

# **ANALYSIS OF THE APPLICABILITY OF FOREIGN EXPERIENCES OF RAILWAY OPERATION AND MANAGEMENT TO THE TAIWAN RAILWAYS**



**INSTITUTE OF TRANSPORTATION  
MINISTRY OF TRANSPORTATION & COMMUNICATIONS**

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## 合作研究計畫報告書摘要表

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<b>關鍵詞：</b>			
<b>摘要：</b> 本報告針對鐵路之組織、制度及管理層面探討歐洲與日本之個別經驗，及兩者在高速鐵路發展的狀況。同時對於台鐵之經營、組織問題作一檢討，並針對台灣目前現況、參考國外經驗，提出台鐵行政體制、組織改革及其高鐵整合型式之建議，以供決策單位參考。			
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<b>備註：</b> 本研究之結論與建議不代表交通部之意見。			

# CONTENTS

	Page
摘要	1
EXECUTIVE SUMMARY	7
CHAPTER 1: PRESENTATION AND ANALYSIS OF THE FRENCH EXPERIENCE	
1.1 Historical Background	13
1.1.1 Three Partly Controversial Thesis Supporting the Planning Contract Procedure	13
1.1.2 Historical Survey	14
1.1.3 Assumptions and Accounting Requirements for Plans and Contracts under the French 9th National Plan	20
1.2 Legal Aspects	22
1.2.1 Description of the French "LOTI"	22
1.2.2 Description of the French "Railway set of Specifications"	23
1.3 Contracts Between the State and the French National Railways	24
1.3.1 The 1985-1989 Contract Results	24
1.3.2 The 1990-1994 Contract	26
1.4 Organization of the French Railways	35
1.4.1 Introduction	35
1.4.2 Centres of Responsibility	36
1.4.3 The Business Units	37
1.4.4 The Technical Divisions and their Supporting Departments	37
1.4.5 The Regions	38
1.4.6 The Relationship Between the Various Actors	39
1.5 Financial Aspects	43
1.6 Impact of High Speed Services	51

	Page
CHAPTER 2: COMPARISON WITH, AND ANALYSIS OF OTHER FOREIGN EXPERIENCES	
2.1 The German Experience	75
2.1.1 The Investment Funding	75
2.1.2 The State Financial Support to the Operating Accounts	78
2.1.3 Adoption of New Management Principles	88
2.1.4 Further Evolution in Germany	90
2.1.5 Medium Term Evolution of the Transportation Policy	91
2.1.6 High Speed Network in Germany	95
2.2 Japanese Experience	101
2.2.1 Events Leading to the Privatization and Division of the JNR	101
2.2.2 The New Companies	103
2.2.3 Changes after JNR Privatization and Division	106
2.2.4 Tasks for the Future	115
2.2.5 Provisional Conclusion	117
2.2.6 Further Reforms	118
2.2.7 Organization and Management	127
2.2.8 High Speed Rail in Japan	135
2.2.9 Synthesis of the Japanese Experience	139
2.3 Other Foreign Experiences	142
2.3.1 Italian Experience	142
2.3.2 Spanish Experience	146
2.3.3 Swedish Experience	148
2.3.4 British Experience	157
2.4 European Railways Guidelines	162
2.4.1 The Draft of European Guidelines	162
2.4.2 Guideline 91/440/CEE on the Development of Community Railways	173



		Page
2.5	Development of High Speed Railway in Europe	176
2.5.1	Community Objectives on Transport Infrastructure and Transeuropean Networks	176
2.5.2	Previous Initiatives for the Creation of a European High Speed Network	177
2.5.3	National Achievements	178
2.5.4	Community Routes	179
2.5.5	Technical Harmonization and Standardization to be Undertaken	180
2.5.6	Evaluation of Economic and Financial Aspects	182
2.5.7	Action to be Undertaken by the Community	182
2.5.8	Council Resolutions	183
2.6	Synthesis of Foreign Experiences	193
CHAPTER 3: DIAGNOSIS AND ANALYSIS OF THE PRESENT SITUATION IN TAIWAN		
3.1	Institutional Aspects	197
3.1.1	Introduction to Government Organization of the ROC	197
3.1.2	TRA's Institutional Relationship with the State	202
3.2	TRA Organization and Management	213
3.3	TRA Competitiveness	215
3.4	TRA Personnel	231
3.5	TRA Accounts	243
3.6	Role and Guidelines Assigned to the Railway by the Nation	263
3.7	Conclusions	272

	Page
CHAPTER 4: SYNTHESIS OF PRESENT EXPERIENCES	
4.1	Synthesis of the Taiwanese and Foreign Experiences 275
4.2	Projection of TRA Revenues and Expenses 281
CHAPTER 5: RECOMMENDATIONS FOR THE FUTURE	
5.1	A 3-Stage Process 285
5.2	The First Stage of the Reform (Institutional Reform) 287
5.3	The Second Stage of the Reform (Internal Reform) 294
5.4	Impact of the Future HSR 309
5.4.1	Impact on the Existing Modes 309
5.4.2	Impact on TRA Ridership 310
5.4.3	Lessons to be Drawn 312
5.5	The Third Stage of the Reform (Integration of the HSR) 313
5.6	Conclusion 319
5.7	Task Ahead 321

# APPENDIX

	Page
APPENDIX 1: Council Directive of 29 July 1991 on the Development of the Community's Railways (91/440/EEC)	323
APPENDIX 2: 法國運輸指導法 (French Law for Transportation, LOTI, March, 1983)	333
APPENDIX 3: 法國國家鐵路權責規範 (Set of Specifications for the National Railways, Sep., 1983)	355
APPENDIX 4: 法國鐵路計畫合約 (Contract Plan)	377
APPENDIX 5: Railway Law (英譯中華民國鐵路法部分條文)	403
APPENDIX 6: Competence Apportionment among Executive Yuan, Taiwan Provincial Government, Taiwan Railway Administration (英譯行政院、台灣省政府與台灣鐵路監理委員會暨台灣鐵路管理局權責劃分表)	413

# LIST OF TABLES

	Page
CHAPTER 1	
Table 1-1 : Financial Highlights	46
Table 1-2 : SNCF Balance Sheets	47
Table 1-3 : SNCF Income Statements	48
Table 1-4 : SNCF Long Term Debt	49
Table 1-5 : SNCF Long Term Debts and Rentals	50
CHAPTER 2	
Table 2-1 : Participation to the Financing of the Investments Comparison between Germany and France	76
Table 2-2 : "Projects of 1st priority" within the network of DB	95
Table 2-3 : "Projects of 2nd priority" within the network of DB	96
Table 2-4 : Japan Railway Group Companies Amount of Liabilities and Reimbursement Program	103
Table 2-5 : Financial Results for Each of the JR Group Companies in 1987 and 1988	106
Table 2-6 : Railway Development Fund Business Scheme	119
Table 2-7 : Outline of Japan Railway Subsidy System - 7 pages-	120
Table 2-8 : Swedish Railways Revenues and Expenditures	150
CHAPTER 3	
Table 3-1 : Government Subsidies to Major Railway Projects	208
Table 3-2 : TRA Passenger Traffic	216
Table 3-3 : Analysis of TRA's Passenger Ticket Sales	217
Table 3-4 : TRA Freight Traffic	219
Table 3-5 : Taxes on Road Vehicles	223
Table 3-6 : Civil Aviation Business Fund	226
Table 3-7 : Motor Vehicles Statistics: Number of Vehicles Registered	227

	Page
Table 3-8 : TRA Personnel	232
Table 3-9 : Income Statement of TRA	244
Table 3-10: TRA's Screened Revenues and Expenses (Fiscal Year)	245
Table 3-11: TRA's Screened Revenues and Expenses (Calendar Year)	246
Table 3-12: TRA Revenues for 1990 & 1991 (Calendar Year)	247
Table 3-13: Analysis of TRA's Expenses (Calendar Year) - 2 pages -	248
Table 3-14: TRA Analysis of TRA Expenses for 1990 & 1991 (Calendar Year) - 2 pages -	250
Table 3-15: Analysis of TRA Expenses 1991 (Calendar Year) - 2 pages -	252
Table 3-16: Analysis of Certain Items of TRA's Expenses (Calendar Year)	254
Table 3-17: Analysis of TRA's Expenses with Some Personnel Expenses (Fiscal Year)	255
Table 3-18: Analysis of TRA's Expenses with All Personnel Expenses Integrated (Fiscal Year)	256
CHAPTER 4	
Table 4-1 : Comparison Between Railway systems in Foreign Countries	280
Table 4-2 : Projection of TRA Revenues and Expenses (Fiscal Year)	282
CHAPTER 5	
Table 5-1 : Impact of HSR on TRA	310
Table 5-2 : TRA's Reduction in Cash Flow for Intercity Services	311
Table 5-3 : Effect of HSR on TRA Local Traffic (Year 2011, NT\$ 1990)	312

	Page
CHAPTER 3	
Figure 3-1 : Organization of the Central Government	200
Figure 3-2 : Organization of the Taiwan Provincial	201
Figure 3-3 : Organization Chart of TRA	214
Figure 3-4 : Six Year National Plan: Project Summaries	264
Figure 3-5 : Six Year National Plan: High Speed Rail Construction Project	265
CHAPTER 5	
Figure 5-1 : SOFRERAIL's Recommendations	286
Figure 5-2 : Stage 1: Institutional Reform	293
Figure 5-3 : Possible Organization Chart of TRC	299
Figure 5-4 : Possible Organization Chart of TRC	300
Figure 5-5 : Liaisons Within and Outside TRC: Set of Specifications - Contract Plan	302
Figure 5-6 : Liaisons Within and Outside TRC: Public Service Contract	303
Figure 5-7 : Liaisons Within and Outside TRC: Target Plans - Activity Plans - Corporate Plans	304
Figure 5-8 : Liaisons Within and Outside TRC: Consumer-Supplier Contracts	305
Figure 5-9 : Liaisons Within and Outside TRC: Lines of Command	306
Figure 5-10: Stage 2: Internal Reform	308
Figure 5-11: Stage 3: HSR Integration	318



# 摘 要

一、SOFRERAIL 於本報告中針對鐵路組織制度及管理層面探討歐洲與日本的個別經驗，同時也一併討論歐洲與日本於高速鐵路發展方面的狀況。

從這份報告的討論中，可歸納出幾點各國行之有效的一般性原則：

1. 所有列入討論的國家都已將鐵路事業轉換為公司型態。
2. 政府有義務提供交通運輸所需之基本設施，已是一通行全球的觀念，即使在自由經濟氣息最濃厚的英國也不例外，歐洲共同體更將它列入各國應共同遵守的指導原則中。在日本，由國家補貼的鐵路發展基金會，亦在某種程度認同此一觀念。
3. 基礎設施與商業營運分立的觀念已普遍得到支持。凡設立公司以興建基本設施均屬國營型態。日本為一例外，最近日本的私人企業已購得新幹線的部份設施所有權。
4. 鐵路營運民營化是世界的趨勢（法國、西班牙除外）。
5. 高速鐵路的建造在各國均由國家力量促成，但於本年度結束前，日本將首先將高速鐵路系統轉由私人企業經營，屆時其高速鐵路股票將於股票市場上公開銷售，然而在此之前日本必須能夠完全控制其相關財務上的風險。
6. 財務平衡的鐵路公司一般皆具備下列共同特徵：
  - 一藉由營業單位之設立達成內部改組（如法國的國營鐵路公司SNCF）；或全力經營單一業務（如日本的客運公司）。
  - 一在相關領域內開發多元化的經營項目（如不動產、零售業等）。西班牙、義大利、德國、英國已朝此方向發展。
7. 歐洲共同體在其指導原則中強調，唯有免於債務之負擔，鐵路才可能與其他運輸業公平競爭，因此穩健的財務狀況是鐵路生存的絕對必要條件：
  - 一債務的處理方式依性質可分為生產性債務（由鐵路公司繼續負擔），以及非生產性債務（由國庫償還）。
  - 一屬義務而非營利的公共服務項目應獲得補償。
  - 一退休金負荷過重的處理方式很多，各國因應之道略有差異。日本是採行革新人事的作法，法國則依在職與退休人員的平均比例，適當

調整國家及法鐵提撥退休準備金之各相關費用。

8. 歐洲共同體的指導原則亦建議賦予鐵路經營者經營自主權，而符合此一建議之最佳途徑是鐵路民營化。由法國所創且目前已被許多國家引進之“計畫合約”制度，即針對相同的目標而設計，其中包含允許經營者自行決定費率政策的自主權。

二、SOFRERAIL 在報告中亦對目前台灣之狀況作一番檢討。現今仍屬於行政組織的台灣鐵路管理局所面臨的問題，都是國外鐵路機構正面臨或曾經面臨過的難題。

來自公路運輸的競爭氣勢逼人。中山（一號）高速公路及其良好網路可提供大量的運能。雖然高速公路設有收費站，但費率不公造成小轎車與大客車和貨車間的交叉補助現象，其他相關於汽車之稅賦及關稅情形也大致相同。由於道路設施使用費低廉吸走了大量的鐵路客源，而且因為城際運輸及貨運訂定過低的標準費率更具傷害性競爭。私人汽車的使用則以驚人的速率成長：自1986至1991年間，小汽車平均年成長率高達16%，同時目前逐步開放民營的國內航空運輸業也享有同等的利益，它無需悉數負擔由政府提供的各項設施成本（如機場、導航設施）。影響所及，台鐵客運狀況漸趨遲滯，貨運量亦江河日下，兩者的營收皆呈現嚴重萎縮。對台鐵費率握有決定權的政府始終不願提高費率，台鐵之困境日窘。

另一方面，台鐵支出卻不斷急速上升，最為沉重的包袱來自人事費用（含在職及退休人員在內）。在職員工除享有良好的所得及福利，薪資並隨每年的公務員薪資調整自動調升，而與台鐵生產力及財務狀況如何無關，更遑論民營運輸業的作法。至於台鐵的退休人員人數遠較其他運輸業龐大，然退休福利金卻毫不遜色。目前每位台鐵員工平均負擔0.75位退休人員退休金，而台鐵力圖精減人力，此一比例只會有增無減。

台鐵其他項目支出亦持續增加，且超出台鐵的管理範圍之外。典型的例子是政府的重大公共工程建設，例如為完成環島鐵路網計畫所營建的台北鐵路地下化工程，其建造成本雖無須由台鐵負擔，但維修及折舊費卻落於台鐵肩上，且無法自其營收中回收。更有甚者，台鐵被迫營運已無經濟效益的路線（如離峰時期乘客稀少的效區及維持支線及小站營運）。至於對學生、老人及軍人的票價優惠措施，台鐵完全得不到任何

補償。

台鐵由此長期收支失衡，爲因應局面，必須從短期市場上大量舉債，赤字問題因而更形嚴重。現金的短缺使台鐵難以對吸引乘客的設施（如車輛、車站等）進行檢修及更新。處此困境中，維持行政體制的台鐵其改革空間委實有限，而不願承擔台鐵負擔的政府機關體系卻如疊床架屋般。台鐵可謂台灣省政府所屬的單位，但(1).其一切諸如費率訂定、薪資調整、人事退休制度、財產分配乃至競爭關係，無不由中央裁決；(2).政府稅收的分配，法律制度規定省府的財源需仰賴中央政府，省府靠中央補助方得支撐局面。因此台鐵的預算端視省府與中央行政及立法機關間複雜的協商結果而定，其間過程繁複，而其結果則常難以逆料，對攸關台鐵營收及支出的款項尤其如此，年年如此，阻礙了台鐵制定中期計畫。

然而，無爲而治的態度只會使台鐵的財務進一步惡化，SOFERAIL所作的調查預估台鐵於1992年台幣49億元的赤字至1996年可能增加至69億元。屆時六年國建計畫中的2號高速公路及高鐵的興建，將使台鐵無任何樂觀的遠景可期。因此，台鐵的當務之急是經由深度的改革振衰起蔽。

三、爲能建立一套持續有效的鐵路系統，SOFERAIL以台灣的現況，參考外國的經驗與做法提出以下十一點建議，分三個階段改革：

(一)改革三階段

- 1.體制改革
- 2.內部改革
- 3.與高鐵整合

(二)建議

- 1.將台灣鐵路管理局改爲台灣鐵路公司，此舉意即該公司將設置董事會。
- 2.與此同時成立鐵路行政督導機構，負責與公司協商權責規範及計畫合約之訂定。爲便於此類協商順利進行，此督導機構應握有足夠的決策權限與各類資源。其於設立之時應將台鐵現有的資產，財產價值以及未來所可能獲得之資助的淨現值列入考量。

3. 爲使各運輸模式及其經營者立於相同的競爭起點，須採下列措施穩定台鐵公司（TRC）的財務：
  - 一非生產性債務轉由國家負擔；
  - 一訂定對照制度（一般是根據退休與在職人員的平均比例）以便計算台鐵公司的退休基金，超出部分費用由政府負擔；
  - 一界定公共服務項目（即純由市場角度而言無法由台鐵提供者），並估算平衡該類項目收支的財務補償費用，由各政府主管機關編列預算支付。
4. 根據歐洲共同體所定義的基礎設施項目，將其帳目與一般會計帳目分開（至少應分設特別帳目，較佳的作法是爲此設立國營建造公司）。此建造公司可透過將台鐵公司（簡稱 TRC）分設爲台灣鐵路營運公司（簡稱TROC）及台灣鐵路設施公司（簡稱TRIC）的作法而設立。兩者於創立初期可爲國營，且各自擁有不同的董事會。
5. 精簡台灣鐵路公司（TRC）的機構及人力。
6. 訂定台灣鐵路營運公司（TROC）應給付予台灣鐵路設施公司（TRIC）的設施使用費率。
7. 研擬鐵路督導機構分別與TROC和TRIC三者間的權責規範及協商計畫合約。
8. 將高速鐵路劃分爲兩部分：基礎設施部分（依歐洲共同體之定義）及資產部分。
9. 基於國家有爲公眾提供運輸基礎設施之義務，高鐵的興建應純粹屬於公共投資，併將興建委託TRIC。
10. 選出民間投資高鐵的最佳時機，時間不宜過早以減低風險、降低投資人之資本負擔；採用建設－經營－移轉（BOT）模式或其他模式都應選擇最佳時機委託之。
11. 在此同時，調整TROC的地位，使其與高鐵經營者的地位相似；TROC及高鐵經營者應置於同一鐵路督導機構之下，俾便就權責規範及計畫合約進行協商。TRIC與TROC和高鐵經營者之間應有合約關係，藉合約訂定出新、舊基礎設施的使用費。SOFERAIL 建議TROC及TRIC應保持分立以免高鐵乘客成爲壟斷市場下的犧牲品。各方如能相輔相成，則於業務上皆各得其所。



四、SOFRERAIL 無意以上述的建議徹底解決台鐵所有關於機構、組織與管理上之各類問題，僅止於陳述於其他國家的各個發展階段已獲成效驗證的普遍原則，並指出如何將這些原則適用於台灣的情況。

每一項原則皆可衍生出許多問題，但這些問題並不一定急於同時解決。由於財務危機，台鐵目前較為迫切的需求應是體制的改革。

基礎設施由其他業務中分出可循序漸進，而TROC的民營化則屬於較長遠的目標，可與高鐵民營化同時進行。此一時程表的排定應視政府行政法規之演變而定。而究竟應採和緩或急進的改革步調（如日本）方能奏效也應一併考量之。

五、目前SOFRERAIL建議應特別研究下列課題，但不表示所有問題皆已涵蓋在內：

- 1.分析交通運輸的社會邊際成本，尋求公共建設、安全及環保的解決方案。
- 2.分析不同模式間的競爭型態，評估各模式所佔的支付成本比例。
- 3.根據台灣情況訂定基礎設施之範圍。
- 4.研擬傳統鐵路之權責規範。
- 5.界定非營利公共服務項目、明確需此類服務之政府機關，並訂定補償計算規則。
- 6.制定對照制度，以便計算鐵路公司應負擔之退休基金成本。
- 7.精簡鐵路內部組織，目標鎖定於商業導向之營運並提高生產力。
- 8.應從事於將高速鐵路部分納入鐵路法之準備，修法時並應符合依前述之分析及建議而得之運輸政策。
- 9.模擬高鐵設施公司與高鐵營運公司之財務體系。
- 10.模擬高鐵之商業吸引力與鐵路設施公司（TRIC）房地產開發兩者間之聚合效應。

## EXECUTIVE SUMMARY

1. In this report SOFRERAIL has reviewed European and Japanese experiences in the institutional, organizational and managerial fields as well as for high speed rail development.

From this review, general principles which have demonstrated their efficiency elsewhere, can be highlighted:

i - All countries under this review have converted their railways into corporations;

ii- Providing transport infrastructure to the public is considered, on a worldwide basis (even in the most liberal countries as in the United Kingdom), as an inherent responsibility of the state; EEC guidelines militate in this perspective; the Japanese Railway Development Fund, partly subsidized by the state, is a kind of recognition of that;

iii- Separation of infrastructure activities from business activities is also generally approved; thus, when separate corporations are created for the infrastructure purpose, they are state-owned; Japan seems to be an exception since the private business companies have recently purchased their part of the Shinkansen infrastructure;

iv- There is a global tendency (except in France and in Spain) to privatization of railway business activities;

v- In all countries, high speed rail has been promoted by public entities; devolution of high speed systems to private hands will only start in Japan by the end of this year when shares will be sold on the stock exchange; however, this will be at a time when all high speed related financial risks are fully mastered;

vi- All railway corporations which succeed in balancing their accounts have this in common:

- they have achieved an internal re-organization by creating business units (SNCF in France) or they are globally dedicated to a single business activity (passenger companies in Japan),
- they diversify (real estate, retail business, etc.) in ventures related to it. Spain, Italy, Germany, the United Kingdom, etc. follow the same course;

vii- EEC guidelines insist on the absolute necessity of a financial stabilization of the railways in order to relieve them from burdens which make them unfit for a fair competition with other modes:

- treatment of indebtedness, debts being divided into productive debts (to remain serviced by the railways) and non-productive debts (to be redeemed by public treasury),
- compensation of non-profitable public service obligations,
- treatment of excessive retirement charges; a variety of solutions have been given to these problems: new personnel status in Japan, normalization of the related charges by reference to an average ratio of pensioners-employees in France, etc.



viii- EEC guidelines also recommend to grant management autonomy to operators of railway business; privatization is generally the best way to comply with this recommendation; the contract plan procedure, a French solution which is being introduced in several other countries, also aims at the same target; it includes allowing to the operator full freedom for setting up the fare policy.

2. SOFRERAIL also reviewed the current situation in Taiwan. TRA, still an administration, suffers from all the illnesses which other foreign railways have faced or are still facing.

Road competition is aggressive. Freeway N°1 and a good highway network offer ample capacity. The freeway is subject to a toll but the rate is biased to make private sedans cross-subsidize buses and trucks. So are the specific taxes and duties to which road vehicles are subject. Thus, under-paying the use of infrastructure, not only do passenger and freight carriers chip on TRA's share of the market, they also set the standard price for intercity travel and freight haulage at a noxiously low level. As for the utilization of private cars, it is growing at an explosive rate: 16% per year 1986-1991. Domestic air transport, now in the de-regulation process, is also in the picture, and it is not charged the full cost of using state-provided infrastructure (airport and navaid facilities). As a result, TRA passenger traffic is virtually stagnating, freight traffic is continuously decreasing and revenues from both are severely curbed; they are so much so as government, who reserves an absolute power of decision over TRA's tariffs, is always reluctant to approve any fare increase.

On the other hand, TRA's expenses are increasing at a fast rate. The most ponderous item is personnel: employees and pensioners. Employees enjoy desirable salaries and benefits, and a status whereby salaries and most benefits follow automatically pay increases decreed by government in favor of civil servants, i.e. irrespective of TRA productivity and financial situation and, specially, irrespective of what happens with the private transportation sector. As for TRA's retirees, they also benefit from a desirable pension scheme as compared to their colleagues outside TRA but in addition, TRA is burdened by much more numerous pensioners than its competitors: currently 0.75 pensioners per employee and this ominous ratio can only increase as TRA strives at streamlining its work force.

Other ponderous items of 'TRA' expenses are also on the rise, and for reasons beyond TRA's management control. Typical is the case of major infrastructure projects that government carries out for the sake of national interests, such as putting tracks underground in Taipei on completing the rail-around-the-island scheme. TRA does not bear their capital cost but maintenance and depreciation are on its shoulders, and they are not adequately compensated by revenues. To make the picture complete, TRA is compelled to run non-economic services (running poorly patronized suburban trains off-peak, servicing secondary lines and small stations) and to grant privilege discounts to students, civil servants, senior citizens, etc.) and receives no compensation wherefore.

As a consequence of the resulting recurrent imbalance of revenues vs. expenses, TRA has to make ends meet by borrowing heavily on the short-term market; this in turn increases its deficit exponentially. And by incidence, TRA is short of cash to carry out desirable replacement, overhauling and refurbishing projects (rolling stock, station buildings, etc.) which would be instrumental in attracting patronage.

In the midst of this predicament, TRA being an administration, management has little leeway to maneuver. And government entities, which at the end foot reluctantly TRA's bill, are multifold. Taiwan Province is, more or less admittedly, the owner of TRA. But i/ it is Central Government which has the final saying in many an instance: rate fixing, wage increase and the personnel-pensioner status, disposal of property (real estate) and the competition footing and, ii/ the legal system for apportioning national tax revenue is such that Province relies on subsidies from Central Government to make its own ends meet. For that reason, TRA budget is dependent on intricate negotiations between provincial and central executive and legislative bodies; the process is cumbersome, the outcome is haphazard, particularly as regards outlays which might have a decisive bearing on TRA earnings and/or expenses, and this is a yearly exercise, which precludes TRA to engage in any earnest medium-term planning of its own.

In a do-nothing scenario, the financial results of TRA can only worsen. A forecasting exercise by SOFRERAIL indicates that deficit, around NT\$ 4.9 billion in 1992, is likely to reach NT\$ 6.9 billion in 1996. Then the construction of a second freeway and that of a high speed rail system, both included in the 6-Year National Development Plan, will hardly bring brighter prospects about. TRA's recovery through an in-depth reform is an urgent task.

3. Taking into account that Taiwanese context and the lessons drawn from foreign experiences, and having permanently in mind the objective of a consistent and efficient railway system, SOFRERAIL suggests a set of eleven recommendations for Taiwan, to be applied along a 3-stage reform:

- 1- institutional reform,
- 2- internal reform,
- 3- integration of HSR.

These recommendations are:

1- Convert TRAdministration into a TRCorporation; by the way, this means endowing it with a board of directors;

2- Create simultaneously a Railway Administrative Tutelage which will negotiate with the corporation a set of specifications and then contracts plans; this Tutelage should be sufficiently empowered with authority and resources in order to handle such negotiations; its composition should take into account both the value of the assets and properties of the existing TRA and the net present capitalized value of future contributions as defined in next point 3;

- 3- With a view to putting all modes and operators on the same competition footing, take measures for the financial stabilization of TRC:
  - transfer non productive debts to public bodies,
  - define a reference system (typically, based of an average demographic ratio of pensioners-employees) for the calculation of the TRC contribution to the pension fund, and charge public bodies for all costs on top,
  - determine which are the public services (those which cannot be provide by TRA on a pure market basis) and designate the government entities empowered to request them; then, evaluate the financial compensation needed to balance the accounts of such services and charge it to the budget of the corresponding entities;
- 4- Put apart (in a special account at least, but preferably by creating a state-owned corporation to this effect) all costs related to infrastructure, according to the definition of "infrastructure" given by EEC. Such a corporation could be set up by dividing TRC into an infrastructure corporation called TRIC (Taiwan Railway Infrastructure Corporation) and an operating corporation called TROC (Taiwan Railway Operating Corporation) which could both be state-owned at the beginning; each of these corporations should have its own board of directors;
- 5- Streamline TRC's organization and work force;
- 6- Determine the toll to be paid to TRIC by TROC for using the infrastructure;
- 7- Draft sets of specifications and negotiate contract plans between the Tutelage and each corporation TRIC and TROC;
- 8- Divide the HSR project in two parts: infrastructure (according to the EEC definition) and other assets related to operations;
- 9- Considering that providing transport infrastructure to the public is an inherent responsibility of the state, start the HSR construction on a purely public basis and commission that task to TRIC;
- 10- Define the best moment for introducing private investment in HSR. It should not be too early in order to limitate the risks and the ensuing requirements of private investors; any solution, BOT or otherwise, should aim at defining the optimum date for awarding a concession;
- 11- Simultaneously, change the status of TROC; the new status should be as similar as possible to the HSR operator status; both TROC and HSR should be put under the same Tutelage which would negotiate sets of specifications and contract plans with them; contracts are also needed, between TRIC on the one hand and TROC and HSR on the other hand, to define the tolls for using the new and conventional infrastructures. SOFRERAIL recommends that TRIC and TROC be kept as two separate corporations in order to protect the HSR users from being captive of a monopoly. It will be in the best interest of these corporations to make the best of their complementarity, on commercial bases.

4. With these recommendations, SOFRERAIL does not claim to provide a clear cut solution to all institutional, organizational and managerial issues. They are merely aimed at sketching out general principles which have demonstrated their efficiency in various countries at various stages of their development, and at depicting how these principles could be adapted to the Taiwanese context.

Each of these principles may raise numerous questions. All of them do not need to be answered at the same time. TRA's institutional reform seems to be rather urgent because of critical financial issues. Separation of infrastructure from other activities may be progressive. Privatization of TROC may be taken up at a further stage, simultaneously with the creation of a private HSR operator. The schedule should be adapted in function of the evolution of government administrative rules. One should also consider whether a smooth or a sweeping (as in Japan) reform can be expected to be more efficient.

5. Starting from now, SOFRERAIL recommends addressing particularly the issues listed hereafter, without pretending that they encompass exhaustively all problems to be tackled:

- 1 - Analysis of the social marginal costs of transport. Solutions for addressing concerns about public utility, safety, environmental preservation, etc.

- 2 - Analysis of the competition between modes. Evaluation of the proportion of total costs paid by each mode.

- 3 - Definition of "infrastructure" in the Taiwanese context.

- 4 - Drafting of a set of specifications for conventional railways.

- 5 - Definition of public non-profitable services. Identification of the government entities which request such services. Setting up rules for the calculation of the corresponding compensations.

- 6 - Definition of a reference system for calculating the normalized pension costs to remain borne by railway corporations.

- 7 - Streamlining railway internal organization aiming at commercially orientate the activities and strengthen the productivity.

- 8 - Preparation of a High Speed Section to be inserted into the Railway Act, consistent with the transportation policy based on foregoing analyses and recommendations.

- 9 - Simulation of financial funding systems for both HSR infrastructure and HSR operations.

- 10 - Stimulation of the synergy between HSR commercial attractiveness and the property development potentialities of TRIC.



## CHAPTER 1

### PRESENTATION AND ANALYSIS OF THE FRENCH EXPERIENCE

#### 1.1. HISTORICAL BACKGROUND

##### 1.1.1. Three Partly Controversial Thesis Supporting the Planning Contract Procedure

A great deal of literature, including official reports, economic articles and university work, has tried to cover management experience relating to public enterprises in the transport sector. Among recent experiences, the development of contracts (for programs, planning, management, etc.) between the State and the public transport sector has aroused a theoretical (and also political) curiosity and given rise to very opposing theses to explain the genesis of these initiatives and their chances of success. In simple terms, we could refer to three theses.

The subject being analyzed is always the same (and, as we shall see, it is not new) : a given economic sector (transport) in which the State intervenes via the intermediary of controlled enterprises raises the problem of the opportunity cost of public funds because these enterprises are "in difficulty". The questions to be solved are : what can justify public intervention in such circumstances and should these commitments be continued ? Is it possible to improve the quality of management in these enterprises ? The logical conclusion of these questions is an historical and genealogical comparison. A brief summary of the three thesis shows the following :

. The first, the managerial or technocratic thesis, sees a problem of bad management, even of strategic error on the part of the enterprises : the solution is down to management : greater dynamism and responsibility, trimming or amputating moribund branches, better perception of potential markets, better selling, etc. These new dynamics are given concrete form in a contract between managers of the enterprise and political leaders.

. The second, the liberal thesis, sees a problem of bad distribution and definition of the role of the State : the solution is to leave the relevant areas to private enterprise where the public service character is not maintained. A contract between the enterprise and the State should be the juridical translation of the segmentation of these areas or their correct separation.

. The third thesis sees a problem of the structural functioning of modern capitalism : public deficits are one way of "socializing" costs which should remain private (i.e. payable by the taxpayer) and "privatizing" profits (which, by contrast, should be "socialized"). A contract between the enterprise and the State only sanctions this division of roles where the public sector contributes to reducing the management costs of private sectors.

### 1.1.2. Historical Survey

#### Emergence of "Negotiations" Between the State and Enterprises in the Transport Sector :

It is possible to claim that dialogue procedures, "contracts" or negotiations between the enterprises (private at that time) and the State have undoubtedly existed since the beginnings of the large railway networks. The 19th century provides a first view of the early development of negotiated procedures between the State and entrepreneurs in the transport sector. Despite the triumph of liberalism, it was still the public authorities that defined the routes, authorized the construction and financed the purchase of land for the first French networks, even though they were profitable. Their operations were left to private enterprises. The geographical distribution very quickly threw up six large companies for six networks which were given concessions of 99 years by the State (instead of short leases).

In order to provide France with a rational network (extension of the 16,000 Km existing in 1859), two ministers of public works, Franqueville (1859) and Freycinet (1879), must have negotiated the shares of the private companies (indeed, transverse and branch lines were not as the first lines which were nevertheless funded by the State). The elements of these negotiations aimed at encouraging the companies to participate in extensions : participation of the State in funding, guarantees of contractual loans to the companies, separation of operations of the two networks (old and new), guaranteed dividends to shareholders. Two conventions were signed on the authority of the two ministers and caused protests at the time from the Radical Party.

The State wanted a large network and needed to become involved. Thus, starting in 1878, it created the State Railways Administration in order to exploit directly the small lines that the large companies did not want. It bought one of these in 1908, the Western Railway Company, whose financial situation had become desperate. After 1919, it inherited the Alsace-Lorraine network and integrated it in what was then known as the State network.

During the war, the private companies saw large sections of their networks destroyed while the army used the rest without paying the "correct price" for them : this led to a catastrophic situation in 1920 and to a new series of laws and conventions. A joint railways fund was supposed to save the poor networks with payments from the rich networks (after a fair profit had been taken); in fact, it was the



public treasury that provided these funds until nationalization of the railway. The State extended its control over the companies and brought about the merger of the Orléans and Midi networks, but nothing helped. With the coming to power of the Popular Front, the companies felt condemned and were finished off by the social reforms of 1936. Not one of them was still making a profit and their total deficit was progressing exponentially.

No doubt the State could once more have wielded the surgeon's knife, returned a limited private network to life and profitability and joined the rest to its own network. But parliament decided otherwise for political reasons. It was thought that the railways should be integrated in a coordinated public transport service.

It took seven months to create the SNCF, a public company 51% owned by the State and 49% owned by the old companies, and to sign a convention defining the aims and operating conditions of this new company.

In the transport sector, the example of the SNCF demonstrates that conventions and agreements are no new invention. Negotiated solutions have always existed where convergent interests were encountered.

Moreover, rail transport is not unique : conventions on public service missions were concluded with the Maritime Mail Company (mail and general purpose services) and was finally taken over by the State, together with even the General Transatlantic Company in 1933.

At the outset, air transport was also greatly subsidized in order to ensure a commercial share to the French flag. The companies with the largest subsidies were grouped together in 1933 with the name Air France which signed a convention with the State.

Liberation and the reconstruction phase did not coalesce the development of State activities in the domain of transport. Two companies were created, the Maritime Mail Company and, more important, the Autonomous Paris Transport Authority (RATP) in 1948 by merging the Paris Regional Public Transport Company, which has a monopoly on public transport in Paris and the Metropolitan Company. At last, Air France's status changed in 1948 : it became a mixed economy company in which private capital could participate.

The period 1948-1968, which followed the period of creation of a public sector backed by national consensus, was a period in which the role of the State was more discreet : even though there were further creations (notably Air Inter in 1955 or the Autonomous Ports of Dunkirk, Paris, Marseilles, etc.), the overall configuration of the public transport sector was only modified by internal financial restructuring : what was seen was essentially a movement towards the creation of subsidiaries (increase in the number of technical subsidiaries of the SNCF and Air France).

The central question of that period was to find out what functions will the public sector be capable of assuming and, in particular, at what (financial) cost to the public. Would uncontrolled expansion or diversification not run the risk of generating excessive overheads for bureaucratic operations and unleash growing losses of efficiency ?

It is in this context that the legitimacy of the public sector (specially the industrial public sector) is starting to be questioned : numerous texts with ideas and committee reports by experts will lead to the development of program contracts followed by planning contracts. The most famous text is the NORA report submitted to the government in 1967.

The NORA report concentrates on developments in public energy and transport enterprises (coal, electricity, gas, SNCF, RATP, General Transatlantic Company, parcels). These enterprises are called "enterprises with serious constraints of public interest". A number of pages are devoted to the "enterprises of the competitive sector" (chemicals, automotive, aeronautics) but there is no study of the public financial sector.

Then, the report examines the possibilities of modifying statutory working conditions; it affirms the need to "open up" the public enterprises in this respect.

Lastly, the report stresses the need for financial rectification of the public sector.

This essential point is expressed around the following conditions :

- . increased tariffs to increase internally generated funds (i.e. a transfer from savings to consumption)
- . lower allocations of public funds to the public sector
- . greater independence of management to take decisions, i.e. greater responsibility for top managers with more importance attached to traditional indicators (in particular the operating result)
- . multiyear investment planning and funding facilities gradually making the intervention of technical ministerial supervision superfluous
- . any public demand will have to be accompanied by an evaluation of the cost of the measure requested and of financial compensation. This imposes a strict limitation on the growth of measures extending the public service.

On 16 September 1969, in an address to the national assembly on the subject of the "new society", prime minister Jacques Chaban-Delmas said :

"In the coming weeks, the government will present a draft convention with the SNCF which is in line with these principal recommendations (those of the NORA report). On the same lines, a contract is being prepared with EDF (electricity) and GDF (gas), and preliminary studies on a forthcoming revision of relations between the State, the relevant local authorities and the RATP have been commenced".

The NORA report was therefore taken up by the government.

### Full-blown Development of Contractualization

The effects of the NORA report started to be felt in an exchange of letters between the management of the SNCF and the State supervisors in 1969. The first objective remained a return to budgetary equilibrium via greater independence in the setting of tariffs, compensation for public services and the granting of a decreasing fixed subsidy. Finally, a rider to the 1937 convention was signed on 27 January 1971 and supplemented by a new set of specifications.

The latter aimed to eliminate all the "artificial" causes of deficit by redefining the compensation that the State would pay for the various charges for public service, for the pension fund or for harmonization of rail/road competition. For the rest, which was a genuine operating deficit, it limited public funding to fixed subsidies which diminished until 1973 when they would be phased out completely. In exchange, the SNCF was given the right to fix its own tariffs (the State making up the difference if it vetoed increases), undertook to reduce staff levels (270,000 by the end of 1973) and its network length (10,000 Km shorter). In fact, the national company was trying to obtain greater independence in managing the network and make it profitable. An early rider, at the end of 1971, was to adjust the investment program upwards. A second, in 1974, was to prolong by two years the contract, since none of the essential objectives would be attained, in particular an operating balance.

It is important to stress some of the characteristics of these arrangements which bear the hallmark of the recommendations of the NORA report :

- . the principle of compensating for public services which leads to a reduction in the activities of the enterprise and its factors of production;

- . the principle of comparing via the national planning procedure the profitability of the investments of the enterprise with those of the community.



It should also be noted that the arrangements relating to intermodal competition in goods transport are mentioned in the rider.

The above mentioned documents envisaged a public contribution to infrastructure costs. This arrangement - justified by the desire to put rail/route competition on a equal footing - is not derived from the spirit of the report but from policies to harmonize tariffs for the use of infrastructures.

In the same way as the NORA report had inspired the program contracts of the first generation, it was the report of another committee, chaired by Renaud de la GENIERE, vice-governor of the budget, that inspired the enterprise contracts of the second generation. This latter report, submitted to the prime minister in Spring 1977, had practically the same subject as its predecessor. Its spirit, which was undoubtedly less open and less innovative, was very pragmatic. Its recommendations confirmed and expanded on those of the first report but in a more operational spirit. Recognizing that public enterprises have to be managed like other enterprises and that their independence is a precondition for their efficiency, the LA GENIERE report suggests that each of them should prepare and present a multiyear enterprise plan on the basis of which enterprise contracts covering the same period would be signed with the State. In particular, the report stresses the freedom of the enterprises to fix the tariffs they are to charge and on the need to compensate in advance and equitably the constraints of public service or general interest that the government could be caused to impose on them. An orientation committee for investments in public enterprises was created.

Four contracts were signed in the two years following the report submission. At the same period, many enterprises were started on several other contracts. The movement thus had more scope than that of 1970/1971 and had several new features. In the transport sector, Air France was the first to sign a contract (in January 1978). The SNCF signed in March 1979 followed by the General Maritime Company (CGM) in August.

The new enterprise contracts marked the introduction of a new logic of operation focusing on the re-establishment of financial equilibrium and linking the results of the enterprise to management performance. Though the principle of compensation was still allowed, the results were to be comparable with those of any other private enterprise once this compensation had been taken into account.

Compared to the CGM and Air France cases, the case of the SNCF is undoubtedly the most complicated. First of all, the enterprise has two principal business that do not develop in the same way and in the same economic climate : whereas passenger traffic increased regularly (and should logically have profited from a shortage of energy), goods traffic had been severely affected by the economic crises (especially in the iron and steel industry). Thus, the government had prevented the SNCF from increasing its passenger fares at the same rate as the

increase in the GDP since public opinion is very sensitive to these tariffs, and it was clearly impossible to increase sharply the goods tariffs against the background of a depression and competition from road transport.

These difficulties explain in part the failure of the first program contract and the rider to it, the deficit of the SNCF having grown since 1974 instead of being reduced.

Apart from levels of activity and tariffs, labor costs and the nature of the service were two other sources of difficulty. As labor-intensive enterprise, the SNCF was not in control of wage levels and working conditions. As a public service, it could not modify its network, services or service quality to suit itself.

The new contract, however, took account of these elements but without neutralizing them completely. The principal objective was still to balance the books but the contract contained more details than in the past on how this should be done. In particular, traffic forecasts by category of service were drawn up with reference to global economic hypotheses ; quality of service indicators and productivity results were defined, and the objectives to be achieved for each of them specified.

In order to realize these objectives, the SNCF was given increased commercial independence, in terms of both the rationality of the network and services (with reserves for bus services) and tariffs ; in the latter case, freedom was total for goods and the structure of passenger fares, but the full second class fare was not to increase more quickly than the GDP over the entire period covered by the contract (1979-1982). An annual investment envelope was specified for 1980, 1981 and 1982 and could fluctuate in line with detailed rules as a function of the performance of the enterprise. As in the past, the State undertook to compensate the constraints it imposed and it was stated explicitly that any new constraint should be subject to an advance subsidy aiming at compensating the costs chargeable to the requesting ministry. Lastly, a subsidy ensuring an operating balance was decreased from FRF 3.3 billion in 1979 to FRF 2 billion in 1982 (in real prices), SNCF limiting its deficit to these amounts.

As a measure of prudence, the contract stipulated that where the basis hypotheses could not be verified or if the SNCF did not achieve the fixed objectives, both parties would get together to examine the reasons and to study the consequences that had to be drawn. But the hypotheses and objectives in question were sufficiently detailed in the appendices to make such an examination useful and for the consequences of any variations to be evaluated jointly without too many problems.



### 1.1.3. Assumptions and Accounting Requirements for Plans and Contracts Under the French 9th National Plan

Enterprise contracts of the second generation already expressed some concern about the very great sensitivity of the activities and accounting results of the public enterprises to even light variations in the national and international economic situation.

But recognition of micro/macro interdependence presented in the contract by sensitivity tests did not signify that coherence was being sought in the figures for the objectives of the contract with respect to the general macroeconomic development foreseen by the national plan.

Without wanting to link this observation to the weakening of the values of planning and the gradual loss of concern to specify objectives - not to mention of the marked absence of any desire to quantify - it should still be noted that the movement towards contracts following the LAYGENIERE report does not suggest the inclusion of these conditions in the process of national planning.

This concern was affirmed in the period that opened with the interim plan (1981-1983) and in particular the 9th national plan (1984-1988). It is this movement that lies behind the contracts of the third generation or - and the terminology makes this clear - those known as planning contracts.

It should be recognized that these preoccupations with planning had already been demonstrated in a certain number of legal texts which enlarged considerably the sphere of influence of the plan and its instruments (and therefore notably contracts with enterprises). Changes in the law to reform planning (law n° 82-653 of 29 July 1982) are applied specifically to the transport sector by the law on domestic transport (LOTI) (law n° 82-1153 of December 1982) : this sector is assigned a more "permanent" role in the specifications for the large public services and a more "mobile or temporary" role in future planning contracts in association with the objectives of the plan. This is what is stated explicitly in the first (law n°83-645 of 13 July 1983) and second (law n°83--1180 of 24 December 1983) planning laws, and in particular in the report appended to the second planning law (methods of execution) where the fourth section is devoted entirely to planning contracts (Official Journal of the French Republic, 30 December 1983, pages 45-46).



## State-SNCF Planning Contract (1985-1989)

This preoccupation to include alternatives in the recommendations of the national plan can be seen in explicit references - mostly in the preambles to the contracts - to the "objectives" and "priorities" of the 9th national plan. But inclusion of a planning process in a framework of negotiations that was already in place was not easy. Thus, for instance, the Commissariat to the plan was not allowed to participate in many of the preparatory meetings for the SNCF planning contract. Negotiations revolved essentially around a confrontation between the administrative actors (supervisory and finance ministries) on the volumes of and changes in public contributions. Despite the affirmations of the legal texts, the problem of the SNCF planning contract was not examined in the light of its budgetary cost. Certainly, the financial dilemma and its consequences were important ; but this did not detract from the fact that overall strategic ideas could or should have integrated the financial elements and the results of forward-thinking on the transport markets. The delays in negotiations can certainly be explained by the size of the sums in question and by the different approaches of the transport and finance functions.

The contract with the new SNCF was not finally signed until April 1985. This contract is representative of the increased planning preoccupations affirmed by the 9th plan. It is the longest contract of this type to be passed (more than 40 articles and 7 very detailed appendices).

It is oriented prudently towards a double objective :

- . imperative financial rehabilitation expressed in terms of a commercial approach, conquest of market shares, new traffic and economies and increases in productivity;

- . modernization of the enterprise from the point of view of internal management, investments and the products on offer.

This approach brings with it new quantitative explanations, even if these continue to be prudent (explanation of public contributions, investment levels and quantification of operating surpluses and accounting results). The central element to pose a problem is still the financial structure of the enterprise. The heavy accumulated indebtedness, produced by deficits carried forward and funding methods external to the requirements of the enterprise, oblige the enterprise to conduct itself as a genuine "debt-loaded developing country". There is great uncertainty about all the accounting projections since it is difficult to forecast with accuracy changes in financing charges which is dependent on hypotheses about interest rate levels in France and abroad.

## 1.2. LEGAL ASPECTS

Two very important documents, which came into force in 1982/1983, need to be fully read in order to understand the basis of the National Transportation Policy on the one hand and the railway policy on the another hand. These two documents, the "LOTI" and the "Railway Set of Specifications", have been translated into English and attached in appendices to this report.

In order to facilitate the understanding of this report, the two following paragraphs briefly describe the contents of these guide-lines.

### 1.2.1. Description of the French "Loi d'Orientation des Transports Interieurs"

This law which governs internal transportation passed in 1982 describes the conditions by which the different transportation modes have to be organized and operated.

This law includes 3 headings and 10 chapters. The content is summarized as follows :

**Heading 1 : General Clauses Applicable to the Different Transportation Modes :**

**Chapter 1 :** The right to transportation and the general clauses applicable to the internal transportation modes.

**Chapter 2 :** Social and safety clauses. The State defines the social regulations and the safety rules and indicates the control methods for the operations applicable to the various transportation modes.

**Chapter 3 :** Infrastructures, equipment and technologies. The choices relative to infrastructure, equipment, rolling stock and transportation materials are proposed in such a way to maximize social and economic efficiency.

**Chapter 4 :** Institutions. A National Transportation Council, Regional Committees and Departmental Committees contribute to the implementation of the internal transportation policy.

**Heading 2 : Clauses Relative to the Different Means of Transportation**

**Chapter 1 :** Rail transportation. Creation of the "New SNCF".

**Chapter 2 :** Urban passenger transportation.

**Chapter 3 :** Rural passenger transportation.

**Chapter 4 :** Road transport of goods.

**Chapter 5 :** Water transportation.

### Heading 3 : Other Minor Clauses

#### 1.2.2. Description of French "Cahier des Charges de la SNCF" also Called "Railway Set of Specifications"

Made public in 1983 the french "Cahier des Charges de la SNCF" describes the rights and the duties of SNCF (the French Railway Company), the conditions of its operations, its budget and the way it provides public services. This document contains 5 chapters :

Chapter 1 : Principles and conditions providing public rail service

Chapter 2 : Contractual and financial relationships between the State and SNCF.

Chapter 3 : Relationships between territorial collectivities and SNCF.

Chapter 4 : Financial and accounting arrangements.

Chapter 5 : The national railways network.

### 1.3. CONTRACTS BETWEEN THE STATE AND THE FRENCH RAILWAYS

#### 1.3.1. The 1985-1989 Contract Results

The 1985-1989 "contract-plan" between SNCF and the State was a success. Its basic goals were reached (accounts balance especially) and the engagements both parties entered into were fulfilled.

This plan was implemented in three main directions: commercial policy dynamism, firm modernization from a threefold viewpoint (technical, social and management) and financial recovery.

#### Commercial Policy Dynamism

The results which have been obtained fully demonstrate the success : at the end of 1989, the passenger traffic reached an historical level: 64.5 billion pk (passengers-km), 55.4 of which on the main network and 9.1 in Paris suburban area.

This traffic benefited from the great commercial success of the South-East TGV. Then, the Atlantic TGV was put into service in September 1989 and the TGV traffic reached 11.46 billion pk at the end of 1989. This traffic growth is also the result of a dynamic policy concerning supply as well as fares (families, teenagers, retired people, package tours). Cooperation with the subsidiaries of the group was strongly encouraged. Also, with all European railways concerned, SNCF widely contributed to the preparation of a common plan for a European high-speed network. At the same time, the projects for a Channel link TGV and for a high-speed TGV service between Paris, Brussels, Amsterdam and Koln were being developed.

The policy of entering into agreements with the regions was very active: instead of the two-thirds envisaged in the SNCF-State contract-plan, 100 % of regions had concluded agreements with SNCF by the end of 1989. Renovation of services and renewal of rolling stock, especially under the label of TER (regional express transit) favored a significant traffic growth estimated at 6.6 billion pk at the end of 1989.

The overall economic situation was difficult for freight until 1988, and the competition has been stiffer and stiffer. In this context, the actions taken by SNCF permitted to stabilize the traffic in 1987 after a long recession period, and even to record a certain recovery since 1988. This traffic was estimated at 51.5 billion tk (tonnes-km) at the end of 1989.

These results were obtained mostly thanks to the development of integrated services (terminal installations with sidings, storage, handling facilities, etc.), to the reorganization of routing conditions permitting to supply a wider range of products (Express Fret, Rapid Fret), to a more active international trade as well as to the expansion of combined transport and to a better coordination with the companies of the group.



## **The Modernization of the Firm**

It has been effective in all fields, from the technical, social and management viewpoints.

The volume of investments was maintained at a very high level (FRF 55 billion in 1989): launching of the Atlantic TGV, improvement of conventional main line and commuter networks, electrification to disenclose Brittany and "Massif Central", reinforcement of traffic safety within the scope of a special program set up after the accidents of 1985 and 1988.

The technical modernization and competitiveness improvement went in line with a big effort of productivity. Consequently, the work force was adjusted to this new situation: during the 5 years' plan period, this force decreased by some 42,000 persons, with 50,000 job terminations (mostly through retirement) and 8,000 admissions.

Beside a reform of channels, the social policy, strengthened by the 1986-1987 Winter strikes, applied itself to develop decentralization and to set up a shared management system.

A new system of internal management per activity was set up. The policy of railway estate valuation was particularly active. Computerization was applied to internal management as well as to relations with customers.

## **Financial Recovery**

It was achieved during the last year after gradual improvement as stipulated in the plan. The result was a benefit of FRF 200 million at the end of 1989, while the deficit was over FRF 6 billion in 1984, just before the plan was signed.

This financial recovery could be reached thanks to a joint action of both parties: SNCF implemented a strict management policy and the State fulfilled its engagements, especially as regards its financial help to the company.

### 1.3.2. State/SNCF Contract Plan 1990-1994 :

#### The Means for Development and a Full Enterprise Responsibility

The contract plan represents the charter for the relations between the State and SNCF for the years 1990 to 1994. It takes over from the contract signed in 1985, also for a five year period, and the terms of which have been respected to the full by both parties.

By means of this new contract plan for 1990-1994, the State and SNCF are expressing a common will : to make lasting provisions for the future of SNCF, in order to enable it to become a modern, competitive public enterprise, turned to the future, dedicated to quality of service and social progress.

This contract thus opens the way for development for SNCF. It is a balanced document, in which both parties have reached an agreement on three essential points : the debt, the State's contribution, the level of investment. It gives SNCF the means for a normal growth rate and takes into account three strategic trends : development of fast passenger links ; improvement of everyday transport; consolidation of the freight situation. The company shall therefore be in a position to fully discharge its obligations as a public service, and, in order to counter the increasingly tough competition from air and road transport, to improve its supply and be even more competitive.

Once relieved of its debt, the result of the losses accumulated since 1970, and with the benefit of the aids obtained in consideration of its services as a public enterprise and of the share it takes in initiatives for the common good, the company is in a position to ensure a balanced budget on the basis of a fully independent management. To this effect, it shall have to pursue its efforts towards improved productivity. This effort cannot be dissociated from a social policy, since it can only be achieved with the support of the railway men.

In the longer term, this plan gives an idea of SNCF as it shall stand in the early years of the twenty first century. Several of its provisions open prospects that go beyond the five year period it covers, especially so as far as the paying off of the debt, the investments, the freight strategy are concerned. It is accompanied by an ambitious research program, which takes social sciences into account for the first time, and is organized around three major projects : Astrée (monitoring of traffic), Commuter (freight intermodal transport), high speed (passengers).

#### The Road to Development

SNCF has drawn up, jointly with its employees, a corporate plan which involves three main strategic orientations. The contract plan integrates these orientations and the State is committed to give assistance for their implementation (article 2).

The development of the passenger high speed links (article 3) shall be based on the new high speed lines (FRF 43.5 billion in 1989 for the TGV programs, installations and rolling stock) and on the upgrading of the existing network (FRF 28 billion in 1989).

In signing the contract plan, the State approves the most sizable investment program ever undertaken by SNCF over five years (articles 23 and 24). SNCF is planning to cover a yearly ratio of 34% by self financing by the end of the contract.

This program is estimated at FRF 79.6 billion (1989 FRF); it involves all the sectors of activity in the company and represents a 60 % increase in constant Francs over the five years of the previous contract. To this sum, one should add the investments in the Paris suburbs, listed in an amendment to the contract and which are estimated at over FRF 15 billion.

In all, the rail investments shall total FRF 96 billion for the period of the contract plan.

These figures show that the future of the enterprise is guaranteed in the long term, all the more so as, if necessary, this investment program will be revalued on the basis of future possible decisions regarding new TGV links (in the context of the master plan, a draft copy of which SNCF has just communicated to the government) or on that of operations conducted jointly with the regional authorities, on the traditional network.

As regards passenger fares, the provisions of the previous contract are extended : evolution on a par with that of consumer prices ; compensation by the State if a decision on an increase is taken belatedly (article 4).

SNCF is committed to endeavor to improve the quality of service, working jointly with the consumer and passenger unions. The Board of Directors will monitor the quality indicators at regular intervals (article 11).

The improvement in everyday transport, a field where the public service aspect of the mission finds its full expression, involves both the Paris region transport and the transport in provincial regions.

The Paris suburbs were not mentioned in the previous contract. The current plan includes a specific plan of action designed to increase network capacity, improve the quality of service as well as the technical and commercial efficiency (article 20). In 1989, SNCF launched a major effort in the Paris transport region , affected by this program, which shall be drawn up jointly with that projected for the RATP.



In the other regions, the convention policy was actively developed during the previous contract plan, especially so through the TER. When renewing these conventions, the company shall make a proposal to the authorities to implement an overall program for an improved service in the region. The savings achieved, especially by transferring to the road the links with a low passenger level, will, with the approval of the regional authorities, be invested in the improvement and promoting of the regional mass public transport.

The strengthening of the freight situation is analyzed in its three aspects : individual wagons, block trains, combined traffic (article 6). An ambitious investment program has been planned for the development of intermodal transport (article 25) ; the company shall participate to its financing.

Working from the orientations defined in its corporate plan, SNCF has set itself as its target to balance its freight accounts by 1999, that is at the end of the next contract plan. This date has been selected in order to give the reorganization of the system for the transport of individual wagons time to reach its full potential.

The State confirms the principles defined in the act governing domestic transport (LOTI - Loi d' Orientation des Transports Intérieurs) regarding the conditions for fair competition between the modes of transport as well as between enterprises.

The social policy described in SNCF corporate plan can be implemented : its main orientations are expressly approved in the contract plan (article 22). It echoes the determination of the management of the company to associate economic progress and social progress.

The company shall have the means of implementing its social policy over the coming years. Among other things, it is in a position to begin the negotiations it had offered the unions, especially regarding training, modernizing of the wage scales and, whenever such a step is possible, on profit sharing.

The contract plan mentions no forecast on the evolution of personnel numbers : this figure can be found in the corporate plan.

The program launched by SNCF on improved safety in traffics is also approved by the contract plan. It shall be immediately implemented and shall be re-valued at yearly intervals (article 9).



Taken together with its subsidiaries, SNCF is a "major intermodal group with a rail predominance". The State/SNCF contract plan stresses the group policy and its contribution to the implementation of these strategic orientations (article 8). The targets selected are those defined in the corporate plan : comprehensive service, international dimension, contribution to the overall results.

## Two Essential Conditions

The settlement of the debt issue - The contract plan offers a comprehensive solution to the issue of the debt generated by cumulated losses.

This debt has an unwholesome nature, since it does not reflect the financing of profitable investments and it is a very heavy financial charge. It amounts to FRF 38 billion, the total of the cumulated operating losses inherited from the past and integrated in SNCF statement of accounts. It shall be transferred up to its extinction to an auxiliary department the costs of which shall be borne every year virtually completely by the state, with SNCF contributing for FRF 100 million (article 28). This department shall be created from 1st January 1991 ; as a consequence, SNCF's financial costs shall be reduced by FRF 3.8 billion from its 1991 budget. Forecasts tend to show that it should be possible to repay this debt within 10 to 12 years.

The final treatment of these losses is a fundamental new element in this contract. It is a vital point for the railway men and their enterprise ; it proves the State's determination that SNCF's future development is no longer to be hampered by the weight of past years.

The adjustment of State aids - The contract plan defines clearly the rules for calculation of the aids from the State to SNCF. The company shall thus be fully responsible for its own management, without any balancing subsidies.

SNCF itself builds and maintains the installations it uses, which is not the case for the other modes of transport. The State's subsidies for installation expenditures, which, in 1990, was fixed at the sum resulting from the implementation of the previous contract, shall now increase by 1.3 % per year in constant Francs (instead of diminishing by 1 %). This increase makes it possible to take into account the investments undertaken in the context of the major scheduled interventions (Grandes Operations Périodiques - GOP) for track renewal, which shall be financed by the company from now on (article 15).

The railway men are affiliated with an independent pension fund, the particular benefits of which are financed by the contributions from the company. The State also contributes to this fund for demographic reasons, as it does to other particular funds. The subsidy for pension payments (article 16) shall experience a sizable increase - on the basis of a standard contribution rate fixed at 36 %. This aid shall amount to FRF 13.9 billion in 1990, that is to say FRF 850 million more than in 1989.

In the context of the national social and family policy, SNCF offers reduced rates to certain categories of people. The State's subsidies to compensate for these social reduced rates is also re-valued (article 21) compared to the 1990 budget. It amounted to FRF 1.7 million in 1990 (FRF 1.57 in 1989) and it will be indexed in future years.

## THE KEY POINTS:

### THE PROVISIONS

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Creation of an auxiliary financial depreciation department, outside of the operating account, for a sum of FRF 38 billion. Yearly State subsidy: FRF 3.8 billion, yearly SNCF participation: FRF 100 million

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Commitment to an overall management target: balancing the accounts.

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Integration of three orientations: development of fast passenger links, improvement in everyday transport, strengthening of the freight situation.

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Approval of an investment program of FRF 79.6 billion (1989). To which are added the investments in the Paris suburbs defined in an amendment, for over FRF 15 billion.

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The safety imperative is integrated as one of the major targets in the contract.

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First priority and special attention given to everyday transport, especially in the Paris suburbs.

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Continuation of the existing system for increases in passenger fares.

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Investment plan for the development of combined traffic: upgrading of the tunnels to large gauge, centers, ect..

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Adjustment of the State aids, especially for the pension funds (+ FRF 800 million).

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### THE ADVANTAGES

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Clear cut and final solution to the issue of the debt generated by cumulated losses. Extinction of this debt over 10 to 12 years.

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Ambitious but credible target given the contract's provisions.

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The enterprise clearly states its acknowledgment of its mission as a public service and its determination to serve better its patrons and customers.

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This sum guarantees the long term development of the rail activity. It is compatible with the overall balance target, with an improved self-financing rate.

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The State supports the current policy. The results shall be assessed on a yearly basis.

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Innovation in this contract plan which shows the will to define the main lines for development in the suburbs jointly with the regional authorities.

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Guaranteed receipts for the company should the tariff increases be delayed. No end to the system of geographical balancing out.

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Means of ensuring the growth of intermodal transport, the means of transport for the future, especially on the international scale.

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SNCF is thus committed to guarantee that its accounts are balanced on the basis of totally independent management.

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## The Settlement of the Debt Issue

The contract plan for 1990 - 1994 offers a comprehensive solution to the issue of the debts resulting from the cumulated losses. The 38 billion French francs it amounts to shall be transferred to an auxiliary department from 1st January 1991, with the consequence that they shall no longer burden the accounts of the company.

### The Selected Mechanism

The auxiliary department is comparable to a redemption fund, without legal status. This system makes it possible to extract the principal and the interests of this debt from the accounts of SNCF, to put aside these 38 billion, the repayment of which shall no longer affect the results of the company.

The corresponding charges shall be financed by the State, for a sum fixed at FRF 3.8 billion (1989 FRF) per year from 1991 to 1994, with a yearly contribution of 100 million from SNCF. In addition, the auxiliary department created on 1st January 1991 shall benefit from the cash proceeds generated by its own activity. For the year 1990, the State shall extend the exceptional measure provided in the previous contract plan up to 3.8 billion.

The economic simulations and calculations show that, in this way, the final settlement of this debt should be achieved within 10 to 12 years.

### Why Settle the Debt Resulting from the Cumulated Losses ?

In setting the issue of the partial settlement of its debt, SNCF was addressing the weight of the debt resulting from the cover of the losses by loans, and not the debt resulting from the loans subscribed to finance profitable investments, which is normal.

On 31.12.1989, the long term indebtedness of SNCF amounted to FRF 96.4 billion, nearly 99 billion with the lease on the TGV coaches. This generates nearly FRF 10 billion in financial charges, or almost 20 % of the company's turnover.

Out of this indebtedness, 38 billion correspond to the losses accumulated by SNCF since 1971, until it became balanced, as a result of the provisions of the contract plan for 1985 - 1989.



The resulting financial charges that weigh on the accounts of the company is unwholesome. This debt does not reflect the financing of profitable investments and it is an insuperable handicap for the activity of SNCF in an increasingly competitive environment. There is no justification, either financial or economic, in indefinitely covering by loans such a high level of cumulated operating losses, whatever their causes (inadequate tariffs, management problems, etc.).

The exceptional State subsidy, provided in the contract plan for 1985 - 1989, the amount of which had been calculated so as to cover the charges generated by this unwholesome debt has helped balancing SNCF's accounts. Nevertheless, this entry created in SNCF's operating accounts afforded no final solution. What is more, this subsidy, which was termed as "exceptional", had no other justification than to afford the cover of inordinate financial charges and appeared as an anomaly in the normal development of the company.

This is the reason why SNCF called for and the State accepted the implementation of a solution leading to the paying off of FRF 38 billion. The solution accepted is that the company had itself put forward to its supervisory authorities.

Several rail networks have obtained a positive answer to similar problems from their respective governments, either by means of a year by year cover of the losses (Luxembourg : CFL, Switzerland : CFF) or selectively (Portugal : CP, Great Britain : BR, The Netherlands : NS, RFA : DB - where the federal government has recently decided to pay off a debt of DM 12.6 billion).

### A Good Solution

The solution of the creation of an auxiliary department, as included in the contract for 1990 - 1994 is a good solution to the issue of the unwholesome indebtedness of SNCF, because it is an effective, and final solution, with stimulating and encouraging consequences for the company.

It does lead to the paying off of the debt, since the very text of the contract states that the loans transferred to the liabilities of the auxiliary department shall remain here "until their final repayment". This statement is the demonstration that this is not a presentation of the accounts valid for the duration of the contract plan, but an effective solution leading to the total repayment of the transferred debt, and, as a consequence, to the equivalent lightening of the debt.

The commitment by the State effectively goes well beyond the period of the contract (1990 - 1994), even though figures are given for that period only ; it guarantees the department the very means necessary to meet the target.



The solution is efficient because a sudden paying off by a subsidy for FRF 38 billion was out of the question due to the State's budget limitations.

It affords full economic clarity. It thus becomes possible to draw up clear accounts, with no other assistance from the State than that given in consideration of public services, of particular services rendered for the common good or aimed at harmonizing the conditions for competition.

It is motivating for the company which is in a position to take full responsibility for an independent management. Indeed, SNCF is relieved of the weight of this anomalous debt and of the resulting unknown factors that weigh on its results (differences in exchange, rate, etc.). It thus became possible to draw up the targets of the contract plan on the basis of a fully fledged corporate policy.

## 1.4. ORGANIZATION OF THE FRENCH RAILWAYS

### 1.4.1. Introduction

French National Railways (SNCF) has just achieved a major restructuring process designed to devolve greater responsibility and accountability to the regions. Clear-cut agreements have been made with the government regarding public service obligation and related compensation, and in the road to financial equilibrium in non-supported business.

The philosophy behind the decision to restructure the management of SNCF was to implement a broadly decentralized form of management based on business units and controlled by head office. In this way SNCF will better satisfy its customers because management will be closer to the ground with better decision-making and action-taking at regional and local levels. It will also improve the means of supervision available to top management.

This new structure was adopted during the spring of 1990 following a formal audit of top management, including the central divisions. It is based on four business units : long-distance passenger, freight, Greater Paris commuter, and parcels. It also includes a service to supervise regional transport systems which, from now on, will be run by the regions.

The business units will order their services through customer/supplier type contracts signed with SNCF's technical divisions in order to fulfill their marketing responsibilities and the objectives agreed upon with top management.

Each business unit will, in a sense, buy the services it requires. The actual nature and cost of the services offered, including both technical and human resources, will be determined within the customer/supplier agreements.

This activity does not imply that a business unit owns the technical means, rolling stock, or other facilities necessary for its operations. But this new way of working will inevitably lead the technicians to consider more fully the needs of the sales team. It will also encourage a better understanding by the sales teams of the constraints faced by the technicians. Finally, it will contribute to a better assessment of the value of services rendered by the entire rail staff.

## The Settlement of the Debt Issue

The contract plan for 1990 - 1994 offers a comprehensive solution to the issue of the debts resulting from the cumulated losses. The 38 billion French francs it amounts to shall be transferred to an auxiliary department from 1st January 1991, with the consequence that they shall no longer burden the accounts of the company.

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### Why Settle the Debt Resulting from the Cumulated Losses ?

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Out of this indebtedness, 38 billion correspond to the losses accumulated by SNCF since 1971, until it became balanced, as a result of the provisions of the contract plan for 1985 - 1989.

The shared means of production, such as infrastructure or rolling stock, have not been divided. Thus the centers have the means to define the products but must turn to other "centers of responsibility" for the means required to create those same products. This limited the scope of changes brought to the former organization but above all it confirmed the key role played by the regions as centers of production. This implies the signing of contractual agreements on a customer/supplier basis.

Depending on their tasks three kinds of "center of responsibility" are identified. They are the business units, the technical divisions and their supporting departments, the regions.

#### **1.4.3. The Business Units**

The business units operate on a given market whose conditions can be influenced by various strategies and which generates commercial revenues which can be completed by governmental grants when a given business unit has to fulfill state-imposed public service obligations.

The units define SNCF's services on the basis of a market-analysis and of the identified needs of the customers. They are now in a position to have an efficient action on spending as well as on revenues. The new organization gives them total control over the conception of products and the responsibility for the choices that derive from their definition.

The services that make up a given offer are provided either by the regions or by the technical divisions. This, because the units do not integrate the elements of production as opposed to what has been done by some other railway companies, i.e. BR (Great Britain) or RENFE (Spain). The units only possess the means which are for their exclusive use such as the wagon fleet for the business unit in charge of freight or the coaches and TGV trainsets fleet for the business unit in charge of long-distance passenger traffic.

Each business unit manager is accountable for the results of his unit to the general directorate. The aggregate result of all units cover the financial charges of the company.

#### **1.4.4. The Technical Divisions and their Supporting Departments**

Mission n°1 for the technical divisions and their supporting departments is operational. It is the definition of rules and standards. In this respect they have a major role to play in seeking better productivity.

They are very close to what used to be the central divisions : operation, rolling stock, civil engineering, computer, supplies, construction of high-speed lines, financial, human resources, public relation, legal,...



But they can also have other missions to fulfill. A mission of production at the national level such as the supply of traction current by the rolling stock division or the definition of design criteria for bridges and tunnels by the civil engineering division. They also have the mission of attributing costs for services carried out by the regions such as the maintenance of rolling stock by the rolling stock division or the driving of trains for the operation division.

In much the same way the operation division is in charge, on behalf of the General Directorate, of arbitrating between the business units for the allocation of shared means; most notably the allocation of time slots.

#### 1.4.5. The Regions

The new organization aims at devolving greater responsibility and accountability to the regions. Therefore it does not come as a surprise that the most noticeable change is the far-reaching responsibilities placed in the hands of the region managers.

The role of the region managers as representatives of the company's President and Director General when dealing with company staff on the territory of their regions and with the local public authorities is quite obviously reaffirmed but they also become responsible for supervising regional transport systems on the territory of the region as defined in the political and economical organization of the country.

The operational units (stations, depots,...) are under the authority of the region, to which the means of production are generally attributed.

Thus the region managers have increased control over human as well as technical resources located on their territories and have full economic responsibility for the region production.

They adapt their managerial staff in such a way as to have a reliable team of managers to implement the region policies. In much the same way they have the power to adapt the financial organization of their regions within a given framework established by the General Directorate (Financial Division).

They are accountable to the company's General Directorate for the financial results of their regions. The accounting shows :

- . in the "credit" column the amount obtained from services sold by the region and the special budgetary grants,

- . in the "debit" column the operating costs of the region (including personnel costs) and the amounts paid for services provided by other centers of responsibility.



The budget of each region is thus calculated using the region revenues, be they external revenues (revenue generated by regional traffic or revenues other than traffic-related) or internal revenues (derived from services provided by the region in accordance with the above-mentioned customer / supplier contractual agreements).

#### 1.4.6. The Relationship Between the Various Actors

The "centers of responsibility" are the core of the new organization. Thus the functioning of SNCF is greatly dependent on the relations established between them :

- . Between the General Directorate and each center of responsibility the relations are hierarchical. They translate into "objectives vs. means" contractual agreements. SNCF now has only three hierarchical levels. The General Directorate, the regions and the operational units.

- . Between the centers of responsibility swapping services the relations are contractual. They materialize in the form of "customer/supplier" contractual agreements which are negotiated by the centers involved and which stipulate the payment in exchange for a given service.

- . Between the centers of responsibility which set the rules and standards and the centers which apply them the relations are functional. The functional missions do not give right to payment. Their costs are covered by budgetary grants.

This system of "customer/supplier" contractual agreements brings radical changes to budget negotiations. The negotiations of the contractual agreements now constitute the first step in the budget negotiations. The centers of responsibility figure out a provisional budget on the basis of the contractual agreements they have signed. The company then computes its budget by aggregating the provisional budgets of the centers.

## 1.5. FINANCIAL ASPECTS

The five following graphs and table illustrate the railway activity and financial results over a 5-year period. They highlight the good financial health of the company which has overcome a bad context in 1991, partly due to the effects of the Gulf war and to a slowdown in economic activity affecting the whole transportation sector.

This situation have given the opportunity of sustaining a very high level of investment, never reached before, most of it being devoted to the new high speed line network development.

The net profit/loss account remains positive (benefit) for the third year. A more accurate analysis of the income statement demonstrates that this result for 1991 is mainly due to proceeds of the sale assets. So, one may consider that the account equilibrium is artificial. However the FRF 4.484 billion of revenue drawn from the sale of assets is only 20% of the new investment, showing the strong action undertaken for the enterprise re-orientation.

SNCF has maintained a self-financing ratio of 24% for its extensive investment program, above the 20% target required in the contract plan.

The financial charges have improved considerably. The change is largely due to the movement of FRF 38 billion of debt relating to previous operating losses into a special account on January 1st 1991. The cost of servicing this debt will be mainly borne by the state.

Tables 1-1 to 1-5 give details on the 1991 balance sheet (assets and liabilities), income statements (revenues and expenditures), long term debts and rentals.

# Financial highlights

Table 1-1

Passenger Traffic	1990	1991	1992	1993	1994	1995	1996	1997
	178	179	182	181	181	182	182	182

Passenger Traffic

(thousands of passengers)

Turnover	1990	1991	1992	1993	1994	1995	1996	1997
	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7

Turnover

(times)

Freight Traffic	1990	1991	1992	1993	1994	1995	1996	1997
	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2

Freight Traffic

(thousands of tons)

Investment requirements	1990	1991	1992	1993	1994	1995	1996	1997
	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7

Investment requirements

(thousands)

Turnover	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7
Gross operating profit/loss	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Net profit/loss	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

As of December 31st (French francs)

Assets	1990	1991
INTANGIBLE FIXED ASSETS	981 000	2 146 100
TANGIBLE FIXED ASSETS		
Land	35 486 130 661	36 252 881 178
Structural engineering works less depreciation (1)	46 849 460 876	49 427 206 173
Equipment and rolling stock less depreciation (1)	29 628 632 322	30 927 700 213
Construction in progress	17 144 473 088	30 650 946 905
TOTAL TANGIBLE FIXED ASSETS	129 108 696 947	147 258 734 469
FINANCIAL FIXED ASSETS		
Investments less allowance for loss in value	3 255 956 398	3 824 823 985
Receivables from investments	1 036 833 016	1 142 279 441
Loans less allowance for doubtful accounts (2)	2 143 709 145	1 851 717 051
Deposits	1 515 243 225	2 247 766 926
TOTAL FINANCIAL FIXED ASSETS	7 951 741 784	9 066 587 403
INVENTORIES (3)	3 211 607 676	3 456 847 261
ADVANCES TO SUPPLIERS	540 284 240	507 446 798
OPERATING ASSETS LESS DEPRECIATION (4)	13 301 644 822	14 371 497 007
MARKETABLE SECURITIES	990 587 118	512 319 138
LIQUID ASSETS	382 932 849	369 208 469
ASSETS ACCOUNTS OF THE SPECIAL DEBT ACCOUNT		1 546 409 830
ASSETS ACCOUNTS OF SOCIAL RELATED SERVICES	7 310 213 623	7 861 585 254
PREPAID EXPENSES	100 922 737	61 388 891
DEFERRED EXPENDITURE	2 467 971 957	2 569 366 173
BOND DISCOUNT	747 108 025	545 757 207
POTENTIAL EXCHANGE LOSS (5)	1 251 557 047	408 621 845
TOTAL ASSETS	167 366 249 825	188 537 915 645

B - NOTES ON THE BALANCE SHEETS

(1) Depreciation is calculated in accordance with the straight-line method, on the basis of life expectancy given in the table below, expressed in years :

STRUCTURES

Generating stations, buildings, bridges, viaducts, tunnels	50
Tracks, electrification, railroad crossings, switchyards	20
Signals, lighting	15

ROLLING STOCK

Electric locomotives	25
South-East TGV trainsets, diesel locomotives, electric commuter trains, passenger coaches	20

As of December 31st (French francs)

Liabilities	1990	1991
CAPITAL		
Capital	9 867 000 000	9 867 000 000
Revaluation of land	34 029 674 025	34 029 674 025
TOTAL CAPITAL	43 896 674 025	43 896 674 025
REVALUATION OF INVESTMENTS	471 096 059	467 308 059
RESERVES	9 555 852 032	10 750 236 632
LOSSES IN PRIOR YEARS	(39 773 885 709)	(2 951 739 329)
RESULT FOR THE FINANCIAL YEAR	16 530 980	6 412 097
EQUIPMENT SUBSIDIES	8 796 748 443	10 228 704 373
REVALUATION OF DEPRECIABLE ASSETS	1 767 590 988	1 477 243 449
RESERVES FOR RISKS	4 004 108 490	2 826 179 363
FINANCIAL DEBTS (5) (6)		
Bonds	79 683 905 099	59 880 874 986
Loans	10 124 447 350	9 207 658 400
Other financial debts	12 441 932 909	12 996 750 252
TOTAL FINANCIAL DEBTS	102 250 285 358	82 085 283 638
ADVANCES RECEIVED	352 430 385	594 839 077
OPERATING DEBTS (7)		
Accounts payable	12 337 534 744	13 247 209 340
Social and fiscal debts	3 817 346 445	3 641 563 852
Other operating debts	15 100 485 777	16 239 514 386
TOTAL OPERATING DEBTS	31 255 366 966	33 128 287 578
LIABILITY ACCOUNTS OF THE SPECIAL DEBT ACCOUNT		1 557 834 400
LIABILITY ACCOUNTS OF SOCIAL RELATED SERVICES	1 911 108 492	2 143 553 557
DEFERRED INCOME	1 236 892 411	1 286 345 429
POTENTIAL EXCHANGE GAIN (5)	1 625 450 905	1 040 753 297
TOTAL LIABILITIES	167 366 249 825	188 537 915 645

Atlantic TGV trainsets, diesel commuter-type trains, freight wagons ..... 15

EQUIPMENT ..... 5 or 10

COMPUTERS (depreciation is calculated on a declining balance basis) ..... 4

The costs of maintenance having an effect on the life of track are accounted for as fixed assets with a 20 year depreciation.

(2) This item includes loans due in less than one year.

(3) Materials in inventory are accounted for in accordance with a mean price per item on the basis of the actual cost of all items in inventory.

(4) Operating assets include notes receivable and non-invoiced services.

(5) Financial debts, including swaps, are valued at the exchange rates prevailing at year-end. When the original exchange rate is less than the year-end rate, the difference appears under "assets" and is subject to a special fund partly covering currency exchange risks ; when it is more than the year-end rate, the difference appears under "liabilities".

(6) Financial debts include loans to be repaid in less than one year, treasury loans and accrued interest.

(7) Operating debts include notes payable and invoices to be received.



As of December 31st (French francs)

Revenue

	1990	1991
OPERATING INCOME		
Traffic income :		
Passenger and luggage traffic (1)	29 748 597 084	30 551 992 818
Freight traffic (2)	17 520 183 864	17 458 157 346
Mail traffic (3)	629 792 825	489 263 812
Total traffic income	47 898 573 773	48 499 413 976
Income from other activities (4)	5 246 840 802	5 113 006 437
Turnover	53 145 414 575	53 612 420 413
Production entered in inventories and production of assets	5 947 600 200	7 078 749 601
Contractual subsidies from the State & local authorities (5)	15 377 948 535	16 067 740 944
Deferred charges (6)	201 000 000	69 000 000
Reversal of provisions	1 077 886 363	1 110 398 187
TOTAL OPERATING INCOME	75 749 849 673	77 938 309 145
FINANCIAL INCOME		
Assets revenue	782 554 710	857 790 479
Reversal of provisions	779 277 530	213 912 280
Other financial income	814 759 094	1 558 889 400
Deferred financial charges (6)	435 000 000	132 000 000
TOTAL FINANCIAL INCOME	2 811 591 334	2 762 592 159
EXTRAORDINARY INCOME		
Exceptional operating subsidy paid by the State	3 906 316 401	(11 247 000)
Proceeds of the sale of assets	1 468 435 037	4 484 998 292
Other extraordinary income	476 192 000	273 619 737
TOTAL EXTRAORDINARY INCOME	5 850 943 438	4 747 371 029
TOTAL REVENUE	84 412 384 445	85 448 272 333

C - NOTES ON THE INCOME STATEMENT :

(1) The revenue from passenger traffic includes amounts received from the State and local authorities as compensation for reduced tariffs. The purpose of these payments is to offset the cost to SNCF of the mandatory free and reduced-fare travel concessions granted to certain user categories such as large families, servicemen and workers taking paid holidays. It also includes compensation for suburban services.

(2) As part of its revenue from freight traffic, SNCF received compensatory payments to cover the cost of mandatory providing certain services which are inconsistent with the commercial interests of SNCF.

(3) Under the terms of article 41 of the Cabier des Charges, SNCF receives certain payments to cover the cost of services provided to the French Post Office Corporation.

(4) Income from other activities includes payments for miscellaneous services (including leases and rentals for rolling stock), as well as income from services unrelated to rail transport.

(5) Revenue in the form of amounts received partly to meet, or to offset costs incurred, consists of various categories of compensatory payments, such as :

- payments (as provided for in article 31 of the Cabier des Charges) towards meeting infrastructure and level-crossing costs, to ensure that

As of December 31st (French francs)

Expenditure

	1990	1991
OPERATING CHARGES		
Consumption of goods and supplies	8 942 409 363	9 902 627 039
External services (7)	12 608 681 084	13 346 151 226
Salaries and similar charges	40 956 024 554	42 157 099 791
Taxes and similar charges (8)	2 414 891 805	2 273 778 583
Funding of depreciation and reserve accounts (9)	6 405 776 571	6 747 229 420
TOTAL OPERATING CHARGES	71 327 783 377	74 426 886 059
FINANCIAL CHARGES		
Interest and similar charges	10 864 043 623	8 153 373 304
Amortisation and provisions (10)	821 896 207	486 049 695
Exchange losses	677 059 787	348 988 890
TOTAL FINANCIAL CHARGES	12 362 999 617	8 988 411 889
EXTRAORDINARY CHARGES		
Book value of sold assets	184 131 058	1 432 328 357
Other extraordinary charges	540 939 413	594 233 931
TOTAL EXTRAORDINARY CHARGES	705 070 471	2 026 562 288
TOTAL EXPENDITURE	84 395 853 465	85 441 860 236
PROFIT FOR THE FINANCIAL YEAR	16 530 980	6 412 097
TOTAL	84 412 384 445	85 448 272 333

SNCF is treated by the State on a par with other systems of transport :

- compensatory payments in connection with public service obligations, to cover the costs of mandatorily providing certain services under conditions, or on the basis of tariffs, that are inconsistent with SNCF's commercial interests as well as the cost of mandatorily developing and maintaining facilities surplus to those deemed necessary to meet operating requirements .

(6) This item covers part of the overhead of the high speed lines deferred until implementation of all services on the concerned lines.

(7) External services relate, among other items, to maintenance, services purchased from third parties (particularly lorry transport), supplies, rent and insurance.

(8) This item covers, in particular, employment tax, property tax, estate tax and national company tax.

(9) Depreciation covers more particularly the depreciation of fixed assets amounting to FF 6.2 billion in 1990 and 6.5 billion in 1991.

(10) This item includes sums attributed to the special fund to cover currency exchange risks.

# Long-term debt

Table 1-4

The following unaudited tables set out the outstanding principal amounts of the primary long term debt of SNCF as of december 31st, 1991.

They do not include the reimbursement premiums of international issues nor the currency/interest rate exchange operations.

## In French francs

	Year of final maturity	Outstanding
DOMESTIC BOND ISSUES	2003	70 870
BANK CREDIT	1992	110
SPECIAL LOANS APPLICABLE TO PARIS SUBURBAN SERVICES AND MISCELLANEOUS EUROFRANCS	2013 2009 2003	1 444 7 892 7 560
RENTALS		
TOTAL DEBT IN FRENCH FRANCS		87 876

## In other currencies

	Year of final maturity	Outstanding (millions)	Equivalent in francs
FIXED RATE SECURITIES AND LOANS			
US DOLLAR	1998	944	4 888
DEUTSCHE MARK	2000	366	1 251
SWISS FRANC	2016	574	2 194
JAPANESE YEN	2000	101 333	4 208
ECU	2001	1 223	8 484
POUND STERLING	2009	210	2 035
DUTCH GUILDER	1997	130	394
LUXEMBOURG FRANC	1995	5 454	905
BELGIAN FRANC	1999	307	51
TOTAL			24 410

## FLOATING RATE LOANS AND BONDS

US DOLLAR (1)	1996	226	1 171
LUXEMBOURG FRANC	1994	1 700	282
BELGIAN FRANC	1996	3 000	498

## TOTAL

1 951

## RENTALS

US DOLLAR	1992	2	9
DEUTSCHE MARK	1997	265	907
SWISS FRANC	2004	669	2 556
JAPANESE YEN	1994	6 000	249
ECU	1999	259	1 798
POUND STERLING	1995	5	44
DUTCH GUILDER	1992	14	43
LUXEMBOURG FRANC	1995	291	48
BELGIAN FRANC	1992	597	99
TOTAL			5 753

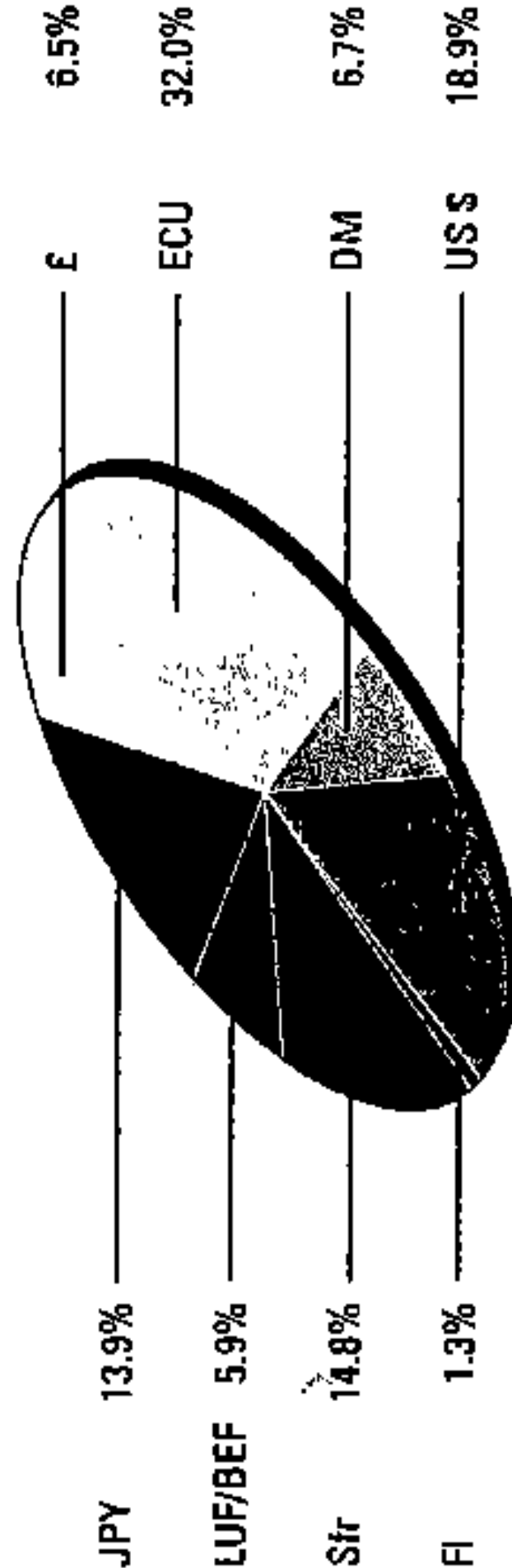
(1) Out of which US\$ 200 million outstanding eurocommercial paper issued under SNCF's securitised note commitment facility.

## TOTAL DEBT IN FOREIGN CURRENCIES

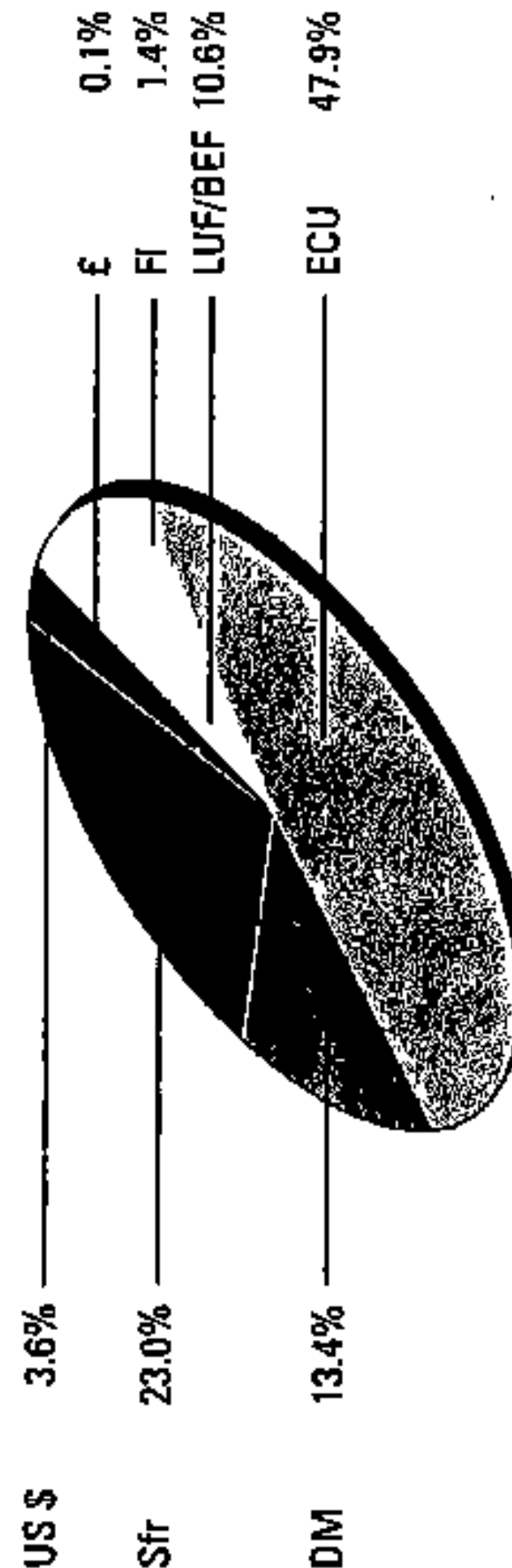
32 114

## Debt in other currencies

### Breakdown of primary debt by currency



### Breakdown by currency as modified by swap agreements



Long-term debts and rentals

Table 1-5

As of December 31st 1991, SNCF's total long term indebtedness -including 36,492 million French francs (ECU 5,260 million) now transferred to the special debt account- amounted to 121,118 million French francs (ECU 17,457 million).

The following unaudited table sets out the breakdown of this indebtedness (expressed in millions of French francs) :

As of December 31st 1990		As of December 31st 1991	
Global amount		Global amount	
105 888		121 118	
Indebtedness in FF		Indebtedness in FF	
70 901	67%	83 029	69%
Rentals in FF (1)		Rentals in FF (1)	
6 158	6%	7 560	6%
Indebtedness in other currencies		Indebtedness in other currencies	
22 212	21%	24 777	20%
Rentals in other currencies (1)		Rentals in other currencies (1)	
6 617	6%	5 752	5%
Out of which special debt account			
Global amount		Global amount	
		36 492	
Indebtedness in FF		Indebtedness in FF	
		27 304	75%
Indebtedness in other currencies		Indebtedness in other currencies	
		9 188	25%

(1) Rentals represent the principal amount outstanding under rolling stock lease financial contracts in various currencies signed between SNCF and Eurofima.

Refunds in respect of this indebtedness are spread out over the following period : (unaudited schedule)

(in millions of French francs)													
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	BALANCE TOTAL
FF	3 894	6 001	5 174	5 871	5 389	10 059	6 113	6 068	8 409	8 707	7 302	15 570	2 032
US\$	11	520			570								90 589
Sfr	950	1 213	607	328	576	129	406	156	687	123	54	54	1 749
DM	770	472	118	1 210	713	149	14	16	638				7 032
£		15	14	15									4 100
Fl	148	105	46	46	46	46							44
LUF/BEF	751	1 142	636	320	376	7	8	9					437
JPY	69	(737)	256	69	69	69	69	69					3 249
ECU	1 320	1 418	1 377	841	495	255	1 220	2 566	1 394	3 747			(67)
													14 633
TOTAL	7 913	10 149	8 228	8 700	8 234	10 714	7 830	8 884	11 128	12 577	7 356	15 624	3 781
													121 118

Liabilities in foreign currencies have been translated to French francs at rates current on December 31st, 1991.

1 United States Dollar (US\$)	5.1800
1 Swiss franc (Sfr)	3.8230
1 Deutsche Mark (DM)	3.4165
1 Pound Sterling (£)	9.6900
1 Dutch Guilder (Fl)	3.0328
1 Belgian franc (BEF) or Luxembourg franc (LUF)	0.16693
1 Japanese Yen (JPY)	0.04153
1 ECU	6.9380



## 1.6. IMPACT OF HIGH SPEED SERVICES

The historical development of high speed in France is purely linked to SNCF willingness. Most of research and development, on technical aspects (prototypes, technical studies, electric current caption, ...) as well as on commercial and economical aspects (market research, costs estimation, economic balance of high speed, ...) were conducted by SNCF departments.

In such a context, where the technology system promoter is already an operator, the SNCF took in 1969, the initiative to propose to the government to build a high speed line between Paris and Lyon. The government, and the public opinion were not in favor of the railway technique. Two working groups have been settled to examine the project feasibility, commercial interest and financial viability. Both task forces gave a positive conclusion after having examined several other alternative strategies in the same corridor. This procedure took much time and the railway company was allowed to start construction only in 1976.

One of the major conclusions about the South-East TGV was that the project was very profitable, the rate of return for railways amounting to 15 % in real terms. The government took advantage of this forecast to state the following conditions :

- . the fare between Paris and Lyons by TGV will remain at the same level as by conventional train (speed democratization),

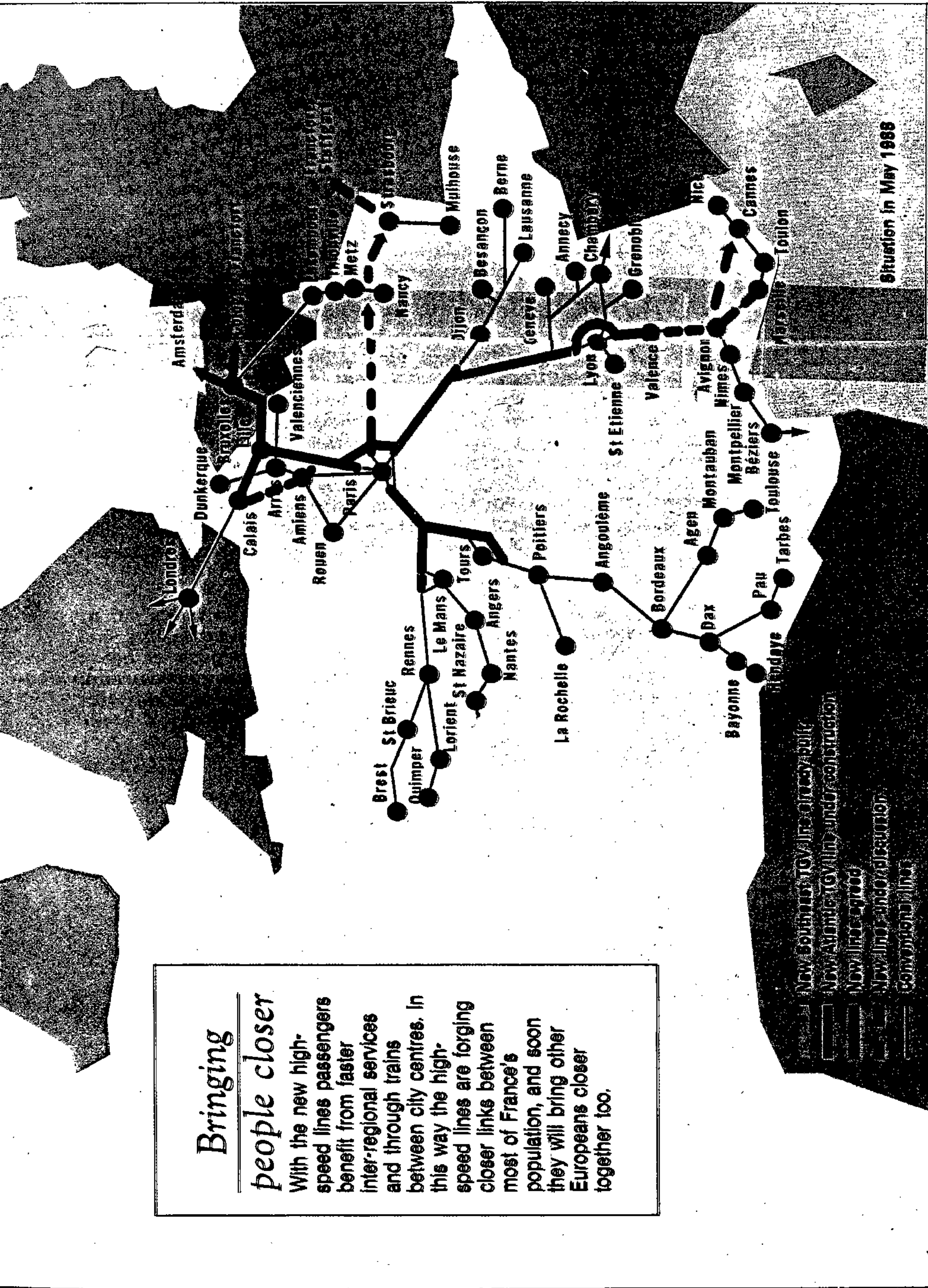
- . SNCF will be the high speed operator but no capital grant will be given from the Government and the railways will borrow 100 % of the investment.

On the government side, and in such conditions, there was no discussion about the institutional matters which could be raised by the introduction of a new transportation technique. On the SNCF side, the TGV was said to be the solution to capture market shares, improve its accounts and get rid of deficit.

The South-East project has been commissioned in two stages, in 1981 and 1983, and rapidly demonstrated its commercial attractiveness. The ridership volume grew above the forecast. The benefits drawn for the operation have increased sufficiently to pay back the debt in 10 years. Now the project success has backed other projects, such as the Atlantic new line or the North TGV. First results got on the Atlantic route confirm the high strategic value of the passenger business of SNCF, and strongly contributes to the railway financial equilibrium.



Figure 1-2 : High Speed Lines in France





However, during that time, the national government, considering that the railways are fully state owned, decided to grant 30 % of the infrastructure cost of the Atlantic TGV. Afterwards, mainly because of budget problems, the government did not pay for any network extension chosen on behalf of SNCF.

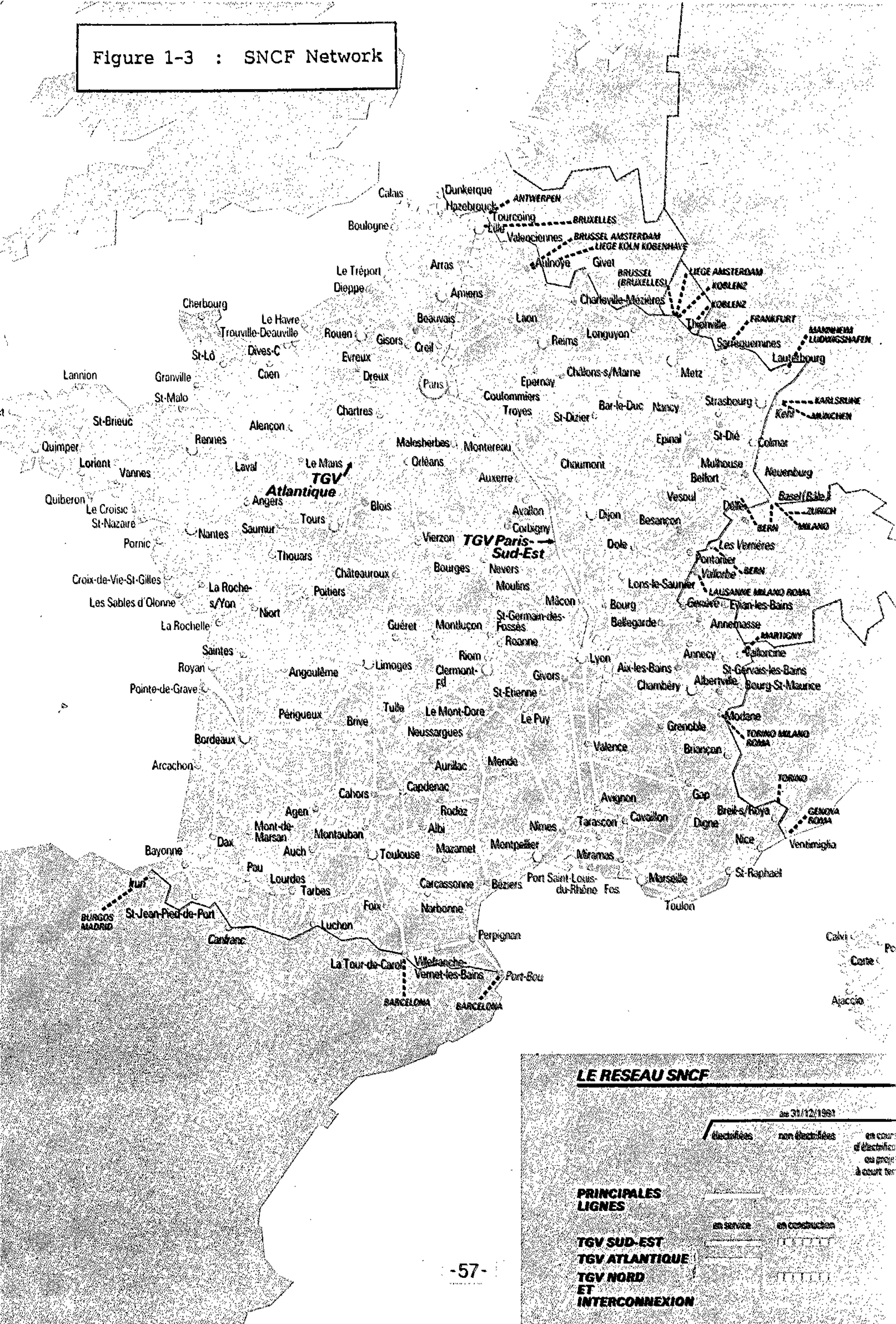
On another hand, thanks to the same gauge, the TGV train set spends more time on the conventional network than running at high speed on new infrastructure. So TGV operations take benefit from the existing lines as well as projects, such as electrifications, located on these old lines should have never been enhanced nor achieved without the TGV.

TGV operations are strongly linked to the whole network as it is illustrated in Figure 1-3. This explains that the idea of separating TGV from the rest of the Company activity, did not appear as a natural evolution. However, the idea came out when the North TGV was under study on behalf of an international group which evaluated other institutional solutions for high speed. Simultaneously, the channel tunnel was decided and built by a private owned company, creating in the European Network a key link differently managed than all the connected national networks. However SNCF insisted on its willingness not to treat the North TGV differently and not to share the generated cash flow expected from the project.

In the meantime, SNCF has mastered all technical aspects of high speed and still improved the operating costs of rolling stock. The commercial speed is progressively increased and by 1995, more than 50 % of the interurban passenger-kilometers will be run on board high speed trainsets. As shown on the following graph, the development of high speed system mobilizes the most part of the railway investments. In 1995, SNCF will have the largest TGV fleet with more than 500 trainset units.



Figure 1-3 : SNCF Network



**LE RESEAU SNCF**

au 31/12/1981

  électrifiées   
   non électrifiées   
   en cours d'électrification ou projet à court terme

**PRINCIPALES LIGNES**

**TGV SUD-EST**  
**TGV ATLANTIQUE**  
**TGV NORD**  
**ET**  
**INTERCONNECTION**

  en service   
   en construction



Figure 1-4 : The TGV Fleet

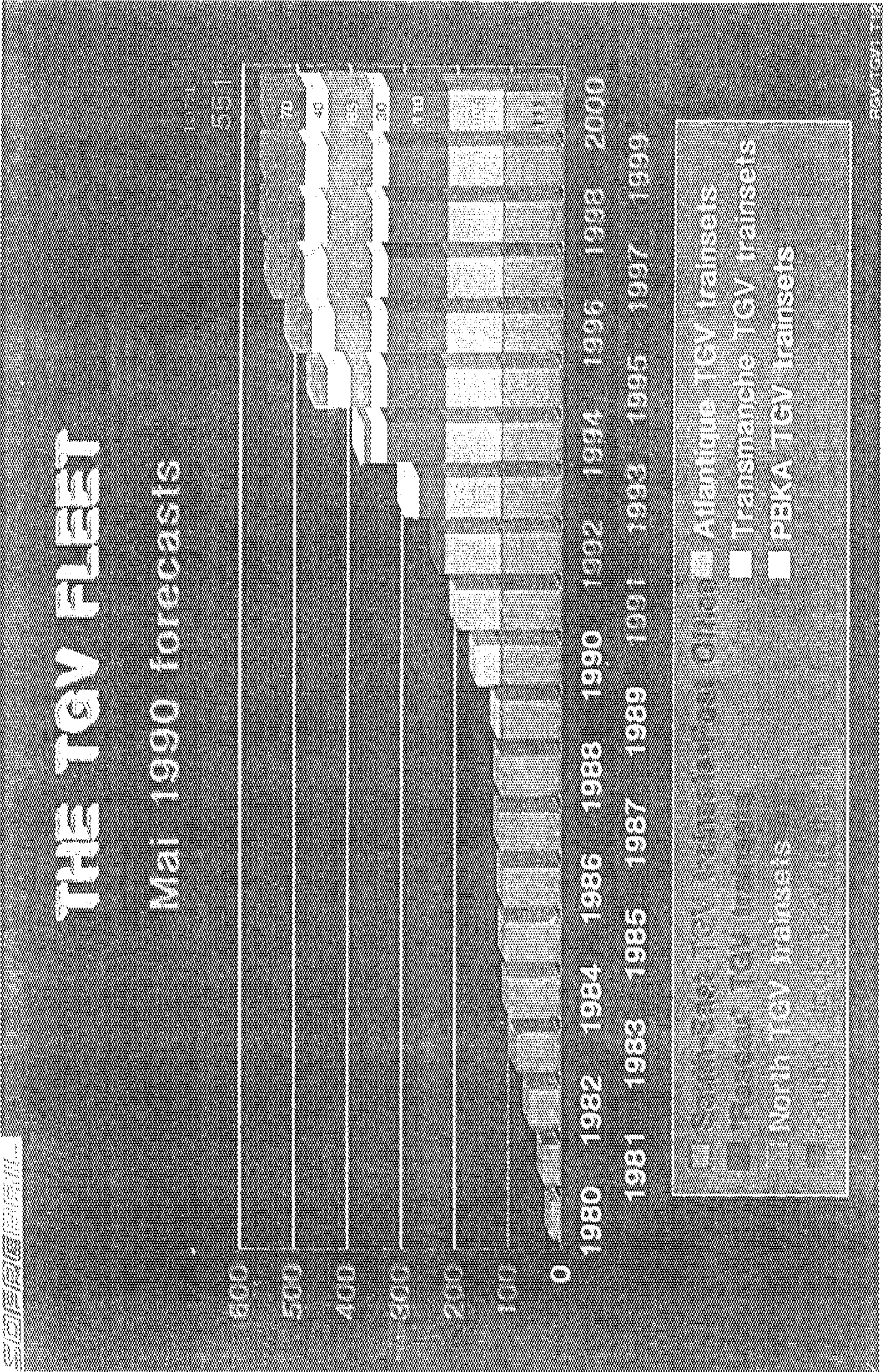




Figure 1-5 : Growth of TGV Traffic in Total SNCF Intercity Traffic





Up to now, the new lines are initially projects proposed by the railway company. However, many areas in France have asked for taking benefit of direct TGV services. So, the Government has commanded a new procedure consisting in establishing a master plan for new railway network. A picture of this master plan is given in Figure 1-7. It is a huge one since it involves not less than 11,000 kilometers of which 4500 are new lines and 6,500 are existing lines to be upgraded at least up to the speed of 160 km/h, but often up to the speeds of 200 and 220 km/h. The purpose of this master plan is either to program the railway investments for a long period or to organize consultancy with local governments. SNCF insists strongly on creating only profitable lines. The profitability is insured when there is sufficient patronage and when the internal rate of return is not less than 8 %. But there are other matters to be dealt with. For example, there is a strong claim from people living in the Eastern regions for an East TGV which is not profitable. The EEC also pushes forwards for the integration of the national network into a European one. EEC favors what is called "key links" giving continuity between two neighbor countries overcoming a block road such a gauge difference as it does exist between France and Spain, for example. So, progressively, French land uses considerations and European planification are getting a higher priority in the construction schedule of the master plan.

The state/SNCF contract plan includes some articles to rule the case of projects, the construction and the operation which become compulsory and change the proper programmation of railways.

It is said that, if a non profitable line had to be built, the state and/or any local collectivity should have to participate to the funding of the said project, giving grants. The level of grants will be evaluated, so as to reach an internal rate of 8 % for SNCF.

On another hand, considering the very important positive external impacts of high speed on the community (saved time, land, security, energy savings, reduced impact on environment of TGV compared to other modes...), the State has decided to back a research program for a new TGV rolling stock generation, to be built by 1996/1997. This research program is also funded by SNCF and railway builders. The objective is to run new trains at the commercial speed of 350 km/h with quite the same economic ratios, the increase in expenditure for energy being as reduced as possible and compensated by a better capital productivity, and a still easier maintenance process.

As a matter of conclusion, we can say that SNCF took the full initiative of high speed in France. The corresponding projects have contributed to its financial equilibrium and allowed to cope with the contract plan objective. But now, the State and the EEC are progressively taking the leadership of the network construction schedule. However, the railway still masters the operating and the commercial policy of high speed trains and the contract plan prevents them from the negative impact of unprofitable projects which would be decided by the Government.

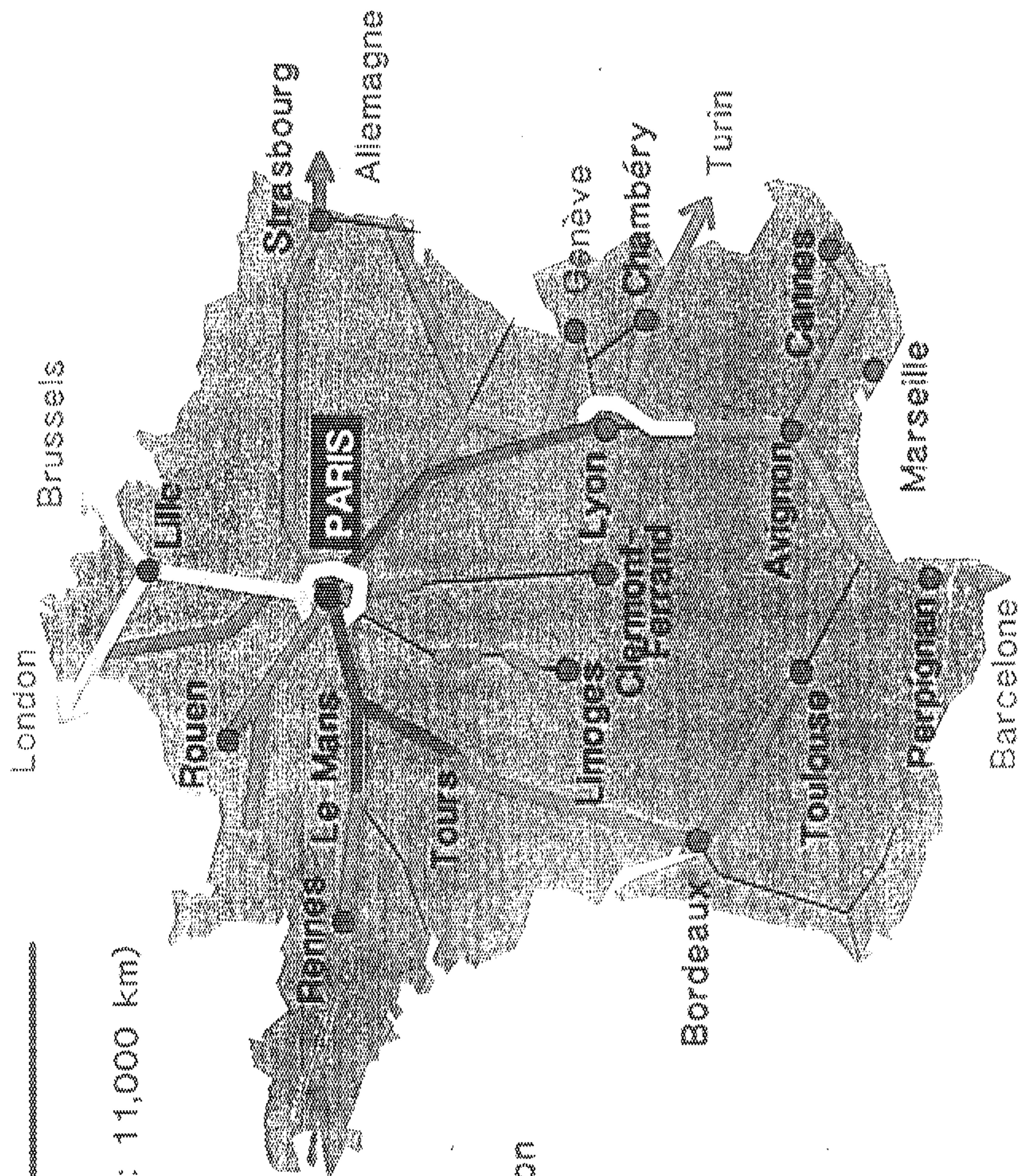


# TGV Master Plan

4 500 km of new lines

(length of the TGV network : 11,000 km)

- lines under operation
- lines under construction
- further projects



STRAATMAN/STRAATMAN

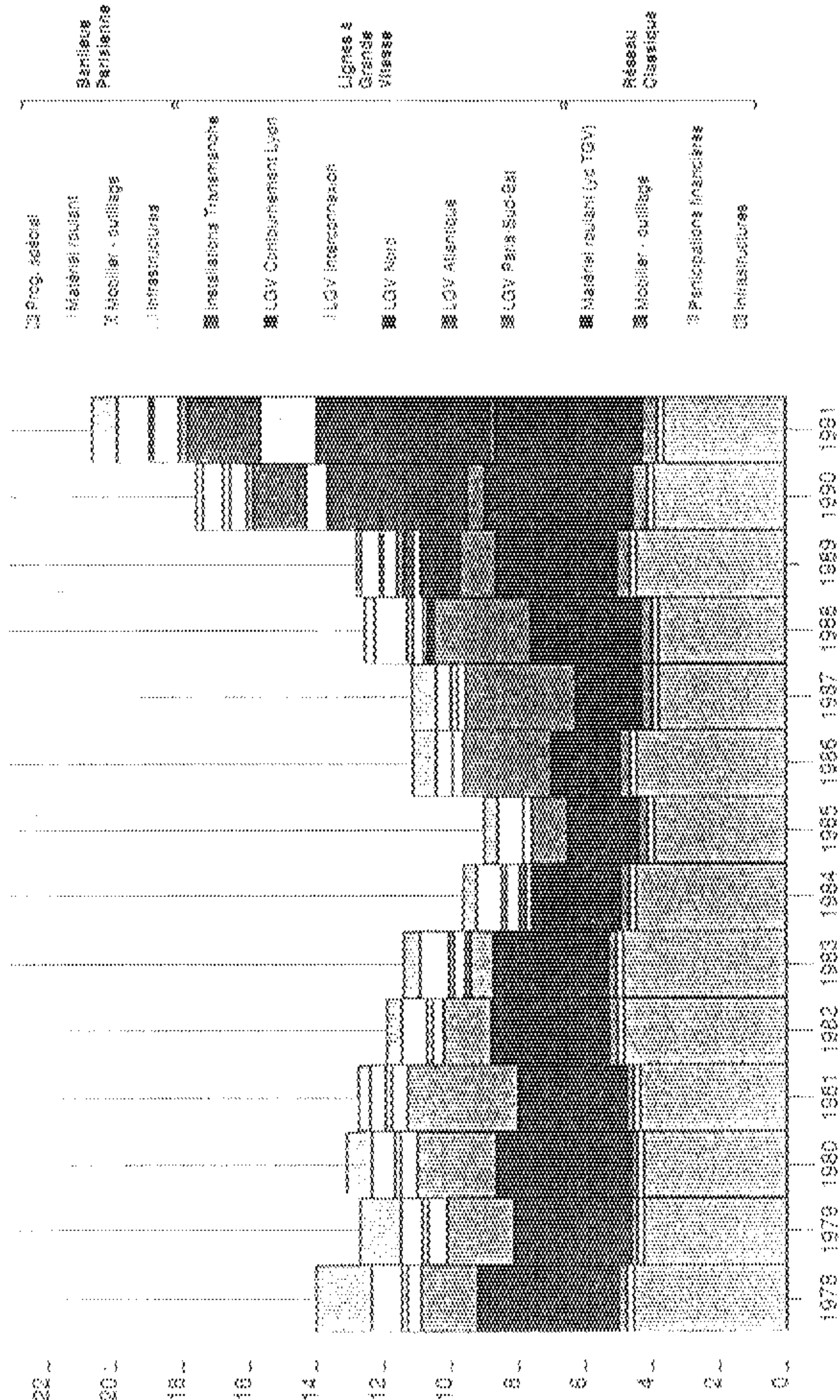


Figure 1-8 :  
Evolution of the Investment Level  
for the Whole Network

EVOLUTION OF THE INVESTMENT LEVEL FOR THE  
WHOLE NETWORK, INCLUDING THE PARIS SUBURBAN AREA  
~ IN BILLION OF FRF ~  
1991 PROVISIONAL ECONOMIC CONDITIONS

EVOLUTION DU VOLUME DES INVESTISSEMENTS  
Ensemble du Réseau Principal et de la Banlieue Parisienne

Crédits de paiement hors GCP (grosses opérations périodiques).  
En milliards de francs hors taxes aux conditions économiques provisionnelles de 1991





## The TGV-New Generation Program

### Introduction :

The program of TGV-NG is born from the common will of the Government, SNCF and GEC-Alsthom. It will cover the period from 1990 to 1996 for the needs of the big European speed market of 2000.

### General objectives of the program :

This ambitious program will mainly develop the following :

- . commercial speed of 350 km/h on new lines,
- . maximum unit capacity similar to double deck TGV,
- . comfort complying with the exigencies of the years 2000-2010 , concerning acoustics, and a possible compensation of the cant deficiency,
- . environment integration,
- . European made trainsets for exportation purposes, adjustable to any country.

### Organization

- . The Program Partners :

The research and development program, made official by an agreement document, will be financed by the parties hereunder in equal shares :

- SNCF (mainly the Rolling Stock and Research Departments, and also the New Infrastructures and High Speed Divisions),
- GEC-Alsthom,
- The Ministries (Transportation, Industry, Research).

- . The Methodology :

In a first stage, the partners have defined the objectives, and in a second one the different phases of the program :

- phase 1 : specifications of the needs and, at the same time, establishment of a research and development plan,
- phase 2 : first conceptual draft and the updating of the research and development plan,
- phase 3 : detailed technical specification,

- phase 4 : conceptual studies of various components of the TGV-NG, and at the same time starting of the research and development plan.

Some "accompanying" studies (i.e. new materials and super-conductors studies, etc) have already been started.

. Financial Implications :

The total amount of the TGV-NG Program has reached the sum of FRF 445 million. Besides that, the SNCF, for their own needs, will make studies and tests for an amount of FRF 90 million.

Specifications of needs :

. Analysis of the High Speed Market

A thorough study on the theme above has been launched at a world scale.

For the coming 20 years, the market input has been roughly estimated between 15,000 and 20,000 vehicles equally distributed between France, the rest of Europe and the rest of the World.

The TGV-NG shall have a basic reference called "generic" TGV-NG trainset. Main specifications of the "generic" trainset are :

- electric trainset, for European utilization,
- compatibility of the European signaling and power supply systems (25 kV 50 Hz, 15 kV 16 Hz 2/3, 1,5 kV and 3 kV d.c.),
- 2 power cars, 8 double deck coaches,
- maximum speed on 1,000 km : 350 km/h , 25kV; 300 km/h, 15 kV or 3 kV; 220 km/h, 1.5 kV),
- axle load equal to or less than 16t (tolerance of 17t for the 4 current types above),
- restart on a maximum gradient with an out-of-service motor bogie,
- reinforcement of the braking capacities,
- sound level equal to or less than that of the TGVA at 300 km/h,
- acoustic disturbances equal to or less than the EC norms,
- FDMS (Reliability, Availability, Maintainability, Security) specifications more demanding than those of the TGVA.

## Conclusion

The main requirements are the following :

- . meet the ever growing exigencies for satisfactory profitability conditions,
- . get optimal integration in the environment,
- . get into the European future forecast.

## CHAPTER 2

### COMPARISON WITH AND ANALYSIS OF OTHER FOREIGN EXPERIENCES

#### 2.1. THE GERMAN EXPERIENCE

Rather than attempting to describe the German experience taken individually, it is endeavored in this chapter firstly to explain that the bases for this experience are the consequence of the recommendations of the European Communities, and secondly to compare the financial relations between the State and the Railway in France and in Germany. Indeed, nothing can give a better insight in the legal and institutional environment than the manner in which these financial transfers are organized.

Despite the existence of a single legal or regulatory source at the European level, which goes beyond the national regulations, it is still possible to note that the organizations differ in each of the two countries as far as the financial subsidies regarding investments and operation of the railways are concerned. These differences are to a great extent the result of historic antecedents in the field of transport and of economic policies. They also stem from the more or less centralized decision-making systems, Germany being characterized by a more active participation from the regional levels (Länder). In addition, they result from the organization at the national level, which is not fully tuned to the demands of the European provisions.

##### 2.1.1. The Investment Funding

The subsidies from the State and the local authorities for investments in their rail networks should be analyzed from three different points of view :

- . the nominal amount of the subsidies granted,
- . the origin of this financing (national and regional participation)
- . the organization of the financial deals.

From a structural and permanent point of view, the gross amount of the subsidies granted by all the public authorities (both national and regional) to the DB is markedly higher than that available to the SNCF :

- . in 1990, the DB received DM 3,820,526,991
- . whereas the SNCF had to make do with FRF 180,000,000, that is 70 times less !



There was only one exception to this state of affairs in the past : the period of time when the TGV Atlantique was under construction, investment of which was financed at 30 % by the State.

As a consequence of their federal organization, the German regional authorities (Länder) take an active part in the financing of the regional and local rail installations. In France, this participation is only beginning to be felt through recent agreements signed between SNCF and the regional authorities, on the operation of the latter's lines. These agreements are nevertheless limited to the financing of the rolling stock exclusively, and do not affect the installations.

Table 2-1 : Participation to the Financing of the Investments

Participation to the financing of the investments				
	GERMANY		FRANCE	
	Instal- ations	Rolling stock	Instal- ations	Rolling stock
Participation from the national budget	X		X	
Participation from the regional authorities	X	X		X
Participation from the local authorities	X	X	X	X

The financial subsidies and the financial deal for the investments find their justification in the decisions passed by the European Council on May 20, 1975. Besides, each of the two networks refers to specific national provisions :

- . contract plan between the State and SNCF in France,
- . Bundesbahngesetz and law on the financing of communal transport (GVFG) in Germany.

As far as France is concerned, at national level, the financing of investments is programmed on the basis of the contract plan, and through a procedure which is controlled by a public body, the Fund for Economic and Social Development (Fond de Développement Economic et Social - FDES) which is responsible for monitoring the investment policies of the public departments and enterprises. In this context, SNCF has made a contractual commitment to reach a self-financing ratio of 34 % for its investments, by the end of the contract, without this ratio ever being allowed to fall under 20 % during the contract.

Still in France, at a regional level, agreements have been signed for several years between SNCF and the regional authorities with a view to fix their financial contribution to the investments in rolling stock in the context of keeping or developing the regional services.

In Germany, at federal level, investment subsidies are granted on four main accounts :

- . the renewal of installations,
- . the financing of communal lines, pursuant to a specific law,
- . the keeping of the existing tracks,
- . various initiatives.

The corresponding credits (about DM 4 billion) are fixed in a sliding five-year plan covering the budgetary requirements for the federal administration and the public enterprises. They are reviewed each year prior to being integrated in the yearly Finance Law.

In Germany still, at the level of the Länder and communes, the subsidies are organized through regional and local agreements both as regards the installations and the rolling stock.

The financing of the new high speed lines is the responsibility of the rail enterprise in both countries. As stated earlier, the only exception was that of the TGV Atlantique, where 30 % of the cost of installations was financed by the State.

To sum things up, although they both implement the Community recommendations, France and Germany take a vastly different share in the financing of the railway investments : a very small amount in France, and a lot in Germany. However, we shall see later on that the French State grants a subsidy for installation costs, which relieves the operating account of SNCF. In other words, what is paid in capital in Germany, is paid in France as a lightening off of the interest and depreciation charges for the investments in fixed installations.

In France, the regional level plays a subsidiary part, whereas in Germany, the Länder are very active. The German example illustrates a greater proximity between the regions which require the services and the payers.

In both cases, the railways are generally responsible for the financing of new lines. Nevertheless, contrary to the DB, SNCF is contractually committed to a certain level of self-financing failing which its investment programs could be rejected or put off by the public authorities. This provision is an incitement to seek an improved profitability of the investments generally speaking and of the new lines in particular.

## 2.1.2. The State Financial Support to the Operating Accounts

### Statistical information and comparisons between the networks

Taken as a whole, the subsidies from the State and from the other public communities and bodies, are a major element in the financial balance of the operating accounts of both networks. Thus, as regards the SNCF, the total sum of the subsidies amounted to FRF 43.441 billion in 1990, that is 57.3 % of the operating products mentioned in the operating account (even though part of these subsidies, that is the contribution to the pension funds, is not entered in the operating account but in a side account). Over the same year, the subsidies from the federal government to the DB amounted to DM 9.986 billion, that is 50.32 % of the cumulated sum of commercial income. It must be pointed out that in this case, one should add the subsidies granted by other authorities than the federal ones, which would result in a substantial increase of the above mentioned ratio. On the whole, it can be said that the weight of the subsidies financing operations, from all sources, is roughly similar from one network to the other and is an indispensable element in the financial balance of the operating account.

Both networks receive roughly similar operating subsidies on the basis of an average exchange rate of DM 1 = FRF 3.36. As seen earlier, the same does not apply to the subsidies for investment where the DB is enjoying a more advantageous position.

It should nevertheless be pointed out that, although the volumes of the subsidies are similar, their breakdown shows a number of marked differences, which are the result of :

- . network organization ;
- . the predominant share of suburban traffic in Germany ;
- . differing conceptions regarding aids to the operation of installations;
- . differing conceptions on the degree of compensation of the public service charges for the passenger traffic.



In addition, the public service missions are not set on either side. They are changing constantly, even though, on both networks, they exclusively or virtually exclusively affect the passenger traffic.

Evolution of the concepts of public service missions in both networks : historical reminder of the causes, the evolution, and current problems relating to these missions :

In both networks, the public service missions account for a substantial share of the rail activity and, as a result, they generate a sizable proportion of income. The extent of these missions is accounted for by the historical considerations which go back to the time when the railway was the main means of transportation for passenger traffic. Over the decades these missions varied in magnitude ; they also gained in openness. Indeed, prior to 1970, the just payment of the services provided by the railway to the community on account of these missions had never been seriously tackled, given that in virtually every country, and especially in France and in Germany the annual losses of the railway were paid off by a balancing subsidy which was granted either instantaneously, at the end of the accounting year (which was the case with the SNCF), or later in time (DB). After 1970, the refusal from the State to continue to systematically cover the operating losses of the railway, made it necessary for both partners (State and Railway) to opt for a more open policy. This was the case in France from as early as 1970 :

- . by drawing up a precise list of the missions undertaken ;
- . by setting precise and objective rules for compensation for each mission.

In addition, these measures were given an official status as early as 1969, in Regulation 1191/69 and its amendment, which made it obligatory for the French and German authorities to treat their railways in a fair manner. This was therefore the case in France, as well as in Germany where the situation seemed to be relatively better, since the authorities had always abided by their commitment to cover a large part of the operating losses of their railway, even if with a time lag.

As a consequence, the provisions of Regulation 1191/69 and its amendment were implemented both in France and in Germany, although with certain differences in each country. As far as France is concerned, the LOTI gave a definition of the concept of public service (Part I - Article 5).



Similarities and differences between both networks :

Among the similarities, one should mention :

- . the essential restriction of the public service missions to the passenger traffic, with the freight traffic being excluded to a great extent from these missions, and coming under the sole commercial responsibility of the networks (with a few exceptions, especially at the DB) ;

- . the obligation to conciliate balanced operating accounts (even though this is not achieved every year by both networks) and the integration of the general interest.

On the other hand, there are differences :

- . vastly different public service structures, both from the geographical and from the institutional points of view ;

- . different methods for the calculation of costs and compensations ;

- . and above all, different attitudes from the State as regards the level of compensation for the cost of the public service missions. With the latest contract plan, the SNCF can say that on the whole these public service obligations are adequately compensated. The DB is suffering from chronically inadequate compensation for certain of its missions of public service (for the short distance passenger traffic, the non compensated annual losses exceed DM 1 billion). On the other hand, this inconvenience is compensated, to an extent, by the participation by the state to the coverage of the final operating losses.

### Recent Evolution in the Concepts

This aspect is constantly evolving in both countries :

- . the creation of public service missions is reviewed with each contract negotiation (certain missions disappear, others are being set up). Thus, as an example, in France, and especially so in the field of regional traffic, the partnership conventions signed with the Regions in 1985 are currently being extended. The new versions will probably cover a much wider ground than originally.

This is not surprising since, over a few years, the regional councils have taken the full measure of their new powers and have designed new transport programs. Up to now, the conventions only covered the field of the stopping trains.

The extended contracts could now include express category trains which have a wider regional vocation. Given the contractual procedure, the SNCF is not in a position to impose, but can only put forward ideas. It is up to each of the regions involved to define the range of its activities. By adapting itself to the specific requirements of each region, the supply of regional passenger services (Services Régionaux Voyageurs - SRV) will move away from the monolithic supply put forward in 1985. In this respect, the French situation should soon resemble the German one, which shows a wide variety of local and regional situations, as a consequence of the intervention by the Länder in the operation of short and medium distance passenger traffic over several years.

. although it is quite true that, in both countries, the freight activities taken in a broad meaning, are not part of the public service missions (which is 100 % true for the freight and the parcels service at the SNCF and virtually true for the freight and parcels service at the DB), this point is under consideration in both networks. It should be added that the combined traffic, the development of which contributes to the general interest (lesser pollution, savings in energy and in volumes) is of interest for the public authorities and will require public financing in both countries over the coming years. As a consequence, one should expect to see in the short or medium term the introduction of public service measures in the freight sector.

Finally, it should be stressed that, in spite of liberal or ultra-liberal recommendations, the public service missions are bound to continue in the future, for reasons of ethics, general interest, social policy and regional development. Nevertheless, it is not for the rail network to say where the general interest lies, to set the index measuring the degree of public utility according to its commercial results. On the contrary, it is for the State to define these missions and the corresponding criteria. In this respect, both countries have a relatively similar position. In both cases, the public authorities define the contents and set the rules for compensation, adjusting them as often as necessary, whilst trying to comply with the general provisions of the EC regulations.

For both networks, reaching the targets set for it by the community (economic efficiency, including in its public service missions, and social efficiency, including in its mission as an enterprise) is conditional on the clarification of the part to be played by each at the service of the Regions, of the State and soon of Europe.

#### Legal and Regulatory Sources

As explained earlier, the regulatory texts issued by the Communities make up the legal base for the subsidies to operations, they are nevertheless relayed by national provisions which include :

- . The German Fundamental Act on Railways (Bundesbahngesetz) ;
- . The "Loi d'Orientation des Transports Intérieurs" (LOTI) - the French act on domestic transport -, and above all the Schedule of Conditions and the contract plans between the State and the SNCF in France.

In both countries, the financial subsidies are introduced, from the point of view of form, according to the provisions of Article 8, paragraph 5 of the Council's Recommendation of May 20, 1975 on the stabilization of rail enterprises and the harmonization of the financial relations between the railways and the States. In spite of these common sources, it is interesting to note the differences in interpretation.

Doctrinal divergences regarding the subsidies for public service missions :

Roughly speaking, the subsidies to the DB have tended to :

- . be paid on a lump sum basis, which goes against the spirit and the text of the EC regulations ;

- . no longer reflect the effective accounting losses experienced by the enterprises over the years.

On the other hand, at the SNCF, these subsidies are calculated for the first year of each contract plan, and then indexed to the various representative variables.

This difference between the methods has far-reaching consequences because it leads to opposite results in each of the networks.

#### The SNCF's public service accounts are balanced

This principle is written in the Schedule of Conditions and in the Contract Plan. In all cases, where the SNCF is requested, for reasons of general interest, to supply services in specific conditions, which differ from what would be generated by the operation of the transport market, the State and the public authorities involved are committed to giving adequate financial assistance so as to guarantee that these activities have no negative consequences on the accounts of the enterprise.

This principle is applied to the SNCF both for the Paris Suburbs accounts and for the Regional Transport Services.

#### The DB's public service accounts are not balanced

The German federal authorities no longer systematically cover the losses generated by the public service missions performed by the DB. This is especially true in the case of the compensation for the local and suburban traffic. The federal authorities made a payment for DM 3.56 billion in 1990 on that account, which left a loss of DM 1.21 billion. This amounts to an absolute loss for the DB. Since this type of loss occurs every year, it has cumulative consequences on the indebtedness.



This is how between 1948 and 1990, the overall cumulated losses resulting from the attitude of the federal authorities amounts to DM 35.54 billion. Indeed, these losses should be broken down among several items of compensatory payments relating to the public service, but the main culprit is the item for local and suburban traffic due to the number of towns involved by this traffic (Ballungsräume).

The federal government has set a rule, which has changed over the years, and is aimed at establishing a kind of profit-sharing system for the DB in the result of its account for suburban traffic before compensation, that is to say that the compensatory payment by the State is all the higher as the DB's ability to cover its expenditures by its pre-compensatory commercial income is better.

Such a rule has the obvious advantage that it constantly demands an improved productivity of the suburb activity, whilst failing to offer the total coverage of the corresponding losses. It can be estimated that the current average level of compensation is only about 85 % of what it ought to be.

It is obvious that this policy goes along with :

- . the lump sum character of the compensatory payments to the DB, which is repeated from year to year and results in extra debts ;
- . the inadequate allotment of subsidies for investments, part of which are used to pay off the operating losses, which leads the DB to fall even more in debt to pay for its investment program.

#### Policy differences

In spite of the EC regulations, the federal authorities have shown a tendency over the last few years to make a policy of limiting the financial subsidies for operation, according to national budget imperatives. As a consequence, the breakdown by item, and hence the allotment for each type of mission, was altered. It is to be regretted that this tendency has become increasingly wide-spread in Western Europe, with the exception of France, with the results that it affects railway finances and takes all the meaning out of the EC recommendations.

In France, on the contrary, this used to be the case before the passing of the LOTI, which has put an end to this state of affairs. The Contract Plan has defined, item by item, the levels and the bases for the subsidies and the method of indexation for the whole term of the plan.

### The SNCF

On the whole, the rehabilitation accounts affect two items :

. Contribution for level crossings (Art. 31 in the Schedule of Conditions) : this contribution is only mentioned for the record, and gives rise to no effective payment ;

. Contribution to the pension funds (Art. 30 in the Schedule of Conditions) for a sum of FRF 14.705 billion in 1992, which makes it by far the largest contribution.

Nevertheless, for legal reasons, this contribution is not entered in the operating account, but in a specific account since the SNCF's pension fund is a legal entity.

The aim is to limit the pension charges financed by the railway to the amounts paid by its competitors in the transport sectors where the ratio between the active / retired personnel is more favorable.

Needless to say, the company bears all the charges resulting from the specific benefits it offers, such as the retirement at 55 instead of at 60.

### The DB

In 1990 the DB received DM 5.087 billion for the rehabilitation of accounts relating to the following 8 items :

. Compensation for the operation and maintenance of level crossings (DM 0.253 billion in 1990).

According to the law on level crossings, only the DB is competent in matters relating to the operation and maintenance of all types of road level crossings. Nevertheless, the continued operation of these level crossings is the joint responsibility of the rail and of the road. This is the reason why, from 1961 onwards, the State has paid for half the corresponding expenditures ; up to 1969, this provision only applied to crossings with federal roads. Since then, the contribution, the obligation of which has been reiterated since 1971 in Regulation 1192/69, has been extended to all level crossings.

. Compensation for the excess amounts in pension payments for the DB personnel resulting from structural causes (DM 3.826 billion in 1990).

Private employers (and, as a consequence, the DB's competitors) only participate to their personnel's pension funds through their contributions to the invalidity - old age insurance schemes they pay for their active employees, and which are set by law. On the other hand, the DB pays all of the pension contributions for its employees. This is the reason why, since 1961, the State has accepted to pay for part of the excessive burden generated by these pension contributions. Since 1965, its share is calculated on the basis of the "normal" conditions in the ministry of finances. It is limited to 30 % of the relative charges for civil servants in activity. Since 1971, EC regulation 1192/69 is the legal basis which makes it possible for the DB to put in for this compensation. From 1989 onwards, the top limit has been removed and a compensation for 31 % of the expenses paid for the active civil servants has been established.

. Compensation to the employees and workers' complementary pension fund (DM 0.836 billion).

The DB is committed by law to pay much higher contributions than those of its competitors, for the complementary pension funds which it is obliged to pay for its employees and its workers, on top of the legal pension contributions. Since 1972 and pursuant to EC Regulation 1192/69, there is only one possibility for compensation.

. Compensation for the supplementary professional training expenses paid for by the DB (1990 - DM 0.083 billion).

Since 1987, in order to help fighting off young persons' unemployment, the DB has been making available professional training capability it does not require to the Government's special programs designed to use up all the training potential available. The cost of these supplementary training places is reimbursed by the State to the DB, at DM 50,000 per place and average training period.

. Compensation for the expenditures resulting from coach transport organized by the DB (1990 = DM 0.055).

. Compensation for the health care financed by the DB (1990 = DM 0.158 billion). Indeed, contrary to its competitors, the DB is obliged to offer free medical care to its personnel.

. Compensation for the pension charges for the foreign personnel (GDR refugees) (1990 = DM 0.003 billion).

Other subsidies relating to Regulation 1107/70 of the Council of Europe :

Subject to a number of conditions, Regulation 1107/70 of the Council of Europe authorizes the payment of subsidies to the operation of enterprises, relating to :



- . the coordination of different modes of transport (and especially for intermodal traffic) ;

- . certain obligations resulting from the public service missions and not covered by the provisions of Regulation 1192/69.

The interpretation of this regulation led to a number of provisions in both networks :

- . the SNCF puts the contribution to the installation expenses under that item ;

- . the DB has passed under that account the various allowances with an especial social character.

The subsidies granted by the federal State to the DB :  
(Under Regulation 1107/70)

- . Transport by road of apprentices and other personnel undergoing training ("traben-Personenverkehr") (1990 = DM .06 billion).

Pursuant to EC Regulation 1107/70, and in application of the third act modifying the act of 24.08.76 on the passenger transport, regular transport companies are entitled, on their application, to a partial indemnity for the non-refundable costs of transporting personnel for training reasons. This compensation is limited to 50 % of the difference between the operating income and the average cost of this type of transport.

- . Refunds for expenses caused by accidents occurring in the course of transport to handicapped persons (1990 = DM .126 billion).

- . Compensation for the negative balance in the relations between the DB and the DR (DM .069 billion).

#### Subsidies granted by the French authorities to the SNCF under Regulation 1107/70

This is the heading under which the State grants the SNCF subsidies to the installation charges, and, up to this day, this is an exception in the European networks.

Article 31 in the Schedule of Conditions has provided for this contribution with a view to homogenize the intermodal operating conditions and to take into account the specific responsibilities resting with the SNCF as regards installations. This contribution is based on the idea that each user of a transport installation should pay a charge or toll equivalent to the corresponding social marginal cost. The social marginal cost obviously includes the cost of maintaining this installation, to which is added the cost of external consequences (cost of pollution, of safety, of congestion, etc.).

This contribution is quite significant being the highest paid by the State on the SNCF's operating account, after that paid for the pension funds. In 1989, its amount had been set at FRF 10.1118 billion for 1990 by Article 15 of the Contract Plan, which also provided for the method of indexation for the whole term of the Plan (in relation to the evolution of general price levels).

In this respect, the situation of the SNCF is more attractive than that of the DB which only gets DM .033 billion for the "track maintenance" item, which sum bears no relation whatsoever to the contribution for installation charges paid to the SNCF and has no economic justification which makes it increasingly vulnerable in the long term. It must be added though that the DB receives in a different manner some subsidies for investments which are more substantial than those paid to the SNCF, which evens things out.

Other subsidies to the operating account :

#### DB

The federal State pays the interests for loans contracted for the stabilization of the amount of the DB's own capital.

As a consequence of a lack of own capital, the DB was obliged to make an extensive use of loans to finance the necessary investments after WWII for the rebuilding of its network.

In order to stabilize this situation, since 1973 the State has been paying back to the DB the interests for these loans, whilst the burden of the capital repayments rests with the DB. The DB had asked that the State also undertake to repay these loans. It met with a degree of success since the State has taken back DM 12.6 of loans since 1991, as "old debts".

#### SNCF

One should mention here the "rail subsidies" which had been paid to the company in order to help it balance its accounts and which have been suppressed from 1991, since the enterprise is now obliged to balance its accounts by its own means.

A subsidy is nevertheless paid to the redemption fund for loans removed from the SNCF's statement of accounts from 1991.

### 2.1.3. Adoption of New Management Principles

#### Separation of the rail enterprise's accounts

The recommendation passed by the Council of July 29, 1991 relating to the development of the railways has made it imperative for the rail companies to separate the management of the installations from that of the transport activity. This has already been implemented by the DB and by the SNCF, which now makes it possible to distinguish between the management :

- . of the rail network installations, and that
- . of the transport operations.

In comparison with the other modes of transport, where the installation costs are borne by a manager (the State), which is distinct from the transport enterprises, the activities (passenger transport, freight transport, parcels service) only bear the costs for the use of the installations, and no fixed charges relating to said installations. The operating accounts thus drawn up are quite comparable to those of any other transport operator, which pays the cost of using installations it does not manage, by means of specific taxes.

#### The DB's method

The DB's position has been laid down in the context of a methodological system called "Trennings-rechnung", which intended to :

- . breakdown the company's income and expenditures between the function of installation management, and that of transport ;
- . breakdown the account of the transport function among the missions belonging to the commercial activity and those belonging to the public service, the rail charges being allocated to the various fields of activity.
- . the expenditure coverage and non-coverage ratios for each field of activity.

This system is based on a total cost methodology, which means that all charges and financial costs are allocated. The methodology involves several stages :

- . breakdown of the expenditures and of the income in shares relating to the rail activity and the non-rail activity (non traffic activity) respectively, the aim being to separate the non-rail activity from the rest (called neutral sector or neutruler Bereech).



. breakdown of the expenditures and of the income for the rail activity in :

- . management of the installations,
- . management of the commercial transport activity,
- . management of the public service transport activity.

The fixed expenditures of the enterprise are shared among these sub-accounts at a pro rata of keys selected for their representativeness.

#### The SNCF's approach

In Article 1, the SNCF's Schedule of Conditions distinguishes between the two essential missions of the enterprise :

- . management of the installations,
- . mission of transport.

The SNCF drew up two sets of accounts in order to fulfill this requirement, working on the basis of the chargeable costs, as opposed to the total cost method selected by the DB :

- . Activity account, separated into :
  - . the passenger traffic, itself divided between Paris suburbs, Fast and Express, regional passenger services,
  - . the goods traffic divided between freight, Sernam (parcels service) and other traffic (Post, road transport),
  - . other activities (mainly non traffic).
- . A management account for installations drawn up following the chargeable costs method, the undivided expenditures (structural expenditures, etc.) are not allocated.

The Installations account records all the expenditures (maintenance and operation) arising from the management of the rail network.

. Expenditures for the fixed installations function (maintenance and capital) excepting the expenditures for buildings and telecommunications, which do not qualify as infrastructure charges,

. Expenditures for the operations function, relating to safety and traffic (especially the safety movements in stations).

After deducting the costs for use chargeable to the various activities, the balance of this account is compared to the amount of the subsidy paid by the State for the homogenization of the competition between different means of transport. In case of a loss, this is paid by the SNCF.

The SNCF's approach differs from that of the DB by the method of calculation selected (system of the chargeable costs rather than that of the total costs). The chargeable cost equals the marginal cost when several activities are jointly using the same installation. On the other hand, it equals the total cost when only one activity uses this installation. As a consequence, in the system used by the SNCF, the activity accounts show a margin on the chargeable costs, whereas in that used by the DB, they show an effective result. On the other hand, in both cases, the account for the management of installations includes the capital charges.

#### The installation management account

Both networks have relatively similar methods regarding this account which is made compulsory by EEC regulations.

#### 2.1.4. Further Evolution in Germany

We have recently heard about the amount of losses to be registered in 1992 which is already :

- . DM 5,3 billion, for the Deutsche Bundesbahn, the annual turnover being DM 24,5 billion ;

- . 50% of its DM 9,4 billion turnover, for the Reichsbahn.

The causes of such a financial disaster are being attributed to an insufficient mastering process of the investments, to significant reduction in market shares and to a huge overstaffing (220,000 and 180,000 employed persons, respectively on the West and the East sides).

Unification of both Germany and the upgrading of the archaic eastern network lead to a financial need of DM 510 billion, of which DM 280 billion are dedicated to make up with past deficits. Such amounts have helped the Government finding sweeping solutions and achieving a serious reform.

The Bundesbahn and the Reichsbahn will be merge into one company in 1994. It will be a share holding company called Deutsche Eisenbahn AG (DEAG). Staff of both previous railroad companies will be kept without any change in salaries or retirement conditions.

Three "Departments" are to be created, the first for passengers, the second for freight and the third for infrastructure management. Then these Departments will also become share holding companies during the next three years. Five years latter, these three companies will be separated one from the other and the DEAG company will disappear.

Obviously, this process is a big step towards privatization of the railway activities and property. It is also fully consistent with the European guidelines. However we do not have any information about the way the Government will fund this reform, and particularly how to handle the debt.

#### 2.1.5. Medium Term Evolution of the Transportation Policy in Germany

The main problems in the current German policy are an increase in the traffic which proves higher than expected, the modification in the flow structure resulting from the reunification of the two German states, and the consequences of transport on the environment.

New traffic forecasts have been completed up to the year 2010 both for passengers and for goods. They were made public in 1990.

They lead to several remarks :

##### . Passengers

Generally speaking, the forecasts were over-estimated for the rail and under-estimated for the road.

The FRG experienced a stagnation of the road traffic in the early eighties, the direct result of the oil crisis. It must be said that the price of petrol had increased by 40 %. When petrol prices dropped again in 1986, a steady growth of the road traffic resulted.

On the whole, the figures for 1990 nearly coincide with the forecasts which had been made for the year 2000. As far as the private cars were concerned, for example, the FRG forecast 31 million vehicles in the year 2000, which was virtually met in 1990.

##### . Goods

Here again, as regards long distance transport, the transportable potential for all the modes taken together has reached the level forecast for the year 2000 in 1990, as a consequence of the growth in road transport.

Nevertheless, the oil crisis which affected the intermediary industries had a more marked effect on the rail traffic.

The traffic over-estimation was all the more sizable as there was a political will to encourage rail transport as opposed to the other modes, but the implementation of this policy met with difficulties.

The forecasts are currently being reviewed in order to integrate the consequences of the events in the East in the forecasts, and especially so, the demographic element.



In addition, the study of the East - West prospects is taking a predominant share in the activity of the Ministry of Transport. The basic idea is that there is currently an imbalance between the old FRG and the old GDR, which imbalance should be made good by 2010.

The aim is thus to homogenize the equipment as rapidly as possible, whether in the field of transport or in that of housing.

The network in the old GDR is in a catastrophic condition. Its upgrading rates among the priorities.

The experts are nevertheless expressing a degree of optimism since the consequences of the reunification are deemed to be highly positive, especially so as a result of the arrival of a large number of young persons : it is estimated that the demographic and economic phenomena shall affect the infrastructure network in the short term.

In addition, the predominating feeling is that there is now an opportunity to avoid repeating the mistakes made in the old FRG, by designing, from the beginning, transport systems that give pride of place to the rail transport rather than to the individual road transport.

As far as integration of external influences is concerned, there is currently no study under way in the FRG addressing the management of crises resulting from an increase in oil prices. This increase would probably result in a leveling off of the traffic growth. But the preoccupations related to the protection of the environment weight heavily, and strong pressures are being exerted to control the development of road traffic.

There exists a (confidential) analysis on the potential consequences of policies aimed at reducing the automobile traffic.

In fact, in FRG, a violent conflict is raging between the advocates of road traffic and those who object to the dominating position occupied by the road, on environmental grounds.

The latter blame the policies favorable to the road, and under estimate the structural factors resulting from the demography, housing and the way of life.

The Ministry officials consider that technological advances would make it possible to limit the pollutions and to improve the traffic, but they would have insufficient effects. They therefore anticipate strong oppositions during the preparation for the investments and the need to go to arbitration.

As a consequence, the rail alternative seems to be the solution to put forward, but one should not exaggerate its consequences.

As far as the State budget is concerned, it seems difficult to go beyond the overall sum of DM 50 billion for transport.

The discussion is under way concerning the creation of toll-gates to pay for the new installations, but it does not seem that the problem of the private or public (toll-gate) source of the financing is always viewed as a major issue in so far as, in the population, the cost is perceived as a supplementary fiscal burden.

In actual fact, the government is mainly preoccupied by the cost of upgrading the networks in the Eastern Länder. The idea of creating toll-gates in the old GDR, in order to facilitate this operation, has been alluded to by the Ministry.

In the event of a private source of financing, it must be stressed that it will always be difficult for the transport to solve the following problem :

. is there a way of preventing operations, where the forecast profits for the private investor exceed the external detrimental consequences to the community ?

. or how can a private investor be made to finance an operation involving advantages for the community in excess of the losses estimated by the investor. In this case, it is necessary to consider subsidizing, even if it is only temporary, until such time as the result becomes positive.

In fact, the completion of private investments requires a new legal frame which is difficult to create.

The consequences of the external effects have been integrated in the recommendations relating to the assessment of large projects. The analyses are under way and new procedures are under review jointly with the GDR's governmental bodies. For the time being, it seems that positions stand as follows, although it is not always possible to express them very precisely :

In the view of the government, toll-gates would not be seen as a means to limit the traffic, but rather as a means of making the users pay for the external costs of the installations (in the Netherlands, the toll system is meant as a deterrent).

Nevertheless, if the external consequences are taken into account in the analysis, it is also necessary to integrate the positive effects of road transport on the economy.

When addressing the issue of the toll-gates, there is a marked preoccupation to explain the positive and the negative aspects of transport to the population. The concern for explanations and a pedagogical approach is undoubtedly indispensable in the current clash situation.

Several engineering companies are working with the government on the assessment of the external effects, but the results have not yet been made public. They probably highlight substantial overall costs.

As regards assessment of the external costs, a number of factors have already been taken into account, such as the noise, the waiting times, etc., but the Ministry does not wish to integrate other "environmental" factors such as, among others, the consequences on ground water.

There is simultaneously a preoccupation to justify public investments by positive macro-economic consequences : the projects should not be financed by the users only.



## 2.1.6 High Speed Network in Germany

Table 2-2: "Projects of 1<sup>st</sup> priority" within the network of the German Federal Railway

	Investment cost (prices of 1983) - thousand mio DM -		
	total	Expenditure	
		until 1985 inclusive	from 1986 onward
1	2	3	4
(a) Backlog	16.552	7.284	9.268
1. NBS Mannheim-Stuttgart	3.604	1.490	2.114
2. NBS Hannover-Würzburg	11.126	4.380	6.746
3. ABS Frankfurt-Mannheim 1st step	340	291	49
4. ABS Gießen-Friedberg	65	58	7
5. ABS Dortmund-Braunschweig	260	211	49
6. ABS Hamburg-Hannover	185	167	18
7. ABS Hamburg-Münster	550	494	56
8. ABS Würzburg-Augsburg	190	166	24
9. General planning of marshalling yards 2nd step (cost of completion)	232	27	205
(b) New projects	16.334	-	16.334
1. ABS Fulda-Frankfurt	460	-	460
2. ABS Frankfurt-Mannheim 2nd step	500	-	500
3. ABS Graben-Neudorf - Karlsruhe	60	-	60
4. ABS/NBS Karlsruhe-Offenburg-Basel	1.678	-	1.678
5. ABS Münster-Köln	175	-	175
6. ABS Köln-Rhein/Main	5.445	-	-
7. ABS/NBS Plochingen-Günzburg 2/	1.910	-	1.910
8. ABS Gunzburg-Augsburg	300	-	300
9. ABS Mainz-Mannheim	475	-	475
10. ABS Dortmund-Kassel 3/	1.770	-	1.770
11. ABS/NBS(Würzburg-)Nürnberg-München 3/	- 4/	-	-
12. ABS München-Mühldorf-Freilassung	630	-	630
13. ABS Hamburg-Harburg - Hamburg-Rothenburgsort	615	-	616
14. General planning of marshalling yards 2nd step	1.600	-	1.600
15. Combined transport (KLV)	716	-	716
Total "Projects of 1 <sup>st</sup> priority" 1/	32.886	7.284	25.602

1/ ABS = Lines to be improved NBS = Lines to be newly constructed  
Subsidies under the Community Transport Financing Law for rapid urban railways excluded (included in Table 3, line 5)

2/ Possible alternative: New construction of continuous line Plochingen-Günzburg 2,190 thousand million DM

3/ Subject to a satisfactory evidence of commercial profitability taking into account the network effects.

4/ Several variants are studied at presents; a calculation of costs is therefore not possible.

Table 2-3: "Projects of 2<sup>nd</sup> priority" within the network of the German Federal Railway

	Investment costs thousand mio DM (prices as of 1983)
1	2
1. ABS Hamburg - Puttgarden <u>3/</u>	235
2. ABS Maschen - Lehrte <u>2/</u>	330
3. ABS Rotenburg - Minden <u>2/</u>	15
4. ABS Köln - Aachen <u>3/</u>	20
5. ABS Aschaffenburg - Gemunden <u>2/</u>	520
6. ABS Nürnberg - Passau <u>3/</u>	150
7. ABS/NBS Karlsruhe - Offenburg - Basel 2nd step	532
8. ABS Augsburg - München	65
9. ABS Saarbrücken - Ludwigshafen (Rhein) <u>3/</u>	280
10. ABS Karlsruhe - Stuttgart <u>3/</u>	40
11. ABS Stuttgart - Nürnberg <u>3/</u>	890
12. ABS Hannover/Braunschweig - border German Federal Railway/German Reichsbahn (GDR) <u>3/</u> <u>4/</u>	700
13. Framework planning marshalling yards 3rd step	395
Total "projects of 2 <sup>nd</sup> priority"	4.172

1/ Owing to interdependencies and the introduction of partial sections there may be changes and supplements.

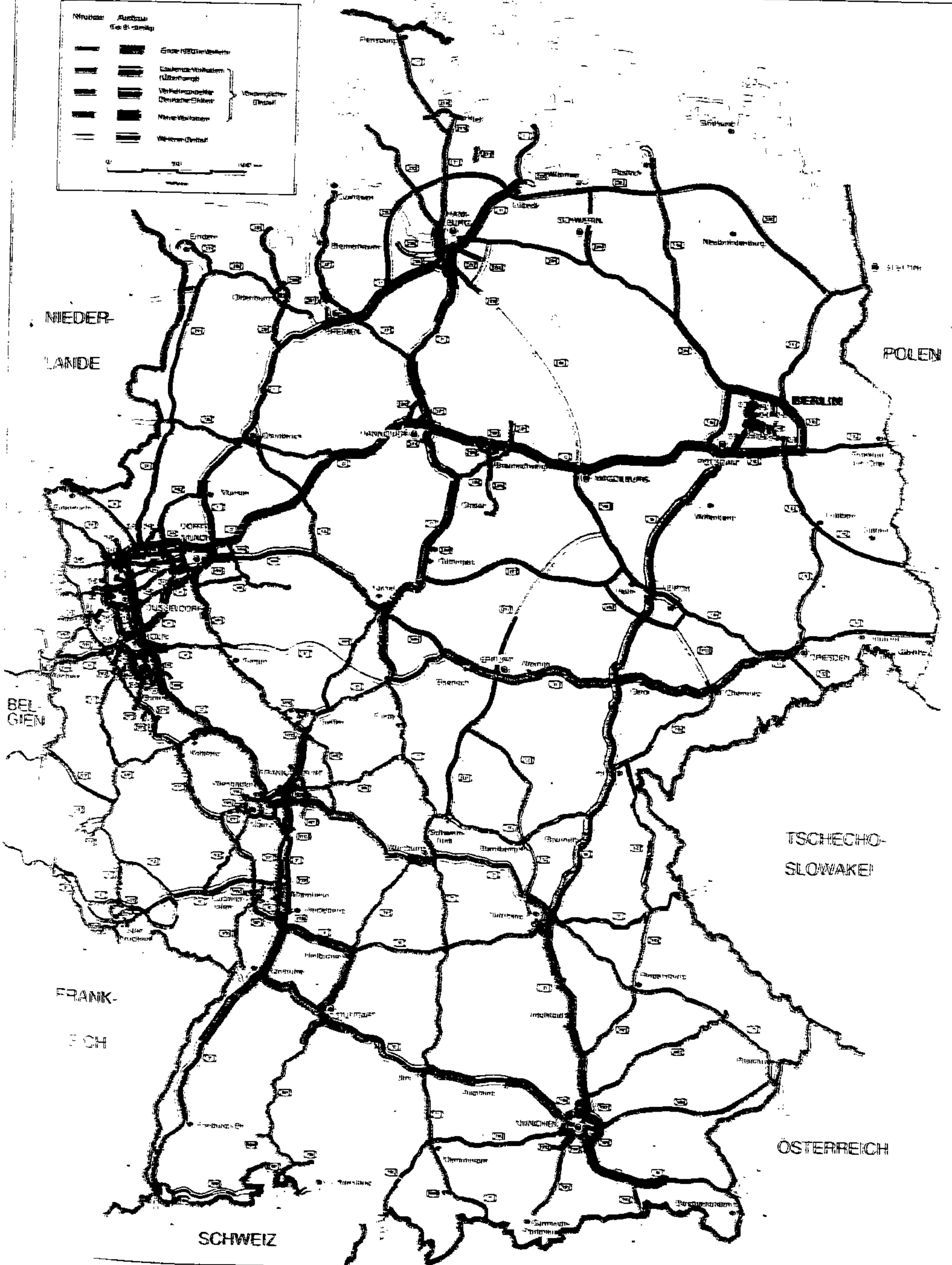
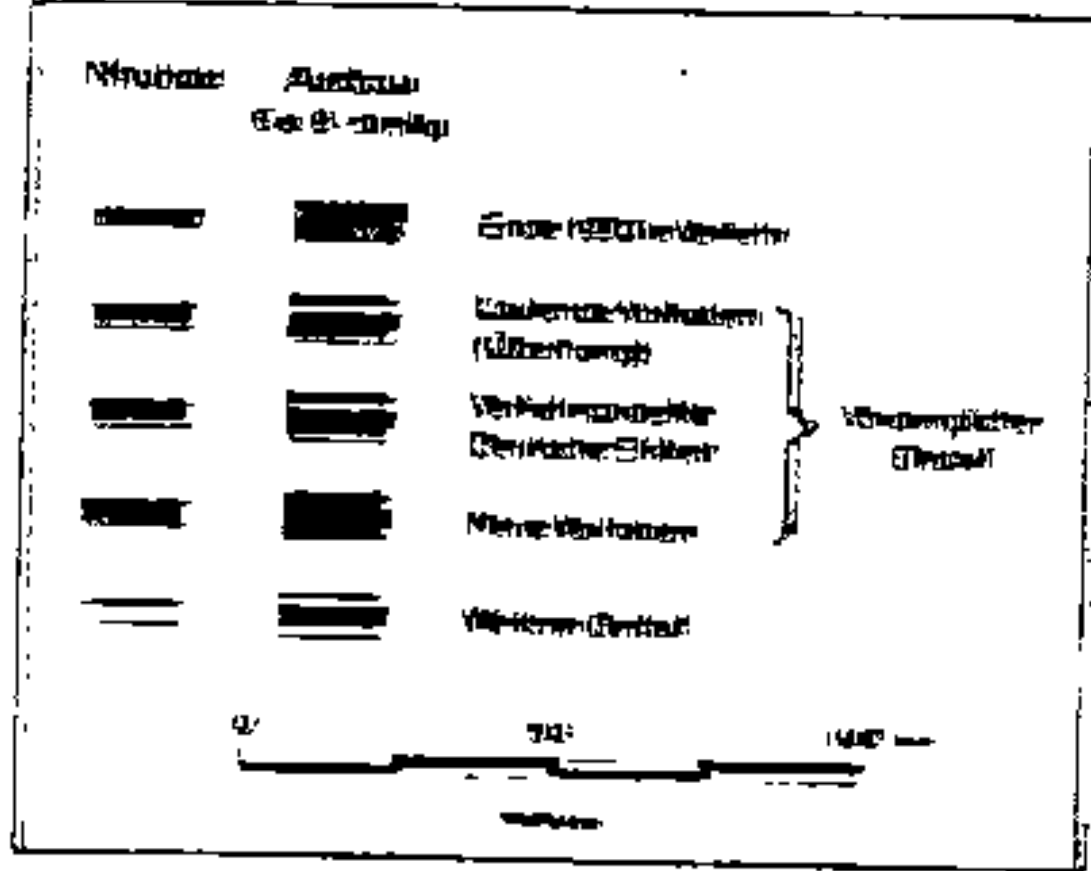
2/ Assessment deferred.

3/ The planning essentially depends on the co-ordination with the planning in neighbouring European states.

4/ The classification does not anticipate decisions on an improvement of the railway line Hannover-Berlin.

- Bundesautobahnen -

Karte 2

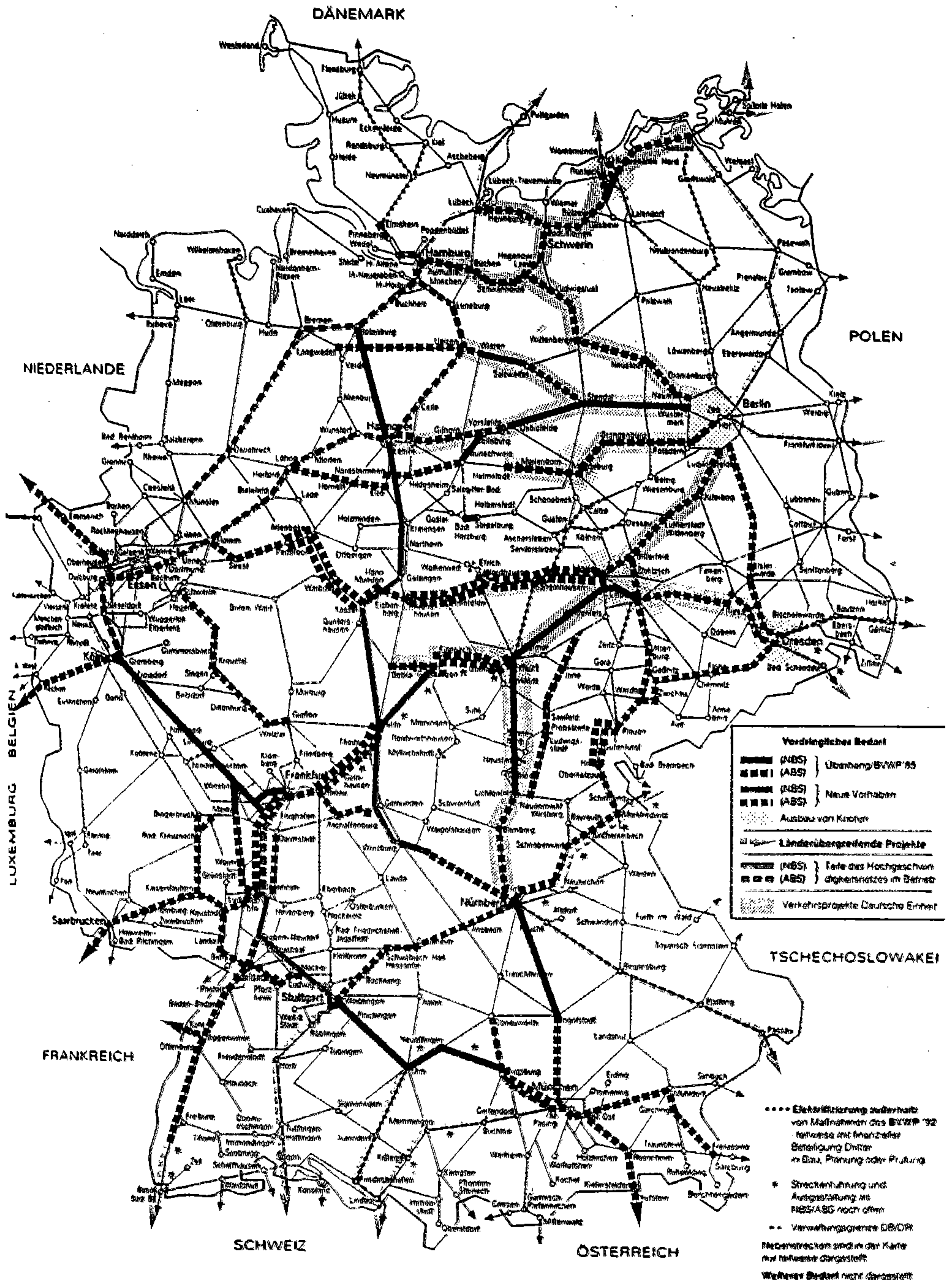




# Bundesverkehrswegeplan 1992

## - Schienennetz der DB/DR -

Karte 1



## 2.2. JAPANESE EXPERIENCE

### 2.2.1. Events Leading to the Privatization and Division of the JNR

#### History of railways in Japan

The history of railways in Japan began in 1872 with the opening of a national railway line between Shimbashi and Yokohama.

In 1949, national railways were placed under the management of the Japanese National Railways (JNR), a public corporation with all of its capital invested by the government. The maximum route length was 21,419 km in 1981.

In Japan, railways retained a monopoly of land transportation from the age of the first railway in 1872 to 1945, when the war ended. During this period, the financial conditions of national railways progressed favorably. This favorable result is well proved by the fact that there were no fare increases in the 20 years from 1920 to 1940. After the war, when inflation was aggravated, the national railways survived the difficulties through fare increases.

However, since 1955, roads have been improved and automobile transport has rapidly developed. As a result, the monopoly of national railways was gradually lost and financial conditions deteriorated.

It was in 1964 when JNR fell into the red. Then the deficits grew rapidly.

In 1966, the accumulated profits up to that time were canceled by these losses, and since deficits began to be carried forward. The government took measures for RN restoration four times up to 1980 without success, and red figures kept on culminating. Despite 11 fare increases in 13 years from 1974 to 1986, total amount of debt of JNR in the balance sheet at the end of fiscal 1986 exceeded 25,000 billion yen, and when adding to this a deficit of 5,000 billion yen incurred by the JNR mutual aid association pension fund, the grand total debt then was about 30,000 billion yen.



## JNR Reform as a Leader of Administrative Reforms

On the other hand, Japan's national financial conditions were in a critical situation after the two oil crises. In order to carry out a drastic reform of a swollen administration, the 2nd Ad Hoc Commission on Administrative Reform was established in 1981.

The 2nd Ad Hoc Commission on Administrative Reform reported proposals to privatize JNR and divide it into 7 companies. The proposals were made based on the views as follows :

- 1) Fundamentally, because of Japan's geographic conditions, railway businesses in Japan have a potential for profitable operation, as seen in the case of long-established private railways, if the management takes appropriate measures and earnest business efforts are made.
- 2) Nevertheless, all of the past four restoration measures ended in failure. This was because the solutions had been sought as extensions to the JNR management structure.
- 3) Specifically, JNR was a public corporation (public judicial person) and a huge organization operated under a uniform nationwide operating system. Under these circumstances a responsible management structure could not be established. These resulted in a management attitude that "good old government will always foot the bill", and JNR restructuring could not be expected.
- 4) The answer was to carry out a drastic reform of JNR management structure, privatize it and divide it into geographic sections of appropriate size, and then the railway enterprises would be activated and managed as a profitable business.

Based on the proposals of the 2nd Ad Hoc Commission on Administrative Reform, the government established a JNR Reform Commission in 1983 to have it study concrete plans for its privatization and division. As the result, "Opinions" were submitted to the prime minister in 1985 to the effect that six passenger railway companies and one freight company should be established.

Based on the Opinions, the government presented related bills to the National Diet and the bills passed in 1986. In April 1987, JNR was divided and the new seven railway companies started in business.



## 2.2.2. The New Companies

### Liabilities and Number of Employees

JNR was divided and privatized into 11 firms:

6 passenger railway companies, a freight railway company, telecommunication company, information systems company, railway research institute and the ShinKansen holding corporation.

Besides those companies, JNR Settlement Corporation, which is to reimburse long-term liabilities by selling off unnecessary lands taken over from the JNR, was also established.

At the time of inauguration of the new companies, the amount of liabilities that should be dealt with and the reimbursement program were as follows :

Table 2-4 : Japan Railway Group Companies Amount of Liabilities and Reimbursement Program

Amount of Liability (trillion yen)		Reimbursement Program (trillion yen)	
Long-term liability and deficits from pension fund	30.0	Responsibility of the new companies (JR East)	14.5 (6.6)
Liability for the Japan Railway Construction Corporation	4.5	Responsibility of the settlement corporation	22.7
Fund to support the three smaller-island railway companies, etc.	2.7	— Selling of lands — Selling of stocks — People's burden	
TOTAL	37.2	TOTAL	37.2

On April 1, 1987, when the new companies were born, 203,000 out of the 277,000 employees on the JNR pay-roll at the beginning of fiscal 1986 were recruited by the new companies. Among the remaining 74,000 people, 66,000 either retired voluntarily or transferred to government organizations and 8,000 were shifted to the settlement corporation for training required for further employment.

## **Burdens Imposed on New Companies**

Although the new companies left part of the debts and the responsibility for surplus personnel with the JNR Settlement Corporation, they had quite a heavy burden on their shoulders at their start.

For JR East, in addition to a debt in the balance sheet of 3,300 billion yen, there were debts of 3,300 billion yen for the leases of the Tohoku Shinkansen and Joetsu Shinkansen from the Shinkansen Holding Corporation, and for the leases of the Musashino Line and Keiyo Line from the Japan Railway Construction Public Corporation. They amount to 6,600 billion yen in total, which JR East is responsible to reimburse. As JR East's revenue in a year is 1,500 billion yen, these financial requirements indicate a danger signal, as shown by those figures.

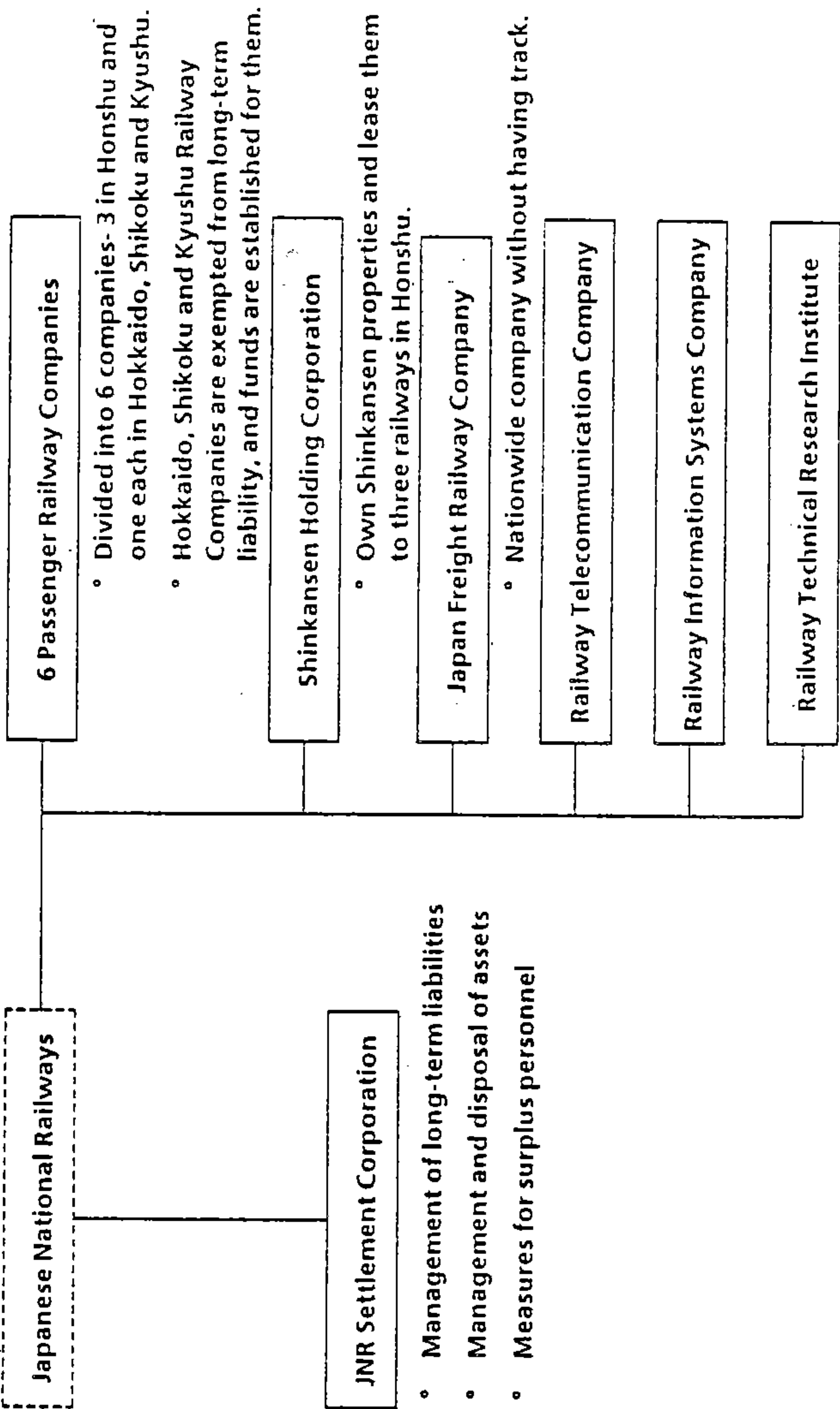
JR East took over 83,000 employees from JNR. As a size of 68,000 employees is enough for operation of the present network of 7,600 km, the company is holding 15,000 surplus employees. As these surplus employees cannot simply be dismissed in this country, if the average annual salary is to be 5 million yen, JR East is forced to shoulder 75 billion yen.

## **Apprehension Over Financial Prospects**

The JNR Reform Commission and the government published a 5-year prospect of revenues and expenses of the new companies. According to the most optimistic of these predictions, JR East would earn an operating profit of 14,8 billion yen in its first year of 1987. After that, by fare increases of about 10% in the following five years (additional revenue from these fare increases to be 150 billion yen), JR East would earn an operating profit of 47,7 billion yen in fiscal 1991.

Against these published prospects, daily newspapers in general commented in those days that "trial calculations of the black figures are full of question marks" or "the prospects are wishful thinking", and judged that the realization of those prospects for revenues and expenses would be extremely difficult.

Figure 2-3: NEW RAILWAY ORGANIZATIONS RECOMMENDED BY JNR REFORM COMMISSION





### 2.2.3. Changes After JNR Privatization and Division

#### Favorable Financial Results

##### . Results for each company

Although the inauguration of the new companies was received with numerous apprehension, their financial results for these two years were exceedingly Favorable.

Financial results for each of the JR group companies in 1987 and 1988 were as follows:

Table 2-5 : Financial Results of the JR Group Companies  
(billion yen)

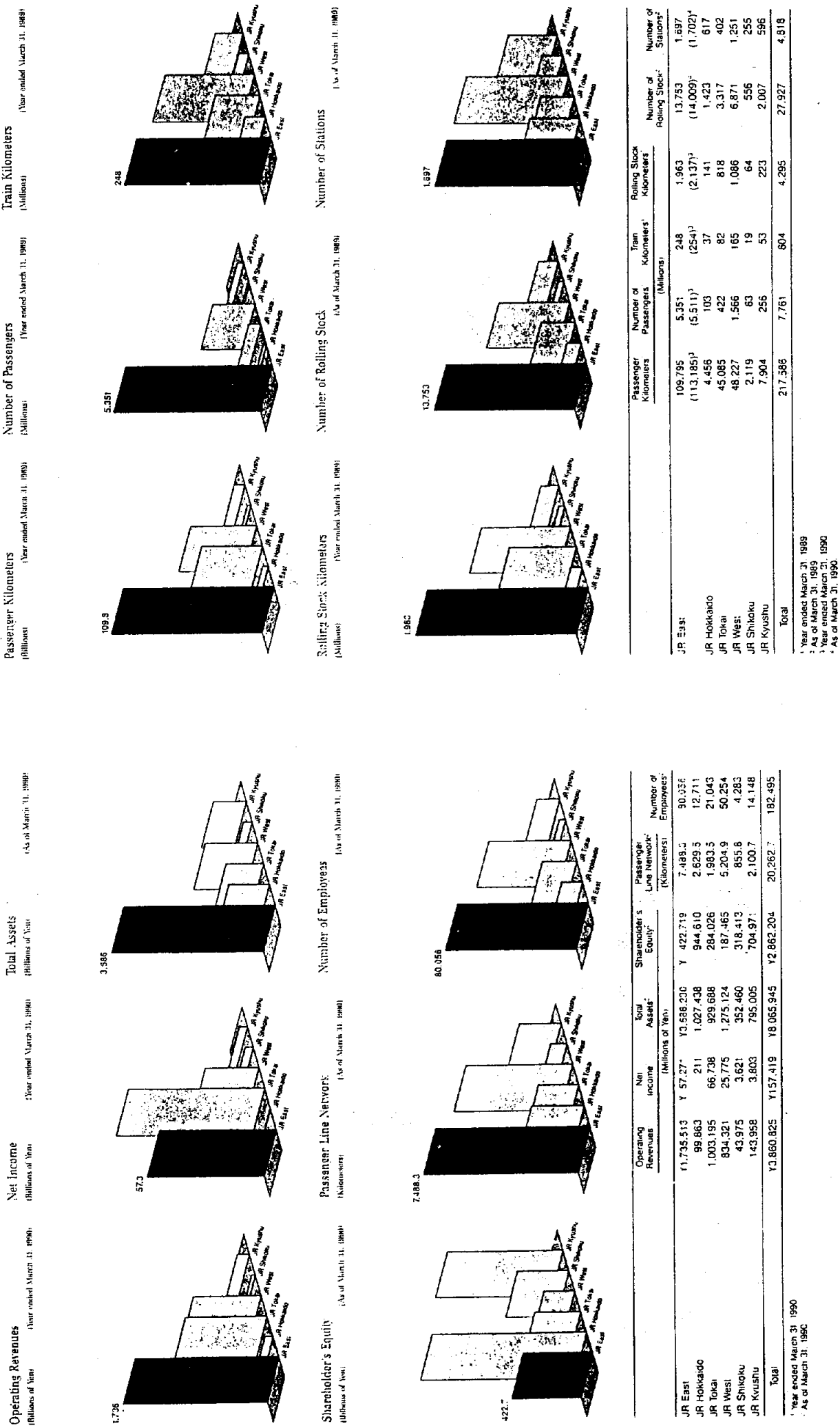
		JR Hokkaido	JR East	JR Central	JR West	JR Shikoku	JR Kyushu	JR Freight	TOTAL
1 9 8 7	Operating revenue	92	1.566	875	763	35	130	173	3.633
	Operating expenses	146	1.269	803	692	50	159	162	3.281
	Working profit and loss	2	77	61	8	1	2	6	152
	Original expectations	1	15	8	8	0.3	1	2	35
1 9 8 8	Operating revenue	94	1.664	969	807	44	140	183	3.899
	Operating expenses	147	1.340	866	728	55	168	172	3.476
	Working profit and loss	1	86	95	17	6	3	7	212
	Original expectations	1	30	10	19	1	3	3	67

As a result of these achievements, the companies did not apply for the fare increase which had been originally intended. The last fare increase was implemented in 1986, and as none of the companies has a fare increase plan at least until 1990, the fare will remain at the same level for at least four years.

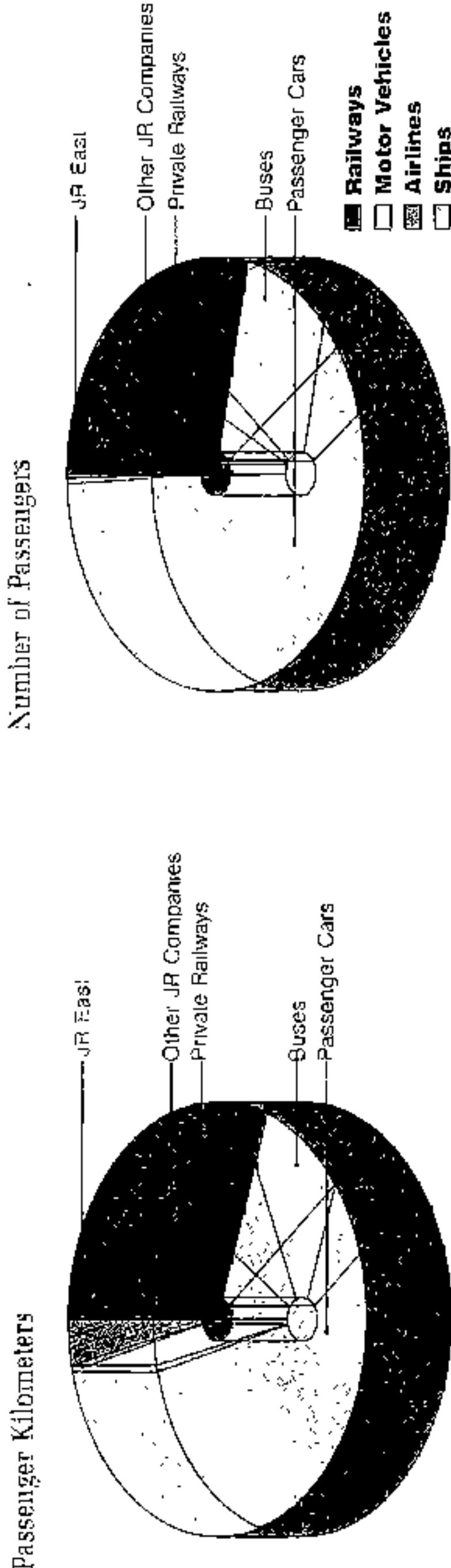
##### . Financial improvements of JR East :

##### - Increase of train-kilometers

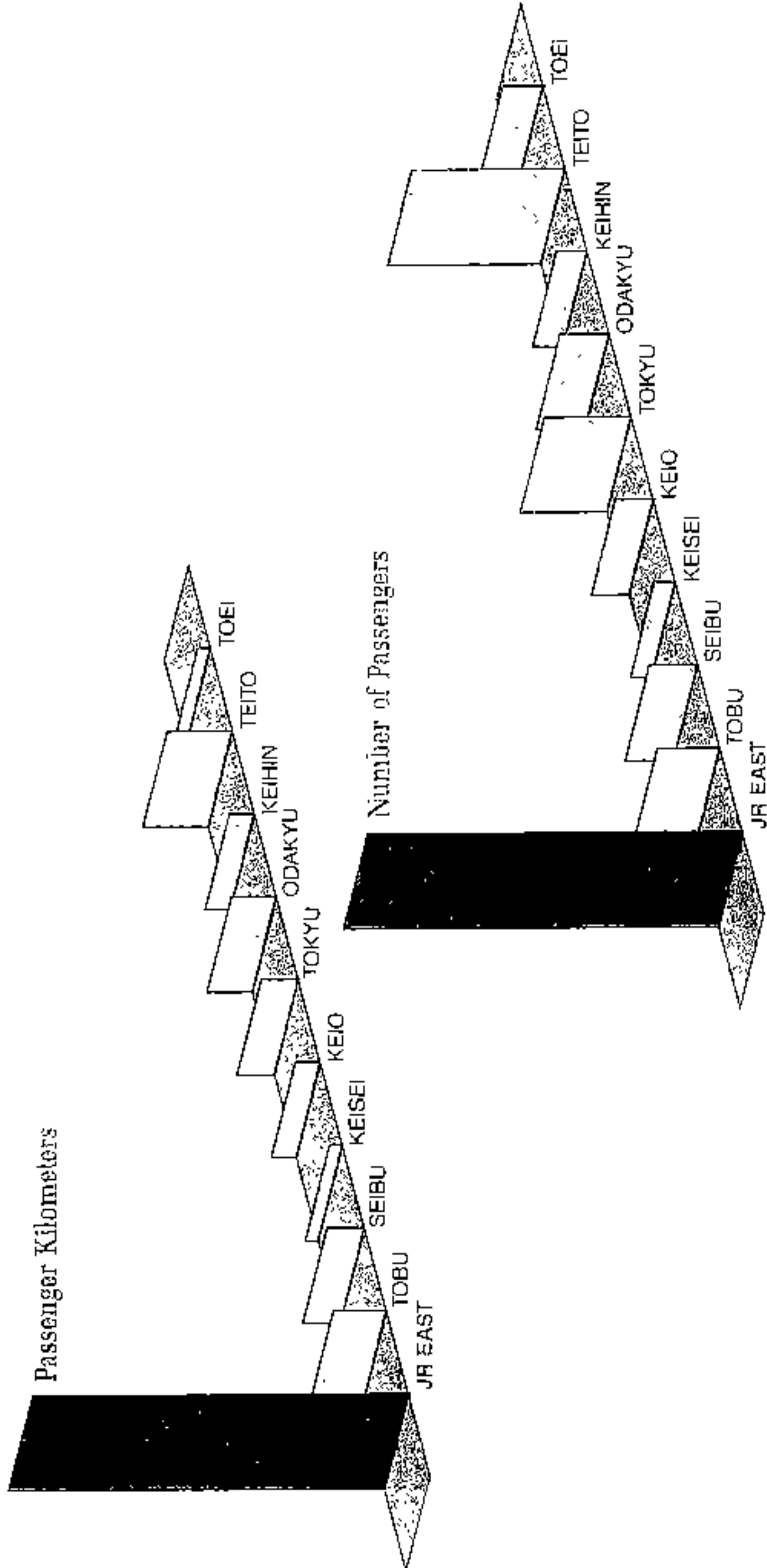
Train-kilometers have increased from 630,600 km at the inauguration of the company to 716,400 km through revisions of train scheduled in March 1988 and in March 1989.



Share of the Domestic Transportation Market



Comparison of the Major Railway Companies in the Tokyo Metropolitan Area

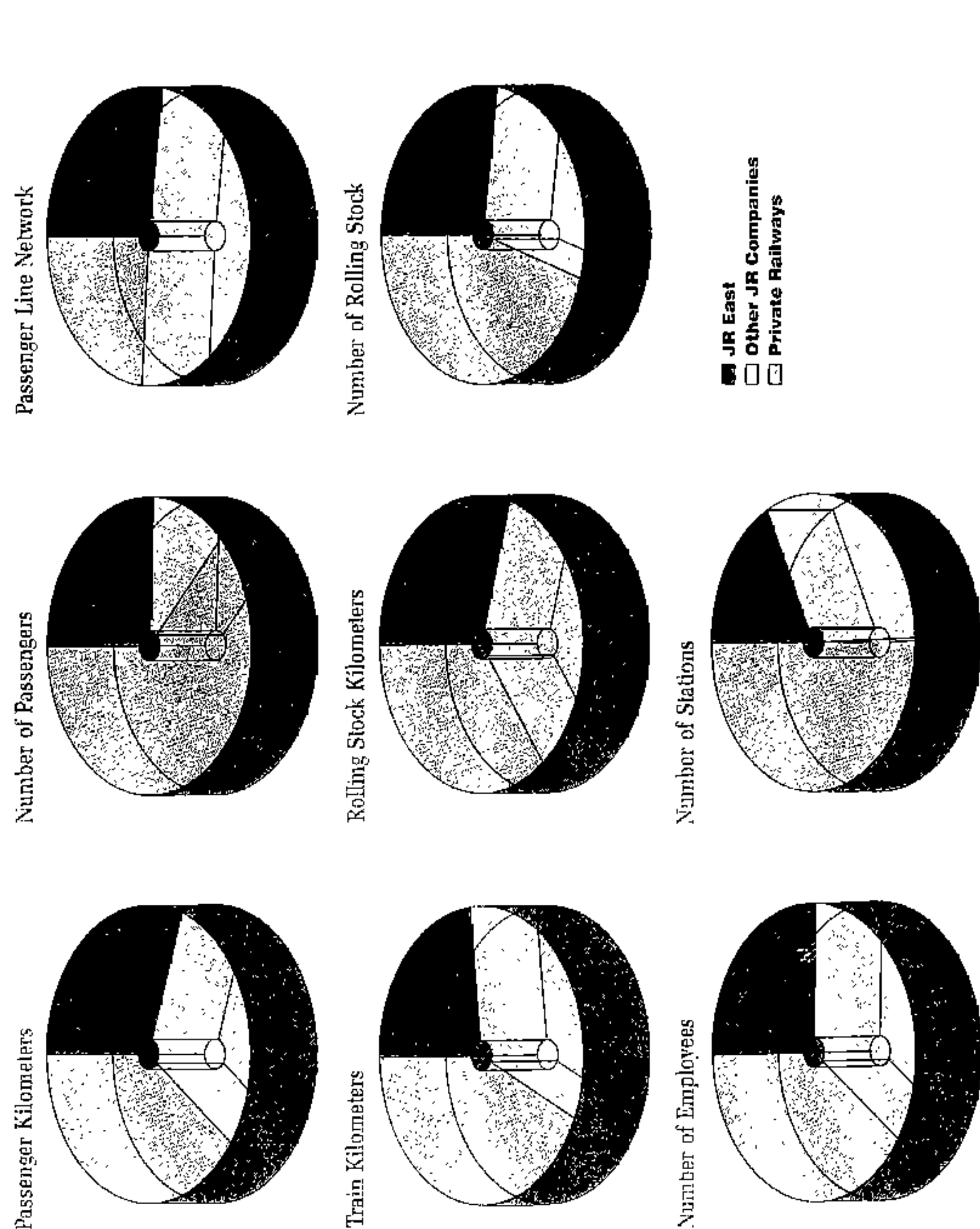


Share of the Domestic Transportation Market<sup>1</sup>

	(Year ended March 31, 1989)		
	Passenger Kilometers (Millions)	Number of Passengers (Millions)	(Percent)
Railways	361,770	20,820	28.4%
JR East	109,795	5,351	7.3
Other JR companies	107,791	2,410	3.3
Private railways	144,184	13,059	17.8
Motor Vehicles	782,032	52,218	71.3
Buses	107,221	8,538	11.7
Passenger cars	674,811	43,680	59.6
Airlines	41,102	53	0.1
Ships	5,672	154	0.2
Total	1,190,576	73,245	100.0%

Source: Annual Report on the Transport Economy 1989, and Statistics of Railways 1988 Ministry of Transport.

Comparison of Japan's Railways



	Passenger Kilometers (Millions)	(Percent)	Number of Passengers (Millions)	(Percent)	Passenger Line Network (Kilometers)	(Percent)	Train Kilometers (Millions)	(Percent)	Rolling Stock Kilometers (Millions)	(Percent)	Number of Rolling Stock (Percent)	Number of Employees (Percent)	Number of Stations (Percent)
	(Millions)	(Percent)	(Millions)	(Percent)	(Kilometers)	(Percent)	(Millions)	(Percent)	(Millions)	(Percent)	(Percent)	(Percent)	(Percent)
JR East	109,795	30.3%	5,351	25.7%	7,478.1	27.2%	248	23.4%	1,963	29.6%	13,007	72,682	25.7%
Other JR Companies	107,791	29.8	2,410	11.6	13,454.6	49.0	366	33.6	2,332	35.1	13,167	97,185	34.3
Private Railways*	144,184	39.9	13,059	62.7	6,530.9	23.8	456	43.0	2,344	35.3	21,688	113,378	40.0
Total	361,770	100.0%	20,820	100.0%	27,463.6	100.0%	1,060	100.0%	6,639	100.0%	47,882	283,245	100.0%
Private Railways	13,170	3.7%	872	4.2%	463.3	1.7%	31	2.9%	205	3.1%	1,641	7,296	2.6%
Tohoku Railway	10,868	3.0	669	3.2	120.1	0.4	17	1.6	112	1.7	884	3,453	1.2
Odakyu Electric Railway	8,425	2.3	1,178	5.7	100.7	0.4	14	1.3	100	1.5	1,000	3,698	1.3
Tokyo Corporation	14,499	4.0	766	3.7	595.2	2.2	63	5.9	282	4.2	1,859	10,695	3.8
Kinki Nippon Railway	11,163	3.1	799	3.8	146.8	0.5	22	2.1	156	2.4	1,277	4,687	1.6
Hankyu Corporation	86,059	23.8	8,775	42.1	5,104.8	18.6	309	29.2	1,487	22.4	15,027	83,549	29.5
Other Private Railways	144,184	39.9%	13,059	62.7%	6,530.9	23.8%	456	43.0%	2,344	35.3%	21,688	113,378	40.0%
Total	144,184	39.9%	13,059	62.7%	6,530.9	23.8%	456	43.0%	2,344	35.3%	21,688	113,378	40.0%

\* Year ended March 31, 1989

As of March 31, 1989

Notes 1. Figures for Passenger Line Network, Train Kilometers and Rolling Stock Kilometers do not include freight traffic.

2. Figures for Number of Rolling Stock do not include freight cars.

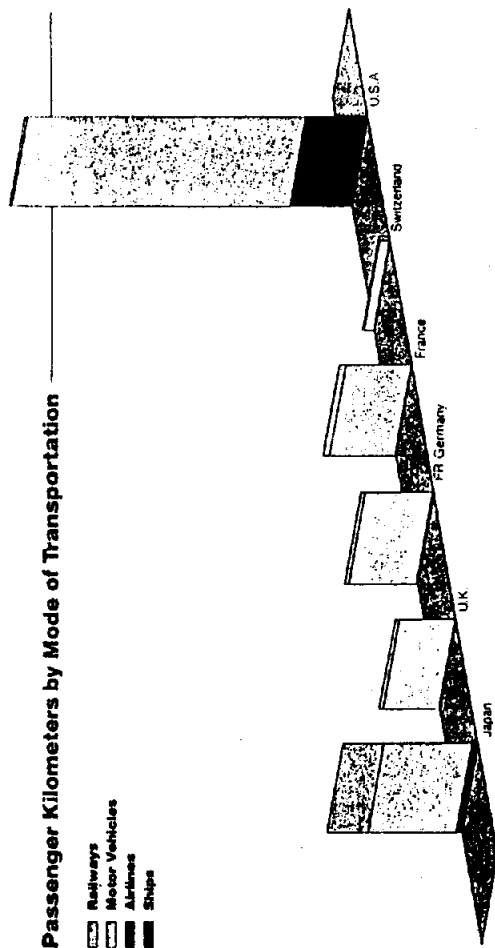
3. Figures for Number of Employees do not include nonrailway employees.

Source: Statistics of Railways 1988, Ministry of Transport



## Passenger Kilometers by Mode of Transportation

Railways  
 Motor Vehicles  
 Buses  
 Airlines  
 Ships



(Billions of Millions) (Year ended December 31, 1988)

	Japan	UK	FR Germany	France	Switzerland	U.S.A.
Railways	3,618	30%	399	600	126	198
Motor Vehicles	7,820	66%	5,924	92	886	81
Buses	1,072	9	61	10	42	4
Passenger cars	6,748	57	4,510	84	844	82
Airlines	412	3	40	2	14	2
Ships	56	—	—	—	2	0
Total	11,906	100%	6,470	6,404	1,028	30,112

\* Figures for Japan are for the year ended March 31, 1989.  
 Sources: Japan: Annual Report on the Transport Economy, 1989 and Statistics of Railways, 1988. Ministry of Transport. U.K.: Annual Abstracts of Statistics, 1989. FR Germany: Verkehr in Zahlen 1988. France: Mémento de Statistique, SNCF, 1988. Switzerland: Statistisches Jahrbuch der Schweiz, 1990. U.S.A.: Railroad Facts, AAR, 1988.

## Sales Comparison with Overseas Companies

Company	Sales (Millions of U.S. Dollars)
General Motors (U.S.A.)	51,26,974
International Business Machines (U.S.A.)	63,438
General Electric (U.S.A.)	55,264
British Petroleum (U.K.)	49,484
Philip Morris (U.S.A.)	39,069
Unilever (U.K.)	35,284
Siemens (FR Germany)	32,660
Nestlé (Switzerland)	29,365
Xerox (U.S.A.)	17,635
JR East	10,384
Unilever (U.S.A.)	10,097
Motrola (U.S.A.)	9,620
Fried. Krupp (FR Germany)	9,402
British Steel (U.K.)	8,677
Michelin (France)	8,669

Notes: 1. Companies for this comparison were selected randomly and on the basis of sales figures for 1988.  
 2. Sales figures for JR East did not appear among those listed in the July 30, 1990, issue of Fortune magazine.  
 Source: Fortune magazine, July 30, 1990.

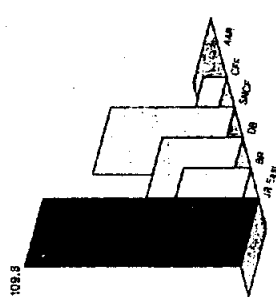
## Sales Comparison with Japanese Companies

Company	Sales (Millions of U.S. Dollars)
Toyota Motor	\$60,444
Hitachi	50,894
Nissan Motor	36,078
Toshiba	29,469
Honda Motor	26,484
Nippon Steel	20,767
Fujitsu	18,734
Sony	16,690
Mitsubishi Heavy Industries	15,007
JR East	10,384
Canon	10,024
Shiro	9,928
Kobe Steel	9,886
Nipponenso	9,663
Sumitomo Metal Industries	9,643

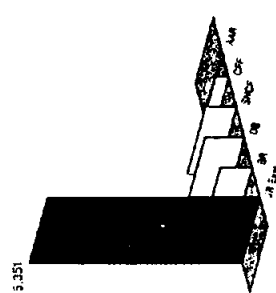
Notes: 1. Companies for this comparison were selected randomly and on the basis of sales figures for 1988.  
 2. Sales figures for JR East did not appear among those listed in the July 30, 1990, issue of Fortune magazine.  
 Source: Fortune magazine, July 30, 1990.

## Railway Services

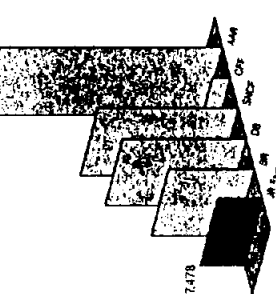
Passenger Kilometers  
 (Billions) (Year ended December 31, 1988)



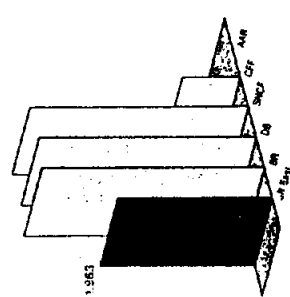
Number of Passengers  
 (Millions) (Year ended December 31, 1988)



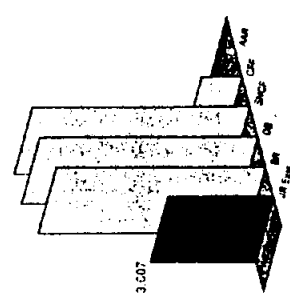
Passenger Line Network  
 (Kilometers) (As of December 31, 1988)



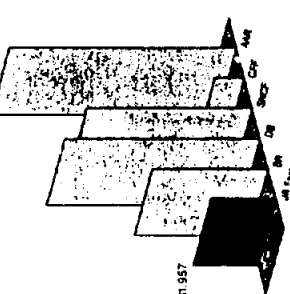
Rolling Stock Kilometers  
 (Millions) (Year ended December 31, 1988)



Number of Rolling Stock  
 (As of December 31, 1988)



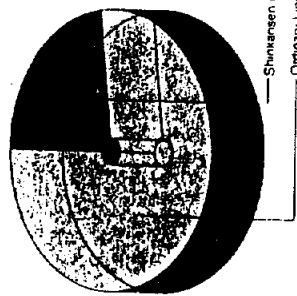
Number of Employees  
 (As of December 31, 1988)



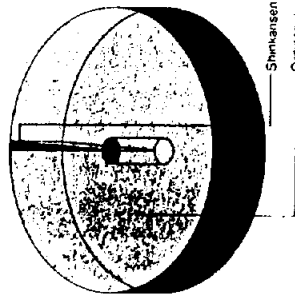
	Passenger Kilometers (Millions)	Number of Passengers (Millions)	Passenger Line Network (Kilometers)	Rolling Stock Kilometers (Millions)	Number of Rolling Stock	Number of Employees
JR East	109,736	5,351	7,479	1,963	13,007	81,957
BR (U.K.)	34,315	764	14,309	2,830	24,918	149,900
DB (FR Germany)	40,959	1,026	20,962	2,794	23,778	251,344
SNCF (France)	63,057	801	23,782	2,793	25,971	213,214
CFF (Switzerland)	10,804	259	2,934	750	5,662	37,372
AAR (U.S.A.)	—	—	37,818	—	—	290,164

\* Year ended December 31, 1988, except JR East and BR figures for year ended March 31, 1989.  
 † As of December 31, 1988, except JR East and BR figures as of March 31, 1989.  
 Notes: 1. BR—British Railways Board; DB—Deutsche Bundesbahn (German Federal Railway); SNCF—Société Nationale des Chemins de fer Français (French National Railways); CFF—Chemins de fer Fédéraux Suisses (Swiss Federal Railways); AAR—Association of American Railroads.  
 2. Figures for Passenger Line Network do not include those lines for freight traffic only.  
 3. Figures for Rolling Stock Kilometers and Number of Rolling Stock do not include freight cars.  
 Source: Statistiques Internationales des Chemins de fer, 1988; Union Internationale des Chemins de fer.

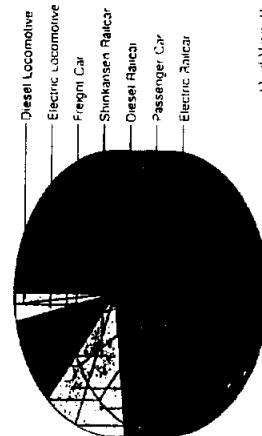
Revenues from Passenger Tickets



Number of Passengers

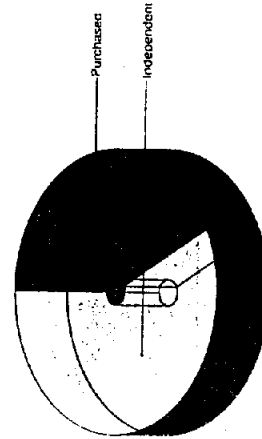


Rolling Stock by Type



(Year ended March 31, 1990)	(Thousands of kWh)	(Percent)
Purchased	25.6	42.5%
Independent	34.5	57.4
Thermal generation	19.9	33.1
Hydroelectric generation	14.6	24.3
Total	60.1	100.0%

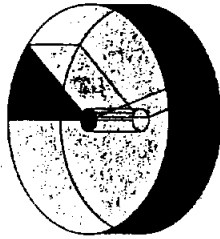
Electric Power



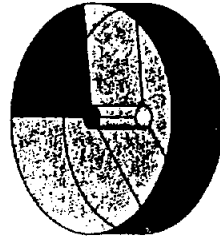
(Year ended March 31, 1990)	(Thousands of kWh)	(Percent)
Purchased	25.6	42.5%
Independent	34.5	57.4
Thermal generation	19.9	33.1
Hydroelectric generation	14.6	24.3
Total	60.1	100.0%

Comparison of JR East Network

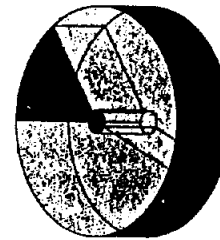
Passenger Line Network



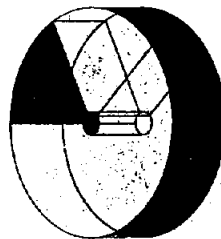
Double Track Kilometers



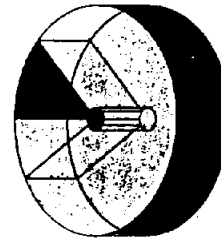
Electrification



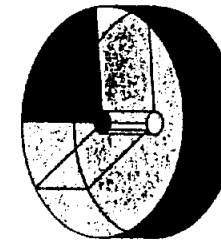
CTC



Passenger Kilometers



Revenues from Passenger Tickets



■ Shinkansen Bullet Train Network  
□ Tokyo Metropolitan Area Network  
□ Regional Network

	Passenger Line Network	Double Track Kilometers	Electrification	CTC	Passenger Kilometers	Revenues from Passenger Tickets
	(Percent)	(Percent)	(Percent)	(Percent)	(Millions)	(Percent)
Shinkansen Bullet Train Network	835.3	11.2%	835.3	23.0%	835.3	17.2%
Tokyo Metropolitan Area Network	2,579.7	34.4	1,467.1	41.0	2,232.8	41.3
Regional Network	4,073.3	54.4	1,308.8	36.0	2,341.7	43.3
Total	7,488.3	100.0%	3,651.2	100.0%	5,409.8	100.0%

\* Year ended March 31, 1990.  
\* As of March 31, 1990.

Passengers Served Daily by 20 Largest Stations

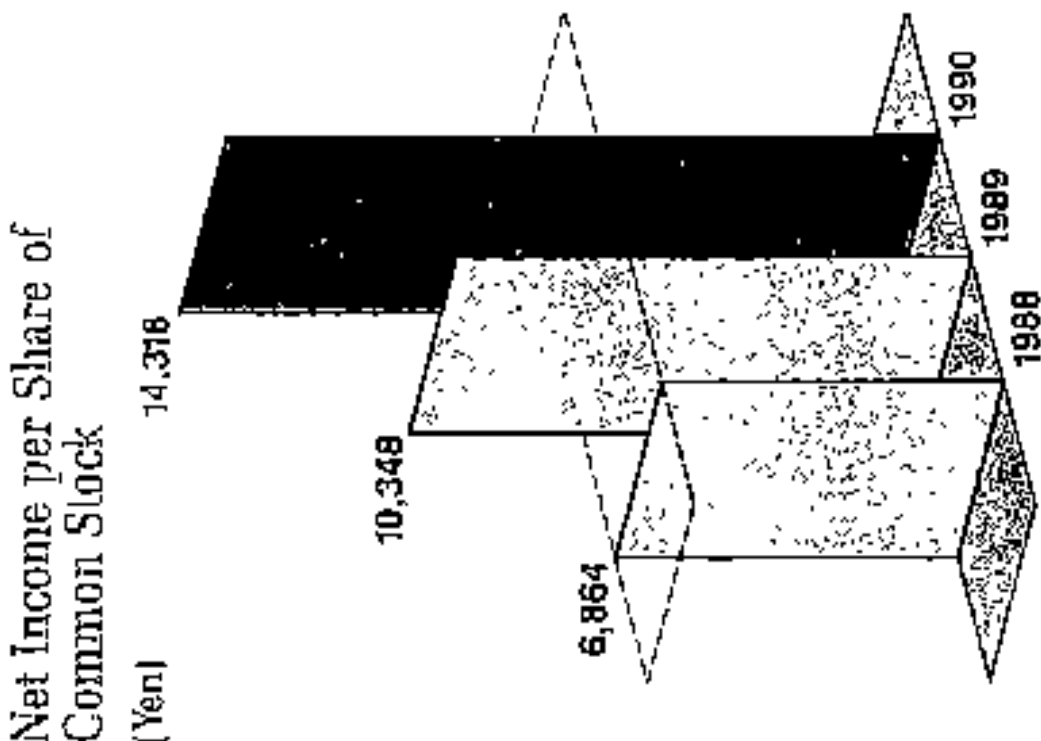
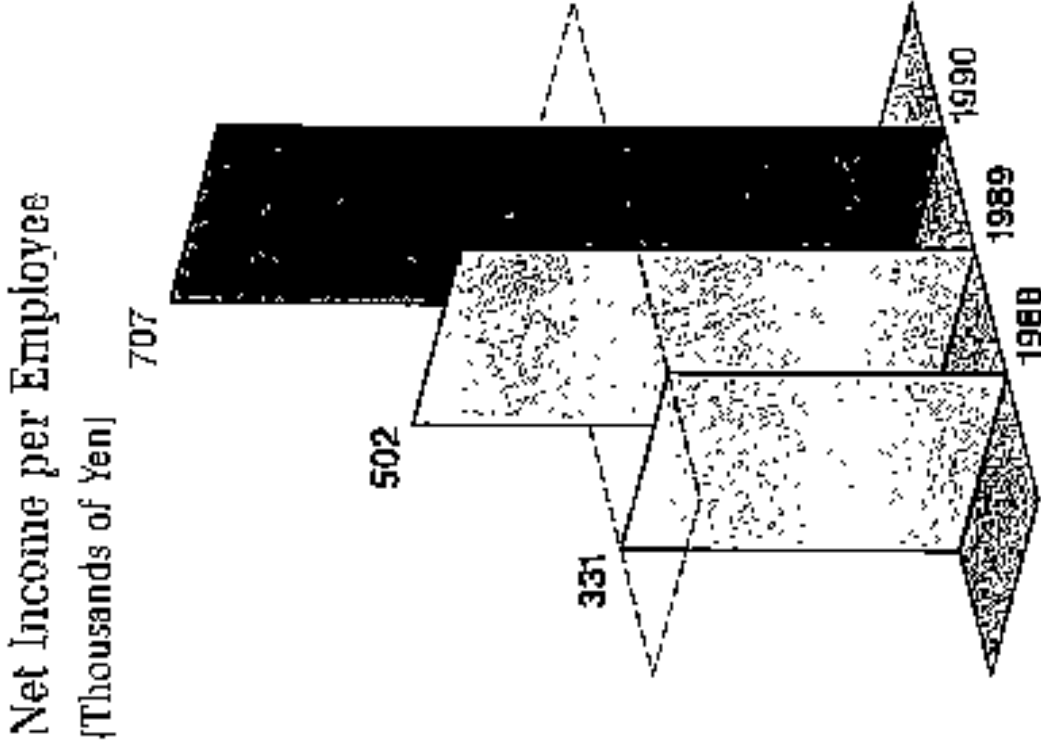
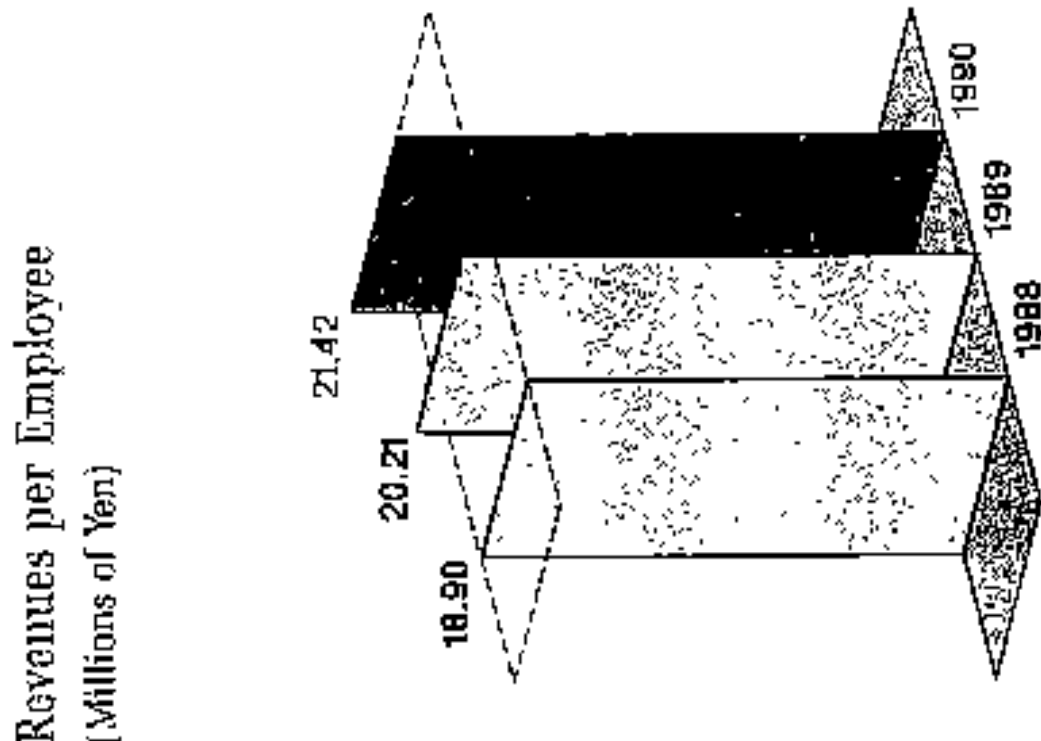
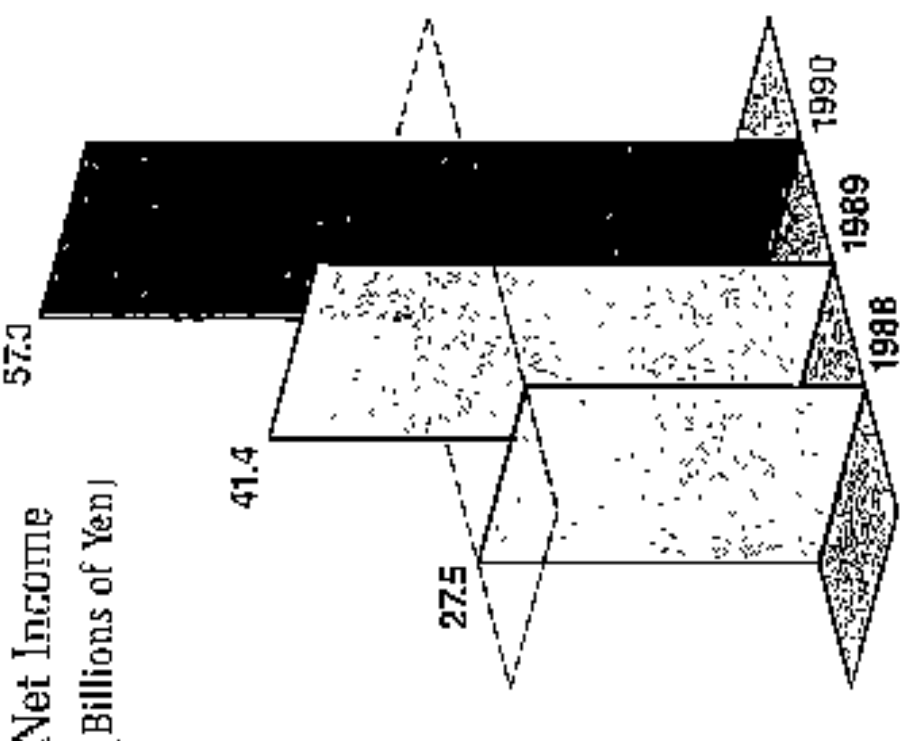
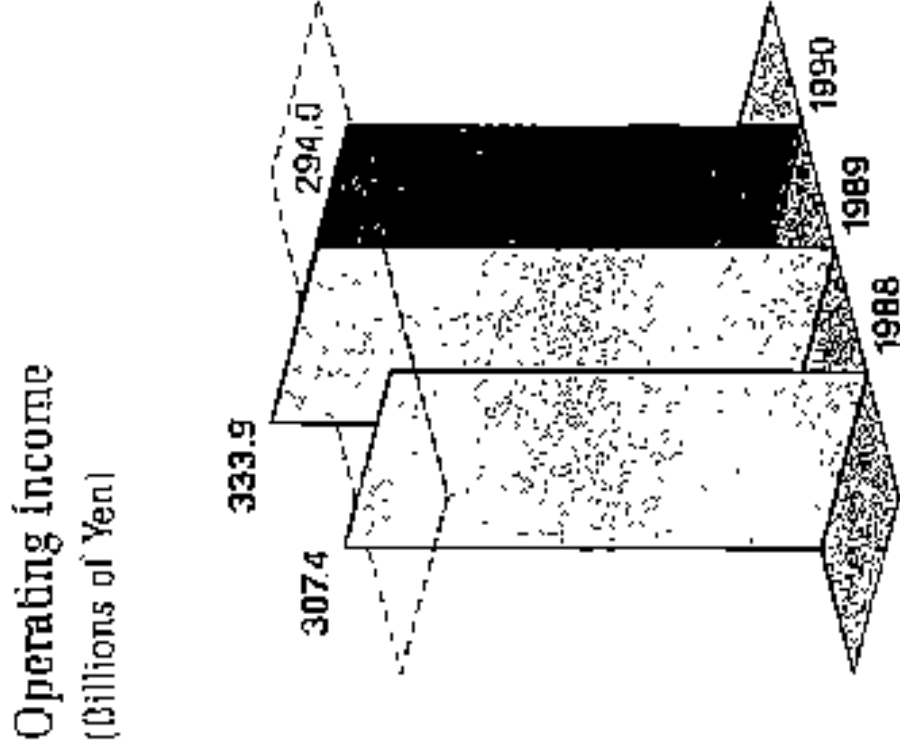
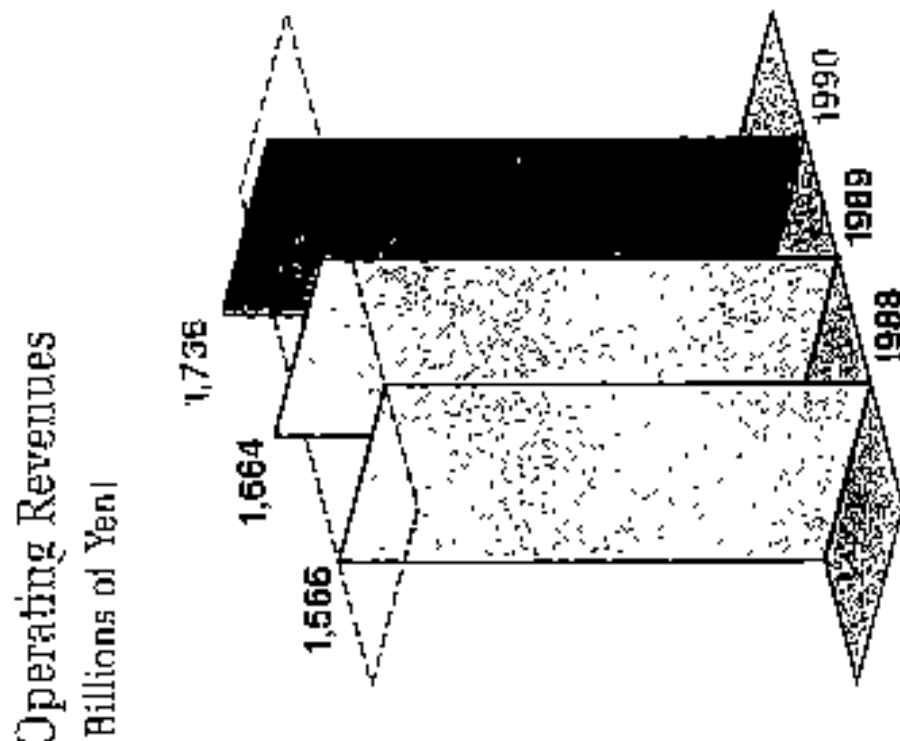
(Year ended March 31, 1990)	(Millions)
Shinjuku	681,207
Yamanote	569,129
Utsunomiya	405,293
Maebashi	367,612
Yokohama	351,159
Shinjuku	228,846
Tokaido	212,169
Utsunomiya	205,087
Shinjuku	196,432
Maebashi	194,804

Ten Largest Hydroelectric Power Plants in Japan

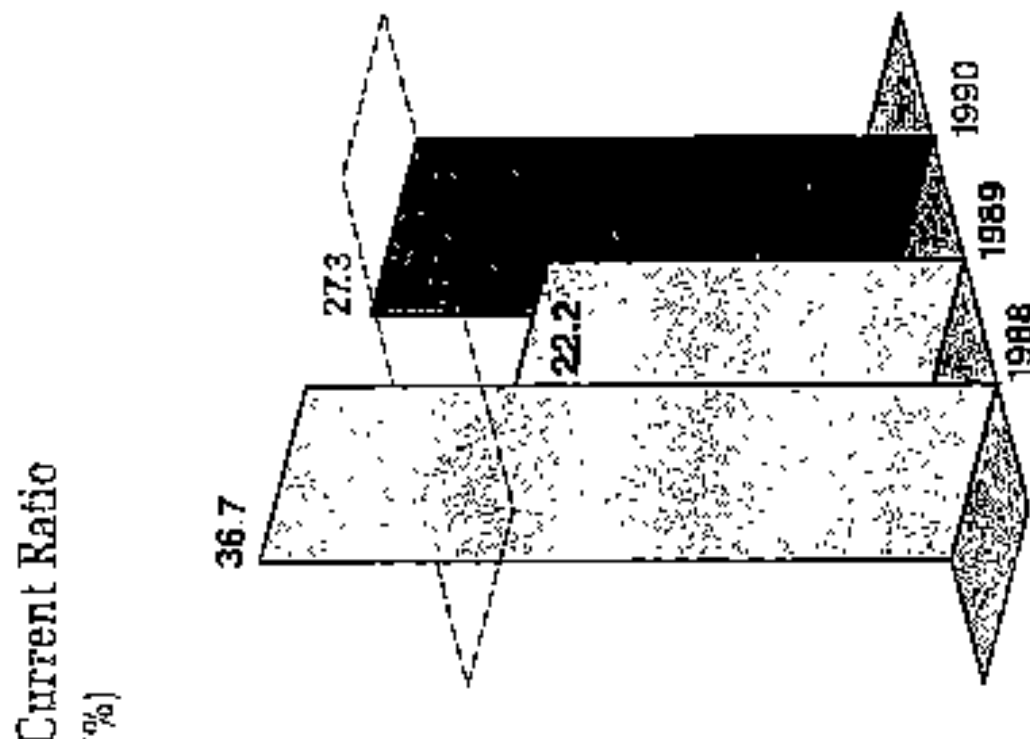
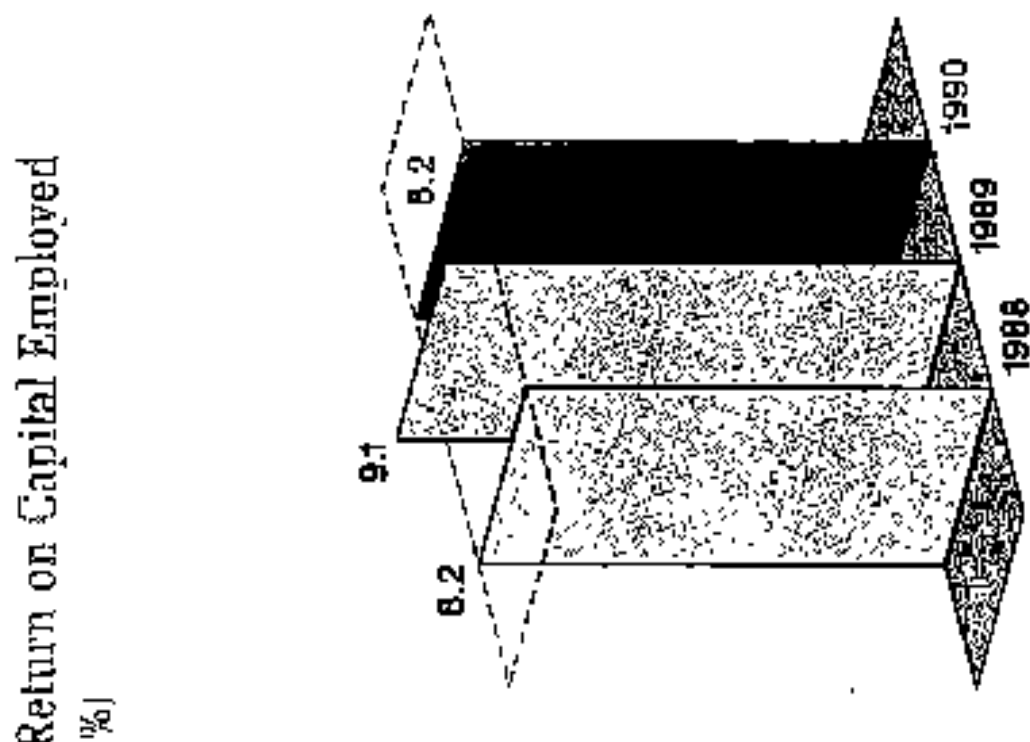
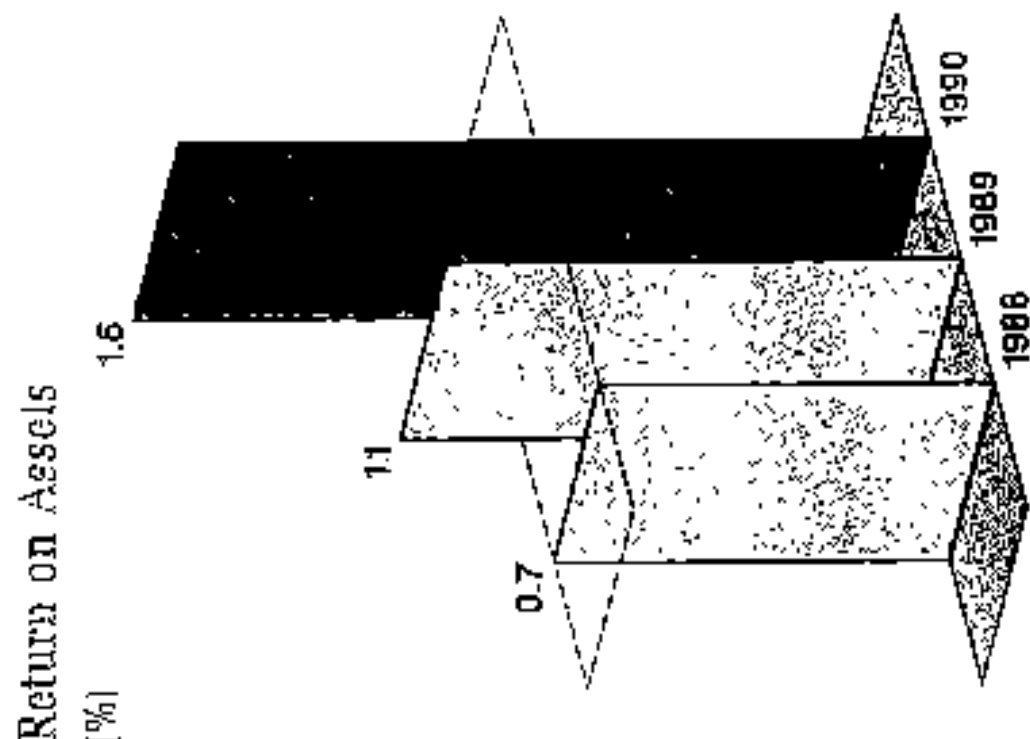
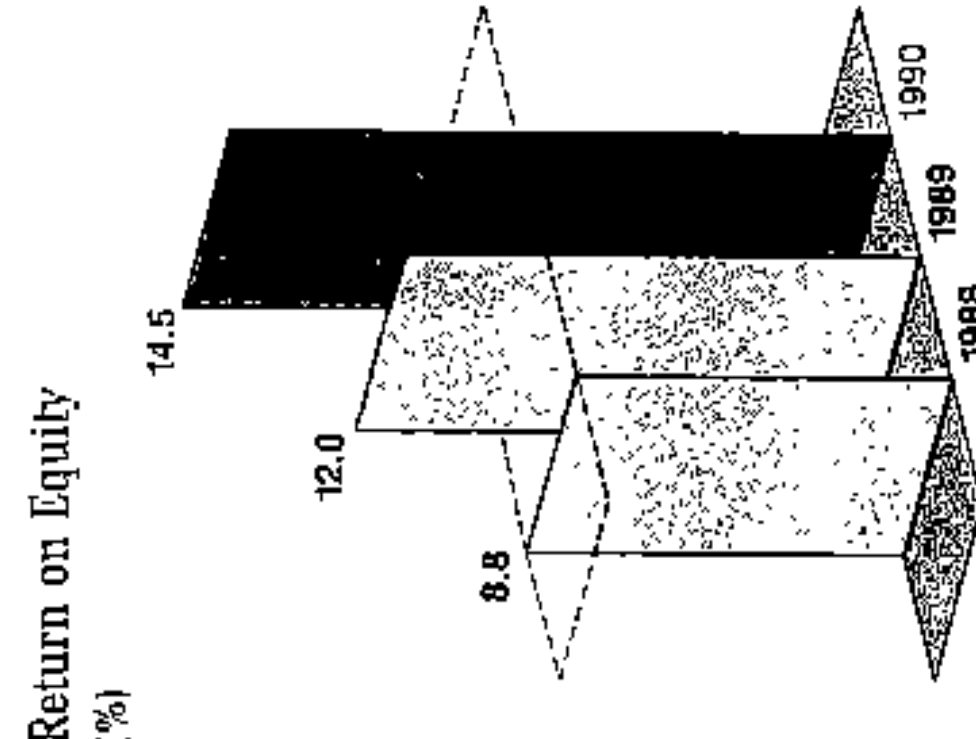
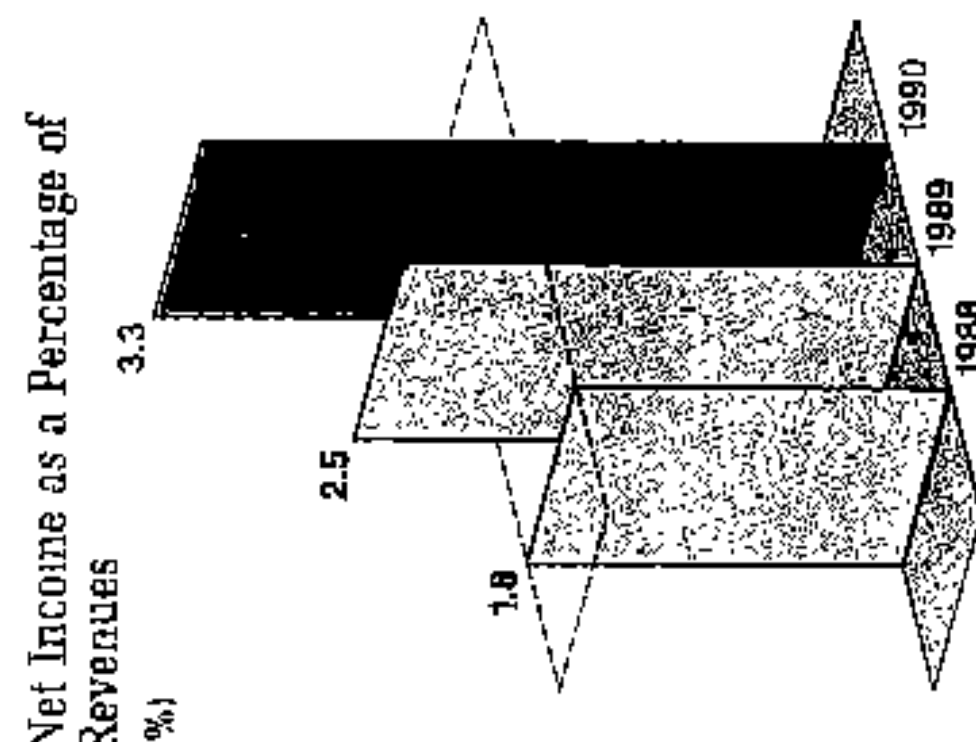
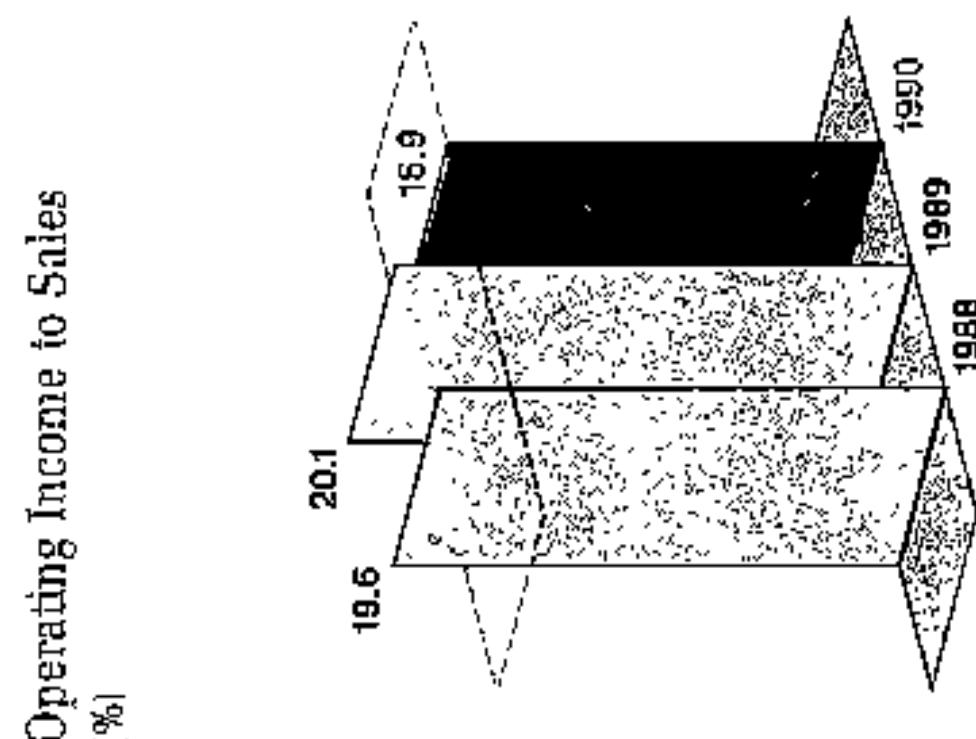
(Year ended March 31, 1990)	(Million kWh)
Sakuma	1,773
Shinagawa	1,344
Kurobe-Dam	991
Senu	810
Oya	742
Yonikani	707
Ozawa	645
Miboc	616
Okusadami	583
Ksc	573

□ Electric Power Development Co., Ltd.  
■ The Tokyo Electric Power Co., Inc.  
□ The Kansai Electric Power Co., Inc.  
■ JR East

Financial Performance



Profitability/Liquidity



	Billions of Yen (except as otherwise noted)		
	1990	1989	1988
Operating revenues	¥ 1,736	¥ 1,664	¥1,566
Operating income	294.0	333.9	307.4
Net income	57.3	41.4	27.5
Revenues per employee (Millions of Yen)	21.42	20.21	18.90
Operating income per employee (Millions of Yen)	3.63	4.06	3.71
Net income per employee (Thousands of Yen)	707	502	331
Net income per share of common stock (Yen)	14,318	10,348	6,864

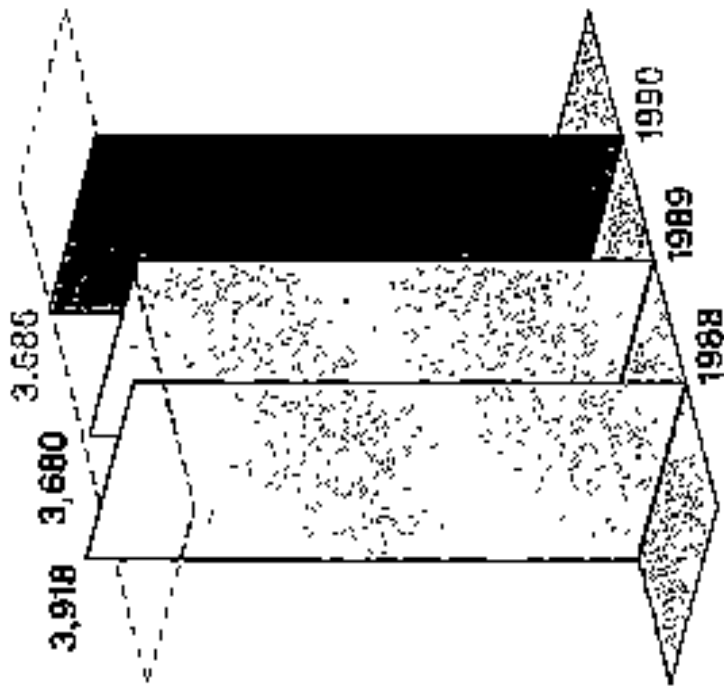
Note: Per employee figures are based on the average number of employees.

	Percent		
	1990	1989	1988
<b>Profitability ratios:</b>			
Operating income to sales (operating income to operating revenues)	18.9%	20.1%	19.6%
Net income as a percentage of revenues (net income to operating revenues)	3.3	2.5	1.8
Return on equity (net income to average shareholder's equity)	14.5	12.0	8.8
Return on assets (net income to average total assets)	1.6	1.1	0.7
Return on capital employed (operating income + interest and dividend income to average total assets)	8.2	9.1	8.2
<b>Liquidity ratios:</b>			
Current ratio (current assets to current liabilities)	27.3%	22.2%	36.7%
Cash flow liquidity ratio (cash and cash equivalents + net cash provided by operating activities to current liabilities)	73.3	65.2	94.1

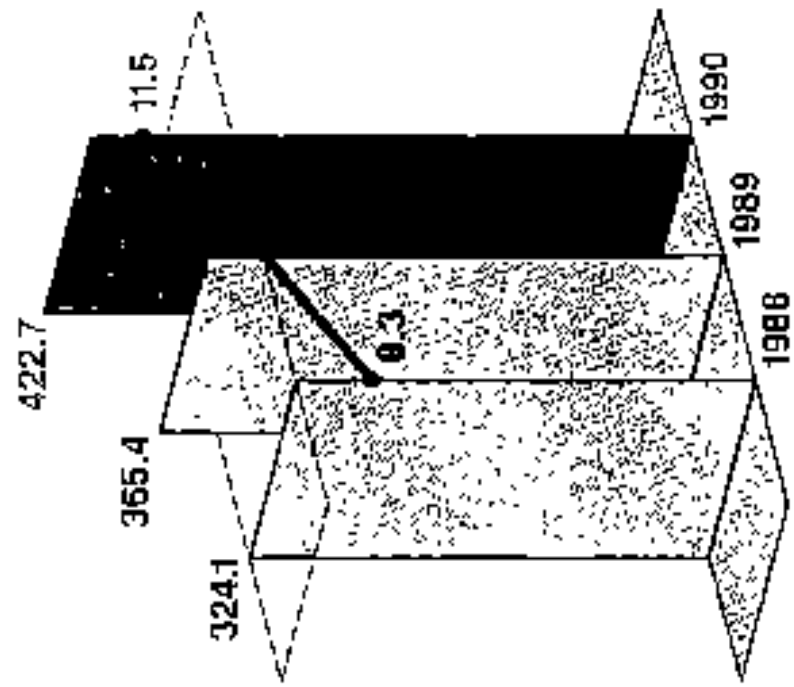


## Debt/Equity

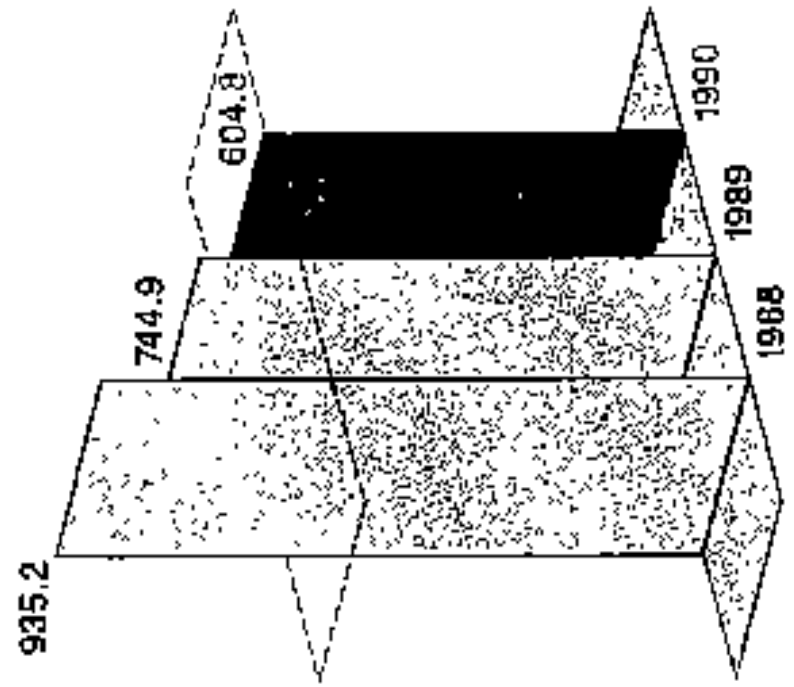
Total Assets  
(Billions of Yen)



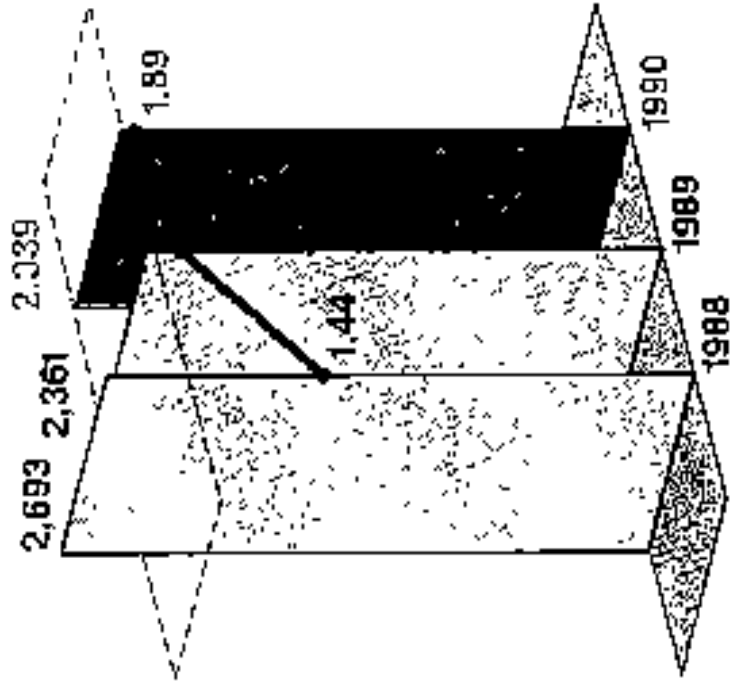
Shareholder's Equity (Billions of Yen)  
Equity Ratio (%)



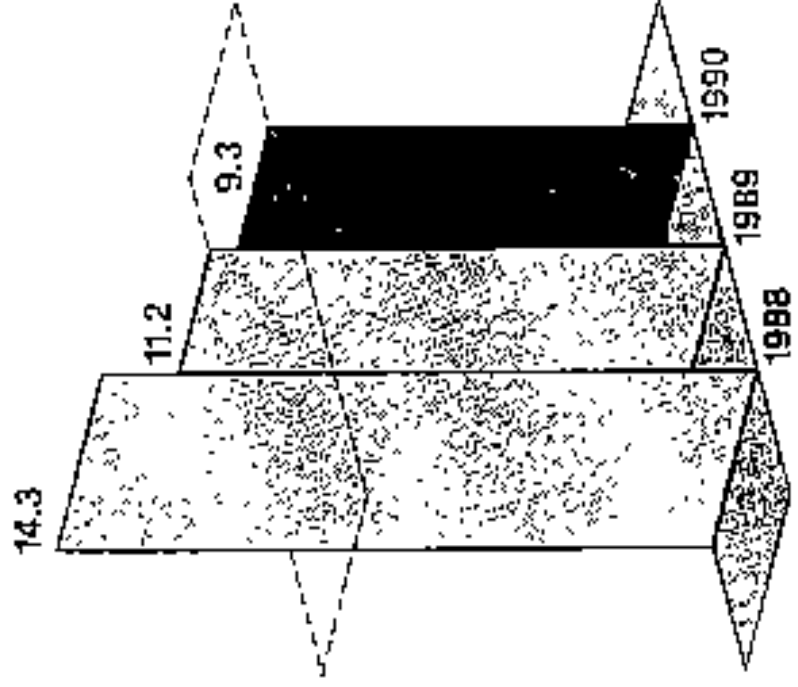
Debt-to-Equity Ratio  
(%)



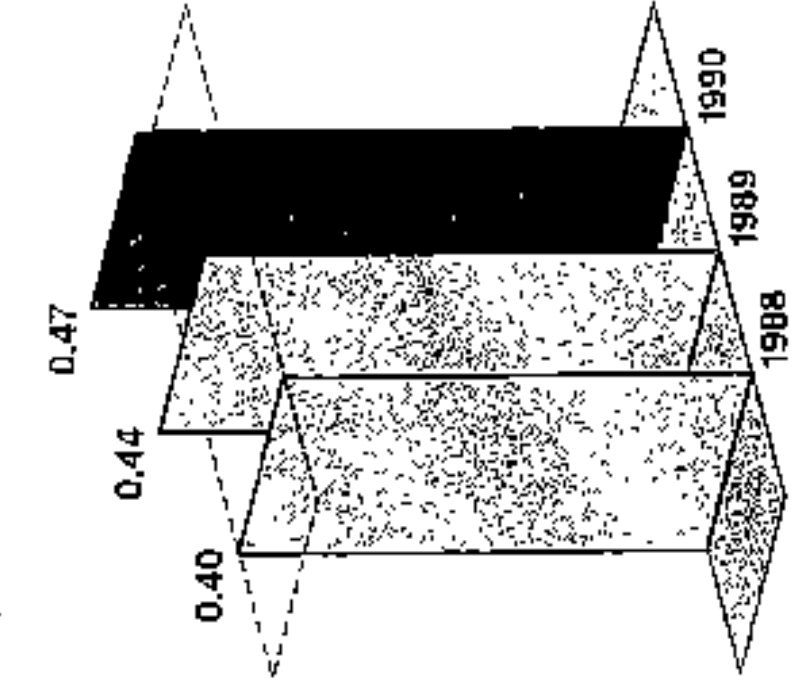
Long-Term Debt (Billions of Yen)  
Interest Coverage Ratio (Times)



Interest Expense to Sales  
(%)



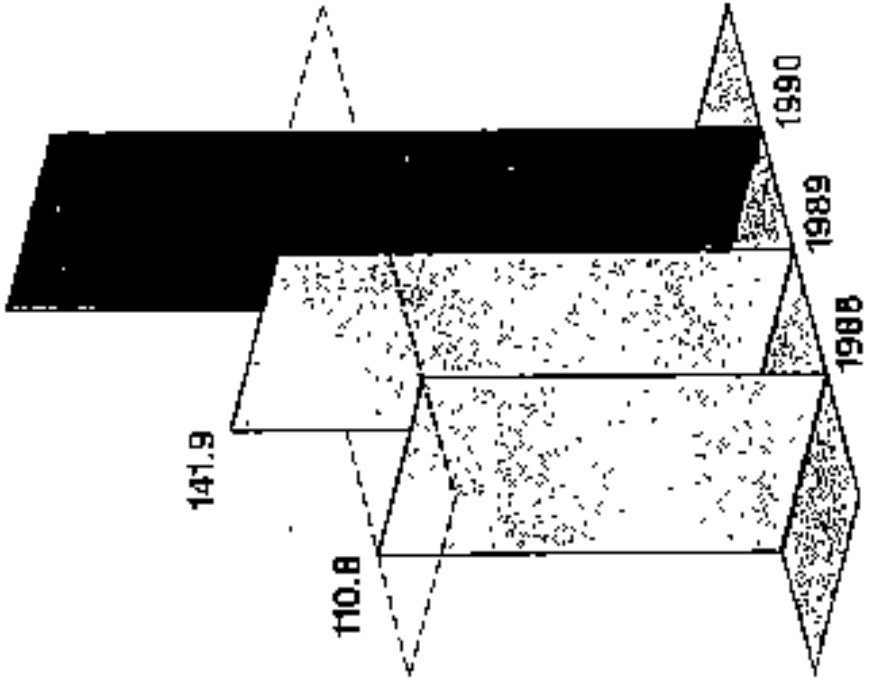
Assets Turnover Ratio  
(Times)



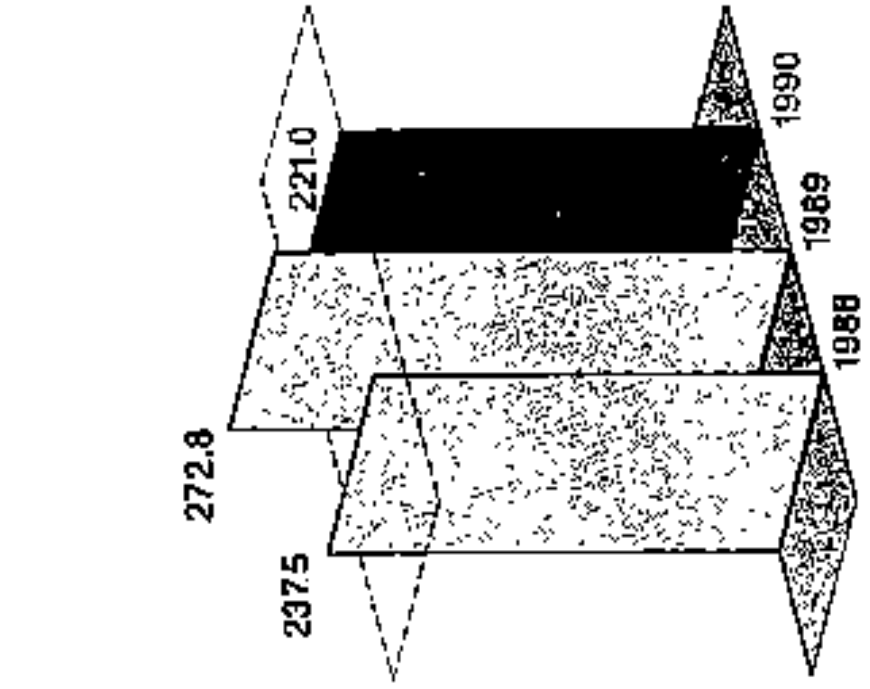
	1990	1989	1988
Total assets (Billions of Yen)	Y 3,686	Y 3,680	Y 3,918
Shareholder's equity (Billions of Yen)	Y 4,227	Y 3,654	Y 3,241
Equity ratio (shareholder's equity to total assets)	11.5%	9.9%	8.3%
Debt-to-equity ratio (short-term bank loans + current portion of long-term debt + long-term debt to shareholder's equity)	504.8%	744.9%	935.2%
Long-term debt (Billions of Yen)	Y 2,339	Y 2,361	Y 2,693
Interest coverage ratio (operating income + interest and dividend income to interest expense) (Times)	1.89	1.86	1.44
Interest expense to sales (interest expense to operating revenues)	9.3%	11.2%	14.3%
Assets turnover ratio (operating revenues to average total assets) (Times)	0.47	0.44	0.40
Net assets per share of common stock (Yen)	Y105,690	Y91,362	Y81,014
Long-term debt as a percentage of capitalization (long-term debt to long-term debt + shareholder's equity)	84.7%	86.6%	89.3%

## Capital Expenditures/Cash Flow

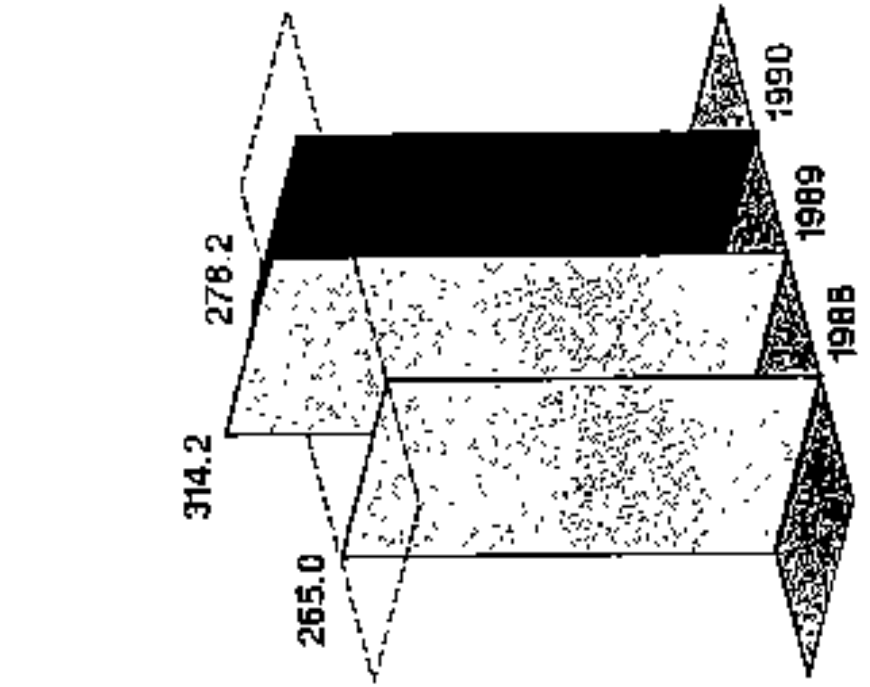
Capital Expenditures  
(Billions of Yen)



Depreciation  
(Billions of Yen)



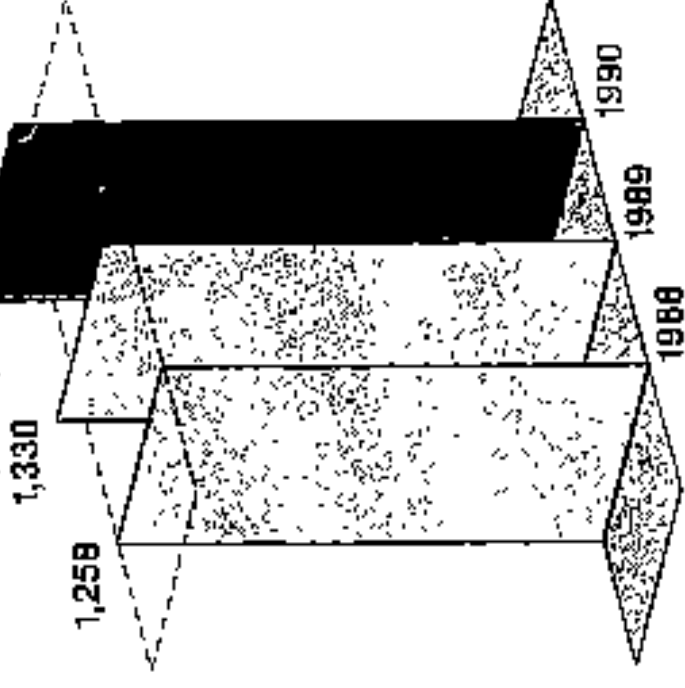
Net Cash Flow  
(Billions of Yen)



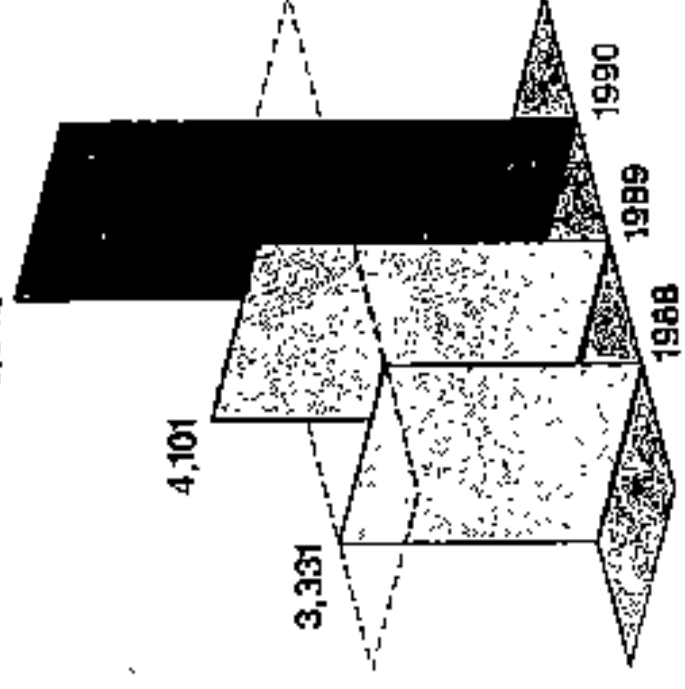
	1990	1989	1988
Capital expenditures	Y194.5	Y141.9	Y110.8
Depreciation	221.0	272.8	237.5
Net cash flow (net income + depreciation)	278.2	314.2	265.0

## Activity

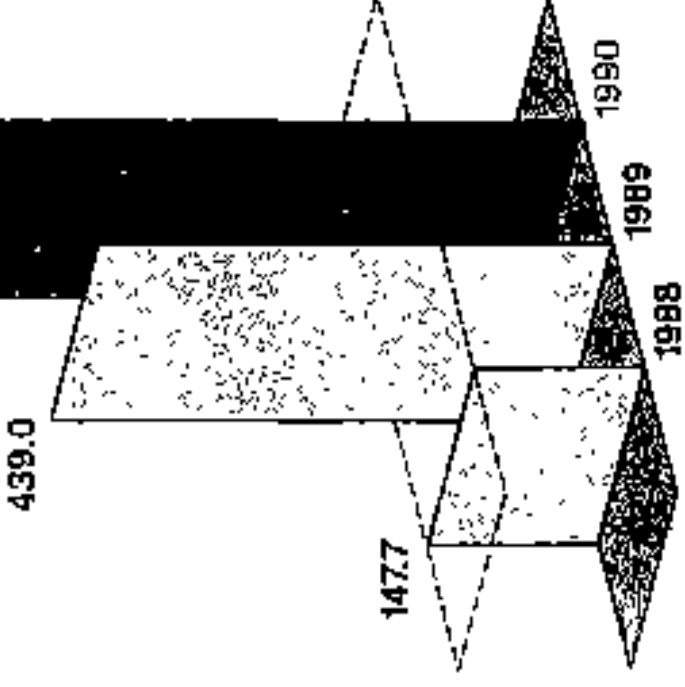
Operating Expenses  
(Billions of Yen)



R&D Expenses  
(Millions of Yen)



External Financing  
(Billions of Yen)



	1990	1989	1988
Operating expenses (Billions of Yen)	Y 1,441	Y 1,330	Y 1,258
R&D expenses	6,642	4,101	3,331
External financing	557,448	438,999	147,735
Bonds	96,448	97,099	105,735
Long-term loans	461,000	341,900	42,000
Equity index (shareholder's equity to common stock) (Times)	2.11	1.83	1.62
Fixed assets ratio (fixed assets to shareholder's equity)	828.4%	962.9%	1,130.1%
Fixed assets to long-term net worth (fixed assets to shareholder's equity + long-term debt)	126.8%	129.1%	121.4%
Working capital (current assets - current liabilities) (Billions of Yen)	Y (492.3)	Y (566.2)	Y (440.2)

- Increase of passenger-kilometers

The maximum passenger traffic in the JNR era was recorded in fiscal 1974 (215.6 billion passenger-km). Then it continued to decrease, in spite of the completion of the Tohoku Shinkansen and Joetsu Shinkansen. Although it recovered a little thereafter, it only reached 92 % (198.3 billion passenger-km) in fiscal 1986, the last year of the JNR era.

In contrast, JR East recorded 104.5 billion passenger-km in fiscal 1987, the first year of its inauguration, and this figure was 6 % higher than that of fiscal 1974 (98.7 billion passenger-km in what is now JR East's area) when the nationwide maximum record was set. In fiscal 1988, it further increased by 5 % and showed a result of 110.0 billion passenger-km. The transport results have thus been showing a favorable trend since the inauguration.

- Increase of productivity

Although train-km and passenger-km have increased, the number of employees to handle this traffic has not been increased. Therefore it is natural that productivity has been improved.

- Decrease of debt

As a result, debt of JR East decreased by 268.2 billion yen in 1987 and by 357.9 billion yen in 1988. The debts to the Shinkansen Holding Corporation and Japan Railway Construction Public Corporation have also been reduced slightly.

**Factory supporting these favorable results**

. Changed employee attitudes

JNR privatization and division was a shocking event to its employees, like the defeat in World War II. Actually their "good old government will always foot the bill" attitude of the JNR era was eradicated. On the contrary, their spirits are aglow with enthusiasm to bring up their company to excellence one by their own hands and on their free will.

As a result, the company employees are positively engaged in their sales promotion activities and making efforts to reduce costs. Now, the employees' small group activities (voluntary activities to improve business operation, including activities at work-sites and development of their ability), use of the suggestion system for improvements and opinion presentation activities are active.

#### . Front-line first principle

Railway businesses are based on work-site operations, and therefore they should be run on the Front-line first principle. However, during the NR era, they were operated under central control and the employees at work-site were working passively in obedience to headquarters' instructions.

After inauguration of the new companies, however, operations have been performed on the front-line first principle with power widely transferred to the work-sites, and together with the employees' attitude change, work-sites have come to play an active part. Train schedules have been revised to better meet users' convenience, and activities such as concerts and a permanent station art gallery, operation of "event trains" and other programs have been planned and implemented to attract more passengers.

#### . Stabilization of labor-management relations

In the JNR era, there were pointless arguments between labor and management in full view of the public, while at the same time unfair deals were being made behind the curtain, and in short, these relations were fruitless.

After the inauguration of the new companies, both labor and management have been anxious to make the new company sound and excellent, and have come to entertain a common recognition that this would bring about employees' happiness. Therefore, a labor-management joint declaration was concluded between the companies and labor unions. And agreements have been made to cooperate to make the companies excellent.

These stabilized labor-management relations have been a major factor to support the favorable results. Today's positive achievements would not have possibly been attained under the relations of the JNR era.

#### . Favorable environment

Japan's GNP continued on an upward curve when the new companies were inaugurated, and formed a favorable environment for business.

This favorable trend has brought increases in both business travel and tourism.

On the other hand, concentration of population toward Tokyo continues and the number of commuting passengers has increased. As a result of soaring land prices in the Tokyo district, residential areas have been spreading and commuting distances have been growing longer, increasing the passenger-kilometers.



## . Passenger's return to railways

In the JNR era, many passengers left railways in a parting-from-JNR phenomenon which was caused by repeated fare increases almost every year since 1974, strikes by labor unions and an unkind attitude of front-line personnel toward passengers. As a result, JNR passenger-kilometers in 1986, the preceding year of the privatization and division, were 92 % of the 1974 level, as previously stated. By comparing this with long-established private railways, whose passenger-km had increased to 126 % of 1974 level, it can be understood how great was the effect of this parting-from-JNR phenomenon.

It is considered that passengers who had parted from JNR, have been coming back to railways after the inauguration of the companies because of an image-change of the new companies. This is because company employees have been highly motivated, passenger services have been improved, train schedules have been revised to better meet passengers' convenience, station facilities have been beautified, comfortable train coaches have been introduced and train fares have been left as they were.

### 2.2.4. Tasks for the Future

In order for the JNR privatization and division to be called as a success, each of the companies should build strength within the company that will enable paying a stabilized dividend continuously.

To achieve this task, business operation should be developed by putting emphasis on the following three points.

#### Realization of a Railway Transport System with High Productivity

In order to build up the strength of the company without recourse to a fare increase, the ratio of personnel cost to revenue should be reduced to the minimum possible.

In 1986, immediately before the privatization and division, this ratio was 63 %. After inauguration of the new companies in 1987, the ratio was 28 % and in 1988 the ratio was 26 % (JR EAST).

By building up a railway transport system with high productivity, under 25 % is the present target, and to lower it to 20 % will be the target for the future.

During the JNR era, the streamlining efforts had been hampered by labor union's opposition movements. After the inauguration of the new company, efforts have been made to improve its productivity, but there is still room for further improvements. The present 68,000 employees engaged in railway business can be further reduced by adoption of computers, high technology and other developments.

#### **More Efficient Use of Company Property**

Properties taken over from JNR at the inauguration of the new companies were limited to those for the purpose of railway business. Therefore in order for the new company to acquire a stabilized revenue from the use of its own property, there is no other way but to make higher and more efficient use of land used for railway business.

Through highly efficient use of station areas and rights-of-way, efficient use of under-viaduct spaces and redistribution of railway lands (such as electric train depots) taking into consideration the soaring land prices, the possibility for stabilized revenue will be enhanced. It will take more time to develop concrete plans, but the companies are putting emphasis on these possibilities.

#### **Development of Subsidiary Businesses**

Many people and much information come into stations. Consequently various types of businesses can be developed centering around stations, and efficient use of station areas can be achieved, as stated in the Section above.

Through the development of subsidiary businesses, the company can earn an income. Surplus employees can be absorbed into these businesses and the burden of personnel expenses of those surplus employees can be lightened.

Railway business is an essential means of transportation, not only as transport facilities for the nation's daily life, but also as the basis for the development of the national economy. Further, as alternative mass transport facilities do not appear likely to come in to take the place of railways even in the distant future, the role of such railways will last forever. For all that, the railway business is not the kind of rosy business that can go on to expand.

In contrast to this, subsidiary business is a hopeful and rosy field. In this context, the companies are expected to grow into a comprehensive business, in the 21st century. At present, the proportions of railway business and subsidiary business are 3 and 1, including affiliated companies.

The present target is set at a 1 to 1 ratio, and in the 21st century this is expected to be 1 to 2 or 1 to 3, like those of the long-established private railways. (There is even an example of 1 to 12" among them).

#### 2.2.5. Provisional Conclusion

Supposing that JNR privatization and division in Japan is a success, it cannot be easily concluded whether or not this is applicable to every one of the National railways. The reasons are:

- . Japanese geographical conditions fit the railway business well
- The railway is a high-speed mass transport system and in order for this business to be viable as a profitable business, generation of a large volume passenger transport demand is necessary
- Japan's inhabitable land areas are limited by its geographic conditions, and the inhabitants are centered in and around large cities. As a result, densely populated districts have formed and a large volume of passenger transport demand is generated.
- JR East, for example, produced transport results of 110 billion passenger-km on its 7,600 km of routes in 1988. This figure exceeds the combined total of 101.3 billion passenger-km for DB, the German Federal Railways (41.4 billion passenger-km for DB, the German Federal Railways (41.4 billion passenger-km on 21,000 route km). In this connection, the traffic density of JR East is six times higher than that of the combined DB and SNCF.
- . In order to make railway financial conditions stable in the future, subsidiary businesses should be widely developed.

In the course of examining whether to privatize a national railway, it is indispensable to study whether the railway can develop subsidiary businesses.



#### 2.2.6. Further Reforms

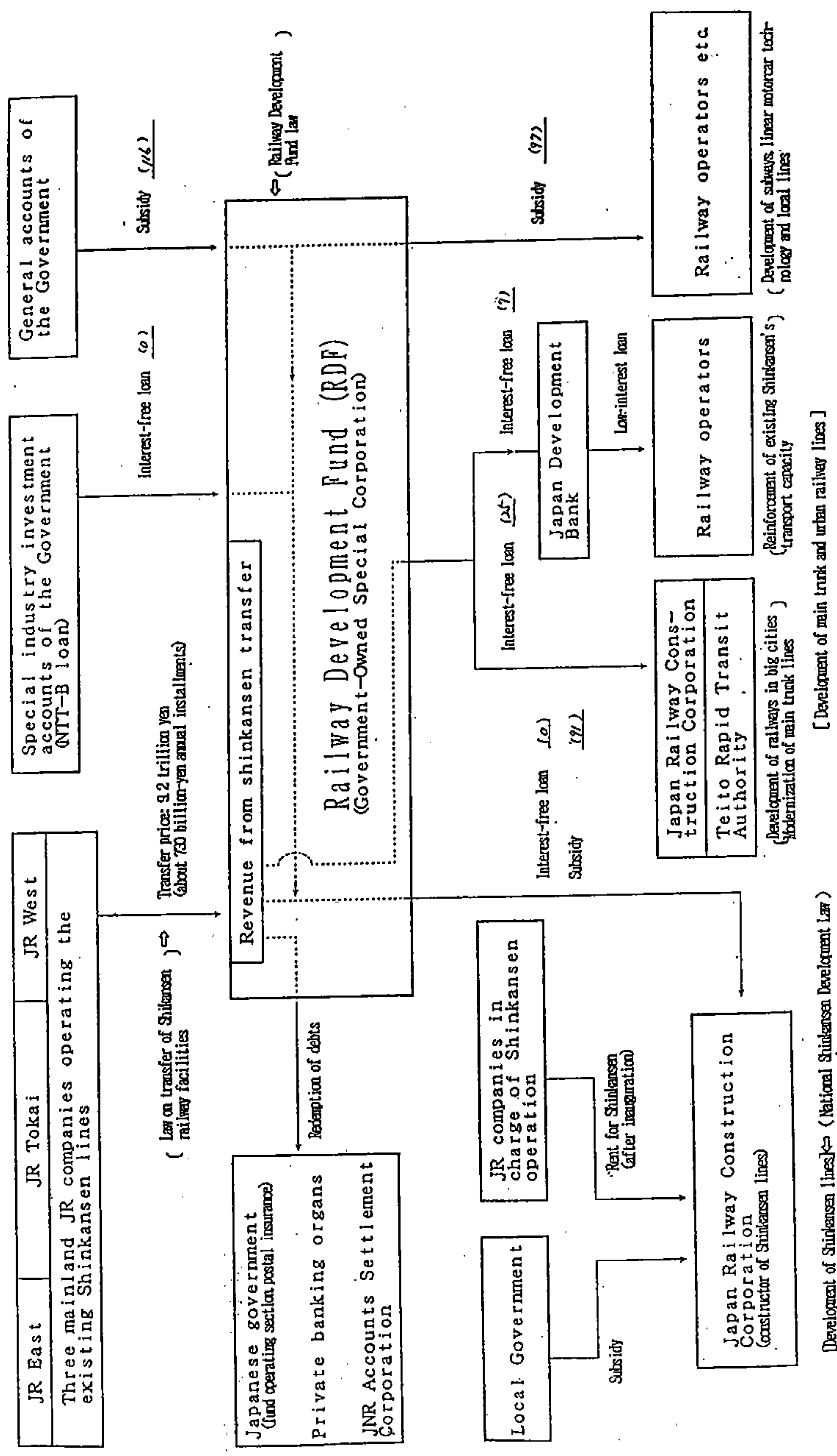
On October 1, 1991, the RAILWAY DEVELOPMENT FUND (RDF) has been established. It is a government owned special corporation created for the purpose of providing comprehensive and efficient financial assistance to railway business. To this end, RDF provides financial aid for the development of those Shinkansen, main trunk and urban lines whose construction is urgently required for a balanced development of the whole country and furthering of urban functions of metropolitan area. In addition, RDF provides subsidies for improvement of railway facilities, in terms of safety and amenities, and for measures taken to make railway operations more efficient or to bring healthy development of the railway business.

RDF utilizes part of the revenue from the transfer of the existing Shinkansen facilities to provide subsidies for new Shinkansen construction and interest-free loans for construction and large scale improvement of main trunk and urban lines. RDF also receives subsidies from the government and uses them to provide financial assistance to railway operators.

In addition to these financial aid operations, RDF redeems long-term debts inherited from the Japan National Railways with the revenue from the transfer of existing Shinkansen lines.

Table 2-6 and Table 2-7 give detail about the activity of this organism.

Railway Development Fund Business Scheme



[Development of Shinkansen lines] (National Shinkansen Development Law)

Table 2-7 : Outline of Japanese Railway Subsidy System ( FY 1991 )

( ¥ 100million )

Name of the System	Outlines of Subsidies	Contents of Subsidies	Budget for FY 1991
I. Improvement of trunk line railways			
1. Measures for Shinkansen-network improvement projects			
(1) Shinkansen-railway-network improvement project			
○ Loans for Shinkansen-railway-network improvement project	Interest-free loans for Shinkansen construction works undertaken by Japan Railway Construction Public Corporation (JRCC)	Interest-free loans as part of the cost to be borne by the Government ( about 35% ) utilizing the funds raised by NTT stock sale	Public works expenses of the Government ( NTT-B ) 128
○ Grants-in-aid of Shinkansen construction promotion project	Grants-in-aid of Shinkansen construction expenses undertaken by JRCC  [Reference] Takasaki ~ Nagano ( Standard size ) Morioka ~ Aomori ( Standard size. Mini-Shinkansen ) Yatsushiro ~ Nishi-Kagoshima ( Super-Express ) Takaoka ~ Kanazawa . . . Works starting adjustment cost 20	Grants from Railway Development Fund (RDF) as part of the cost to be borne by the Government ( about 35% ) and by JR ( about 50% ) The source of the grants is part of the existing-Shinkansen-transfer revenue	Grants from RDF 354
(2) Subsidies for Shinkansen-network-improvement-promotion-preparation project	Subsidies for Shinkansen-network-improvement-promotion-preparation project, such as environmental impact assessment on the sections of Shinkansen construction works to be started by JRCC	• Ratio of subsidies: 10/10 of the expenses of Shinkansen-network-improvement-promotion-preparation project	General source of revenue of the Government 20



Name of the System	Outlines of Subsidies	Contents of Subsidies	Budget for FY 1991
<p>2. Measures for the main-trunk-line-railway-network improvement</p> <p>(1) Subsidies for trunk-line-railway-activation project</p> <p>(2) Interest-free loans for trunk-line-railway-network improvement</p> <p>(3) Subsidies for the construction of local development lines and local trunk lines</p>	<p>Subsidies for Shinkansen-through-operation works between Fukushima and Yamagata on Ou Line, and for higher standardized works between Muikamachi and Saigata on Hokuetsu-Hokusen Line</p> <p>• Interest-free loans from RDF for higher standardization, Shinkansen-through-operation, and freight transport capacity improvement works on main trunk line railways</p> <p>• Deposit of necessary amount from RDF to The Japan Development Bank (JDB) which provides low-interest loans for the expenses of transport capacity improvement works of Tokaido Shinkansen</p> <p>Subsidies for JRCC construction expenses of local development lines and local trunk lines ( AB lines ), and JRCC new line survey expenses</p>	<p>• Ratio of subsidies: 1/5 of the cost of works to be subsidized</p> <p>* Local governments invest money proportional to the expenses borne by the central government</p> <p>( ratio of loans )</p> <p>• Higher standardization and Shinkansen through operations 50%</p> <p>* Local governments contribute in proportion to the central government</p> <p>• Main trunk line freight transport capacity improvement 30%</p> <p>• Transport capacity improvement of Tokaido Shinkansen 50%</p> <p>RDF deposits interest-free fund in JDB in order for lend at the special interest rate for public works</p> <p>• AB lines ( 6 lines )</p> <p>Ratio of subsidies: 10/10 of the construction expenses</p> <p>• New line surveys ( topographical and geological surveys of Chuo Shinkansen and Shikoku Shinkansen )</p> <p>Ratio of subsidies: 10/10 of the survey expenses</p>	<p>General source of revenue of the Government 22</p> <p>Loan from RDF 35</p> <p>General source of revenue of the Government 150</p> <p>General source of revenue of the Government 4</p>

Name of the System	Outlines of Subsidies	Contents of Subsidies	Budget for FY 1991
II. Improvement of urban railway network			
1. Subsidies for underground railway construction	Subsidies for new line constructions and large-scale improvement works of underground railways undertaken by the local government or Teito Rapid Transit Authority (TRTA)	<ul style="list-style-type: none"> <li>• Ratio of subsidies: 70% of the expenses of construction works to be subsidized (1/2 by the central government, 1/2 by local governments)</li> <li>• Time to begin granting subsidies: For the construction up to FY 1989 ... Following FY of the constructions For the construction from FY 1990 onward ... The FY of the construction</li> <li>• Ratio of grants: For the construction up to FY 1989 ( 10-year installment ) ... 6, 5, 4, 3, 3, 3, 3, 2 (%) For the construction from FY 1990 onward ( 10-year installment ) ... 1, 2, 3, 4, 5, 4, 4, 3 (%) For newly adopted lines in FY 1991 ( 5-year installment ) ... 7, 7, 7, 7, 7 (%)</li> </ul>	General source of revenue of the Government 605
2. Subsidies for new-town railway construction	Subsidies for new-town railway constructions undertaken by the local government or semi-public enterprisers	<ul style="list-style-type: none"> <li>• Ratio of subsidies: 95% of the expenses of construction works to be subsidized (1/2 by the central government, 1/2 by local governments)</li> <li>• Time to begin granting subsidies: Following FY of business operation started</li> <li>• Ratio of grants: 6-year installment ... 3, 3, 3, 3, 3 (%)</li> </ul>	General source of revenue of the Government 5

Name of the System	Outlines of Subsidies	Contents of Subsidies	Budget for FY 1991
3. Subsidies for the interest on construction expenses of rental lines and transfer lines	Subsidies for part of interest expenses on the capital required for constructions of JR main trunk lines and large-city urban lines ( CD lines ) lent by JRCC and large-city-zone private railway lines ( P lines ) transferred by JRCC for counter value	<ul style="list-style-type: none"> <li>- Rental lines ( CD lines ) Subsidies for interest expenses for the part of interest over 5.0% on the required capital ( Period of time to provide subsidy ...for 40 years after inauguration )</li> <li>- Transfer lines ( P lines ) Subsidies for interest expenses for the part of interest over 5.0% on the required capital ( 1/2 of subsidies are borne by the central government and local governments respectively ) ( Period of time to provide subsidy ...for 25 years after inauguration, as for new-town railway, for 15 years)</li> </ul>	General source of revenue 177
4. Interest-free loans for urban-railway-network improvement projects	Interest-free loans from RDF to large-scale improvement works such as track doubling of JR commuter lines undertaken by JRCC and to underground railway construction works undertaken by TRTA	<ul style="list-style-type: none"> <li>• Ratio of loan: 40%</li> <li>* Local governments contribute in proportion to the central government</li> </ul>	Loan from RDF 123



Name of the System	Outlines of Subsidies	Contents of Subsidies	Budget for FY 1991
III. Technical development of Linear Motor-car and others			
1. Subsidies for the development of superconductive magnetic levitation railway technology	Subsidies to Railway Technical Research Institute (RTRI) for the basic technical development work utilizing Miyazaki Test Line and the applicational technical development work such as the construction of Yamanashi Test Line, with a view to promoting the technical development to put the superconductive magnetic levitation railway in practical use	<p style="text-align: center;">( Ratio of subsidies )</p> <p>(1) Basic technical development expenses on Miyazaki Test Line and in RTRI 1/2</p> <p>(2) Technical development expenses on Yamanashi Test Line to put the technology to practical use</p> <ul style="list-style-type: none"> <li>• Investment for practical use test: 1/4</li> <li>( Yamanashi Test Line construction expenses )</li> <li>( 7-year installment )</li> <li>• Expenses for practical use test: 1/4</li> <li>( Development of test vehicles for the new test line and others )</li> </ul> <p>(3) Equivalent in value of interest on technical development expenses financed by The Japan Development Bank 1/4</p>	<p style="text-align: center;">General source of revenue of the Government 45</p>
2. Subsidies for other technical development	Subsidies for advanced and basic technical development for railway safety, disaster-prevention and environmental measures undertaken by RTRI	<ul style="list-style-type: none"> <li>• Railway technical development: 1/2</li> <li>( Technical development for comprehensive disaster-prevention system )</li> </ul>	<p style="text-align: center;">General source of revenue of the Government 2</p>

Name of the System	Outlines of Subsidies	Contents of Subsidies	Budget for FY 1991
IV. Measures for safety, disaster prevention and medium/small sized rural private railways			
1. Subsidies for railway disaster prevention project	Subsidies for disaster prevention projects, such as those against falling rocks and snowslides on railway facilities and river improvements, undertaken by JR	( Ratio of subsidies ) • Measures against falling rocks and snowslides: 5.5/10 • River improvements: 5.5/10 • Seashore conservations: 1/3	Public works expenses of the Government 8
2. Subsidies for railway modernization and others			
(1) Subsidies for railway modernization	Subsidies for improvement of facilities which is instrumental in promoting safety and improving transport services and business performances of medium/small sized rural private railways which are under difficult financial circumstances	• Ratio of subsidies: 2/5 of modernization expenses (1/5 by the central government, 1/5 by local governments)	General source of revenue of the Government 7
(2) Subsidies for natural disaster restoration project	Subsidies for disaster restoration works of the railway enterprise which has suffered from large-scale natural disasters and is placed under difficult financial circumstances	• Ratio of subsidies: 1/2 of the restoration expenses (1/4 by the central government, 1/4 by local governments)	General source of revenue of the Government 9
3. Subsidies for level crossing safety facilities improvement	Subsidies for improvement of level crossing safety facilities, for the purpose of preventing accidents on the level crossing, undertaken by the railway enterprise which is under difficult financial circumstances	• Ratio of subsidies: 1/2 or 1/3 by the central government and 1/3 by local governments	General source of revenue of the Government 2

Name of the System	Outlines of Subsidies	Contents of Subsidies	Budget for FY 1991
4. Subsidies for railway improvement			
(1) Subsidies for deficits	Subsidies for the ordinary loss of the railway enterprise whose railway facilities are becoming obsolete owing to the difficulties in maintenance, and the disruption of whose service might cause a serious damage to the lives of the local residents	<p>• Ratio of subsidies: 10/10 of the ordinary loss of the lines to be subsidized (1/2 by the central government, 1/2 by local governments)</p>	General source of revenue of the Government 13
(2) Subsidies for running expenses	Subsidies for part of the ordinary loss of the railway enterprise which runs the railway converted from specific local lines or new local railway lines constructed by JRCC	<p>• Converted railways Ratio of subsidies: 5/10 of the ordinary loss</p> <p>• New local railway lines Ratio of subsidies: 4/10 of the ordinary loss</p> <p>*Period of time to be subsidized ---for 5 years after inauguration</p>	
5. Subsidies for upkeep and repair expenses of the connecting bridge between main island and Shikoku island	Subsidies for upkeep and repair expenses (railway portion) of Onaruto-kyo Bridge, undertaken by Honsyu-Shikoku Connecting Bridge Public Corporation	Subsidies for upkeep and repair expenses and the interest thereon ( railway portion ) Payment of the subsidies is made in the next FY	
			General source of revenue of the Government 0.2



### 2.2.7. Organization and Management

The six passenger companies as well as the freight company have their proper organization and management system. On this topic, we have only information about two of the main passenger companies: East Japan Railway Company and Central Japan Railway Company.

Both managing organization charts are given hereafter.

There are **similarities** between these two organization systems. Among these similarities, the most important is the constitution of a holding group including besides the railway company a lot of subsidiaries specialized in various activity fields. For example, the Central Japan is surrounded by approximately 30 subsidiary companies which contribute to the railway transportation business, making it more fruitful. Some of them are specialized in transportation but do not act as competitors: they insure some complementarity to the services provided to passengers by the core company. Others work in connected fields: travel agencies or tour operators. Others contribute to develop retail and hotel resorts around the station areas. At last some subsidiaries are involved in the infrastructure development since they deal with civil works.

There is also in both organization chart a department dedicated to activity diversification and development:

- . Property Management Department, at the Central Company,
- . Building and Under-viaduct Development Department and Business Development Department, at East Company.

These Japanese companies have put emphasis on a potentiality, up-to-now unexplored or relatively put aside as marginal. Now they are conscious of their enormous tangible resources: land and railway facilities, huge customer base, dominant market share, brand name appeal,...Diversification into new railway-related business is expected to strengthen the operational base and to allow to better meet customers' needs thanks to more sophisticated products and services. Another strategic goal is to become a real estate developer. Towards this end, land near the railway lines is being transformed into resort and housing developments and even into new towns.

Despite these similarities, two big **differences** in the organization charts are worth noticing. East Japan as clearly created two Business Departments, one for management of current activity, and the other for development. In this case there is no distinction between the various categories of services. Central Japan (apart from the Marketing Division put in a functional position at the general management level) gives priority to the technical operation categories.

The marketing departments are on a hierarchic level which is located under the two Operations Divisions, one for conventional lines and the second for Shinkansen lines. In this latter case, Railway technique prevails on railway business.

These differences are in fact very important since they highlight differences in the management philosophy and practice. East Japan put emphasis on the commercial and the financial objectives while Central Japan seems to focus on operations. Maybe reasons for such different viewpoints have to be searched in the network consistency and/or in the historical background of each company.

However, we cannot say that the JNR privatization has lead to seven company organized in compliance with the same structure.

EAST JAPAN





FIGURE 2-10

ORGANIZATION  
CHART

CENTRAL JAPAN

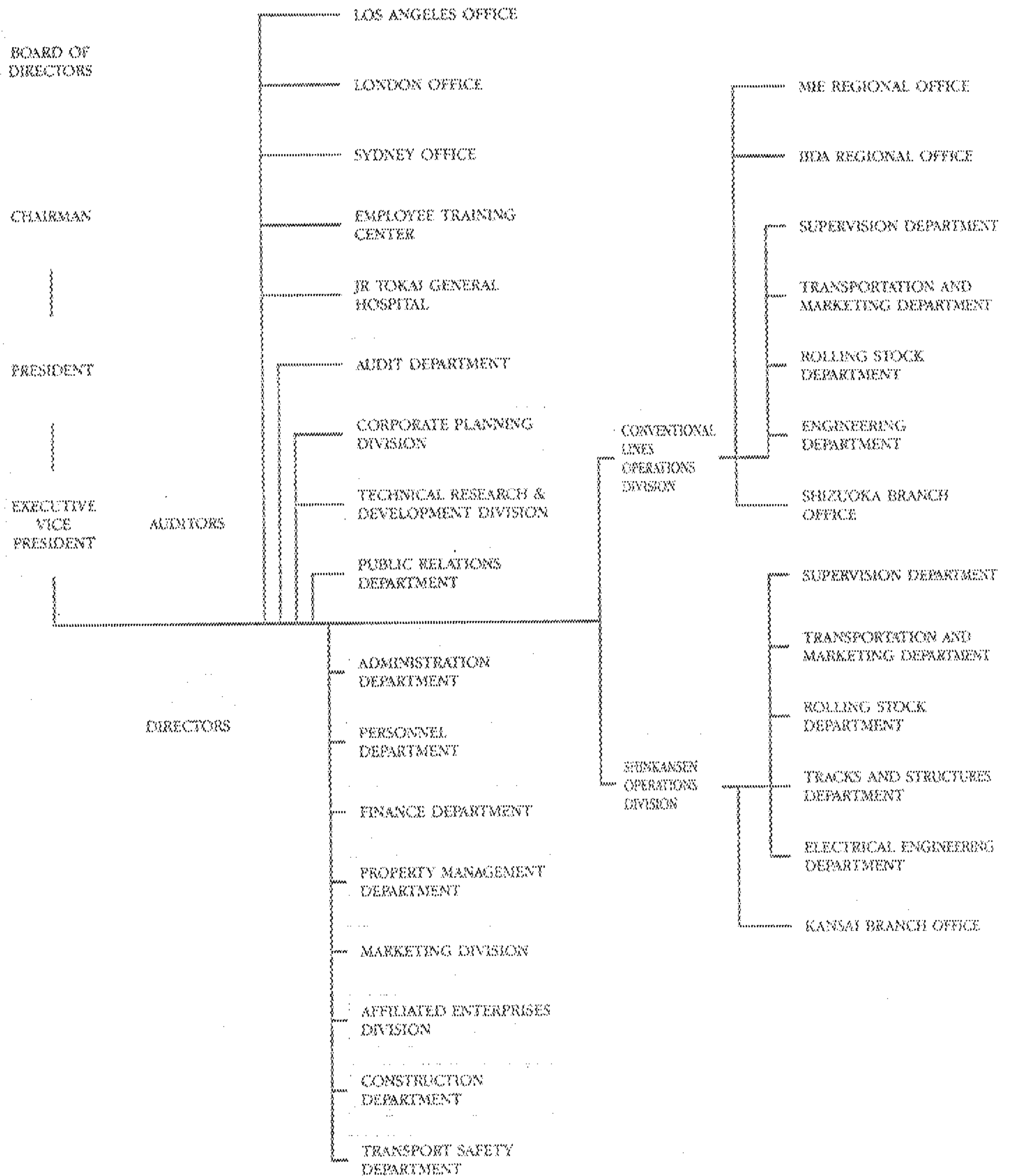


FIGURE 2-11

DOMESTIC  
SUBSIDIARIES

CENTRAL JAPAN RAILWAY COMPANY	TRANSPORTATION	JR Tokai Bus Company Chubu Kotsu Company First Air Transport Co., Ltd.
	3 COMPANIES	
	RAILWAYS	
	TRAVEL BUSINESS	
	RESTAURANTS	
	AND RETAIL SALES	
	SPORTS CLUB	
	RESTAURANTS	JR Tokai Corporation
	AND RETAIL SALES	I-Diner Tokai Co., Ltd.
	5 COMPANIES	Tokai Kiosk Company Passengers Service Co., Ltd. Hikari Shopping Center Corporation
	STATION BUILDING AND SHOPPING CENTER DEVELOPMENT	Ogaki Station Development Co., Ltd. JR Development and Management Corporation of Kansai JR Development and Management Corporation of Shizuoka Shizuoka Terminal Development Company Limited Shin-Yokohama Station Development Co., Ltd. Tsu Station Development Company Toyohashi Station Building Co., Ltd. Nagoya Station Area Development Corporation Nagoya Terminal Station Building Co., Ltd. Nimazu Station Building Co., Ltd. Hamamatsu Terminal Development Co., Ltd.
	11 COMPANIES	
	LEISURE	JR Tokai Tours
	3 COMPANIES	Shizuoka Terminal Hotel Co., Ltd. Nagoya Terminal Hotel Co., Ltd.
	ADVERTISING AND PUBLISHING	JR Tokai Agency Co., Ltd. Wedge Inc.
	2 COMPANIES	
	CONSTRUCTION	JR Tokai Electric Construction Co., Ltd. JR Tokai Construction Co., Ltd. Tokai Rolling Stock & Machinery Co., Ltd.
	3 COMPANIES	
	OTHERS	Chuoh Linen Supply Co., Ltd. Tokai Transport Service Company
	2 COMPANIES	

### 2.2.8 High-Speed Rail in Japan

The 1964 inauguration of the Tokaido Shinkansen line marked a milestone in Japanese rail history. This new line considerably reduced travel time while increasing transport capacity between the two major cities of Tokyo and Osaka. It symbolized a major shift towards advanced rail system.

The popularity of the first line led to the subsequent construction of three more Shinkansen lines, the Tohoku (497 km), Sanyo (554 km) and Joetsu (270 km) lines which together with the Tokaido line (515 km) created a nation-wide high-speed rail network which to date carries a number of passengers unmatched elsewhere in the world. The Japanese National Railways failed to capitalize on this undeniable public success which over twenty years later was to push the Japanese authorities to restructure dramatically the organization of rail transportation in their country.

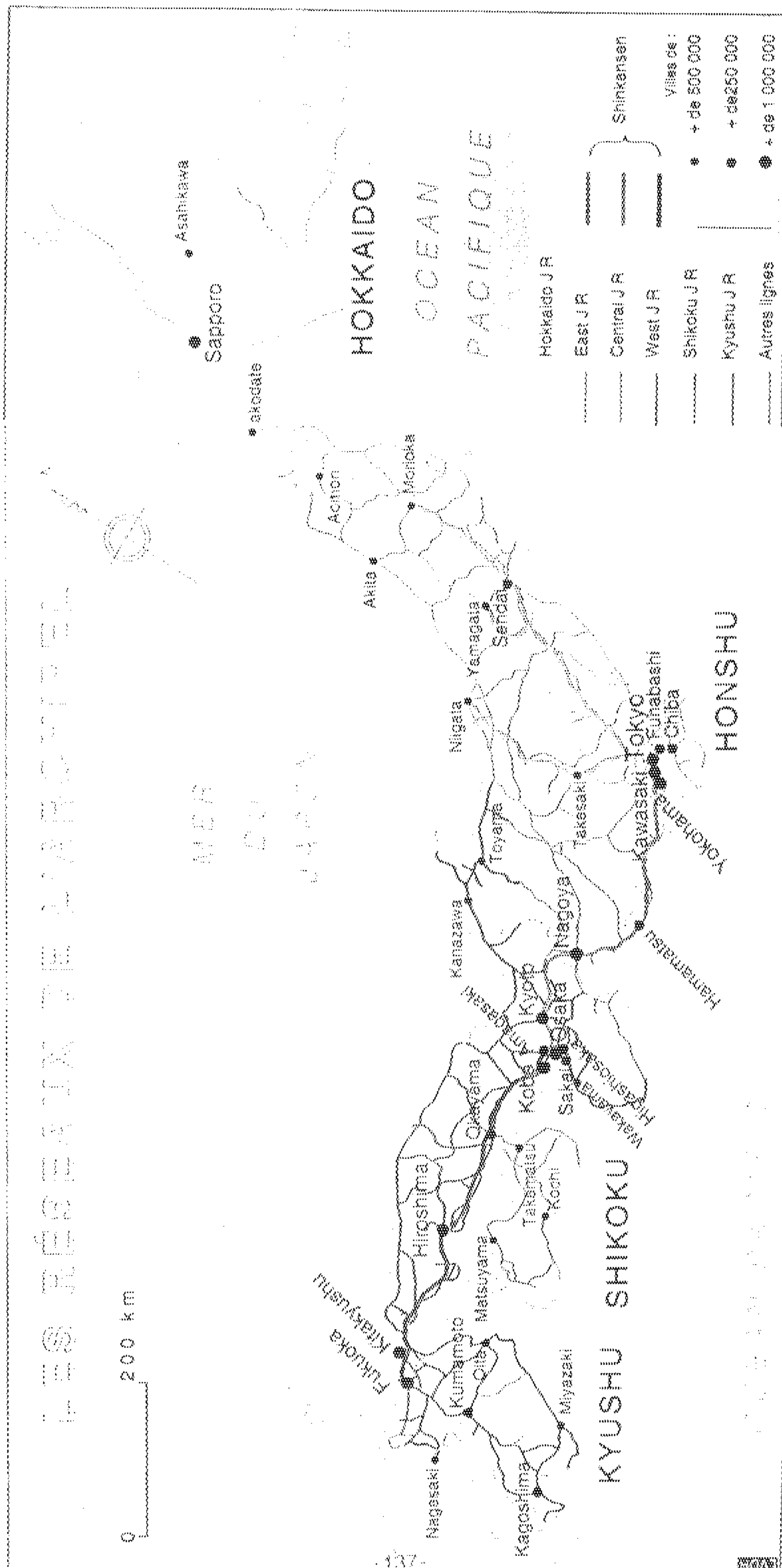
Because high-speed and privatization are closely linked, the development of the former made way for the latter and vice versa. And this right at the very beginning of the high-speed adventure in 1964 when the 1st Shinkansen, the symbol of a nation greedy for technologies, raced down the Tokaido line linking Tokyo and Osaka at a speed of 220 km/h. As opposed to French Railways (SNCF) whose revenues and turnover were boosted by the commissioning of the Paris-Lyon high-speed line (TGV), the start of Shinkansen operation heralded the beginning of the end for the Japanese National Railways (JNR), a century-old company. In 1965 JNR, which had previously enjoyed a relatively sound financial situation, recorded their first deficit. Important detail, the Japanese network is a narrow-gauge network...with the exception of Shinkansen tracks which are standard UIC gauge. This means that Shinkansen trainsets cannot travel on conventional lines. As a result the success of the Shinkansen system did not spill over the rest of the network as opposed to what happened in France with the TGV. Therefore in Japan serving some of the country's inland areas with the Shinkansen has meant enlarging existing tracks or building new ones at enormous costs. Thus as new tracks were being built, the deficit was growing steadily bigger. To make matters worse the deficit was never taken care of by the State which limited its intervention to guarantying JNR's bonds and loans, and until the 1980's none of Japan's successive governments really tackled the problem. The result was that 23 years after the commissioning of the Tokaido Shinkansen, JNR's books were irretrievably in the red. The overall debt now approaches NT\$ 750 billion or 1.75 times the HSR construction cost. Through the impetus of the government of Prime Minister Yasuhiro Nakasone who came to power in 1982 a commission was set up to study the possibility of privatization. After many reports had been written the privatization was finally voted by the Japanese parliament on April 1st, 1987 in the wake of the privatization of the tobacco company and more significantly that of the Japanese Telephone Company (NTT).



The privatization of JNR led to the creations of seven smaller companies. Three of them are on the central island of Honshu and are in charge of operating the Shinkansen system. They are East Japan Railway, West Japan Railway and Central Japan Railway. When it comes to Shinkansen operation the three companies cooperate very closely. They have adopted the same fare policy, share the computerized reservation and ticketing system and offer connecting services. Freed from the past debt the companies made substantial profits right from year one. This was made possible among other things by important fare increases.

In the organization that came into being with the privatization, the new Railway Development Fund (RFD) provides financial support for future network extensions. The sources of the allotted funds vary but it is worth noticing that the Japanese State constitutes one of the most active sources.

Figure 2-12 : Japan Railway Network



### 2.2.9. Synthesis of the Japanese Experience

The reform of JNR and its privatization can be summarized in a three-act scenario :

- . act 1 : institutional reform,
- . act 2 : debt management and corporate finance,
- . act 3 : sale of shares

We are giving here below our opinion on each one of them:

. Act 1 is undeniably a success. The reform envisaged was a bold one since it aimed at breaking a major public monopoly to give rise to seven companies established under private law.

Beside the institutional trauma such a reform implied, two challenges were to be taken up.

The first one consisted in creating companies having their own identity and an independent management while originating from the same network. In addition, the service quality was not to be impaired by such an independence and the possible occurrence of artificial frontiers making up obstacles on this old network. As a matter of fact, even if improperly managed, the latter had nevertheless a sizable asset: a perfect continuity of its lines.

The second challenge was connected with the problems of personnel: the new companies had to engage their own personnel and the status loss and engagement process was not a painless one since it resulted in the reduction of 70,000 jobs.

These two challenges were fully taken up.

The companies created operate properly and carve their own images with their respective customers. Cooperation prevails over competition in the relations between the three companies of the central island. This is reflected in the fact that Shinkansen tariffing is the same through the whole island of Honshu. The computerized reservation and selling system called MARS (Multi-Access Reservation System) allows to buy in the station of a company a ticket for a journey on the network of another company. You merely pay a commission of 5% to the company which issued the ticket. This cooperation can be further illustrated by the situation of one Shinkansen delayed, which is not frequent, and another (running on the network of another company) waiting in order to ensure connections. A through Shinkansen of one company runs on the tracks of another one and vice-versa. For the customers, while the companies' images are different, continuity and uniformity are ensured throughout the transport service.



As regards the personnel, the privatization process that was mainly directed against trade unionist railway men in Kohuro achieved its objective: those were the most widely affected by the 70,000 job reductions. However, it should be noted that the manpower saving measures were, to a great extent, made possible by the government generosity over pre-retirement schemes. Also, leading firms and public communities were called for to recruit former railway men.

Finally, when the unemployment rate is around 2.5%, employment is not a priority concern for the State!

. Act 2 does not seem to have posted such brilliant results. However, this severe judgment is worth toning down: the sizable reform undertaken should not be assessed over a period of 4 or 5 years only. This being taken into account, it should be noted that, out of the 7 private transport companies, only three posted a financial balance. But, of course, these are the three leading ones all located in the main island. According to the latest figures in our possession (1991):

- The East Japan Railway posted a Y 55 billion profit for a Y 1,600 billion turnover with a debt of Y 1,900 billions. 80,000 persons are employed in this company and its 7,600 km network carries 5.7 billion passengers.

- The West Japan Railway posted a Y 77 billion profit for a Y 900 billion turnover with a debt of Y 620 billions. 48,000 persons are employed in this company and its 5,100 km network carries 1.6 billion passengers.

- The Central Japan Railway posted a Y 50 billion profit for a Y 1,100 billion turnover with a debt of Y 350 billions. 21,000 persons are employed in this company and its 2,000 km network carries 129 million passengers.

These operation results are rather encouraging especially as these companies:

- allot part of their profit to pay off the debt which was charged to them, by transmitting the relevant funds to the JNR Settlement Corporation

- and, by paying Y 5,900 billion, acquired in 1991 the Shinkansen infrastructure which had been rented to them through a 30-year financial leasing by the Shinkansen Holding Corporation.

Nevertheless, in spite of the payments made by the companies, the JNR Settlement Corporation public holding already mentioned has just enough to cover the relevant debt interests and its total indebtedness of Y 37,000 billion is in fact slightly over that inherited from 1987.

. Act 3 was dealing with the sale of the shares of the three Japan Railway companies in Honshu. This step is closely linked to the debt repayment of these companies. At the moment, these shares are held by JNR Settlement Corporation and the term "privatization" is not correct since no private individual or legal entity holds any share. There are two reasons for the delay observed since the first April 1987, date of the reform: quasi-stagnation of indebtedness as mentioned above and stock exchange slump. However, according to the specialized press, the government plans to quote shares towards the end of 1992 up to the quarter of the capital owned by the new companies. What remains to be known is of course the purchase price of shares to be compared to that of their basic selling price.

On the whole, we can say that the reform undertaken in Japan is a success. The lead time observed to obtain some results take time to be reached, this is mainly due to the extent of the reform that the national economy cannot absorb instantly. It must be admitted that the risk of such a reform was to cut a network which was unified; in fact, no division occurred whose consequence would have been a plain loss of traffic, and the service quality supplied was not impaired. Another aspect of the reform was that manpower could be significantly reduced. It is almost certain that if they had modified their management system in depth, the former national JNR would have reached the same productivity level but this would have taken much longer.

What were the assets of such a reform which permitted to make it a success ? In our opinion, they were four :

- . The very strong will of the government to start and carry through this reform which, by the way, has been sustained ;

- . The State's direct help for re deployment of railway men not maintained in their jobs, and indirect as far as indebtedness is concerned ;

- . The existence of a network which operated satisfactorily ;

- . The availability of a high-speed network which retained a railway patronage; the massive increase in fares during the eighties also allowed to generate a flow of revenues which highly contributed to make this reform successful.

## 2.3. OTHER FOREIGN EXPERIENCES

### 2.3.1. Italian Experience

#### The New Relationship Between the Italian State and the Italian Railways - The Contracting Policy of the Italian Railways

Prior to 1985 the Italian Railways (FS) were an administration attached to the ministry of transport. In 1985 the company was granted the status of a public company with a duty to present well-balanced books.

A draft for more profound changes and taking into account guideline 91/440/CEE was presented to the Italian parliament but was "frozen" due to the interruption of parliamentary life prior to the general elections.

This however did not prevent FS from pursuing its own reorganization. In accordance with the draft waiting for parliamentary approval, FS tried to clarify the responsibilities, to accelerate the decision-making process and to better stick to market demands. To reach these objectives the following changes were implemented :

- the operational activities were turned into separate divisions with gradual autonomy for their budget and control of their costs and revenues,
- the creation of "functions" for the central activities attached to the General Directorate of the company. These functions herald the responsibilities of holding companies vis-a-vis the subsidiaries which will be set up (see later),
- rationalization of the relations between the Italian State and FS through a contractual plan.

Signed on January 23rd, 1991 this contractual plan covers two years and is experimental. It was not debated in parliament although some of its stipulations - especially those on the setting up of subsidiaries - were included in the finance law of 1992.

These stipulations were essential. If no change had been brought, the financial situation of FS would have led to the State taking over the estimated cost of around 2500 MM FRF for the restructuring and development plan of FS over the next ten years. And even though no assurance could be given that FS would have fallen back on self-sufficiency.



The main features of the contractual plan are :

- the end of subsidies within the next five years,
- economic equilibrium and freedom to set fare policies,
- compensation from the State for failed profits due to state-imposed limitation to fare increases,
- the signing of contracts, in compliance with the European Community Regulation n°1893/91, for operating non-profitable services at the request from the State or from other public authorities,
- the possibility to transfer redundant personnel to subsidiaries or to specific companies which are part of the reintegration program of the State.

The contractual plan makes for proportional financial help from the State. Instead of fixed subsidies carried over from year to year FS can cash in lump sums reflecting their successful investments, their traffic volumes, their financial results.

To achieve the goals laid down in the contractual plan FS adopted a double-sided strategy :

- one side was to sell some of the company properties,
- another side was to turn to the private sector for financing projects likely to be profitable.

This call to the private sector make possible the mobilization of new financial partners, while allowing a so far unknown flexibility and swiftness which are welcome in an increasingly competitive environment.

Following these principles FS has set up subsidiaries in three fields of action :

- the improvement of business activities,
- the high-speed system,
- the regional services.

The first one aims at decentralizing some activities while attracting knowledge and experience from outside the company. Such is the case for instance of the new subsidiary in charge of computer science which replaces the former department once integrated into FS> This subsidiary has entered a partnership with two outside companies which will share the financing and development of projects. A natural client will be FS itself but the subsidiary will be free to look for other clients both in and out Italy.

In much the same way, freight services will be carried out by a number of companies mixing FS people and people from the private sector who will bring more investment power and a new market approach.

FS's consulting services are in the hands of a new subsidiary Italferr SISTAV SpA.

The second one deals with railway systems of the future. A special law promulgated in the spring of 1991 gives FS the right to contract to other companies in which it might even have shares, the construction and management of railway infrastructures.

Thus, in July 1991 a company called TAV SpA was created whose role is to gather the funds to finance the planned high-speed infrastructures (27,500 MM ITL). FS is the primary shareholder of TAV SpA with 45.51% of the capital while 24 institutions of credit own the remaining 54.49%.

With the same preoccupation in mind the technical feasibility of the high-speed network was contracted to Italferr-Sistav.

FS considers this devolution of responsibilities to subsidiaries particularly rewarding. They consider that contracting to a company with private capitals the right to construct any given assets and let it cash in on the investment ensures the best technological choices, reduces construction time, and guaranties the highest profit margins.

FS further thinks that, given the Italian context, relying solely on its own means would not lead by far to the same efficiency. As proof of this an often-quoted example is the construction of the high-speed line between Rome and Florence, the so-called "Direttissima" whose construction last nearly twenty years!

Along the same line FS envisages a similar approach for warehouses or maintenance centers,...

The last field of actions in which FS set up subsidiaries deals with services from which FS would like to withdraw while transferring the management of local lines to companies made up of both FS and outside operators and turning these lines into MRT lines.

In fact more than to guaranty a profit margin the intention is to reorganize the use of former investments.

An example of this attitude is the creation of Metropolis whose job is to capitalize on the selling of FS assets not in give-away operation but with the idea of developing projects which would be profit-making, would diversify the company's activities and create new job opportunities. For example shopping areas, parking lots, hotels, restaurants,...

However full implementation of this strong desire to create subsidiaries can only be achieved after all the squabbles between the Ministry of Transport, FS top management and the trade-unions over redundancies and job-cutting have been solved.

Yet on June 13, 1992 a ministerial committee for economic planning has accepted the principle of privatization of FS.

The details of how the privatization process will take place are not known but there is no doubt left on the government's desire to go through with the project as can be seen by the recent decision to put an end to the big public holdings and to tackle head-on the country's deficit which has reached a staggering 160,000 MM ITL.



### 2.3.2. Spanish Experience

#### The Structural Reform of RENFE

In 1991 the Spanish national railways (RENFE) embarked on a sweeping reform aiming at reorganizing its structures and using as a basis the segmentation of the transport market.

The objective was of course to improve the quality and competitiveness of the products put on the market and to favor creative ideas but also to provide the company with an organization making it possible to better evaluate the financial performances of each business unit.

This desire resulted in the adoption of a "new management plan" characterized by a division of the company into eleven "activity departments" with great financial autonomy.

These activity departments are divided into two groups :

- the business units,
- the functional divisions providing goods and services to the business units.

The business units are :

- long-distance passenger services,
- regional services,
- commuter services,
- high-speed,
- bulk freight traffic,
- small parcels services.

Long-distance passenger services, high-speed, freight and small parcels services are considered as commercial activities. The criteria for appraising their performances is the accumulated profit.

As opposed to them, regional and commuter services are managed along social criteria in accordance with contractual agreements passed between RENFE and the country's public authorities at central, regional or local levels in compliance with the European Community Regulation n°1893/91.

The functional divisions are divided into five groups :

- traction (rolling stock and drivers),
- rolling stock maintenance,
- infrastructure and maintenance,
- train operation,
- stations and related services.

The various departments have full autonomy in the management of their resources and in the appraisal of the services received from the other departments. Each department is responsible for the quality of the goods and services it provides and their mutual relations are ruled by customer/supplier contractual agreements along the lines of those that would normally rule the relations between two different companies.

They adapt their territorial structures to the characteristics of their activities and of the services they have to provide to passengers or to operators in the case of the business units, or to the business units in the case of the functional divisions.

Their functioning can be monitored through accounts recording losses and profits.

RENFE's General Directorate can be divided into two groups :

The first group is made up of the following divisions ;

- presidency,
- division in charge of the company's land properties,
- public relation,
- development, planning and finance,
- personnel and human resources,
- general secretariat.

The second group, placed under the authority of the General Director and his Deputy General Managers, is in charge of :

- economy and finance,
- high-speed,
- commuter services,
- three divisions supervising the other activity departments.

Furthermore, RENFE has contracted to subsidiaries such activities as external and internal advertisement, the management of commercial centers,, of parking lots and other facilities, engineering tasks, research and development, the selling of used assets, the home delivery of goods, the transport of containers,...

### 2.3.3. Swedish Experience

#### Partition of SJ

In July 1988 Sweden followed the lead of Austria and Switzerland and assumed state responsibility for the upkeep of the railway's infrastructure. As a result SJ was partitioned. SJ became confined to operation of rail transport as a public but commercially-motivated enterprise. Its infrastructure, already state-owned, became the responsibility of Banverket (BV) (literally Track Authority in translation), which has been titled Swedish National Rail Administration in English. The move had two objectives: equalization of the terms of competition between road and rail and environmental protection. Like road transport, SJ's trains are now taxed for their use of state-funded infrastructure. At the same time road users had petrol prices lifted by 6 per cent and the tax on air fares was raised. Part of the extra money extracted from road users will be applied to rail infrastructure improvements.

#### Division of Responsibilities

Under the government's new transport policy for the 1990s, the development of the railway sector is to be based on socio-economic costs and benefits and not only on commercial principles. Thus, decisions regarding new construction of railway will be based on socio-economic evaluation as is the case in the road sector. Principles and methods to be used will be developed by Banverket. Banverket will also participate in developing the railways into a competitive transport system. In the next decade about SEK 10.000 million will be allocated to new projects.

Among other things, Banverket will decide upon the overall investment and maintenance plans for the state railway inspectorate, which will check on safety in the rail network and transportation. This body will also make inquiries about accidents.

Banverket is highly decentralized. Five regions with some 20 districts have responsibility for their own planning and economy. In addition, there is an Industrial Division with commercial responsibility for purchasing, production and storage of material for the entire administration.

The new policy makes provision for an injection of privatization. As a government agency BV is required to adopt a neutral attitude to transport companies that may become competitions for future access to the tracks.

In brief, the responsibilities of Banverket cover :

. Railway lines : sub-structure, superstructure and track, signals and other safety installations, electric traction equipment ;



- . Terminals: all through tracks, certain storage tracks and siding, passenger platforms, lighting and some major marshaling yards ;
- . Fixed installation for traffic supervision and safety.

The responsibilities covered by SJ are:

- . Locomotives, wagons and coaches;
- . Terminal buildings and stations, including surrounding public services;
- . Goods terminals (except major marshaling yards) and combined road/rail transfer terminals;
- . Industry tracks;
- . Workshops for rolling stock.

Financing of Banverket will normally be effected through state budget grants. The transport companies will then have to pay fixed as well as variable fees for the use of the tracks.

#### **New Arrangements for Social Network**

SJ has long been divided into a core that SJ has been mandated to operate commercially; and a rural network that SJ has run under contract to the government, which has covered this system's inevitable losses. That segregation is now more emphatic.

The national railway system, where SJ has to run a fully self-supporting passenger and freight service, is established as 35 core routes totaling 6 180 km. The strategic Lapland ore line from Kiruna to the ports of Lulea and Narvik (Norway), has been set apart as a special operation.

The residue consists of 23 lines aggregating 2 220 route-km that currently offer both passenger and freight service and 50 lines totaling 1 370 route-km where SJ runs freight trains only. The new legislation has transferred responsibility for passenger service over these regional lines to the 24 county public transport authorities. State financial support continues, but at reduced levels. These local authorities were given until July 1990 to decide whether they would persevere with trains, either under their own management or run for them by SJ under contract; or whether they would substitute bus service. For continuation of rail service they would receive state grants equivalent to their lines' previous annual deficit, which they could supplement as desired from their own local taxation.

It also became possible for private enterprise to compete with SJ for contracts from the country authorities to run the latter's regional passenger services. But SJ retained sole authority to run freight service over the regional lines. However, under the new status SJ's former compensation for obligation to run unprofitable freight service is withdrawn and replaced by a subsidy for wagon load and intermodal system development.

**Table 2-8 : Swedish Railways Revenues and Expenditures**

Finance (SEK million)

Revenue	1987	1988	1989
Passengers and baggages	4 735	5 296	NA
Freight, parcels and mail	4 242	4 294	NA
Other income	1 028	1 030	NA
Total	10 005	10 620	10 376

Expenditure	1987	1988	1989
Staff/personnel	6 173	6 384	10 000
Materials and services	707	3 922	10 000
Depreciation	482	554	339
Financial charges	110	187	9
Total	10 472	11 037	10 348

#### **New Regime's Effect on Passenger Services**

The first private operator to compete successfully for a regional passenger service franchise was BK-Taøg. In May 1990 this company was contracted by three county administrations in the far south of the country to run four services aggregating 456 route-km in an area extending from Halmstad on the west coast through Nassjö to Oskarshamn in the east. BK-Taøg operates 20 diesel railcars bought by the three county authorities from SJ. These are single-manned, with ticketing carried out on board by the driver. However, SJ still has to staff stations purely to run the lines' historic signaling. Banverket takes track rental from the county authorities.

In August 1991 BK-Taøg was entrusted by the local authority Jönköpings Lanstrafik with local services over the Nässjö-Jönköping line. In this instance its operations would share tracks with some SJ trains.

Elsewhere in southern Sweden, SJ has beaten private enterprise to a 15-year operating contract from the county transport authority Blekinge Lanstrafik.

This authority has elected to buy from ABB five three car diesel train-sets of Danish Railways' IC3 type.

The units will be built by ABB Scandia and will be operated between Karlskrona, Kristianstad and Malmö.

At the start of 1991 the government proposed to parliament that Banverket be bidden to study whether, from 1993 onwards, private operators should be free to bid against SJ for license to operate inter-city as well as regional passenger services.

### Passenger Traffic

In September 1990 the first of the ABB-built X2000 200 km/h tilt-body train-sets began trial public service between Stockholm and Göteborg, making three round trips weekly on a schedule of 3 hours 35 minutes for the 459 km between the two cities. Service frequency was doubled in March 1991 when a second train-set became available and was to be further intensified in May 1991.

Of the initial order for 20 train-sets, 10 were to be assigned to Stockholm-Göteborg service. Five of these would be exclusively first-class. All were expected to be in operation in 1992, when some would begin service between Stockholm and Linköping, en route to Malmö.

At the launch of X2000 service the units were able to run at 200 km/h continuously over the 114 km between Skövde and Hallsberg, apart from one speed restriction over a bridge about to be renewed. Work was in progress that would soon make the same speed continuous over the 66 km between Hallsberg and Katrineholm.

It was anticipated that by 1994 virtually all the 599 km route from Stockholm to Malmö would be fit for 200 km/h by X2000 units, which would then reduce journey time between the two cities from 6<sup>1</sup>/<sub>2</sub> hours in 1990 to 4 hours 10 minutes.

SJ was in 1991 expected soon to order a further 41 X2000 train-sets, enabling their introduction on the Stockholm-Gävle-Sundsvall (414 km) and Malmö-Göteborg (303 km) routes.

In 1990 total passenger traffic rose some 3,5 per cent above 1989 in total journeys, and was up about 2 per cent in passenger-km.

SJ and Sweden's international and domestic airlines, SAS and Linjeflyg, are combining their computer reservation systems to offer an integrated seat and hotel reservation service.



## **S-Bahn Scheme**

SJ has published a scheme for major enlargement of its Stockholm S-Bane network and its redevelopment and re-equipment to the highest standards of RER or S-Bahn cross-city operation. Starting north of the city and proceeding clockwise, the six radial routes embraced by the SJ plan originate from Uppsala (to which would be added a loop serving Arlanda airport), Nynäshamn, Nyköping, Katrineholm, Eskilstuna and Västerås. Southwest of the capital extra operating capacity is already being created by construction of the Grödinge line (see below), which will segregate intercity and suburban traffic as far as Sodertälje. This should be finished in 1994. In addition to upgrading of other radial lines concerned by the scheme, SJ sees completion of the dedicated Arlanda Airport line (see below) as essential to provide the required operating capacity on the Uppsala line. In the central area of the project the minimal need is one extra track between Stockholm Central station and Årsta.

Some components of the scheme were addressed by a program of investment in the county's urban rail system, developed by the Transport Ministry and regional authorities, which was laid before parliament in January 1991. This included provision for extension of double-tracking on the Nynäshamn line and for improvements on the Västerås line.

Some extremities of the proposed wider network are well over 100km from Stockholm Central. It has been suggested, therefore, that the S-Bahn rolling stock accommodation might include suitably-equipped business compartments, family compartments and catering facilities. It would be designed for a maximum speed of 160 km/h. Bi-levels are a possibility.

## **Stations to Become Traffic Centers**

Station activity is being restructured by SJ's new Real Estate Division. To make them convenient traffic centers with room for trains, buses, taxis and private cars as well as commercial services, increased cooperation with local authorities is being pursued. In certain cases the latter may take over the responsibility for smaller stations on the regional lines of the social network.

Henceforth, if the Real Estate Division wants to sell property it will be enough to have the government's approval instead of that of Parliament as was earlier the case.

## Göteborg and Malmö Urban Services

The January 1991 urban transport investment program mentioned above provided Skr 500 million for development of suburban emu services out of Göteborg on the Malmö main line and on single-track branches in the area. In 1990 the Göteborg region traffic authority ordered seven Type X10 emus from ABB for introduction in 1992 between Göteborg and Kungsbacka.

In the Malmö region local funding of Skr 300 million would supplement skr 700 million of state money for electrification of the 65 km Ystad branch and for installation of a third track between Arlöv and Lund.

## Fixed Link with Denmark Agreed

In 1991 the Danish and Swedish governments signed agreement to complete a fixed Öresund link between Malmö and Copenhagen before the next century. The two countries' parliaments were expected to ratify the agreement in the summer of 1991, and the expectation was that bids to build would be called in the autumn.

The 17,6 km link will be part bridge, part tunnel. It was hoped to finish the rail link as far as Copenhagen's Kastrup airport by 1997, and complete the project in 1999.

SJ and DSB have announced that they intend to operate a Malmö-Copenhagen regional express service over the fixed link, which on the Swedish side would have a park-and-ride station at Malmö South. Up to mid-1991 it had not been decided whether the rail link would be electrified at the SJ's 15 kV 16<sup>2</sup>/3 Hz or the DSB's 25 Hz or the DSB's 25 kz ac.

## Freight Traffic

The head of the new SJ Freight Traffic Division has separate staff functions responsible for economy, market and production. At ground level there are also business areas, four geographical and six delineated by function. Every business area has its own profit responsibility.

International traffic other than ore movement in the far north again rose in 1990, by some 10 per cent, but because of the economic recession freight tonnage overall was over 5 per cent down on 1989.

Ore for LKAB, steel for SSAB, wood products for SCA, Stora and Korsna, engineering products for Volvo and Saab-Scania, foodstuffs for Felix, KF and ICA as well as transports for the Post Office Administration are some of the most important traffics. SJ Freight's 200

biggest customers are responsible for 90 per cent of receipts from full-load traffic. A key objective is to increase transport quality and efficiency mainly in cooperation with these 200 important customers.

Daily contacts between customers and SJ Freight have been made easier and improved through new customers' centers available at 22 places throughout the country. These effect wagon requests, reservations, loading guidance, quality follow-up, information on transits, etc. Extension of the SJ Freight data-based information system offers many advantages to the customer. A new electronic consignment note is fully based on data provided by the contract. The customer has only to indicate number of contract, destination station, wagon number and total weight of load. All other information is on the data base and all freight contracts are registered in the system. Customers of SJ Freight are invited to connect their own data terminal to this information system.

The aim of SJ Freight, together with SJ's big customers, is to build rail transport into a manufacture and distribution process. For Felix SJ Freight delivers foodstuffs daily to some 30 places, and 40 per cent of these flows are completed to the final destination by road.

To achieve a maximum proportion of overnight transits between centers not covered by through trains, SJ has devised an operating plan focused on its Hallsberg yard, which is strategically placed at the junction west of Stockholm between the lines to Oslo, southwest to Göteborg and south to Helsingborg and Malmö. Eight terminals that are major sources of intermodal business form each night complete trains of traffic for mixed destinations and forward them to Hallsberg. Here the wagons are swiftly sorted into fresh trains, each of which concentrates traffic for a single destination.

For the general market SJ has a network of overnight intermodal trains interlinking ports and key inland centers. Five nights a week there is also a dedicated Trans-Europ-Container-Express between Göteborg and Oslo.

In conjunction with other European railways, the number of through trains to and from Continental hubs steadily increases. There are , for example, thrice-weekly trains linking Helsingborg and Dijon, France; twice-weekly services between Boden in north Sweden and Chiasso, and also between Gävle in central Sweden and Hamburg Maschen.

SJ and DSB have been joined by Norway's NSB and Finland's VR in a Nordic European Rail Unit (NERU) to develop door-to-door intermodal service.

So far as the rail element is concerned, the principle is that Helsingborg assembles traffic from each railway into one train for a non-stop long-haul via the DanLink route to a selected European rail center.



The inaugural NERU venture was a North-Ruhr Express, run daily each way, Mondays to Fridays, to the Langendreer terminal at Bochum in the Ruhr. SJ's three gateways to the service are Göteborg, Jonköping and Stockholm's Arsta terminal. The service is open to piggybacked semi-trailers as well as containers and swap bodies, and the client can choose either to entrust the entire transit to NERU or organize his own cartage. The railways are also touting for term-based charters of whole trains to the same timings.

### **Helsingborg Works Completed**

Helsingborg is the Swedish gateway to DanLink, the enhanced rail freight route to Northwest Europe developed jointly by SJ and the Danish State (DSB) and German Federal (DB) Railways in the earlier 1980s. From Helsingborg two capacious ferries, one DSB - and the other SJ - owned, ply to Copenhagen Freeport and the DSB; and the DSB is linked to the DB by the Rødby-Puttgarden ferry route.

A massive Helsingborg improvement scheme was completed in June 1991. The Skr 1700 million project was jointly funded by a state grant of Skr 78 million, and by Banverket, Helsingborg city and private developers. A new multi-modal ferry terminal surmounts an underground four-track rail station that is threaded by a new 1,5 km single-track which has been tunneled between the city's north and south stations. Reopening of a 13 km link from the north will allow Göteborg-Malmö through traffic to be routed via the new station.

### **Far North Closure**

The 321 km Mora-Östersund section of the Inlands-Bana, the railway which runs 1 067 km through the sparsely populated center of northern Sweden, was closed to all traffic in June 1991. Opposition to total closure reprieved the remaining 746 km to Gällivare, junction with the Lulea-Narvik ore line, for judgment after the national election due in September 1991.

### **Banverket and the Infrastructure**

SJ's main lines allow speeds up to 130 km/h, but short stretches between Stockholm and Göteborg are now upgraded to 200 km/h. Double-track exists on the following lines:

- . Stockholm-Göteborg
- . Stockholm-Uppsala and some additional parts further to the north.

## Banverket's Forward Plans

No later than September 1991 Banverket (BV) was required to submit to the government a final infrastructure development plan for the 1990s. Parliament had set a ceiling of Skr 10 billion on proposals, but SJ in particular and many county authorities rejected plans within that limit as inadequate. Banverket was therefore working in 1990 on schemes within a Skr 20 billion ceiling as its Project Design Plan, and on a Long-term Strategic Plan within a limit of Skr 30 billion.

The principal projects under way in 1990 were:

- . Upgrading of the Stockholm-Malmö line for 200 km/h, to be completed by 1992, when Stockholm-Göteborg journey time by X2000 should be cut to less than 3 hours for the 459 km distance. One target is to reduce the line's total of level crossings, 400 a few years ago, to fewer than 100.

- . Completion, probably in 1994, of the 30 km double-track Grödinge line at the southwest approach to Stockholm, which will segregate inter-city traffic from slower traffic on the existing route. Features of the project are a bridge over the Södertälje Canal; with a main span of 160 m, and a new elevated four-track main station at Södertälje.

- . Upgrading of the Stockholm-Malmö line for 200 km/h by X2000 train-sets, to be finished from Stockholm to Linköping by 1994, and throughout by 1995/96. The project includes extension of CTC to the third of this route presently without it and provision of loops for 750 m-long freight trains, which will be able to travel the re-laid main line at 120 km/h.

- . Double-tracking of a further 30 km of the Göteborg-Malmö line, to be finished by 1992 and allow launch of the city's new emu suburban services (see above). Some further double-tracking of this overtaxed single-track route can be contained within the Skr 10 000 million ceiling, but not widening at the line's northern end, which involves boring a new 8 km tunnel at Hallandsasen.

- . Partial double-tracking, realignments and additional loops on the single line - but as yet, only where most urgently needed, because of the financial constraints - to increase freight operating capacity from the north and central Sweden to the south. Rising traffic includes the 'Steel Arrow' trains moving steel slabs from the Luleå ironworks to coil mills at Börlänge, and the growing number of container and piggyback services generated by extensive exports of timber and paper products, imports and two-way traffic in machinery.

- . Upgrading of the East Coast line, including provision for 200 km/h between Stockholm, Uppsala and Gävle.

#### 2.3.4. British Experience

The British Government is determined to see better use made of the railways, greater responsiveness to the customer, and a higher quality of service and better value for money for the public who travel by rail. The proposals in this White Paper meet these objectives.

The railways have substantial strength. They have unrivaled city center to city center connections. They are particularly cost effective for long distance and heavy freight. They can be energy efficient. They often cause less environmental damage than road transport. But the railways cannot play their full role unless they give passenger and freight customers the services they expect. The key to success is a reliable, efficient operation offering high quality services to users. The introduction of competition through greater involvement of the private sector and the ending of BR's monopoly in the operation of services will be instrumental in achieving this.

#### British Rail

British Rail has made significant improvements in recent years. Its efficiency compares well with that of other European railways. The productivity of the BR work force is among the highest of any European railway. InterCity services and BR freight operate without direct subsidy.

Investment in the railways has greatly increased. Last year rail investment reached £1005m, more than 50% higher in real terms than in 1980, and was the highest in real terms since 1962 when the network was much more extensive. Over £1 billion is expected to be invested in 1992/93 with continuing high levels in subsequent years.

All parts of the railway have benefited from this investment. For example, the East Coast Main Line has been electrified from London to Edinburgh. New diesel trains operate on many Regional services. BR is investing heavily in the trains and infrastructure for international services through the Channel Tunnel. The Government is encouraging BR to improve its services under the Citizen's Charter. The Passenger's Charter sets demanding but achievable standards, makes commitments about improving services and establishes new compensation arrangements.

However, regular users know that the performance of the railways is not good enough. Too frequently, and on too many lines, the quality of service fails to meet the traveling public's expectations. BR's staff and management work hard to improve services. But they are limited by the structure of the industry in the public sector. The industry is more insulated from the demands of the market than its private sector airline, coach and road haulage competitors. It therefore has fewer incentives to improve its performance and less freedom to respond to what the customer wants. Radical changes are needed.



The Government therefore wishes to involve the private sector in the operation of the railways. Introducing competition, innovation and the flexibility of private sector management will enable the railways to exploit fully all the opportunities open to them.

In other countries, the private sector is actively involved in the railways. Already 40% of Japan's railways are private and it is the Japanese Government's intention to privatize the remainder. The Swedish Government enables the private sector to operate certain railway services through a tendering system. The privately owned American freight railways have been successful and profitable over the past ten years.

### **The Essential Requirements**

The Government has paid particular attention to the following issues in framing its proposals:

- Safety. The safety of the rail network remains of paramount importance. Any changes must provide for the existing standards of the railway network to be maintained and for any necessary development and further improvement of these standards. The Government has taken the advice of the Health and Safety Commission.
- Quality of Service. The new arrangements must offer the passenger and freight customer improvements in the standard of service they receive from the railways.
- Essential Passenger Services. The Government fully recognizes the social and other benefits of regional and commuter services. It is committed to providing continuing subsidy to support them.
- Network Benefits. A single railway network is convenient and flexible for passengers. These benefits include a national timetable and through ticketing.
- Opportunities for Employees. The Government is willing to enable BR's existing work force to transfer to new companies when they are established and to provide opportunities for them to take a stake in their industry when they are in the private sector.
- Environmental Benefits. The Government wishes to continue developing the environmental benefits of rail and to maintain its existing high environmental standards.

The railway is a very large, complex and specialized operation. Millions of people depend on it. Services must not be disrupted by organizational change. So the pace of change must take account of the need to keep services running efficiently.

## Options

The Government has considered a number of options for the future structure of the railway. It would not be practicable to privatize BR as a single entity because its financial losses are too great. Similar objections apply to the sale of BR split into purely geographical units. For the foreseeable future no regional company could be sold outright as each would be entirely dependent on continuing and large subsidies from the taxpayer.

BR, with the Government's agreement, has, over the last ten years, reorganized the railways in business sectors based on different markets - InterCity, Regional Railways, Trainload Freight etc. There is scope for some privatization of the individual businesses. But it would not be possible to sell all of them. They operate in different markets and they have very different financial performance. Network Southeast could only be made profitable with substantial and rapid real fare increases. The Government does not believe that such increases would be justified. Regional railway services will be dependent on subsidy for the foreseeable future. The financial prospects of the present InterCity services are better and it is likely to be possible to privatize at least some of them in due course. Freight is profitable, overall, but the different parts of the freight businesses perform very differently. The Government has therefore concluded that no single solution is appropriate to all BR's businesses. Each will have to be treated differently, taking account of its characteristics.

Flexible solutions will be needed to encourage private sector participation in the railways. A structure is required which will promote the introduction of new operators while taking account of the continuing need for subsidy. BR currently operates as a vertically integrated railway. Track and train operations are to be separated at an early stage and a new track authority - Railtrack - will be established initially within BR. When BR's train operations are in the private sector, Railtrack will continue on its own as a separate organization. This structure offers the greatest prospect for private sector involvement in operations and will enable BR to provide fair treatment between operators wanting access to the track and other infrastructure. The Government recognizes the challenge which this restructuring will pose for BR following the recent organizational changes introduced under the Organizing for Quality initiative. It will work closely with BR management to ensure a smooth transition to the new structure.

## Summary of Proposals

The Government has decided that rail freight and parcels should be transferred entirely to the private sector.

So far as the passenger railway is concerned the Government believes that the private sector should be given the fullest opportunity to manage and operate existing railway services, receiving grants where necessary in return for meeting required standards of service. In this

Parliament the objective will therefore be to enable the private sector through franchising to manage and operate passenger services. Responsibility for negotiating, awarding, and monitoring franchises will be given to a new Franchising Authority.

In addition the Government proposes to provide a right of access to the rail network for private operators of freight and passenger services. All operators will be required to meet strict safety and environmental standards. Rights of access will be overseen by a new rail Regulator.

One part of BR will become a track authority - Railtrack - with responsibility for operating all track and infrastructure. The other part will become a residual operating company responsible for operating passenger services until these are all franchised to the private sector. When franchising is completed BR's only function will be to provide track and associated infrastructure.

The Government will also provide opportunities for the private sector to purchase or lease stations, subject to safeguards for operators and passengers.

In the longer term the Government would like to see the private sector owning as much as possible of the railway.

#### **The Benefits of Private Sector Involvement and Liberalization are :**

- More concern for the customers' needs. Management and employees in the private sector have greater incentives to provide the services which the customer wants. The profitability of their company - and at the end of the day their jobs - depend on providing a service which attracts custom. Nationalized industries do not face such acute pressures.

- Competition and Ending the Monopoly. New operators will be allowed to provide services, giving customers a choice and stimulating improved services and value. Already a number of companies have indicated an interest in introducing new freight or passenger services.

- Management Freedom. Railway management should be free to get on with its main task of running services to the satisfaction of passengers and customers. The Government's proposals will provide for greater participation by the private sector in railway operation, with less scope and justification for Government involvement in managerial issues.

- Clear and Enforceable Quality Standards. The Franchising Authority will specify and monitor the level of services which passenger operators will be required to meet. For the first time standards such as punctuality, reliability and overcrowding will be written into contracts. A franchisee failing to perform to the required standards will be in breach of contract and subject to penalties including, in extremis, the loss of the franchise.



- Motivation. Franchising passenger services to reflect regional or local identities will help to boost the pride that all employees take in providing a high quality service to the traveling public.

- Efficiency. Smaller operating companies will bring more localized management closer to the public and greater opportunities to cut out waste and otherwise reduce costs, without sacrificing quality.

## 2.4. EUROPEAN RAILWAY GUIDE-LINE

The paragraph 2.4.1. is a summary of the draft of European guide-lines also called "the communication". All items have not been adopted, but it is interesting to keep memory of the ideas which were raised at the EEC level.

The paragraph 2.4.2. gives the decided new European context for railways ie the items and decisions which are coming into force.

### 2.4.1. The Draft of European Guide-Lines

The unified Community transport market will offer the Community's railways both a challenge and an opportunity. The challenge is how to adapt to the new situation ; the opportunity is the freedom to provide new services. This communication deals with a number of areas where action by the Member States is called for to Clarify the relationship between the railways and the State and to create the situation where the railway's technical advantages can be fully exploited.

The integration of the transport market is an important part of the program to strengthen Industry and trade in the Community. To achieve this objective the Commission has adopted a comprehensive approach to the transport industry based on these principles :

- freedom for transporters to respond to market requirements,
- clarification and simplification of the role of the state in transport,
- freedom of establishment as well as to provide services throughout the Community,
- effective means to protect users and workers,
- respect for the environment.

These principles have to be seen in the context of the need to safeguard the environment, notably taking proper account of the social costs of atmospheric pollution and noise, as well as of congestion and traffic safety. Efficiently organized the Community railways will be able to make a major contribution to resolving these problems.

The Commission has already set out the broad lines of the approach it considers should be adopted in transport modes other than rail. It is clear that the effectiveness of Community action and the success of the Community transport sector will be compromised if the railways are not included.

The Commission has made many proposals for the railways. Only a limited number have been accepted and their success has been similarly restricted. Although not being a good indicator of the success of railway activities, it has to be accepted that the increasing level of financial support plus the failure to increase their share of the freight markets indicates a problem. It is unrealistic to suppose legislative

action as such can supply a panacea for the railways. However, the principles of the Treaty of Rome, if correctly applied, can offer the possibility of general improvements. This Commission's text develops upon previous proposals plus the Council's conclusion of December 1986. The proposals have also taken into account the views of the European Parliament, the Economic and Social Committee and other bodies. They now represent an attempt to set the scene for 1992 and after. It is hoped that they will ensure that the inherent efficiency of the railways in many transport markets can be developed and improved whilst at the same time protecting the right of the Member States to require the operation of services in the public interest.

The Commission is particularly concerned with the poor performance of railways in international traffic, in spite of the hopes created by past Community initiatives. In fact, the development of international services has been handicapped both by the present rigidly national-based organization of Community railways and by the disparate relationships between the states and railway undertakings.

With the Single Market of 1992, just a few years away from completion, the following question has to be posed how can a genuine Community railway system be created and integrated into Europe's future transport structure ? The present situation requires combined action by the Member States and the Community. The aim of this Communication is to establish the ground rules for such progress.

The Commission's proposals, annexed to the Communication, intend to set out the framework within which the Member States are to apply more detailed measures that suit each particular situation. However, there has to be a certain common purpose and standard set of principles to guide the creation of a genuine Community railway system within the Single Market. In particular, the concomitant of liberalization has to be the efficient allocation of costs to all modes. The key principles that the Commission considers should be adopted is that all modes meet the full costs for the resources they consume taking account where necessary of external costs and benefits

Following a review of the scenario in which railways are to operate the Communication analyses and develops the key principles that the Commission considers should be adopted :

Concerning a new organization for Community railways :

- . provision and access to the Community railway infrastructure : the freedom of access to national railway infrastructure should be offered to any authorized rail transport operator ; international companies should have transit rights ;

- . infrastructure ownership : Member States should authorize national undertakings to own and operate infrastructures under clear conditions ; the railways should pay for facilities on an equivalent basis to other modes of transport ;



. public services : Member States should assume full financial responsibility for the provision of public services, notably by agreeing contracts with rail transport operators ;

. railway undertakings : Member States should lay down the requirements for the continuation or establishment of authorized railway transport or infrastructure operators, notably ensuring their autonomy, independent management, technical ability and adequate financial structure ;

. public railway undertakings : Member States have to provide for the institutional, economic and financial restructuring of existing public railway undertakings, creating the conditions for their adaptation to the new situation.

Concerning infrastructure development for a high speed network :

. infrastructure development : the Community should examine how the Community's different financial instruments could contribute to the achievement of projects ;

. high speed services : the Community should promote their international development (notably a network of major axes).

Although the predominance of the railways in land transport has been eroded by the expansion of road and air services, they remain important in a number of areas notably :

- movement of bulk freight;
- medium distance passenger services between large population centers;
- urban transport.

It is clear that in the foreseeable future the railways are likely to remain important in these areas. The questions that this communication addresses is whether the advent of the Single Market will find the railways ready to meet the challenges that will be posed in terms of competition and new demands and what action needs to be taken at the Community level ?

The competitiveness of railways in international intra-Community (IIC) freight traffic is a key point for their development. In EUR-12, during the 1960's and up to 1974 IIC freight traffic grew almost twice as fast as GDP, however the railways share in the modal split sharply decreased (in spite of an absolute increase in tonnes) revealing their inability to withstand increased competition.

From more than 80 Million tonnes transported in 1974, rail IIC traffic fell in 1975 to only 65 Million. This level has been maintained since (except for 1979/1981 and 1983/1984 peaks), whilst the total IIC traffic (including maritime flows but excluding pipelines and air) grew more than 50 %. As a consequence the railways modal split decreased from 14 % (1975) to less than 10 % (1987). This evolution is partially due to change in the structure of industry, where the railways traditional coal and steel customers lost business.

Railways passenger traffic carried increased from 3.6 to 3.9 billion from 1973 to 1980 (1 % per year). The situation therefore is more satisfactory than in the freight sector. Since 1980, the number of passengers carried has remained stable. However, this is the result of a steady growth in urban and suburban traffic and of a sharp increase in national intercity trains, which counter-balances losses in traditional medium distance services. As a consequence of a longer average trip (53 km in 1980 versus 58 km in 1988), the traffic measured in passenger-km slightly increased.

However, international passenger traffic has been decreasing at an average of 2 % per year since 1980 ; it now represents only 0.5 % total passengers carried by rail.

The Member States compensate the railways ex-post for the losses they incur in the provision of public services. The basis of the compensation is laid down in Council Regulations 1191/69, for public service obligations, 1192/69 for the normalization of accounts (i.e. compensation for unequal costs imposed on railways but not on other modes) and 1107/70 mainly for infrastructure costs. It should be noted that the aids are not always obligatory and the method of payment has led to a disagreement over the extent that full costs are covered.

Aid from the Member States has increased considerably in the past, notably in the 1970's and the beginning of the 1980's. However, it is possible to note a certain stabilization of aids to a number of networks since 1984.

The contributions from the Member States under various headings remains an important source of revenue for the railways. The importance of the receipts from aids varies substantially from network to network e.g. the percentage of self generated receipts to total operating income is 22 % for the Luxembourg, 31 % for the Italian railways but increase to 76 % for the U.K.

Economic growth : the development of the Single Market will offer new opportunities for Community railways. The abolition of the remaining frontier barriers will lead to an expansion of economic activity and changes in the location and commercial operations of companies throughout the Community. In their turn these economic benefits to industry and commerce will translate into benefits for other sections of society. Disposable income will be increased and spending on leisure will rise. Thus, the external scenario for the railways in the 1990's and into the next century seems generally favorable. However, this favorable scenario has to include a realistic assessment of changes in competing modes. The progress the Community has made to increase transport efficiency is well documented ; here it will suffice to note some of the main changes that are likely to occur that might concern the railways.

Road (freight) : By 1993 the access to the market for international road freight transport will have been freed from quantitative controls. The existing quantitative system of licenses and quotas will be replaced by a qualitative system based on the performance of firms in meeting a number of strict requirements in relation to professional competence safety, environment, etc. In addition the international freight market will be freed from the remaining vestiges of tariff controls. A further important measure concerns the introduction of national cabotage. The net effect of these measures will be to make road haulage more efficient and an even stronger competitor for the railways. Overall these measures should allow operators to exploit the opportunities of the Single Market and reduce those costs that they currently bear which are due to the existing fragmented market situation.

However, to set against this tendency there are problems facing the road haulage industry. Notably there is the increasing problem of congestion and the associated environmental difficulties. These problems are already acute in certain areas particularly on transit routes and public opinion is increasingly questioning the traditional answer of "more roads". Community action in fields like cabotage which reduce empty running and hence benefit road congestion but nevertheless infrastructure difficulties will increase. This problem is also linked with the issue of the coverage of infrastructure costs and in particular the balance between Member States.

The Commission has proposed a system based on the principle of territorial payments for infrastructure, but the lack of progress in agreeing a solution brings the dangers of unilateral national measures closer.

Road (passenger) : Long distance road passenger services have not yet developed to create a Community network. Certain Member States have a comprehensive domestic network and occasional services for tourists have developed widely. The Commission believes that further simplification and liberalization needs to be introduced if this mode is to play an effective role in the Single Market.

However, it is still necessary to maintain control procedures to ensure that there is not unfair competition within the sector and with other transport modes, as well as to maintain safety standards. Overall, the railways will find competition increasing but experience suggests that the market segment of coach services may be different from that of the railways.

Inland waterways : the inland waterway industry is undergoing a somewhat similar metamorphosis as that experience by the railways. The loss of traditional traffic and changes in industrial and commercial practices have led to the development of chronic over capacity in the sector. This problem coupled with difficulties concerning the renewal and replacement of infrastructure has given rise to grave difficulties. The Communities has reacted by a scheme to encourage the scrapping of the least efficient vessels in the fleet ; the scheme will starts early in



1990 and will improve substantially the situation of this environmentally friendly mode of transport. Following the completion of the scrapping program the Commission hopes that demand and supply will be more closely aligned and the need for any further Community action can then be examined.

**Air transport :** air transport has become an increasingly effective competitor to the railways over distances of 300 km. The Commission is proposing a series of measures that will open up the air transport industry to greater competition and thus provide more attractive services for customers. However, the delays created by airport and indeed air-lane congestion means that certain shorter distance air services are now open to competition from faster rail services. This has already been shown to be the case in France with the T.G.V.. Thus, the railways have the possibility of increasing their market share on middle distances, say up to 600 km, if they can introduce sufficiently attractive services.

**Other modes of transport :** coastal shipping and pipelines also compete with the railways in certain markets. However, the nature of these competitors severely limits the traffic for which they can compete. It seems unlikely that there will be any change in this situation.

### **The Problems Facing Community Railways**

**Organization/Management :** Community Railways remain firmly fixed to their national base notwithstanding some tentative efforts to create international organizations (e.g. INTERFRIGO, INTERCONTAINER). The consequent lack of "end-to-end" management clearly creates problems in ensuring an adequate quality of service and in no small way explains the railways lack of success in international business. Although, it is not the role of the Community to lay down the form of railway management, it is clearly a question of Community interest to ensure that there are no obstacles to railway companies in providing services throughout the Community. In this way, the railways would compete on an equal basis with other modes of transport.

If this question of provision of Community services is to be tackled the question as to whether the railways have a sufficient management autonomy to enable them to operate efficiently cannot be avoided. This implies further clarifications. It is clear that the Member States should distinguish between their position as the railways owner and that of a "customer" for railway services ; only if this clear distinction is made can the full advantages be realized from an independent management working to achieve clear objectives.

Finance : the financial situation of railways has given rise to increasing problems. The deficits of railway companies is often confused in the public mind with an indicator of efficiency. In reality, the difference between the receipts and costs of railway companies is influenced by a wide number of factors, notably :

- the degree to which public services are compensated;
- the capitalization of past deficits;
- the restrictions imposed on railways in pricing and the provision of public services.

In theory, the existence of Community provisions to compensate the railways for their public service obligation should prevent the creation of capital debts. In practice, the existing system of providing compensation ex-post and without providing fully for replacement of assets has not been successful and certain railways have accrued large capital debts; e.g. the DB in 1988 had a capital debt of 20,9 billion ECUS which incurred 1,5 billion ECUS in interest charges, for the SNCF debt amounted to 11,6 billion ECUS. If the railways are to operate efficiently it is essential that their capital structure reflects the real current value of assets and that adequate capital exists to provide for investment and renewal of assets. If the railways of the Member States are to work in unison to cater for needs of the Community it is important that the basic objective of realistic capital accounts is achieved and that the State lays down clear rules regarding the rules to govern all railway capital investment to avoid debts building up again.

Capacity : the Community's railways in general have spare capacity on most routes or additional capacity that can be made available at limited costs. However, any examination of the real capacity has to take account of the nature of the service to be offered. In the passenger field many routes are unable to offer the speed required to-day to be competitive with other modes of transport. Although the modernization of routes is often the most economic way to increase speeds in some cases completely new routes are necessary. Such new routes figure very largely in the plan published by the Community of European Railways in 1989. Only with the provision of these new high speed routes will the Community finally develop an integrated rail system free from the restrictions inherent in the uncoordinated approach adopted to-date. As for freight transport again there is a service problem in that many principal routes in the Community do not possess sufficient height of width clearance to accept the norms adopted for Community road vehicles. In this case, there are strong arguments for Community action to establish common standards and priorities to complete a Community network.

Technical : numerous technical obstacles block the path to a closer integration of Community railways. In part these technical problems can be traced back to the epoch of the development of railways e.g. the difference in the track gauge used in the Iberian peninsular. However, further problems have arisen due to the lack of a common approach to the introduction of new techniques e.g. the electrification of lines at different voltages. Some effort have been made to harmonize standards but these remain limited in scope.



As Community railways have effectively been controlled by national governments, it is not surprising that their operations have been restricted to the national territory. Railways have had limited incentives to develop their technical advantages on a European-wide context. This is an increasing problem as the technical scope to create a Community network now exists for both passenger and freight movement. For this reason Community action has to be developed in parallel with national measures designed to tailor the railways to the specific situation in each Member State. The creation of a true Community network with the consequent advantages for users should not limit the development of national and even regional solutions designed to meet particular needs and aspirations but rather enlarge the range of railway services in general. The future for railways is not only in high speed lines but in the constant improvement of existing services at the national level.

### **The Provision and Access to the National Infrastructure Network**

Roads, waterways and air space are generally treated as public utilities whose use should be open to all. This principle of free access was not applied to railways as it has been considered that the provision and use of infrastructure also undertook operations and jealously guarded the rights to its use. In the early days of railway operation the number of companies in existence posed an obvious impediment to the operation of long distances services and in many countries the concept of "running rights" was developed ; this allowed one company to operate on the tracks of another subject to the payment of a toll or fee. Over time this practice died out as gradually private companies were merged into a single public undertaking. However, the principle is of interest as it reflects one of the key elements of the Community : the freedom to provide services.

A further important issue to consider in relation to the current linkage of railway operation and infrastructure is the question of harmonization of competitive conditions between modes. The manner in which road users currently pay for roads and the historical anomalies that exist in relation to waterways makes the achievement of the object of a broad equality of treatment between competing modes difficult. This problem has been tackled in a number of countries, notably Switzerland and Sweden, by the State assuming financial control for railway infrastructure and instituting a charging system comparable to that used in road transport.

### **Separation Between Operational and Infrastructure Activities**

In accordance with the principle set out in the Article 222 of the Treaty, the Commission does not propose any specific solution regarding infrastructure ownership : Member States may either authorize an undertaking to own and operate the national railway infrastructure (in particular the existing railway undertaking) or may assume the ownership and financial responsibility for the railway infrastructure. In this latter case a Member State should be required either to establish a public body or to agree a contract with an undertaking, granting to such public body or undertaking the responsibility for the management



and maintenance of the infrastructure. Any railway undertaking also operating railway infrastructure, either under State authorization (undertaking-owned infrastructure) or under a management contract agreed with the Member State (State-owned infrastructure) should be required to organize their transport and infrastructure operations as two distinct divisions, in order to ensure that no cross-subsidiation occurs.

In the case of international operations established national operators should be able to form groupings to offer throughout services transiting, where necessary, other Member States. This principle of free access for international services will be linked to the payment of a fee but is likely to give an important stimulant to create new services in the Community.

### **Public Services Responsibilities**

An efficiently organized transport market should provide the services that users require and will pay for. However, in certain cases the Member States may want to intervene in the market in order to ensure public services e.g. in urban areas. Such state intervention has been through the imposition of public service obligations. Since 1969 Community legislation has laid down that the imposition or maintenance of public service obligations may only be adopted "in so far as they are essential to ensure the provision of adequate transport services.

This concept also extends to the provisions of special tariff facilities for certain categories of users.

However, this Community legislation was based on the belief that a major harmonization between modes would be achieved within a few years. This has not happened and what was essentially an interim system has continued.

A new regime, reconciling the public needs with the need for efficient management, is now necessary. The basic feature of such a system is to establish a contract price in advance by an agreement between the State and the undertaking and related to a well identified service. The contract price should not be directly tied to the undertaking's costs incurred with the provision of the service but should rather be established by a market approach thus taking into account other possibilities to provide services state should evaluate the possibilities on the basis of their social cost/benefit analysis.

The railway undertaking would negotiate the contract price for each service on the basis of the financial objectives given by the State. In principle all public services provided by railways should be converted to the new regime. However, in the case of services operated in and around major conurbations, in conjunction with other operations and regional services, the public authorities may decide to maintain the existing "ex-post" approach. However, in view of the advantages of the new approach it is expected that the great majority of services, even in conurbations, could be covered efficiently by this new method.

## **The Role of Railway Undertakings in Tomorrow's Europe**

In order for railways to function effectively in the Single Market, Member States have to lay down the general principles for their operation as well as making suitable arrangements for the establishment of Community wide services.

These principles should notably ensure that railway undertakings:

- are autonomous ;
- are managed independently ;
- have the technical capability to carry out the operations or manage infrastructure taking into particular account safety aspects;
- have an adequate financial structure

A key element in the creation of a Community system is that the organization of railways has to facilitate development of new compatible operational arrangements. Such organizational compatibility will in its turn facilitate the development of technical compatibility. However, operational compatibility can only be achieved if railway management is really autonomous and responsible for the success of the undertaking. This is a first requirement for any movement towards the break down of national barriers. The precise nature of the national railways organization is not a matter for the Community once the principle of autonomy is adopted. With an autonomous management in place and the basic rules for access to infrastructure accepted the corner stones for a Community railway system are laid.

Railway management will be expected to achieve its own specific objectives within the basic principles set out above : some operations will be clearly commercial and be operated according to market principles ; other services will be operated on behalf of the public authorities on the basis of a clear public service contract between both parties.

As far as the commercial services are concerned the Member States have to ensure that railways have the same commercial possibilities as their competitors and that in particular their infrastructure costs are equally treated.

## **The Financial Structure of Public Railway Undertakings**

A question of particular concern is that of the present railway undertakings capital and debt structure. For various reasons many of the Community's existing railways do not have a capital structure that reflects the basic economic principle that the real value of assets employed is represented by their earning power. If an autonomous management is to be responsible for the railways it is vital that the capital account of the enterprise is examined to provide for a more

normal balance between capital and debts. If the level of debts is considered to be out of proportion to working capital, Member States should take the necessary steps to adjust this either by writing off existing debts or increasing the railways' capital.

At the same time as the railway financial structure is reviewed, the Member States should also proceed to clarify the remaining compensations for various obligations etc. that are imposed upon the railways under Regulation 1992. Whenever possible such obligations should no longer be imposed but in the case that they are considered to be necessary they may either be covered by :

- inclusion in the public service contract ;
- incorporation in the infrastructure reorganization ;
- be the subject of a "once off" compensation (notably a capital reconstruction).

#### 2.4.2. Guideline 91/440/CEE on the Development of Community Railways

The guideline n° 91/440/CEE of the European council on the "Development of Community Railways" was adopted on June 29, 1991 (document attached in appendix). This guideline now constitutes the legal ground for all kinds of relationship between the governments and the railway companies not only in the Community's member states but also very soon in the countries of the "European Association of Free Exchange (AELE) which on May 1, 1992 concluded in Porto a number of agreements aiming at creating together with the EEC what is called the "European Economic Space".

The guideline 91/440/CEE will come into effect on January 1, 1993 but the various member states and the railway companies are already paying proper attention to its contents in their thinking and when elaborating projects dealing with their mutual relationship or with the internal structures of railway operators.

The framework laid down in the guideline is completed by council regulation n°1893/91 on public service obligations which came into effect on July 1, 1992 and whose application will be extended to the AELE countries after the Porto agreements have been ratified.

The main provisions of regulation n°1893/91 and of guideline n°91/440/CEE are the following :

- the financial autonomy of railway companies,
- the reorganization of their financial situation, most notably as regards the servicing of past indebtedness which does not constitute productive investments,
- the termination of public service obligations or, if continued, their itemization in contractual agreements between on the one hand railway operators and on the other hand the State or other public authorities,



- establishing of a separation, at least as regards financial and accounting management, between infrastructure management and railway operations. The word infrastructure being applied to the fixed installations required for train operations but also to CTC centers and more broadly to all installations contributing to the organization of such railway operations,

- distinguishing between two kinds of entities : the infrastructure-managing body and the railway operators in charge of the two above-mentioned activities. It is understood that this distinction can be made at the financial level (in the case of one single railway company), at the organizational level (in the case of one railway company with two different sectors), or at the institutional level (in the case of two entities which are legally unconnected).

- giving access and transit rights to individual railway companies providing international intermodal services and to international groups of railway companies providing all kinds of international services (passengers, fret).

A number of railway companies were already operating under the first three items listed above. Such is largely the case of French Railways as previously seen, while the other European railway companies have seen in the guideline the opportunity to improve their situation substantially in those fields.

However the last two stipulations represent courses which are radically new if not downright revolutionary and are those which stir the greatest number of problems and the most delicate ones as well.

As regards establishing transit and access rights the aim of the commission was to transcend the national perimeter in which European railway companies usually operate, to further new forms of cooperation between those companies, even to open the market to new operators that would compete with the existing national operators.

The railway companies are currently busy studying the extraordinarily complex conditions under which those transit and access rights could be implemented.

The difficulties are for example the access fee for penetrating on a given infrastructure, especially if one keeps in mind that some coordination is desired between the countries to avoid distorting the rules of competition, or if one wishes to keep for the governments the possibility to integrate the social costs of the various modes, or to integrate considerations of global or social policies or of policies linked to the environment or to the national land development.

Each member state is busy transposing the stipulations of guideline 91/440/CEE into its national legal system as is the obligation of the guideline itself. A number of member states are in favor of implementing even the most radical solutions laid down in the guideline or are considering to go even further.

As for the railway companies they are resolutely walking down the road of creating many international groups. A road that seems to be particularly attractive. By so doing their clear intention is to show to the market as well as to the national authorities and to the community's authorities their ability to cooperate in a way that is both active and efficient especially when it comes to operating cross-border commercial services.

A difficult policy whose achievement quite naturally requires time whatever the amount of goodwill applied to the task.

The European parliament has already set 1995 as the deadline by which the commission must have examined how the system works and to formulate if need be new propositions with a view to improving the efficiency of the community's railways.

## 2.5. DEVELOPMENT OF HIGH SPEED RAIL IN EUROPE

Other aspects of the European Guidelines address the High Speed Network at the European scale. Here is a summary of these Guidelines.

### 2.5.1. Community Objectives on Transport Infrastructure and Transeuropean Networks

The objective of Community transport infrastructure policy is to develop different transport networks to meet the increased need to move goods and persons about which will be increased by the completion of the European market. The main features of this policy, as it affects the railways, are the coordinated development of a properly integrated community network, and use of financial resources, including Community funds, to build this network. From a financial point of view, the Community program sets out to improve efficiency by concentrating the support available on a few priority projects, which are to be entirely financed by combined packages of public or private resources.

Particular attention should be paid to the railway section of the whole transportation program since, in the past, the level of investment in railway networks has not been sufficient to modernize and extend them. This lack of development is particularly regrettable because in many cases the railways have reserve capacity which could cope with additional traffic, partly by using new techniques.

The Commission considers that, within the general context of developing railway infrastructure, whilst maintaining the priorities for action agreed notably by the infrastructure committee, certain aspects deserve priority, namely a high-speed rail network, combined railroad transport and traffic control systems. The rest of this chapter explains the commission's thinking on a European high-speed rail network.

The development of a high speed train network has also to be included in the framework of ideas that the Commission is considering on "trans-European networks". The guidelines have the objective of providing the Community with the infrastructure it needs to meet the new demands of various economic sectors generated by the achievement of the European internal market. In view of the new network scale, priority is given to a number of projects which are not on the critical path of the national plans.



### 2.5.2. Previous Initiatives for the Creation of a European High-Speed Network

Europe is an ideal area where to develop a high-speed rail network since the main routes are already clearly identified within the Member States. It is important therefore to coordinate the national networks very carefully in order to arrive at a coherent Community system. This can be done by exploring the following possibilities :

- converting existing lines for high-speed trains, as has been done in the United Kingdom, in order to reach 200 or even 225 km/h,
- building new lines to take mixed passenger and goods traffic , which means reducing gradients and, in many cases, expensive engineering work,
- building special dedicated lines for passenger traffic, which will require less extensive investment than mixed lines and will make it possible to optimize operating efficiency.

Several feasibility studies have been made for providing the Community with a high-speed rail network. Worth mentioning in particular are :

- the report "Towards a European high-speed rail network" sent by the Commission to the Council on 30 June 1985,
- the Starita report to the European Parliament, 1987,
- the proposal for a European high-speed network sent to the Commission by the Community of European Railways (CER) on 24 January 1989.

These various reports contain virtually identical arguments and reach similar conclusions regarding the advisability of developing a high-speed rail network on a European scale.

The Commission has decided to send the Council the proposals made by the Community of European Railways, making additions and amendments where necessary.

The CER report works through the following topics :

- Europe is an ideal area because of distances, population distribution, congestion on the roads and in the air, and environment problems ;
- national projects would form the overall framework ;
- creation of a European network by filling in the missing links between national projects ;
- possibility of staging gradually the network can be built up over a period of 20 to 25 years ;

- necessity of insuring compatibility and harmonization of technical aspects (rolling stock) and economic aspects (time savings, demand forecasts, social benefits, profitability, etc.);
- project funding to take into account public benefits ;
- contribution of the network to European integration.

The Commission sees the work summarized in this report as an important contribution and plans to use it as a basis for giving a real boost to implementation of the network, while at the same time ensuring harmonious integration with its transport infrastructure policy. It is time in fact to begin a truly operational phase, setting practical objectives to be met during a preliminary stage while determining the technical and financial resources which will be needed and assessing the nature and scale of any side-effects.

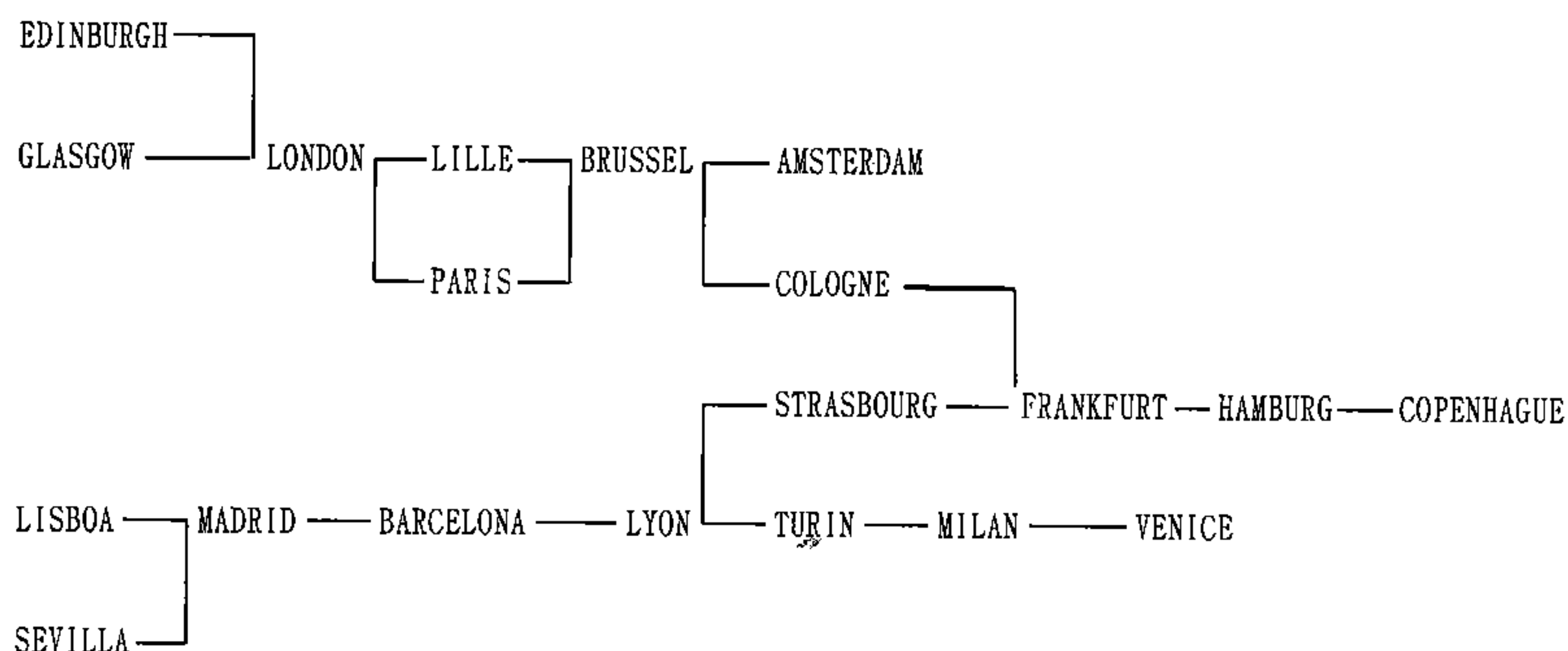
### 2.5.3. National Achievements

Most Member States of the Community are now working on high-speed train programs, but have reached various stages of development. Some have been operating them for several years and others are conducting studies before taking decisions. The programs are virtually all designed to meet national needs. They cover the most important routes and their specifications may differ. All these routes constitute the framework and the point of departure for a future European network.

The Commission must be informed of the national plans of the Member States. Consultation with national experts has taken place to this end. For each planned route, the following information is required:

- planned opening date ;
- the main infrastructure and equipment specifications ;
- traffic forecast, proposed services and type of rolling stock to be used ;
- information available on investment costs, fixed installation costs and rolling stock cost, and proposed financing methods ;
- estimation of overall profitability

Figure 2-13 : Sections of the European High Speed Rail  
Network to be Developed



These projects, which are also interlinked by the French TGV line from Paris to Lyons, represent excellent coverage of Community territory since nine out of the twelve Member States are involved. They also have the merit of presenting totally different geographical and economic features.

In addition, in the various countries, a number of interconnecting points from which it is possible either to extend the high-speed rail network or to link up with conventional networks begin to emerge. The development of the high-speed network should act as a catalyst, providing full incentives for the development of most of the conventional rail networks.

Completion of a European network, and particularly work on the priority projects, will require the filling in of "missing links" or "key links". These are the sections which will need to be built in order to link up national networks. Various problems will have to be solved : the particularly high cost of building lines across mountain ranges, the fact that only limited traffic is forecast since frontiers still have quite a major psychological impact, technical obstacles, special policies, etc. Particular emphasis should be placed on financing these links.

#### 2.5.5. Technical Harmonization and Standardization to be Undertaken

With a view to the large single market of 1993, Europe is preparing to dismantle its administrative frontiers. The Commission, as part of its transport policy, is working on a legal framework which will open up the railway industry so as to allow freedom of carriage to duly authorized undertakings, which will of course include, first and foremost, the existing railway companies of the Community.



A notable feature of the history of the railways is the fact that many different national, or even regional, systems have developed which is impossible to change overnight. Nevertheless, it is impossible to conceive a new network development, which is to be fully operational during the first half of the 21st century at least, without a minimum of technical standardization, in order to provide a cost-effective service which meets the needs of European customers. A number of careful choices will therefore have to be made without delay.

Progressive but dynamic alignment will therefore be an essential precondition for the credibility of a European network. The community of European Railways will have to play a leading role and it is also essential that the railway industries be prepared to cooperate with the project. Alignment will only be possible if all the parties concerned have the same political will.

From a technical point of view it is obviously possible, to a certain extent, to live with different systems and different specifications. However, this approach, which up to now has been the basis for cooperation between the different networks, will result in high costs and less reliable equipment. The European railways should rather adopt "universal" specifications compatible with the particular set of International routes they plan to serve, which is their only chance of success. Although a number of experiments have already been carried out in this direction, the results unfortunately have not been applied within the industry.

Certain design parameters must be harmonized in order to standardize operation on each section of the network and to avoid fragmentation of the industry. For this reason, the harmonization required to build a Community network must include:

- infrastructure and equipment specifications : track gauge, line profiles and in particular maximum gradients, radiuses of curvature, maximum loads per axle, types of current used for electric traction, and whether the line is to be used for mixed traffic or for passenger transport only with the consequent effects on line lay-out and top speeds ;
- traffic control systems which, if not harmonized, will at least need to be made extremely compatible in terms both of equipment and regulations on their use ;
- designing rolling stock specifically for the services for which it is to be used, which means it must be ordered and built according to unique specifications irrespective of the owner or operator ;
- the commercial aspects of the high-speed train "product", i.e. quality of service, marketing, setting of rates and sharing revenue, reservation system, etc.

As a practical measure, the Commission intends in the near future to prepare a restricted list of values of a certain number of parameters relating to infrastructure and equipment for the European high-speed

train network for ultimate adoption. This list will be drawn up by a working party consisting of representatives of the different interests (Commission, Member States, railways and industry).

In addition, the Commission would like to emphasize the industrial dimension, which is an important feature of this project.

Considerable quantities of rolling stock and equipment will have to be supplied by the Community rail industry. Moreover as the technical specifications of supplies will have to take account of the Community dimension, the Commission is planning to organize preparatory work in this direction.

#### **2.5.6. Evaluation of Economic and Financial Aspects**

The decision to commit the European Community to building a high-speed train network should be based on analysis of the socio-economic benefits of such a network. This consideration was obviously behind the decisions taken by Member States on their own national projects.

The aspect which most directly concerns the Community is the overall size of the network and more particularly the question of the "missing links". The Community approach should not be to consider each of these links in isolation but rather to consider them as a feature of the whole structure.

Since in many cases the financing of these links is a problem, there should be the widest possible range of different solutions: own resources, financial market, assistance from Member States and/or the Community, and interest subsidies to bring together capital from different sources, particularly the financial institutions of the Community. Plans will be drawn up of future needs and these will be updated regularly as the requirements of the different features of the project become clearer

#### **2.5.7. Action to be Undertaken by the Community**

It follows from the above that the following action is required:

- planning the whole network by coordinating national plans (working party) ;
- harmonizing a certain number of technical parameters relating to infrastructure and equipment in order to ensure that they are all compatible (working party) ;
- enabling the Community to contribute towards financing the network, particularly those links which are not particularly profitable but are nevertheless required to tie the network together.

## 2.5.8. Council Resolutions

Since the proposal of the EEC Transportation Commission described in the previous paragraphs, two resolutions have been adopted by the council. The very text of these resolutions is given here after as well as the main recommendations of the high-level working group set up on December 1989.

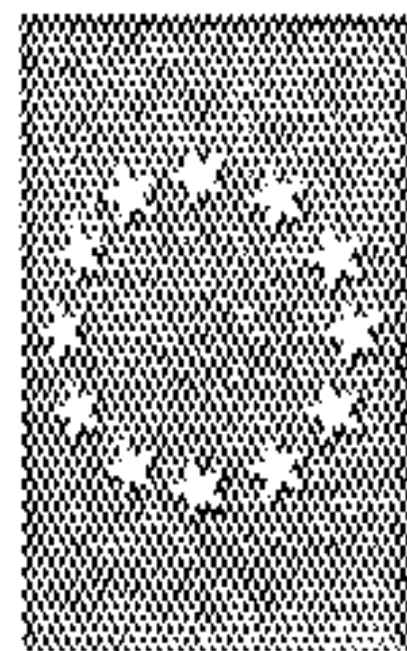
The composition of this high-level working group was :

Commission of the European Communities (DG III, VII, XI, XIII, XVI) including the group chairman ;

- . Government representatives of the 12 Member States ;
- . Community of European Railways ;
- . Railway equipment manufacturers :
  - ABB transportation,
  - AEG Westinghouse,
  - Ansaldo,
  - GEC Alsthom,
  - SIEMENS AG,
- . Roundtable industrialists ;
- . Eurotunnel ;
- . Observers :
  - Austria,
  - Switzerland,
  - Yugoslavia.

The Europeans long term master plan agreed upon includes 23,000 km of high speed lines - of which 12, will be new lines in the EEC territory and in Switzerland and Austria. The total amount of investment is ECU 180 billion, of which 18 % are already funded for projects under operation or construction. The whole envisaged network extended to the Eastern part of Europe (but not ex USSR) will reach 35,000 km.





CONJONCTURE EUROPEENNE  
INFRASTRUCTURES DE TRANSPORT

EUROPEAN CONJUNCTURE  
TRANSPORT INFRASTRUCTURE

EUROPEISCHE CONJUNCTUR  
VERKEHRSINFRASTRUKTUR

Scénario de l'Union européenne de 1992 à 2010  
Outline map of European high speed rail network (2010)  
Lebensraum des Europäischen Hochgeschwindigkeitsverkehrsnetzes (2010)

1. Lignes à grande vitesse (LGV) > 200 km/h  
2. Lignes à grande vitesse (LGV) > 200 km/h  
3. Lignes à grande vitesse (LGV) > 200 km/h  
4. Lignes à grande vitesse (LGV) > 200 km/h  
5. Lignes à grande vitesse (LGV) > 200 km/h  
6. Lignes à grande vitesse (LGV) > 200 km/h

Autres lignes  
Lignes existantes  
Lignes à grande vitesse

1. Lignes à grande vitesse (LGV) > 200 km/h  
2. Lignes à grande vitesse (LGV) > 200 km/h  
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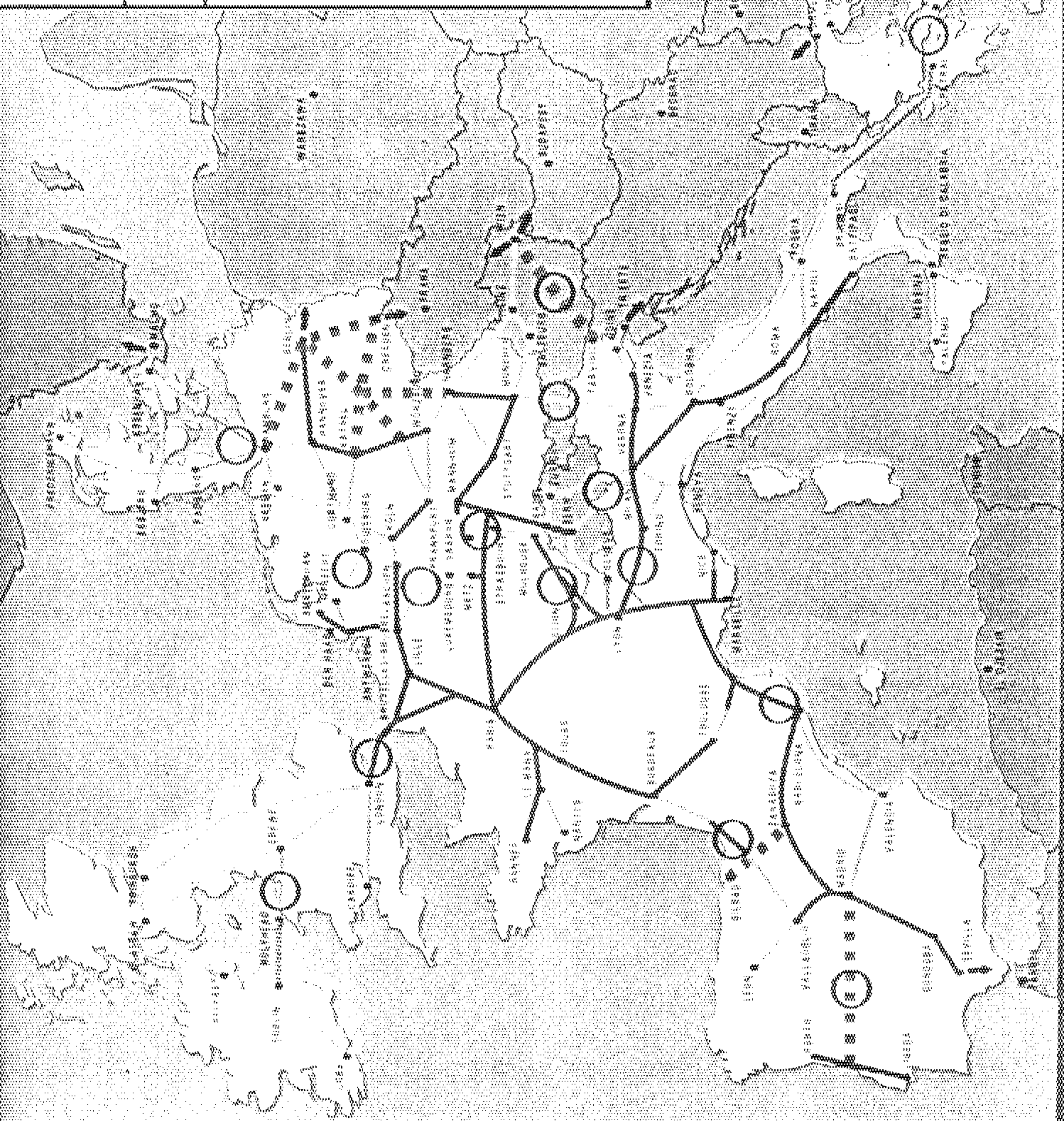
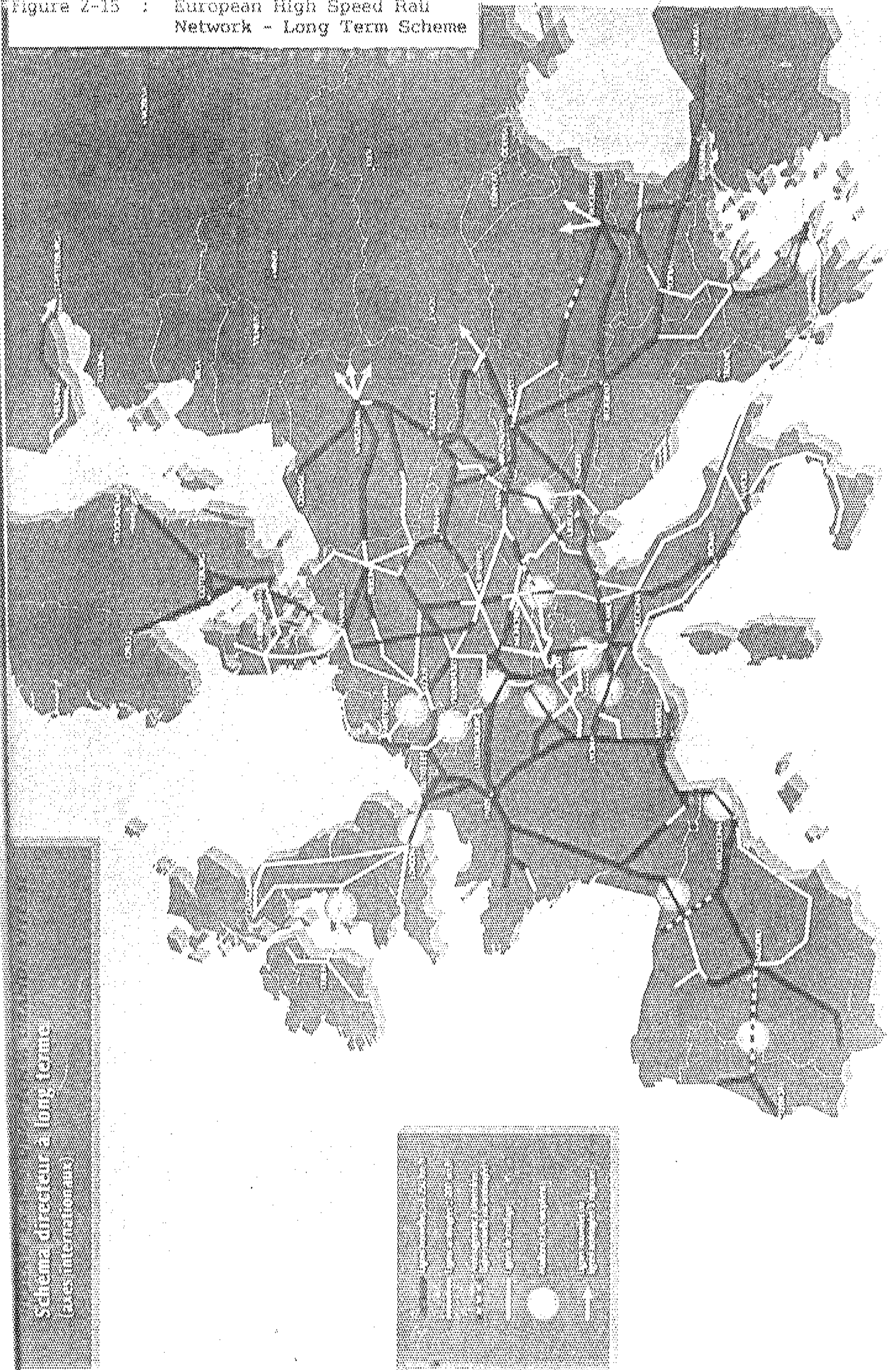




Figure 2-15 : European High Speed Rail Network - Long Term Scheme





#### **COUNCIL RESOLUTION OF 4 AND 5 DECEMBER 1989.**

The Council invites the Commission to set up a high-level working Group, consisting of representatives of the governments of the Member States and of the European railways on the matter of the development of a European high-level rail network.

The Group would be consulted in order to prepare, before 31 December 1990, an outline plan specifying those priority projects which are to be undertaken with a view to the completion of a European high-speed network on the basis of the national plans and the decisions already taken at international level. The plan will be submitted to the Council for approval.

The Group would further be consulted on the standards and common technical characteristics which would enable modern trains to run on the network and ensure the compatibility of techniques and infrastructure between the various sections of the network.

#### **COUNCIL RESOLUTION OF 17 DECEMBER 1990.**

The Council welcomes, in view of the importance attached by the European Council of 14 and 15 December 1990 to the development of large infrastructure networks, the communication on the European high-speed rail network which the Commission has submitted to it following consultation of the Working Party set up as a result of the Resolution adopted by the Council at its meeting on 4 and 5 December 1989.

The Council welcomes the discussions held to draw up an outline plan specifying the priority measures for establishing the European network. It notes the progress made in formulating technical conditions to ensure that infrastructure, equipment and rolling stock are compatible and that trains can run across international boundaries.

The Council requests the Commission to look in greater detail, together with the representatives of the governments of the Member States, the railway companies and the railway industry, at:

- ▶ the socio-economic impact of the network on the integrated transport market and the development of the Community, particularly bearing in mind the gauge change in the Iberian peninsula;
- ▶ the impact of the network on the environment in the broadest sense, and how it compares with other modes of transport in this regard;
- ▶ economic studies, including, amongst other things, the commercial aspects of the key links and other crucial points in the network and the problem of financing them.

The Council requests the Commission to continue studying the key links and to consider how the development of the Community's relations with the European Free Trade Association (EFTA) countries and the Central and Eastern European countries will affect the network.

The Council notes the Commission's intention of preparing a draft Directive on the approximation of laws, regulations and administrative provisions concerning rail traffic and emphasizes the need to carry out joint initiatives as soon as possible to harmonize command and control systems.

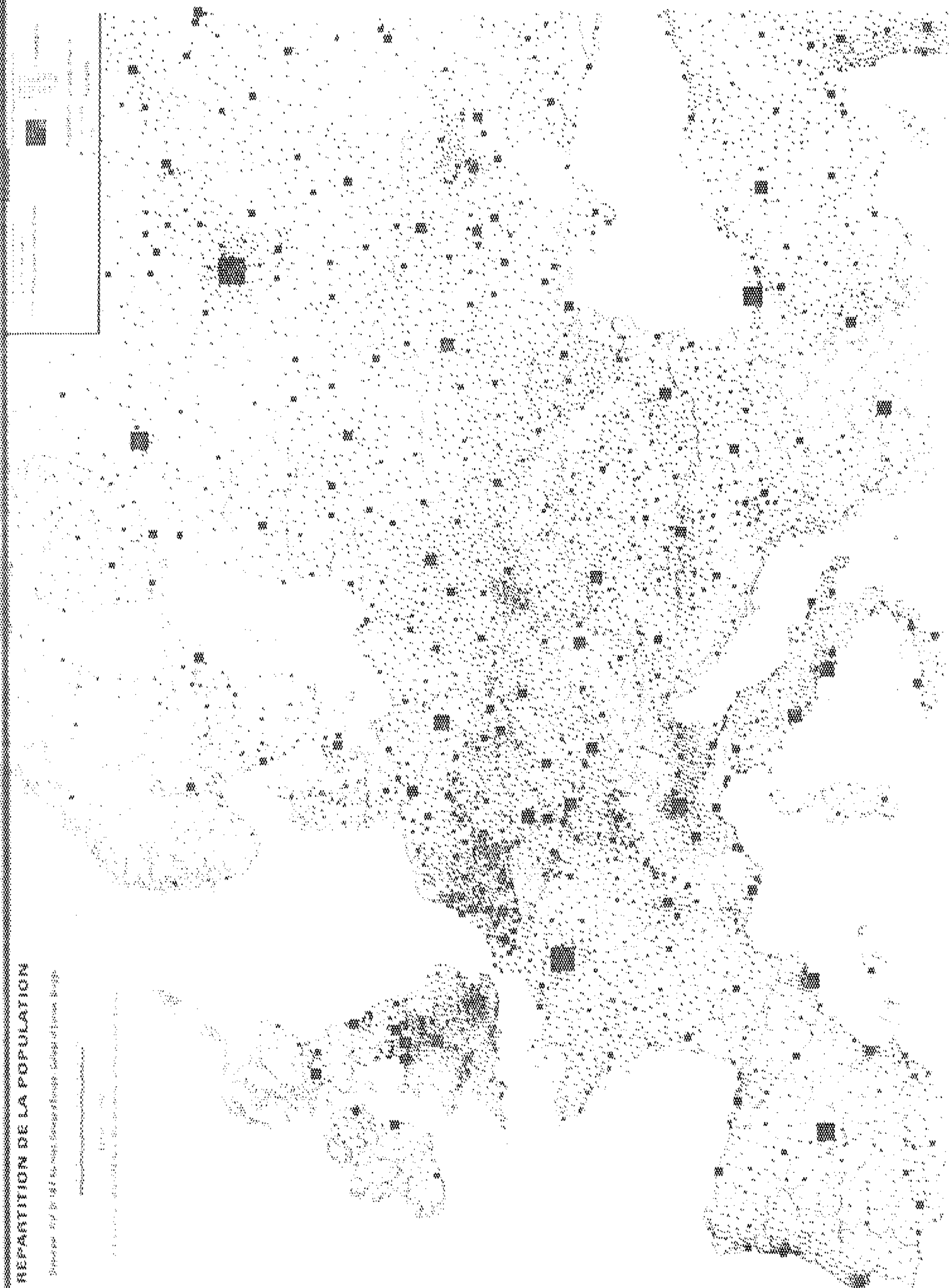
The Council expresses its satisfaction with the Working Party's results and requests the Commission to consult this Working Party again on all the topics mentioned above.



## THE MAIN RECOMMENDATIONS OF THE GROUP

In view of the development of the European high-speed train network, the Group recommends that the Commission formulate the proposals and take the necessary measures to attain the following aims:

- I The approval by the Council of the **Outline Plan** established by the Committee on the basis of currently available data.
- II The priority implementation, within the appropriate scope, of the measures required to establish the following **key links**:
  1. Hamburg-Copenhagen
  2. Belfast-Dublin-Holyhead-Crewe
  3. Utrecht-Arnhem-Emmerich-Duisburg
  4. The interconnections near Strasbourg and Saarbrücken
  5. London-Channel Tunnel
  6. Brussels-Luxembourg
  7. Rhine-Rhone
  8. Lyons-Turin
  9. Madrid-Barcelona-Perpignan
  - 10 a) Lisbon-Porto-Madrid  
b) Vitoria-Dax
  11. Milan-Basle
  12. Brenner
  13. Tarvisio-Vienna
  14. Links towards and within Greece
- III Assessment of the **socio-economic impact** of the network on the integrated transport market and on the development of the Community, taking into account the gauge differences in the Iberian Peninsula.
- IV Research into the effect of the network on the **environment** in the broad sense of the word (including safety and energy control) and comparison with other transport modes.
- V Continuation of the process aimed at guaranteeing **technical compatibility**.
- VI Promotion of **cooperation** between the railways and the industry for the drawing up of standards and technical specifications.
- VII Achievement of coordinated **command and control** systems with upward accounting and continuation of research into a unified system.
- VIII Reinforcement of arrangements made by the railways to promote a **commercial policy**, namely ensuring a high service quality.
- IX **Financial arrangements** for the key links and other difficult points of the network.



## 2.6. SYNTHESIS OF FOREIGN EXPERIENCES

We can sort foreign experiences into three categories:

- . non privatized systems,
- . privatized systems,
- . general European orientations.

To the first category, belong Germany, Italy, Spain, Switzerland, Sweden

We have examined in depth the German experience and it is very similar to the French one. However, the rules for financial transfers between the State and the Railways have been applied with less clarity and rationalism. For example, money granted for investments, in fact, is used for the operating equilibrium. On another hand, the unification of East and West Germany creates huge problems to the railways which are now facing unbearable deficits. The Government has recently decided a drastic reform which looks like a step towards privatization.

Italy rises an interesting case because the creation of the high speed network gives the opportunity to a new structure involving private funding.

Sweden is incontestably the most interesting case because this country has anticipated the European guidelines separating the infrastructure from the operations of the network. The infrastructure company as well as the operator company are fully state owned but the latter is a commercially-oriented enterprise. Possibility is potentially given to private operators to run trains on the railway network. It seems to be a success. However one wonders about the priority given to infrastructure projects when there are budget conflicts or when several operators claim for incompatible projects. One of the key issue of the process is the analysis of the competition between modes. Sweden has succeeded to introduce a true equalization of competition conditions between road, air and rail through an oil taxation taking into account the whole social marginal cost.

To the second category belong Japan and will belong United Kingdom

The Japanese case is very interesting. One of the main characteristics of the privatization reform are:

- . the operating deficits and the enormous indebtedness appeared in the past JNR organization simultaneously with Shinkansen construction and operations, mostly due to too low fares ;



. the privatization process has been a major opportunity to improve strongly the productivity whilst the former JNR could not act because of status constraints ;

. the passenger companies have not the same organizational structure but all of them take benefit of a property development policy ;

. the three major passenger company make profit, partly thanks to Shinkansen operations which have got a dominant position on the market ;

. however the other companies have deficit and the past debt of the JNR, of which a holding company is in charge, does not reach to be reduced. At the same time the private companies make enough money for buying the infrastructure which was leased to them.

By many features, the japanese experience and the French experience are similar. One can wonder if their relative success is not mainly due to the efficiency of their high speed systems and to a strong commercial orientation (creation of business department) combined with an active diversification and property development.

The BR experience will be interesting since it will also be a privatization at large scale.

The European Community recent guidelines address both the institutional matters and the high speed network development.

For the first topic, the guidelines push forwards to :

. a clarification of the state and the railway roles and for autonomy and self financial sufficiency of the railway ;

. the abandon of the non profitable business except if the states or other collectivities are willing to financially compensate the corresponding railway operations ;

. the separation of the infrastructure management from the operations by creation of separate companies or at least by special accounts in the same company ;

. the access to the national network to private operators, for transit or other services.

For the second issue, the EEC tries to enhance the development of an ambitious high speed rail network, expecting from its operations many positive external effects, the first of them being the European integration. Other effects are release in road congestion, energy savings, reduced impact on environment...

The problem to solve is to advise the national plans so as they converge towards the creation of long trans-European corridor. In this perspective, one of the crucial tasks of the EEC is to back all the "missing link" or "key link" projects, even thanks to community funding.

No choice is recommended in term of high speed technology, but attention is paid in order to facilitate the integration and the interpenetration between the various national networks.

## CHAPTER 3

### DIAGNOSIS AND ANALYSIS OF THE PRESENT SITUATION IN TAIWAN

#### 3.1. INSTITUTIONAL ASPECTS

##### 3.1.1. Introduction to Government Organizations of the ROC

The Constitution of the Republic of China was promulgated in December 1947. It is based on the principles of equality, freedom and democracy. It was amended in 1948 by Provisional Articles; the latter were abolished in 1991 and the Constitution was amended by ten Additional Articles which provided a legal basis for the election of the Second National Assembly.

Under the Constitution, the ROC is governed at three main levels: central, provincial and county/city, each of which has well-defined powers.

#### Central Government

The role of "parliament" (in Western parlance) is jointly filled by the National Assembly, the Legislative Yuan and the Control Yuan. The functions of the National Assembly are to elect/impeach the President and Vice President, to amend the Constitution and to vote in the exercise of its right of referendum on proposed constitutional amendments submitted by the Legislative Yuan.

The President of the Republic of China is the highest representative of the nation and the paramount commander of the army. He represents the country in its foreign relations and all acts of the State are conducted in his name. He has specific constitutional powers to conduct national affairs:

- . nominating and (with the consent of the Legislative Yuan) appointing the Premier and the auditor general of the Control Yuan (who is in charge of budget auditing only but not of other functions of the Control Yuan, of which the president and vice-president are elected from among the members), nominating and (with the consent of the Control Yuan) appointing the president and vice president of the Examination Yuan.

- . seeking a solution to inter-Yuan disputes (e.g. a controversy between the Executive Yuan and the Legislative Yuan).

- . exercising emergency powers.



The constitution provides for a central government with five branches:

- . the Executive Yuan
- . the Legislative Yuan
- . the Judicial Yuan
- . the Examination Yuan
- . the Control Yuan.

The Executive Yuan has a president, usually referred to as the Premier. Within the Executive Yuan, there are eight ministries (a recent proposal made by the Executive Yuan to extend the number of ministries to thirteen will be examined and probably adopted by the Legislative Yuan. Projected new ministries will be: the Ministry of Health, the Ministry of Labor, the Ministry of Environment, the Ministry of Social Welfare, and the Ministry of Culture, The Ministry of Transportation and Communications (MOTC) which controls the highways, railways, mass transit, telecommunications, navigation, aviation, meteorology, tourism and the postal services. It supervises both state-owned and private related enterprises. A department is in charge of railways, highways and tourism. The Ministry of Finances handles the fiscal administration of the nation: national treasury, customs, taxation and monetary affairs. The Ministry of Economic Affairs oversees the nation's economic administration and development. It has eleven departments covering industrial development, foreign trade, national standards and patents, commodity inspection and quarantine, energy resource planning, water conservancy planning, medium and small business administration, export processing zone administration, geological investigation, national corporation management and investment approval. Labor and social affairs and land administration are handled by the Ministry of the Interior.

Other organizations within the Executive Yuan with an interest in railway affairs are:

- . the Directorate General of Budget, Accounting and Statistics (DGBAS).
- . the Council for Economic Planning and Development (CEPD). Its functions are to coordinate the financial and economic sectors in advancing the economy and to study the world economic situation and trends in the domestic economic structure. There are eight departments: Overall Planning, Sectorial Planning, Economic Research, Housing and Urban Development, Controller, Manpower Planning, Performance Evaluation and General Affairs.
- . the Council of Labor Affairs.

The Legislative Yuan has the general legislative power (the term "law" denotes a legislative bill passed by the Legislative Yuan and promulgated by the President of the Republic). Another function/power of the Legislative Yuan is to decide upon budgetary bills. Until recently, a number of members of the Legislative Yuan had been in office for more than forty years. Locally-elected representatives (universal, equal and direct suffrage, and by single and secret ballot) are now revigorating the Yuan. They serve a term of three years and

are eligible for re-election. It is noteworthy that if the voters in a member's precinct feel that their elected representative has not duly performed his or their function, they may file a petition for recall; and if a member fails to attend meetings throughout a session without valid reason, he is regarded as having resigned.

## Local Government

At the local level, the island is divided into three territories: the Taiwan Province and the Special Municipalities of Taipei City and Kaohsiung City which are on a par with the Province, and report directly to the Central Government.

The Taiwan Province has a provincial government and a provincial assembly.

The assemblymen are elected directly by popular vote for a four-year term. The 77 members of the current assembly were elected in December 1989. Among the functions of the Assembly:

- . to pass provincial statutes concerning the rights and obligations of the people.
- . to approve the provincial administrative budget.
- . to decide on the disposal of the provincial properties.
- . to decide on the organic laws of provincial enterprises.
- . to exercise the power of consent on the provincial government's appointment.

The Provincial Government Council consists of 23 members selected by the Executive Yuan and appointed by the President. The Provincial Government has jurisdiction over 16 counties, which have 309 registry offices; and over five cities, which have 22 registry offices. Under the provincial government are 19 departments and 33 business operations in which the provincial government holds over 50 per cent of the total capital. The Provincial Government promulgates and issues laws and regulations in accordance with the laws and orders of the Central Government. If the laws or regulations affect the taxation, civil rights or duties of provincial residents, they shall be submitted in advance to the provincial assembly for consideration. Should the assembly reach a decision which the provincial government deems improper, the latter may ask the Executive Yuan to make a final decision.

Taipei City and Kaohsiung City have similarly a mayor and an elected council.

FIGURE 3-1: Organization of the Central Government

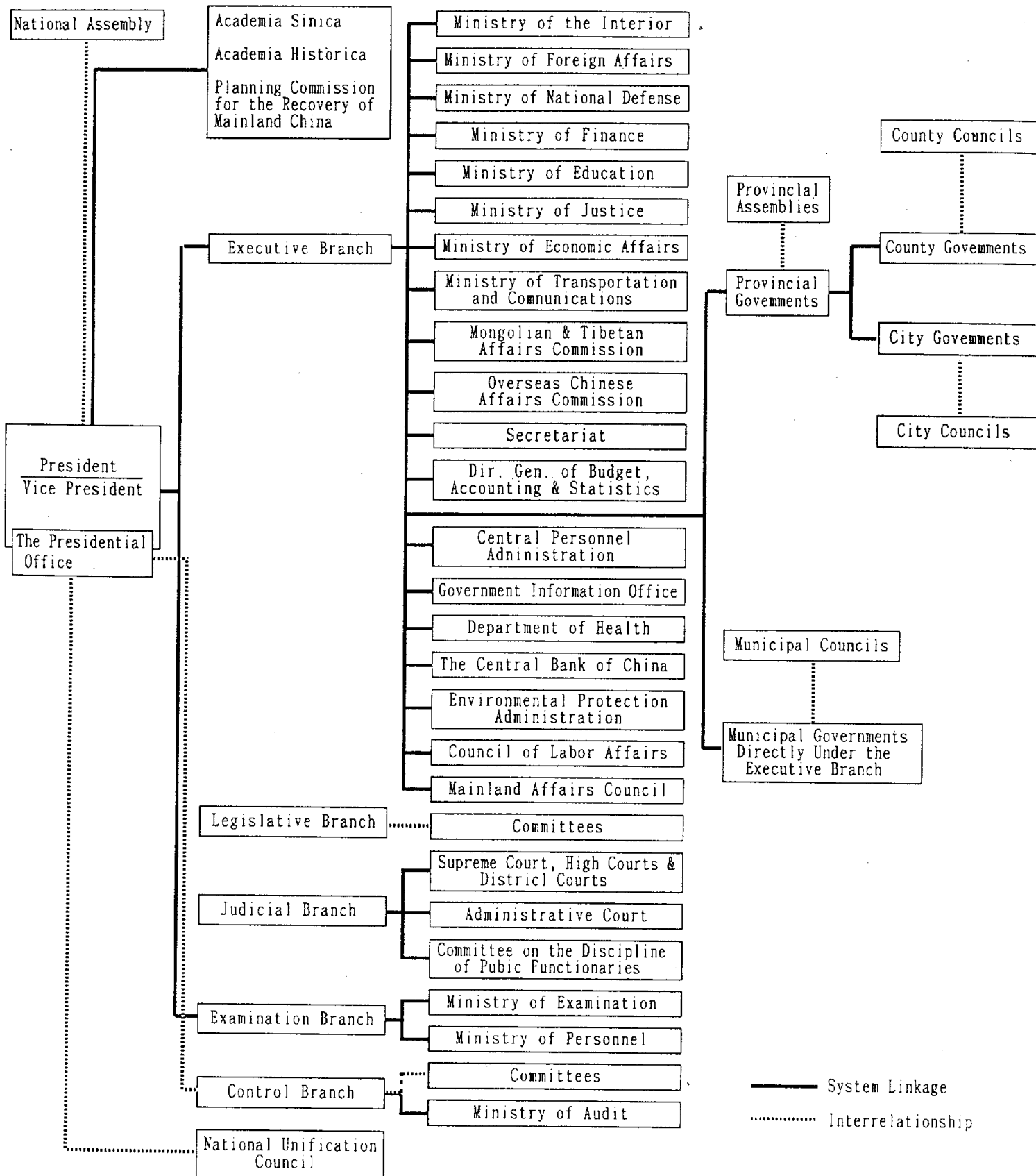
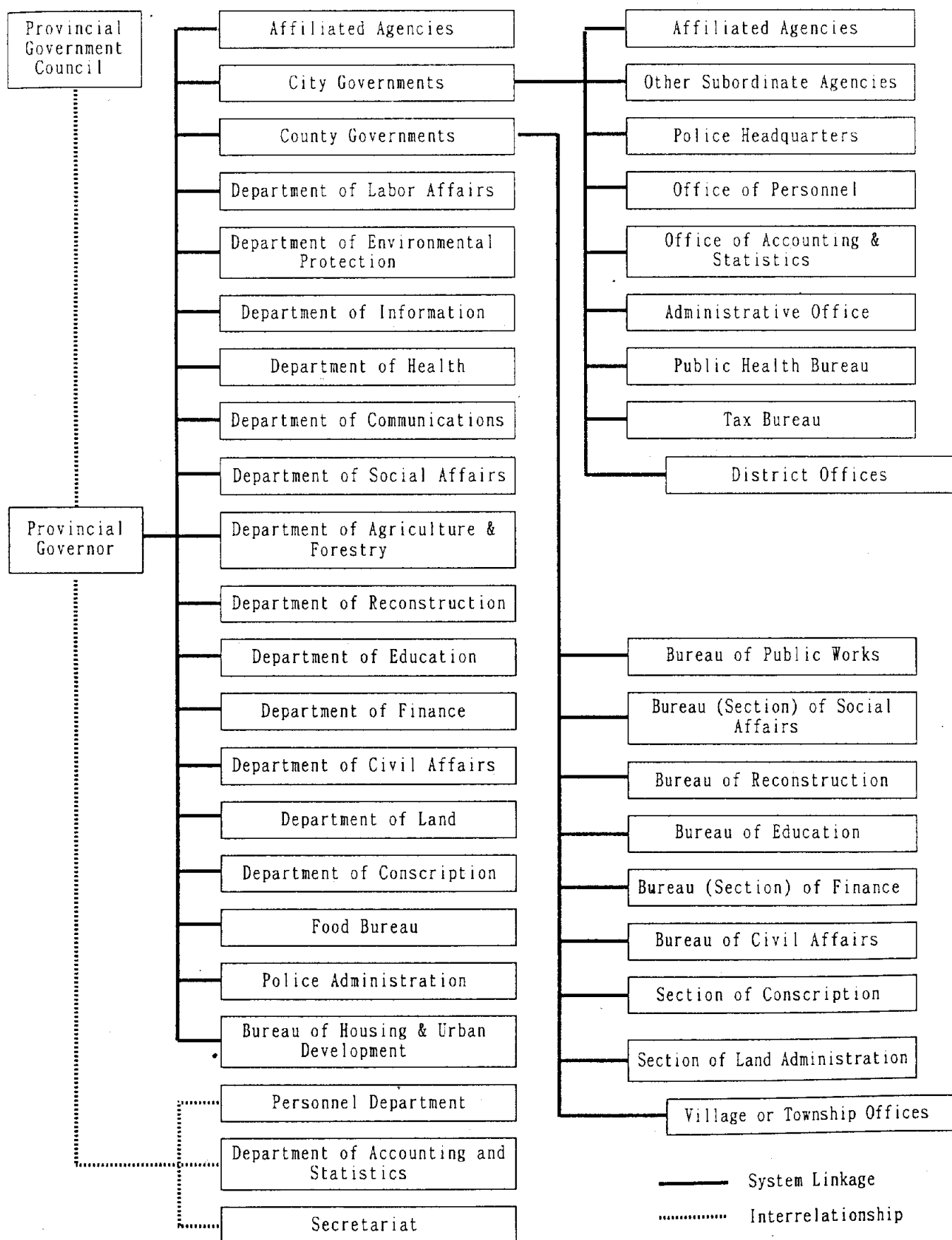




FIGURE 3-2 : Organization of the Taiwan Provincial Government



A legislation on self-government is currently being considered, by which:

- . Taipei County and Kaohsiung County would be separated from Taiwan Province and would merge, respectively, with Taipei City and Kaohsiung City, leaving the Province with a shrunken administrative area. The population of Taipei City will then be 6.2 million and that of Kaohsiung City 2.5 million or, together, 40% of the population of the island.

- . The Governor of the Province, the Mayor of Taipei and the Mayor of Kaohsiung would be popularly elected instead of being appointed by the Central Government.

### Financial Aspects

In 1990, 71% of revenue from all levels of government were tax and monopoly revenue (source: ROC Year Book 1991-1992) with the following distribution (source: Taiwan Statistical Data Book 1991):

- . Customs Duties: 9.67%
- . Commodity Tax: 10.03%
- . Income Tax: 26.63%
- . Stamp Tax: 0.42%
- . Business Tax, VAT: 13.20%
- . Land Tax: 12.45%
- . House Tax: 3.23%
- . Other Taxes: 18.07%
- . Tobacco and Wine Monopoly Revenue: 6.24%

Most taxes are collected by the Central Government which distributes a part of the proceeds to the local governments (Province, etc.) as per apportionment rules determined by a law promulgated in 1951 and amended from time to time (in 1965, 1968, 1973 and 1981). In addition, the Central Government provides local governments with subsidies which are negotiated on a case by case basis. The Central Government is currently under pressure from local governments to amend the law, with a view to increasing apportionments and reducing the need for subsidies.

Other resources of the Province are local taxes and the proceeds from business operations fully or partly owned by the Province: forests, harbors, the railway and various kinds of industrial ventures.

### 3.1.2. TRA's Institutional Relationship with the State

#### Past History

Following the Railway Administration Commission which took over in 1945 when Taiwan Province was recovered from Japan along with other provinces on the Mainland, the Taiwan Railway Administration was established in March 1948. At that time, the network had 901 kms of lines against the current 1,120 kms.

A Railway Law was promulgated in 1958 and amended in 1959 and in 1978. It provides the following definitions and stipulations:

. "National Railways" means the railways owned by the State and operated by the Central Government.

. "Local railways" means the railways operated by the local governments.

. "Private railways" means the railways operated by nationals.

. "Special railways" means railways constructed by companies and organizations for the purpose of their own business transport.

. Construction, management, control, transportation and safety of operation are governed by this law.

. In principle, railways are operated by the State.

. Construction, extension, transfer or operations of local railways and private railways are subject to the approval of MOTC.

. National Railways are administrated by the MOTC. Local railways, private railways and special railways are supervised by MOTC.

Whereas it is clear that TRA is neither a "private" nor a "special" railway, there are conflicting views as whether it is a "local railway" operated and, to an extent, owned by the Province, or a "national" railway. Some argue that, in 1945, when the Central Government entrusted the provincial authorities with the task of registering various assets recovered from Japan on behalf of the nation, these authorities registered the railways located on the island of Taiwan in the name of the Province. It should be remembered that, at that time (1945):

. the Central Government had actual control over most of the Chinese mainland, with its seat in Nanking. Only in December 1949 did the Central Government transfer its seat to Taipei and did it see its actual control reduced to the Taiwan Province and part of the Fukien Province.

. the Province's jurisdiction extended over the entire island. It is only in 1967 and 1979 respectively that the Special Cities of Taipei and Kaohsiung were created. As indicated above, the jurisdiction of the two cities will soon encompass 40% of the island population.

It does seem that from 1945 onwards, TRA was actually operated by the Province as a local railway and, in particular, the Province cashed in the company's profits which remained handsome until the mid-seventies. It is around 1978, when it became obvious that TRA had turned into a perennial money-loser, that the issue of ownership, Central Government- vs. Provincial jurisdiction, became a point of contention.



## The Rehabilitation Commission

In 1978-79, foreign consultants were called in. It would seem that their first recommendation was to turn TRA into a national railway, something that was successfully opposed by the Province, so that their second recommendation was to establish it as a public enterprise jointly owned by the Central Government and the Province, which the Province would not accept either, unless it could own 51% of the equities.

By the end of 1980, the Central Government set up a "Rehabilitation Commission on Taiwan Railways" with the major goals of "rationalization in investment", "modernization in facilities", "continued reduction in the numbers of personnel" and "insuring improvement in productivity".

The Commission comprised nine members:

- . three representatives of the Central Government: Deputy Minister of MOTC, Deputy Minister of Finance and Deputy Chairman of the CEPD.
- . three representatives of the Province: Governor, Director of the Department of Transportation and Director of the Department of Finance.
- . three experts approved by the Central Government.
- . the Commission being chaired by the Governor of the Province and vice-chaired by the Deputy Minister of MOTC.

The Commission was very active during the three years which had been originally assigned to its mission.

On the one hand, the Commission set up the policy that major railway investments would henceforth be funded (capital and interest) by both the Central and Provincial Governments on a 50-50 basis. And, in line with that policy, it was decided that the Central and Provincial Government would take charge retroactively, on a 50-50 basis, of debts contracted by TRA to fund the Electrification Project of 1979.

Over that seven-year period, TRA's work force was actually reduced by 9%, from 22,901 employees (including 1,117 in the Freight Service subsidiary and 177 in the Catering Service subsidiary) in 1980 to 20,551 (including 798 in the Freight Service subsidiary and 92 in the Catering Service subsidiary) in 1987.

On the other hand, it was felt that the Rehabilitation Commission was instrumental in establishing a working relationship between all parties concerned by railway affairs, conducive to a better coordination between Central and Provincial Governments and, at the provincial level (since the Governor himself was chairman of the Commission), between the various departments. It is said, however, that the Rehabilitation Commission had been intended to act as a board of directors for TRA, which it actually never did.

## The Supervision/Control Commission and Committee

When first set-up in 1980, the Rehabilitation Commission had been assigned a three-year term. In 1983 this term was extended and then again in 1985. It ceased to exist in December 1987. From 1981 to 1984, TRA's revenues increased by an average 3.33% per year and expenses only by 2.09%. In 1984, revenues exceeded expenses by NT\$ 8 million and, in 1985, by NT\$ 16 million. But this improvement was short-lived: from 1986, TRA was again in the red. Therefore, in April 1988, the Central Government created the "Supervision and Control Commission on Taiwan Railways" to supervise and guide the improvement of railway operation.

The composition of the Supervision and Control Commission is a little different than that of the extinct Rehabilitation Commission: it is comprised of eleven members:

- . the same representatives of the Central Government: Deputy Minister of MOTC, Deputy Minister of Finance and Deputy Chairman of the CEPD.
- . the same three representatives of the Province: Governor, Director of the Department of Transportation and Director of the Department of Finance.
- . three experts designated by the Central Government.
- . the Deputy Chairman of the national Labor Commission.
- . the Director of the Department of Labor of Taipei City.
- . the Commission being, as was its predecessor, chaired by the Governor of the Province and vice-chaired by the Deputy Minister of MOTC.

A "TRA Operations Improvement Plan" was drawn up and approved by the Central Government in May 1990. To implement the Plan, the provincial government modified and supplemented some items of improvement, which was adopted by session No. 2054 of the Provincial Government. It was decided to establish a "Supervision/Control Committee", headed by the Secretary-General of the Provincial Government and composed of relevant departments. The Committee is supposed to make a report every three months on the result of the implementation of the Improvement Plan.

It would seem that the Commission meets quite un-frequently and at irregular intervals. An explanation may be that its members are of too high a level in the hierarchy to be able to devote much of their agenda to routine railway affairs.

### **Present Situation**

In 1989, a document prepared by the Provincial Government and approved by the Central Government was issued to determine the respective authorities of TRA's General Manager, the provincial level, the Supervision/Control Commission and the Central Government level. Its most salient features are as follows:

. Decisions on the following matters belongs to the Executive Yuan:

- Elaboration of rules establishing the Supervision/Control Commission and selection of the Commission's members.
- Type of staff salary scheme (following deliberation by the Commission and approval by the Provincial Government).
- Sale, exchange, rent out or long-term lease of land and buildings (following approval by the Provincial Government).
- Borrowing from abroad, Bond issue (following deliberation by the Commission and approval by the Provincial Government).
- Major project investment plan (following deliberation by the Commission and approval by the Provincial Government).
- Fixing and modification of passenger and freight tariff.

. Decision on the following matters belongs to the Provincial Government:

- Modification of TRA organization statutes (for major modifications: following deliberation by the Commission).
- Criteria of staff number setting.
- Designation, removal and secondment of Department chiefs and higher-ranking officers.
- Modification of capital (following deliberation by the Commission).
- Budget planning and approval (following deliberation by the Commission)
- Budget settlement approval.
- Coverage of expenses in excess of the budget and of authorized standards.
- Modification of budget for project capital expenditure.
- Handling of losses or destruction of cash, bills, securities, goods or any other assets, or losses due to other unpredictable incidents.
- Disposal of fixed assets (except land and buildings).
- Retirement and loss of fixed assets and equipment.
- Donation of fixed assets.
- Advance for non-budgeted capital expenditure.
- Annual plan of TRA for Operations and Services.
- Medium/long-term plans.
- Capital expenditure plan for specific projects.
- Major R & D projects.
- Installation and improvement of level-crossing facilities (improvement projects should be reported to the Central Government).
- Manufacturing/construction projects of mechanical facilities.
- Lost/retired equipment exchangeable against usable equipment (value exceeding certain amount).
- Donation of materials (value exceeding NT\$ 0,1 million).
- Construction/repair works; purchase, order or disposal of goods: selection and negotiation for value over certain amount, signature of contract, acceptance examination and relevant matters.

. Decision on the following matters belongs to Managing Director, TRA (\* denotes that TRA must keep the Provincial Government informed):

- Adjustment of budgeted number of Basic Service Labor (within 20% of total budgeted staff number).
- Special examination and promotion examination (not including promotion investigation of the two highest ranks) of railway staff, transport sector (\*).
- Designation, removal and secondment of deputy-chief rank, senior-



ranking and junior-ranking staff (\*).

- Recruitment and dismissal of contract staff (\*).
- Reward and penalty, retirement, compensation and dismissal of staff (not including Deputy Managing Director).
- Cooperation with universities (pre-recruitment training)(\*).
- Budget execution.
- Modification of budget for non-project capital expenditure.
- Statistical plan execution.
- Management of goods, financial and accounting matters.
- Analysis and control of commercial activities, operating performance, budget execution and financial situation (\*).
- Funds management and short-term borrowing.
- Domestic borrowings
- Ordinary R & D projects.
- Fixing and modification of miscellaneous fees for passenger and freight transport (\*).
- Establishing/modification of regulations and rules for passenger and freight transport (\*).
- Establishing/modification of running rules (\*).
- Establishing/modification of specific rules related to passenger and freight transport (\*).
- Renewal plan for station equipments (\*).
- Elaboration/modification of rules relevant to related businesses in stations (\*).
- Elaboration/modification of rules relevant to advertising businesses in stations (\*).
- R & D projects for tourism (\*).
- R & D and improvement plans for running safety (\*).
- Elaboration of plans of preventive measures and of compensation scheme for running accidents (\*).
- Setting-up of regular/non-regular trains (\*).
- Handling of contentious matters rising out of property (land and buildings).
- Handling of accidents during construction (\*).
- Elaboration/modification of other rules and regulations (\*).
- Sale of retired equipment and ordinary waste materials.
- Lending of goods and materials.
- Donation of materials (value under NT\$ 0.1 million).
- Application for foreign exchange.
- Construction/repair works; purchase, order or disposal of goods: invitation for bid over certain amount (subject to provincial supervision).

## Examples of Decision-Making Procedures

### Major Investments

Table 3-1 lists major railway projects which were funded by grants from the Central Government and the Province under the aegis of the Rehabilitation Commission and the Supervision/Control Commission (However, the following projects are not included in that Table because TRA is not in charge of them: Northern Link Line, South Link Line and Taipei Railway Underground between Huashan and Wanhua).

**TABLE 3-1 : GOVERNMENT SUBSIDIES  
TO MAJOR RAILWAY PROJECTS**

Projects Items	Project Period	Amount of Subsidies Approved in Fiscal 1992			Date of Putting into Service
		Central	Province	TRA	Total
1 - Widening of the Eastern Line	1979 - 1985	27.92	23.14		51.06
2 - Extension of the Ilan Line	1981 - 1986	34.83	34.83		69.66
3 - Railcar Purchasing Project for the Extension of the Northern Line	1982 - 1988	24.00	-	16.00	40.00
4 - Reconstruction of Bridges at Hsin-Tian-Hsi and at Ta-Tu-Hsi	1984 - 1989	5.73	5.73		11.46
5 - Double Tracking Project between Kaohsiung and Pingtung	1984 - 1990	14.61	14.61		29.22
6 - Double Tracking Project of the Mountain Line between Fengyuan-Chengkung	1985 - 1988	7.50	7.50		15.00
7 - Reconstruction of three Bridges at Hsia-Ta-Hsi, Hsia-Ta-An and Ta-Ke-Kan	1984 - 1989	7.51	7.50		15.01
8 - Automatic Signalling of the Northern Line and Ventilation Improvements of the Kuan-Yin Tunnel	1985 - 1989	2.74	2.74		5.48
9 - Reconstruction of Outdated Bridges along Railway Lines	1986 - 1991	24.09	14.04	14.04	52.17
10 - Commuter EMUs Purchasing for Mass Rail Transit (48 trainsets)	1986 - 1990	6.99	6.99		13.98
11 - Payment of Electrification Project's Capital Investment	1979 - 2008	95.96	95.96		191.92
12 - Interest Payment of Electrification Project	1979 - 1997	49.27	49.27		98.54
13 - Round-the-Island Railway Support Facilities Project	1988 - 1993	8.86	8.86		17.72
14 - Laying of Dual Track on the Mountain Line between Chunian and Fengyuan	1988 - 1997	28.55	16.55		45.10
15 - Car Purchasing for the South Link Line	1989 - 1991	8.26	8.26		16.52
16 - Additional Commuter EMUs for Mass Rail Transit (72 trainsets)	1991 - 1993	7.75	2.75		10.50
TOTAL		354.57	298.73	30.04	683.34

1 - These amounts are budgeted subsidies. Actual paymanes may be delayed depending on project progress.

2 - This Table does not include projects that TRA is not in charge of which are : Northern Link Line NT\$ 7.3 bn., South Link Line NT\$ 23.2 bn., Taipei Railway Underground between Huashan and Wanhua NT\$ 17.7 bn.

In theory, the initiative of such a project is incumbent on TRA; however, it may happen that the Central Government (and specifically the CEPD) gives a hint that it is willing to fund certain projects. The preliminary project is prepared by TRA and submitted to the Supervision/Control Commission. It is then submitted to the Governor of the Province who has it examined by the provincial Department of Transportation and the provincial Economic Committee. It is then forwarded to the Central Government who has it examined by the MOTC and the CEPD. Negotiations take place to define the respective shares of the Central and Provincial Governments in funding the project. These negotiations prove generally cumbersome due to the conflicting electoral interests of the respective assemblymen. The project has finally to be adopted by the Legislative Yuan and the Provincial Assembly.

As may be seen on foregoing table, projects funded by such grants (and other major projects funded by the Central Government, that TRA is not in charge of) include:

- . New Line construction
- . Major rehabilitation projects
- . The TRUPO
- . Reconstruction of aged major bridges
- . Purchase of Rolling Stock

Further projects already approved or under consideration for such government financing are the following (until end of the fiscal year 1992):

- . Purchase of 72 EMUs for city commuter mass transit system: NT\$ 10.5 billion.
- . Replacement of ATC/ATS equipment of the main line. The equipment is 18 years of age and considered un-safe. Estimated cost: NT\$ 9.4 billion.
- . Track renewal program: NT\$ 4.6 billion.
- . Enhancement of train operating safety, specially through adding redundancies to level-crossing equipment: NT\$ 2.3 billion.
- . Purchase of 240 EMUs for city commuter mass transit system.

The initiative of such projects may be with the government, with TRA or a mix of both. Thus:

- . construction of the South Link was a political decision of the Central Government with a view to enhancing the national defense and promoting tourism and other economic activities in the eastern part of the island.
- . re-building aged bridges resulted primarily from a technical requirement put forward by TRA with a view to ensuring continued safe operation of the main line.
- . procurement of new rolling stock results from both the government's concern for improving commuting conditions for the population of the Taipei area, and TRA's need of phasing out aging equipment which is becoming exceedingly costly to maintain.
- . replacement of outdated and hazardous signaling, following a serious accident, is also desired by TRA and the government.



The implementation of such projects is entirely free of charge to TRA in the sense that TRA does not have to pay back the capital and is charged no interest. However, when the project is completed, it is incorporated in TRA's assets and TRA has to provide for the operation, maintenance and depreciation, and this may not be compensated by the revenues TRA derives therefrom.

As shown in foregoing table, there is a tendency that sharing the burden of the grants is no longer 50-50. In February 1992, the Province requested the Central Government that, in future, the sharing norm be 75-25.

As regards the HSR project, it is felt that the Province will not share in.

#### Tariffs, Fares and Rates

As per the Railway Law, fare and rate fixing are determined as follows:

- . for local railways, Art. 35 (Approval of fares of local and private railways): Transport fares of local and private railways must be approved by MOTC. The same procedure shall apply for any adjustment of fares.

- . for national railways, article 26: (Fare calculation of National Railways):

- . formulae of fare calculation of national railways are elaborated by the MOTC. Those formulae should be submitted to the Executive Yuan, the latter will transfer them to the Legislative Yuan for approval. Any modification of the formulae should follow the same procedure.

- . the national railways' fares, calculated according to the above-mentioned formulae, should be submitted by the MOTC to the Executive Yuan for approval before its implementation. The same procedure should be followed for any modification.

- . due to special circumstances or situations, the National Railways may set relatively low fares (...). These fares are subject to approval of the MOTC.

The prevalent procedure is that TRA has the initiative of fare adjustments. Its requests are submitted to the Provincial Government (Department of Transportation), then to MOTC and the Executive Yuan. In actual practices, TRA is reasonably free to implement discount fares for commercial purposes. As for rate increases, its requests are generally backed by the Province but they frequently meet with a refusal from the Central Government.

On the other hand, TRA is obliged to grant fare-reductions to different categories of passengers, such as students, civil servants, military commuters, the elderly, the National Salvation, journalists, and military personnel. The discount rates range between 75% and 25%. This obligation comes essentially from the Central Government.

### Annual Budget of TRA

The initiative is incumbent with TRA which submits a blue-print to the Provincial Government. It is examined in succession by:

- the Department of Transportation
- the Department of Budget
- the so-called "Five-person Group" composed of the Director of the Department of Finance, the Executive Secretary of the Research, Development and Evaluation Department, the Director of Budget, Accounting and Statistics Department, the Director of the Personnel Department and the Deputy Chairman of the Economic Commission.
- the Commission of the Provincial Government, chaired by the Governor.
- and the budget has finally to be approved by the Provincial Assembly.

The outcome of each step of this process is an injunction to TRA to reduce its expenses while increasing its revenues. However, per-capita salaries and benefits are not subject to discussions since they follow automatically what the Central Government decides in favor of civil servants.

It would therefore seem that the Central Government has no part in TRA's budget preparation. But it is not so, because the regular revenues of the Province are complemented every year by subsidies from the Central Government, which are allotted for specific purposes.

### Disposal or Sale of Land

Disposal or sale of railway's land property has to be approved by both the Provincial and Central Governments. As per article 25 of the Land Law (promulgated in 1930 and amended several times, most recently in 1989), no provincial, municipal or county government can dispose of, mortgage or lease for a period exceeding ten years the public land under its jurisdiction unless it has the agreement of the representatives of its jurisdiction and the approval of the Executive Yuan.

It is said that the Central Government would not object the leasing of land for the purpose of setting up such joint ventures as the creation of commercial centers, but the Provincial Government would not accept that such leases exceed ten years, which is too short for investors to recover the cost of erecting buildings of any significant magnitude. The Central Government would not object land sales either, but the Provincial Government would not let much of the proceeds at TRA's disposal to redeem its debts and/or make up for its operating deficit.

The TRUPO project (Taipei Railway Underground Project) was entirely funded by the Central Government (40%) and the Special City of Taipei (60%). It resulted in freeing valuable land in Taipei downtown area but TRA obtained no share of the proceeds.

## Conclusion about Ownership

In fact, the issue of whether TRA is a "national" or a "local" railway is critical only to a limited extent.

Being a local railway does not spare TRA being overwhelmingly dependent on Central Government policies and decisions as regards rate fixing for passengers and freight and privilege discount tariffs, the Labor Standard Law and by-laws, the level of services (train frequency, comfort, etc.) outside the Province's territory (in Taipei and Kaohsiung areas and as regards the links between these two Special Cities), taxes, duties, freeway tolls, airport fees, etc. incumbent on TRA itself and its competitors, etc. It is also quite clear that being a local railway does not either spare TRA the impact of decisions taken by the Central Government in the interest of national defense, national development, national environment, national well-being, etc., such as the round-the-island scheme or putting tracks underground in Taipei and Kaohsiung (which result in increased operating, maintenance and depreciation charges to TRA).

As regards Personnel expenses and Personnel efficiency, TRA is committed to implement any salary increase which the Central Government may decide in favor of civil servants. However, this is because TRA opted for a remuneration scheme which stipulates such a link. Different schemes could be adopted, indifferent to the fact that TRA is a local or national railway. On the other hand, if TRA attempted to adopt a different scheme with a view to curbing salary increases or limiting personnel benefits, and this resulted in industrial disputes, the Central Government would probably intervene to preclude any serious disruption of passenger services, indifferent again to the fact that TRA is a local or national railway.

In fact, in spite of TRA being operated as a local railway, all decisions of importance are finally taken at the Central Government level: either because the matters they involve are subject to the Central Government's authority as per the Railway Law, or because they are dependent on financial resources which the Provincial Government cannot raise, and therefore from Central Government subsidies.

However, the Provincial Government's implication results in inconveniences such as:

- . on issues of major importance, the two-level decision-making process is cumbersome.
- . on certain matters of routine management, such as the level of local services, train schedules, etc., TRA has to compromise with requests from members of both the national and the provincial assemblies.
- . the Province's claim on the ownership of the railway real estate makes it impossible for TRA to sell it to pay its debts, and difficult to use it for certain joint ventures which might be profitable.



### 3.2. TRA ORGANIZATION AND MANAGEMENT

TRA's organization Chart is given in Figure 3-3 next page.

TRA is headed by a Managing Director, assisted by three Deputy Managing Directors (Operating, Civil Engineering and Administration), one Chief Engineer and one Chief Secretary.

Within TRA proper, there are 8 departments headed by Directors:

- . Planning
- . Transportation
- . Civil Engineering
- . Mechanical Engineering
- . Electrical Engineering
- . Purchasing and Stores
- . General Executive (Administration)
- . Accounting

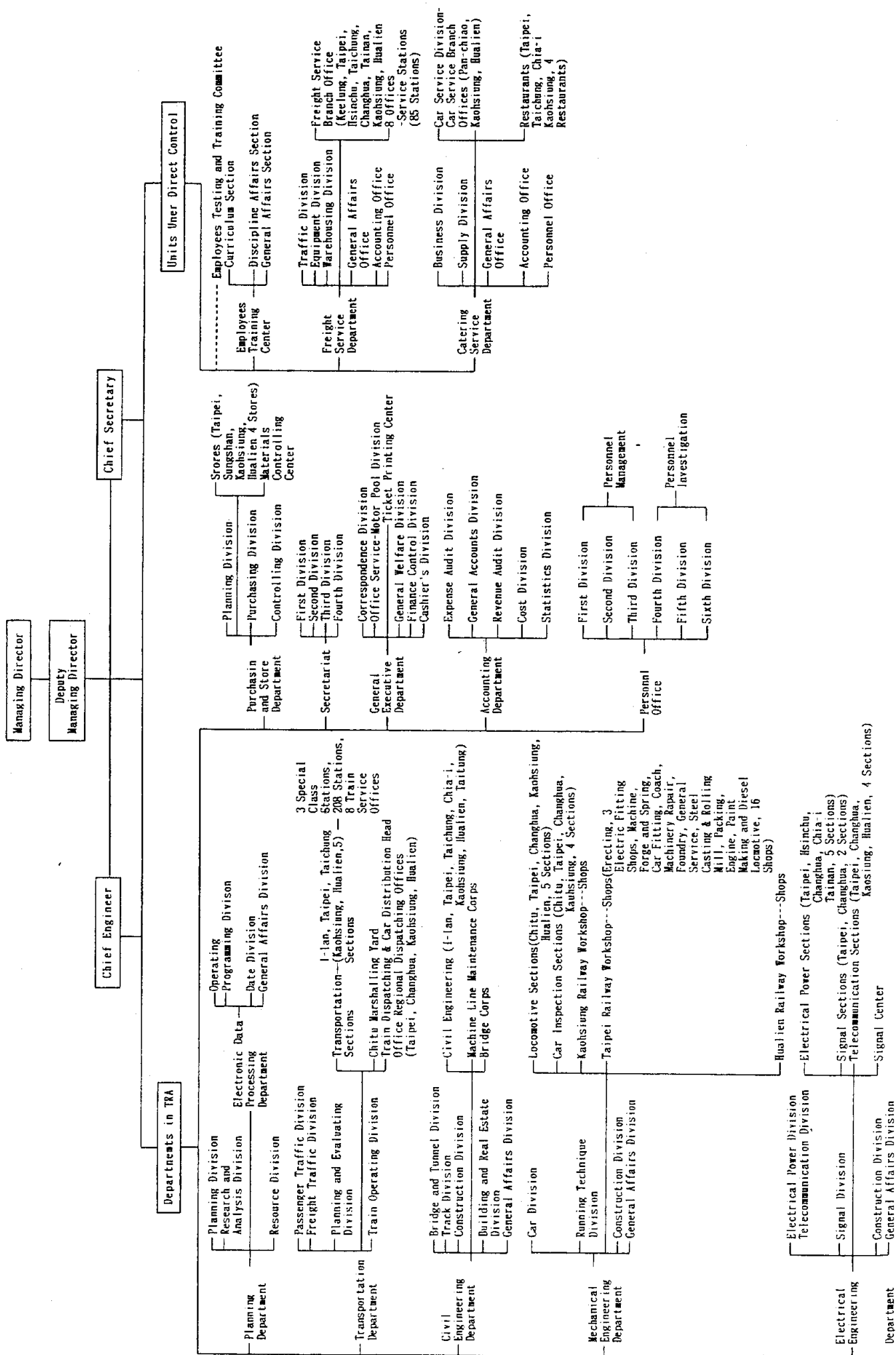
plus the Secretariat and the Personnel Office and the following units "Under Direct Control":

- . Employees Training Center
- . Catering Service Department (restaurants in 4 stations and catering service on board trains)
- . Freight Service Department (freight collection and delivery, warehousing, etc.: 8 offices and services in 85 stations).

Following Consultants' recommendation circa 1980 that TRA should be more marketing oriented, a Business Department was established in 1981; however, this Department was eliminated in 1991, with its Passenger Traffic Division and Freight Traffic Division integrated into the Transportation Department. Budgeting is the responsibility of the Accounting Department. Debt Management is the responsibility of the General Executive Department. Costing and Statistics are the responsibility of the General Executive Department. In addition to the Freight Service Department and the Catering Service Department, Taipei, Hualien and Kaohsiung Workshops are separate cost centers.

As mentioned above, designation and removal of the Managing Director, deputy managing directors, directors and deputy directors belong to the Provincial Government.

Figure 3-3 Organization Chart of Taiwan Railway Administration



### 3.3. TRA COMPETITIVENESS

#### Past and Present Traffic of TRA

##### Passengers

In calendar year 1991, TRA carried 137 million passengers, 8,611 million passenger-kms (average distance: 62.8 kms). In terms of passengers (see Table 3-2 next page), TRA traffic was maximum in 1974: 145 million passengers (average distance: 59.9 kms). It was at its recent lowest in 1989: 127 million (average distance: 63.9 kms). In terms of passenger-kms, TRA traffic has fluctuated between 8,278 million in 1974, 7,950 million in 1978 and the highest-ever 8,611 of 1991.

Traffic evolution over the past years (see Table 3-3 below) is characterized by:

- . a decrease of ridership in the lowest-priced ordinary trains and now extinct limited express trains.
- . stagnation in the medium-priced Fu Hsing and Chu Kuang express trains.
- . a definite increase in the highest-priced Tze Chiang trains. The latter accounted in 1987, for 16% of passenger-kms and 22% of revenues and in 1991, for 27% of passenger-kms and 34% of revenue.

Though we did not inquire about the respective operating costs of these four categories of trains, we feel that they are not on par with their respective earnings since, in 1991, average seat occupancies, basic fares/pass-km and average revenue/pass-km were as follows:

	Ordinary	Fu Hsing	Chu Kuang	Tze Chiang
Seat Occupancy Ratio	31%	61%	77%	94%
Basic Fare NT\$/km	0.98	1.27	1.52	1.89
Average Revenue NT\$/km	0.76	1.08	1.29	1.54

Average revenue of ordinary trains is only 77% of the basic fare; this is mostly due to discount fares which the government imposes on TRA to grant to commuters of various kinds. Average revenue of Tze Chiang express is only 81% of the basic fare; this is mostly due to discount fares which TRA grants for commercial reasons (including a 15% discount which benefits to passengers who purchase their return ticket at the same time as their onward ticket. For the same type of round-trip tickets, TMTC offers only 10 % discount.). Part of the difference between basic fare and average revenue may also be explained by the fact that the basic fare includes the 5% VAT and TRA revenue does not include it.



TABLE 3-2:

## TRA Passenger Traffic

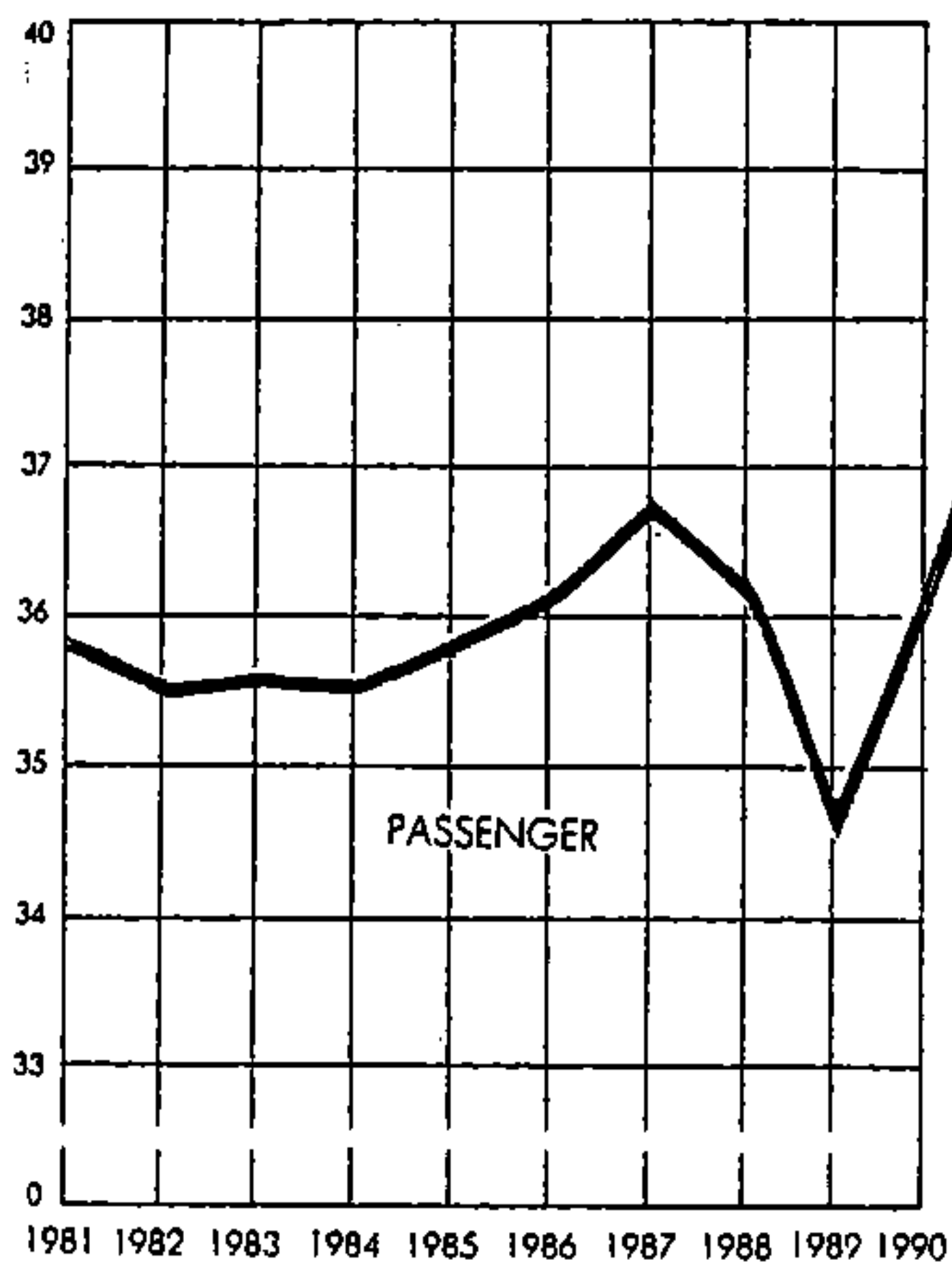
## Number of Passengers

Year	Yearly total	Daily average
1981	130,737,013	358,184
1982	129,632,689	355,158
1983	130,150,691	356,577
1984	130,262,167	355,908
1985	130,895,638	358,618
1986	131,606,739	360,566
1987	134,168,230	367,584
1988	132,160,922	361,095
1989	127,283,379	348,722
1990	131,736,289	360,921
1991	137,123,711	375,681

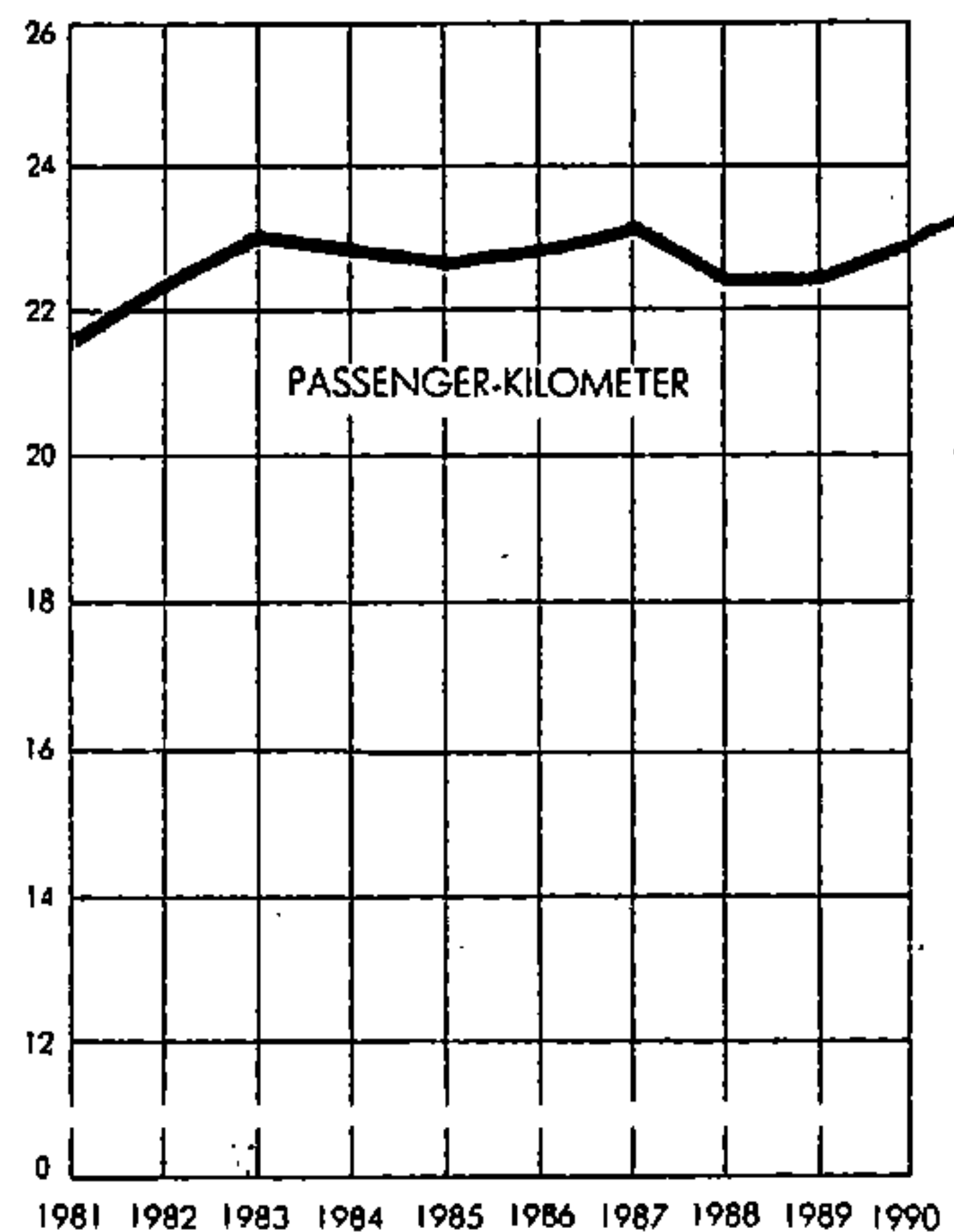
## Passenger-Kilometers

Year	Yearly total	Daily average
1981	7,946,881,127	21,772,277
1982	8,172,756,185	22,391,113
1983	8,524,251,925	23,354,115
1984	8,447,398,603	23,080,324
1985	8,298,942,008	22,736,827
1986	8,305,294,472	22,754,231
1987	8,446,356,535	23,140,703
1988	8,223,337,337	22,468,135
1989	8,123,572,775	22,281,021
1990	8,312,178,346	22,773,091
1991	8,611,316,493	23,592,602

Unit: 10,000 Passengers/day



Unit: 1,000,000 Pass.-Kms./day



**Table 3-3 :**  
ANALYSIS OF TRA's PASSENGER TICKET SALES

(source: Statistical Report of TRA, 1988,1989,1990)

NOTE: Discount % 0,77  
means in fact that  
average passenger pays  
77% of full fare

CALENDAR years	Passenger-km million					Revenue million NT\$					1991 Rate Revenue Discount		
	1987	1988	1989	1990	1991	1987	1988	1989	1990	1991	NT\$	NT\$	%
<b>ORDINARY AND EXPRESS TRAINS</b>													
Seat Occupancy Ratio	33,31	35,21	32,7	32,12	30,68								
Contribution to Total	0,25	0,24	0,23	0,22	0,20	0,13	0,14	0,15	0,14	0,13			
Full fare	1167	1134	1123	1102	1068	659	708	849	841	843	0,98		
Reduced fare						152	168	189	177	182			
Party						4	6	8	3	52			
Ordinary commuters	42	40	41	52	34	21	23	29	35	23			
Student commuters	420	381	346	323	317	137	136	148	153	119			
Special Commuters	353	336	332	307	266	0	1	0	0	0			
Govt Empl. commuters	105	86	52	55	36	26	26	30	31	20			
Supplemental fare						49	59	76	75	66			
Sub-total	2087	1977	1894	1839	1721	1048	1127	1329	1315	1305		0,76	0,77
<b>LIMITED EXPRESS TRAINS</b>													
Contribution to Total	0,02	0,02				0,02	0,01						
Full fare	156	113				111	77						
Reduced fare	22	15				8	5						
Supplemental fare						14	9						
Sub-total	178	128				133	91						
<b>FU HSIN EXPRESS TRAINS</b>													
Seat Occupancy Ratio	71,23	70,7	68,86	67,36	61,42								
Contribution to Total	0,23	0,21	0,21	0,21	0,22	0,23	0,20	0,20	0,19	0,20			
Full fare	1695	1516	1482	1480	1614	1599	1437	1469	1471	1716	1,27		
Reduced fare	277	238	230	229	237	217	193	203	207	220			
Party						6	0						
Season tickets			1	2	34	0	0	0	4	23			
Supplemental fare						54	63	72	71	77			
Sub-total	1972	1754	1713	1711	1885	1876	1693	1744	1753	2036		1,08	0,85
<b>CHU KUANG EXPRESS TRAINS</b>													
Seat Occupancy Ratio	76,66	76,88	78,28	77,86	77,07								
Contribution to Total	0,34	0,33	0,34	0,33	0,31	0,40	0,39	0,38	0,36	0,33			
Full fare	2493	2434	2481	2447	2375	2807	2753	2909	2900	2992	1,52		
Reduced fare	344	318	317	320	310	341	327	335	342	346			
Supplemental fare						99	118	139	133	123			
Sub-total	2837	2752	2798	2767	2685	3247	3198	3383	3375	3461		1,29	0,85
<b>TZU CHIANG EXPRESS TRAINS</b>													
Seat Occupancy Ratio	97,73	98,09	99,67	97,25	94,28								
Contribution to Total	0,16	0,20	0,21	0,24	0,27	0,22	0,26	0,28	0,31	0,34			
Full fare	1212	1417	1521	1724	2022	1547	1858	2097	2385	3023	1,89		
Reduced fare	161	193	207	270	299	185	231	264	333	411			
Party									8	1			
Supplemental fare						47	74	104	108	133			
Sub-total	1373	1610	1728	1994	2321	1779	2163	2465	2834	3568		1,54	0,81
<b>TOTAL</b>	<b>8447</b>	<b>8221</b>	<b>8133</b>	<b>8311</b>	<b>8612</b>	<b>8083</b>	<b>8272</b>	<b>8921</b>	<b>9277</b>	<b>10370</b>		<b>1,20</b>	

## Freight

In calendar year 1991, TRA carried 16.4 million tonnes and 1,894 million tonne-km (average distance: 116 km). In terms of tonnes (see Table 3-4 next page), traffic has fluctuated over the past twenty years between 16.0 and 18.2 million. In terms of tonne-km, it has been slowly decreasing from a maximum 2,780 million in 1973 to a minimum 1,793 million in 1990. The average hauling distance was more than 150 kms until 1980, between 146 and 126 kms between 1981 and 1987 and, from 1988, less than 120 kms.

The bulk of the traffic (1990 figures) is construction materials, coal and grains:

- . lime-stone, sand and stone: 27.6%
- . cement and cement products: 23.5%
- . grains: 15.2%
- . coal and coke: 11.5%

and container traffic has fluctuated widely while remaining small:

- . 1980-1982: 500,000 to 550,000 tonnes
- . 1983, 1984, 1986, 1987: more than 1,000,000 tonnes
- . 1985, 1988-1991: 640,000 to (1991) 882,000 tonnes.

LCL (less than carload) traffic is steadily decreasing, from 437,000 tonnes in 1965 to 130,000 tonnes in 1981 to 50,000 tonnes in 1986 to 28,000 tonnes in 1991.

## Context of Intermodal Competition

TRA assumes entirely the burden of maintaining and depreciating its infrastructure (track, signaling) and controlling train movement. By contrast, with the exception of Freeway N°1, the usage of public facilities is free of charge and it is the nation that assumes the infrastructure cost of motor transport: maintenance of streets, roads and highways, policing and "social costs" associated to traffic accidents, congestion, pollution, etc. However, certain specific taxes are levied on motor vehicle purchase, ownership and operation.

Direct taxes paid by TRA in 1985 and 1991 were (million NT\$):

	1985	1991
- Income Tax	Nil	
- Stamp Tax	18	1
- Business Transaction Tax:	89	Nil
- Land Tax	9	9
- House Tax	6	17
- Surtax for Education	22	Nil
- Other taxes	21	14

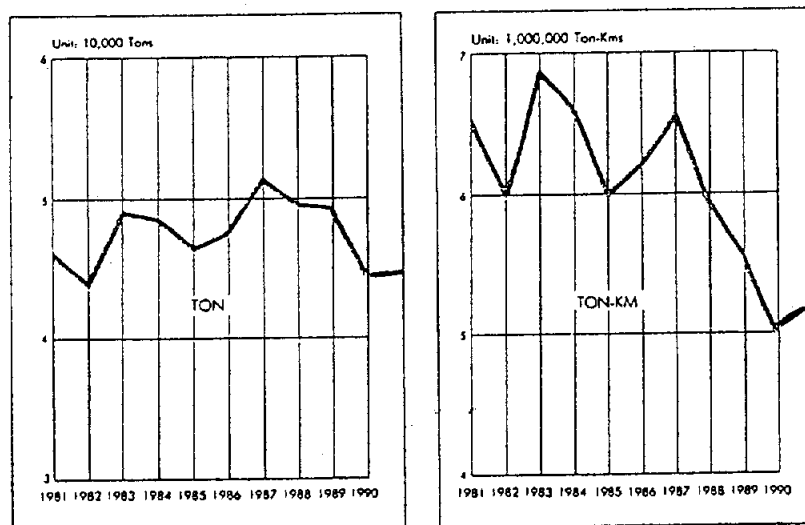


TABLE 3-4 :

## TRA Freight Traffic

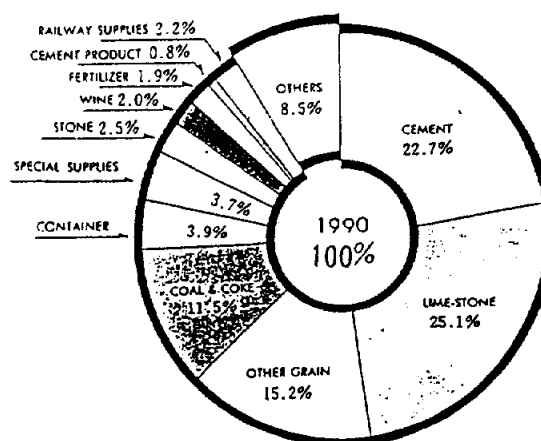
Tonnage			Ton-Kilometers		
Year	Yearly total	Daily average	Year	Yearly total	Daily average
1981	16,905,301	46,316	1981	2,392,595,404	6,555,056
1982	16,035,115	43,932	1982	2,174,800,427	5,958,357
1983	17,845,281	48,891	1983	2,465,593,717	6,755,051
1984	17,576,828	48,024	1984	2,385,479,642	6,517,704
1985	17,083,185	46,803	1985	2,185,669,030	5,988,134
1986	17,341,830	47,512	1986	2,265,474,682	6,206,780
1987	19,056,103	52,209	1987	2,399,092,824	6,572,857
1988	18,204,354	49,739	1988	2,178,199,688	5,951,365
1989	18,081,725	49,539	1989	2,013,303,580	5,515,900
1990	16,401,990	44,937	1990	1,792,891,709	4,912,032
1991	16,417,066	44,978	1991	1,903,945,084	5,216,285

Daily Average of Freight Traffic



Classification of Freight Traffic

Principal commodity	Tonnage	Percentage
Total	16,401,990	100.00
Lime-stone	4,108,230	25.1
Cement	3,723,910	22.7
Other grain	2,495,953	15.2
Coal and coke	1,885,054	11.5
Container	642,967	3.9
Special supplies	604,254	3.7
Sand & stone	406,826	2.5
Wine	327,510	2.0
Fertilizer	310,130	1.9
Cement product	130,575	0.8
Railway supplies	367,991	2.2
Salt	159,644	1.0
Oil	167,608	1.0
Suger	104,886	0.6
Rice	98,145	0.6
Timber	624	0.0
L.C.L.	33,748	0.2
Miscellaneous	833,935	5.1



As an administration, TRA would not be subject to the Income Tax even if it made a profit, as would do so TMTC, private bus and truck companies as well as enterprises which operate their own fleet of buses or trucks privately and private domestic airlines. Wild Chicken Bus are not likely to declare their real revenues.

Prior to the creation of the VAT in 1985, TRA was subject to a Stamp Tax much higher than it is now, and to the Business Transaction Tax. So were bus and truck companies. Sales of TRA's services (passenger tickets, freight haulage, etc.) are subject to VAT at the same 5% rate as other business transactions. Only illegal business such as the Wild Chicken Bus can escape that tax.

When the VAT was effective in May 1986, the Central Government requested the whole transport sector, public or private businesses, not to increase their rates accordingly (i.e. by 5%), for the consideration of avoiding any impression of inflation caused by the application of the new Business Tax Law (VAT). Therefore, TRA kept, and still keeping its rates unchanged from the viewpoint of the VAT. In fact, the VAT has inflicted on TRA, as well as on other transport businesses, as a nearly 5% decrease of revenue, before the deduction made from the purchasing VAT. TRA is allowed, like a normal enterprise, to compensate the VAT it pays for purchasing goods and services by deduction from the VAT it levies on goods or services it sells. Since tariffs in the transport sector are highly regulated by the Government (any adjustment is subject to the approval of the MOTC or its counterpart at lower level, and this is the case for railway, road, air and naval transport, no matter how they are organized, publicly or privately), it is fairly certain that TRA is not more disfavored in this respect of the VAT than other modes of transport. However, the application of VAT resulted actually in a decrease of TRA's revenue taken as a whole. As to the methods of accounting as practiced at TRA, the VAT on sales does not appear in the financial statements of TRA, for it considers this part of cash as money to be handed in to the Government, thus not part of TRA's income. Nevertheless, according to TRA, the value of the VAT on sales is deducted by TRA's purchasing VAT, just like any other companies do.

Land Tax and House Tax levied on TRA apply entirely to the Freight Service and Catering subsidiaries. Other direct taxes levied on TRA include License Tax and Tax on Road Vehicles using fuel which are dealt with below.

#### **Direct and Indirect Taxes Specific to Fuel and Transport Equipment**

##### **Fuel: VAT Tax and Commodity Tax; Out-of-Refinery Prices**

Fuel from the pump is paid by private citizens, transport enterprises and TRA alike (with, however, an exception in favor of TRA, see below):

- . Gasoline: NT\$ 17 / litre
- . Diesel Oil: NT\$ 12.0 / litre
- . Kerosene: NT\$ 9.0 / litre (contract price)

These fuels respectively bear the following taxes:

. Gasoline: 5% VAT and a 60% commodity tax. The prior-to-tax delivery price is:  $17/1.05/1.6 = \text{NT\$ } 10.12$  / litre.

. Diesel oil: 5% VAT and a 50% commodity tax. The prior-to-tax delivery price is:  $12.00/1.05/1.5 = \text{NT\$ } 7.62$  / litre.

. Kerosene (for domestic airlines): the 5% VAT and a 8% commodity tax. The prior-to-tax delivery price is:  $9.0/1.05/1.08 = \text{NT\$ } 7.94$  / litre.

Since diesel oil is not likely to be significantly cheaper to produce and deliver than gasoline, it is presumed that both the lower out-of-refinery price of gasoline and the lower commodity tax which apply to it result from the Government's will to favor freight transport and public transport of passengers over private car usage.

Above prices apply equally to TRA and its competitors. However, TRA enjoys a special privilege as per a decision from the Central Government, dated October 1960: a special discount on diesel oil consumed by locomotives (whereas it pays the common price for diesel oil consumed by railcars and trucks).

#### Purchase price by TRA: NT\$/litre

	Common	Locomotives	Discount
From March 13, 1986	12.0	10.0	16.7%
From April 26, 1986	11.0	9.0	18.2%
From April 30, 1986	10.0	8.0	20.0%
From December 24, 1987	9.5	7.5	21.1%
From July 1, 1988	9.0	7.0	22.2%
From August 24, 1990	12.0	7.0	41.7%
From May 26, 1991	11.5	7.0	39.1%
From February 2, 1992	12.0	7.0	41.7%

Respective consumptions were as follows:

#### Million liters/year

	Common	Locomotives
1986	5.5	37.7
1987	6.4	38.2
1988	6.3	36.7
1989	6.2	36.3
1990	7.1	34.0
1991	10.1	33.4

The agricultural and fishery sectors also benefit from privilege prices.



### Tax on Vehicles for Using Fuel

It was the Government's intention to place on top of the VAT and the Commodity Tax, a special tax on fuel (NT\$ 2.5/litre on gasoline and NT\$ 1.5/litre on diesel oil) but it was found more expedient to levy, instead, a tax on vehicle ownership: the so-called Tax on Vehicles for Using Fuel. It involves different rates according to the vehicle registration, in function of their estimated respective fuel consumption (see Table 3-5 next page). Typical rates are as follows:

	Displacement (cc)	NT\$ / Year
Private Sedan	1201-1800	4,800
Private Bus	7201-7800	10,988
Excursion	7201-7800	27,488 (1)
Public Bus	7201-7800	31,716
TMTC Bus	7201-7800	42,408
Private Truck or Trailer	7201-7800	15,318
Private Truck or Trailer	11001-12000	22,086
Business Truck or Trailer	7201-7800	21,996
Business Truck or Trailer	11001-12000	34,364

(1) Wild Chicken Bus benefit from the "Excursion" rate

Neither rail-borne TRA vehicles (diesel locomotives, DMUs and railcars) nor aircraft are subject to this tax.

### License Tax

This is a tax on vehicle ownership, indifferent on the vehicle usage. Typical rates are as follows (see also Table 3-5):

	Displacement (cc)	NT\$ / Year
Private Sedan	1201-1800	5,940
Private Bus	7201-7800	11,700
Excursion	7201-7800	11,700
Public Bus	7201-7800	11,700
TMTC Bus	7201-7800	11,700
Private Truck or Trailer	7201-7800	11,700
Private Truck or Trailer	11001-12000	16,200
Business Truck or Trailer	7201-7800	11,700
Business Truck or Trailer	11001-12000	16,200

On rail-borne TRA vehicles (diesel locomotives, DMUs and railcars), this tax is nil.

Aircraft is subject to:

- . a registration fee: 0.2% of purchase value if under NT\$ 320 million, 0.1% if above.
- . a yearly navigability license fee: NT\$ 3,000 if under 5.7 tonnes, NT\$ 6,000 if above.

Table 3-5 : Taxes on Road Vehicles

JBB/TRAvign	1992 July 15	TAXES ON ROAD VEHICLES		NT\$/Year	
Cylindrée (cc, cubic centimetre)		1201-1800	4201-4800	7201-7800	11001-12000
SMALL PASSENGER VEHICLE, Private					
License Tax		8640	30780		
Tax on Fuel Usage		4800	11220		
SMALL PASSENGER VEHICLE, Business					
License Tax		3060	24300		
Tax on Fuel Usage		9600	n.a		
BUS TMTC					
License Tax			7200	11700	
Tax on Fuel Usage			30296	42408	
PUBLIC BUS					
License Tax			7200	11700	
Tax on Fuel Usage			22644	31716	
EXCURSION BUS (Applies to WILD CHICKEN BUS)					
License Tax			7200	11700	
Tax on Fuel Usage			17676	27488	
PRIVATE BUS					
License Tax			7200	11700	
Tax on Fuel Usage			7848	10988	
TRUCK, Private					
License Tax			7200	11700	16200
Tax on Fuel Usage			9252	15318	22086
TRUCK, Business					
License Tax			7200	11700	16200
Tax on Fuel Usage			11792	21996	34364

## Commodity Tax on Equipment

In general, commodity tax on typical items is as follows:

- . glass: 10%
- . electric appliances, TV sets, record players, refrigerators: 10-15%
- . concrete, air-conditioners: 15-20%
- . toasters: 15%
- . soft drinks: 8-15%
- . cigarettes, wine and other alcoholic beverages, cosmetics: 35-60%.

As regards transportation equipment, it is as follows:

- . railway rolling stock: nil
- . bus: 15%
- . motorcycle: 17%
- . car, less than 2,000 cc: 25%
- . car, 2,001- 3,600 cc: 35%
- . car, above 3,600 cc: 60%
- . truck: 15%
- . trailer: 15%
- . aircraft: nil

No commodity tax is levied, directly or indirectly, on materials such as rails, ballast, cement and miscellaneous domestic-made components purchased by TRA.

## Customs Duties

Railway equipment and spare parts imported by TRA are subject to a 5% duty whereas busses and their spare part are subject to a 42.5% duty. Aircraft and spare parts self-imported by airlines do not support custom duties.

## Freeway Toll

A toll is levied on vehicles using Freeway N°1, parallel to TRA trunk line in the western corridor of the island. For each toll section averaging 35-40 kilometers in length (total length is 373 km and there are ten toll sections), they were/are as follows:

NT\$				
	Light Vehicle	Heavy Truck	Bus	Trailer
1974-1981	15	20	30	30
1981-Sept 1990	25	30	40	40
from Sept 1990	40	50	50	65



Available traffic statistics over the past six years are as follows:

	Traffic Volume and Traffic Composition			Toll Revenue million NT\$
	Light Vehicle	Heavy Truck	Bus & Trailer	
1986	107,187,657	27,538,137	23,279,912	4,415
1987	132,136,310	30,339,057	27,416,695	4,983
1988	163,891,334	32,103,874	31,089,727	5,656
1989	192,103,323	33,011,019	31,777,205	6,600
1990	218,342,374	34,800,994	32,544,093	7,135
1991	226,159,299	40,254,806	29,201,898	9,065

The share of light vehicles has increased steadily from 67.8% in 1986 to 79.16% in 1991. Average traffic growth from 1986 to 1991 was:

- . Light vehicle: 16.1% /year
- . Heavy Truck: 7.9% /year
- . Bus & Trailer: 4.6% /year
- . Total: 13.3% /year

Since tariffs were raised in September 1990, revenues are said to be almost sufficient to balance operating costs including maintenance. Bearing in mind that the wear and tear of highway pavement is approximately proportionate to power 3 of the vehicle axle load, it may be seen that this tariff does not reflect in any way the respective maintenance costs related to each category of vehicles. It seems to reflect the Government's will that light vehicles (private cars and small busses) subsidize collective passenger transport and, specially, freight transport. A study is being carried out by IOT; it is expected to show that the toll structure is favorable to bus and very favorable to heavy truck and trailer.

#### Airport Fees

Table 3-6 next page shows the revenues and expenses of the Civil Aviation Fund. Globally, 1991 revenues were 54% higher than expenses. However, revenues of domestic airports (not including Kaohsiung which is both international and domestic) were only 56% of their expenses. This is a strong indication that usage of infrastructures by domestic airlines is subsidized by international operations. We have no indications regarding nav aids, radars and other facilities.

#### TRA's Competitors: Passenger Traffic

##### Small Automobile

Vehicle ownership is now 2.7 million vehicles or 1 per 7.5 habitants vs. more than 1 per 2.5 habitants in the most advanced countries. It is no surprise that vehicle ownership (see Table 3-7 next page) is increasing at a very high pace: 15% from 1990 to 1991 but an average 16.1%/year from 1986 to 1991. This trend is likely to continue. As indicated above,

**TABLE 3-6 : CIVIL AVIATION  
BUSINESS FUND**

Unit : NT\$ 1,000.-

Fiscal Year	July 1st, 1988 ~ June 30, 1989		July 1st, 1989 ~ June 30, 1990		July 1st, 1990 ~ June 30, 1991	
	Amount	Ratio	Amount	Ratio	Amount	Ratio
<b>Fund Revenue</b>						
CKS Airport	4,590,435	60.5%	5,025,100	55.0%	5,717,601	57.0%
Kaohsiung Airport	253,858	3.3%	315,884	3.5%	435,771	4.4%
Cargo Terminal	1,313,981	17.3%	1,596,908	17.4%	1,499,396	14.9%
Airport Hotel	157,073	2.1%	195,552	2.1%	204,672	2.0%
Others (Domestic Airport)	1,274,281	16.8%	2,010,828	22.0%	2,179,618	21.7%
<b>TOTAL</b>	<b>7,589,628</b>	<b>100.0%</b>	<b>9,144,272</b>	<b>100.0%</b>	<b>10,037,058</b>	<b>100.0%</b>
<b>Expenditure</b>						
CKS Airport	(1,252,702)	23.7%	(1,284,245)	22.2%	(1,356,923)	20.8%
Kaohsiung Airport	(199,497)	3.8%	(222,193)	3.8%	(255,372)	3.9%
Cargo Terminal	(557,755)	10.5%	(713,195)	12.3%	(771,134)	11.8%
Airport Hotel	(219,847)	4.2%	(251,348)	4.4%	(271,704)	4.2%
Others (Domestic Airport)	(3,055,448)	57.8%	(3,313,515)	57.3%	(3,866,482)	59.3%
<b>TOTAL</b>	<b>(5,285,249)</b>	<b>100.0%</b>	<b>(5,784,496)</b>	<b>100.0%</b>	<b>(6,521,615)</b>	<b>100.0%</b>
<b>Balance</b>	<b>2,304,379</b>		<b>3,359,776</b>		<b>3,515,443</b>	

**Table 3-7 :**

MOTOR VEHICLE STATISTICS: Number of vehicles registered  
(source: IOT: Transportation Information)

	1986	1987	1988	1989	1990	1991
BUS						
Business	15722	15685	15931	15804	15098	14811
Private	5976	5923	6024	6400	6586	6230
Total	21698	21608	21955	22204	21684	21041
Annual Growth		0,99	1,02	1,06	1,03	0,95
PASSENGER CAR						
Business	90035	95254	98643	101809	104168	101044
Private	956625	1159701	1480478	1839547	2199279	2541837
Total	1046660	1254955	1579121	1941356	2303447	2642881
Annual growth		1,20	1,26	1,23	1,19	1,15
HEAVY TRUCK						
Business	33302	34948	38616	40502	41831	40569
Private	45807	48167	53678	58548	65353	69066
Sub Total	79109	83115	92294	99050	107184	109635
SEMI-TRAILER						
Business	17854	22346	25321	28306	30004	29224
Private	1055	1420	1652	2020	2346	2028
Sub Total	18909	23766	26973	30326	32350	31252
TRAILER						
Business	648	778	915	945	957	1391
Private	110	131	131	174	175	184
Sub Total	758	909	1046	1119	1132	1575
Total Heavy Truck + Trailer	98776	107790	120313	130495	140666	142462
Annual growth		1,09	1,12	1,08	1,08	1,01



light vehicle traffic growth on Freeway N°1 from 1986 to 1991 was 16.1%/year. The construction of a second freeway is under way. There is little doubt that in future, the most severe "competitor" of the rail mode will be the automobile.

## Bus

Intercity collective road transport is handled by:

- . Taiwan Motor Transport Corporation (TMTC): a state-owned enterprise.
- . a number of private Public Bus companies.
- . the so-called Wild Chicken Buses.

Table next page presents a comparison of TRA, TMTC, and Private Bus traffic which is summarized below.

	passenger-kms	
	1981	1991
TRA		
Passenger-km (million)	7,947	8,621
Average annual growth 1981-1991	+0.82%	
Share of total	28.4%	34.26%
TMTC		
Passenger-km (million)	11,999	7,157
Average annual growth 1981-1991	-5.04%	
Share of total	42.8%	28.4%
Private Public Bus		
Passenger-km (million)	8,090	9,348
Average annual growth 1981-1991	+1.50%	
Share of total	42.8%	28.4%

This has only an indicative value because:

- . City Bus are not included whereas TRA traffic in Taipei area is.
- . Only part of Private Bus are competitors to TRA.
- . Wild Chicken Buses are not included.

TMTC has a fleet of 3,000 bus and around 13,000 employees. It is a serious competitor to TRA as it operate routes parallel to rail lines, specially Freeway N°1. Fiscal 1991 has seen TMTC getting an operating deficit of NT\$ 2,560 million, making its total accumulated losses to NT\$ 5,190 million.

Today, there are thirty-four private Public Bus operators with a total of about 6,400 buses and around 18,000 employees. Out of these private bus companies, the United Motor Transport Company (UMTC), or Tonglien, funded in 1990 to consolidate and legalize part of Wild Chicken Bus and fast-growing, with a fleet of buses up to 400 and employees approximating to 1,000, is the leading competitor of TMTC as well as TRA since it is the only private bus company to be granted the right to run regular public services on Freeway N°1. The other private bus companies run solely lower-traffic inter-city roads.

Both TMTC, UMTC and other above-mentioned private bus companies operate on regular schedules, comply with laws and regulations (and specially the Labor Standard Law) and present a tax return. This is not the case of the so-called Wild Chicken Buses. These companies operate illegally vehicles licensed as tour coaches, in the name of legally established taxi companies or travel agencies, to run tourism related business or other, but not the long-distance passenger transport, far less on the freeway.

Little is officially known on their activities. It is believed that most of them operate on a family basis, with no concern for the Labor Standard Law, accounting rules, or depreciation of their vehicle(s). Having no terminals, they pick passengers in the street, including in front of railway stations; tickets are also sold in drugstores and similar outlets; under no constraints as regards adhesion to fixed timetables, their seat occupancy ratio is high; their tax on vehicle for using fuel is only 65% of that paid by TMTC. They are thus in a position to offer high quality services (air-conditioned buses with video and other amenities) at very low prices: about half the price of a train ticket on the Taipei-Kaohsiung corridor. On the typical route Taipei-Jiayi, prices compare as follows:

. TRA Tze Chiang:	NT\$ 507
. TRA Chu Kuang:	NT\$ 408
. TRA Fu Hsing:	NT\$ 341
. TMTC Kuo Kuang:	NT\$ 294
. TMTC Chung Hsing:	NT\$ 248
. UMTC:	NT\$ 280
. Wild Chicken:	NT\$ 270

The estimated number of Wild Chicken Buses approximates 200. They can run as much as 20,000 kms per month. Assuming an average load of 24 passengers, their total yearly traffic may be of the order of 1,000 million passenger-km, which is far from being negligible compared to TRA's traffic along the Western corridor. Not only does this deprives TMTC, UMTC and TRA of a legitimate share of the intermodal business, but it also stings them (or, at least, TMTC and TRA) into keeping their fares at an unsoundly low level.

## Air Transport

Since the recent de-regulation, half a dozen private companies are engaged in a throat-cutting competition to win their slot in the market. As evidenced above, they enjoy fiscal privileges and are not charged the full cost of the infrastructure they use. They are said to suffer heavy losses and no more than one or two are likely to survive. Anyway, as shown in a foregoing table, domestic air transport is currently growing by around 10% per year.

### **TRA's Competitors: Freight Traffic**

Road carriers' activity (see foregoing tables) is increasing steadily:

- . Number of heavy trucks and trailers registered: 5.7%/year
- . Traffic of heavy trucks on Freeway N°1: 7.9%/year

As evidenced above, the contribution of road carriers to infrastructure maintenance and operation expenses (freeway and highways) is very small. This allows them to charge rates which are far from reflecting the social cost of their services to the nation. Consequently, TRA feels compelled to keep its rates at an exceedingly low level so as to avoid losing a significant part of its business. And, due to the rigid structure of TRA's tariffs, this price-cutting policy applies also to segments of TRA's freight business which are hardly price-sensitive (e.g. massive haulage of certain bulk commodities) because rail transport is technically best suited to them than road transport.



### 3.4. TRA PERSONNEL

#### Work Force, Productivity

Until December 1991, TRA and its related businesses had a total number of 19,510 employees, of which 19,153 were permanent staff, 183 were contract labor force, and 174 were temporary workers. "TRA Financial Analysis Report" put these figure 20,606 for the total employees. According to TRA Personnel Department, the total number of TRA employees in June 1992 was 20,404. According to TRA Personnel Department, there are a further 1,395 contract laborers hired mainly by the Freight Traffic Service and the Catering Service (1,356 by the two Services and 39 by TRA).

Table 3-8(next page)shows the parallel evolution of the work force and rail traffic over the past decade: globally, the number of unit-km per employee has very slightly decreased from 0.52 million in 1983 to 0.53 million now. However, the following more elaborate figures prepared by TRA show a definite progress as regards the passenger activity:

	Passenger-km/Employee	Tonne-km/Employee
1981	341,000	108,000
1982	356,000	99,000
1983	382,000	116,000
1984	382,000	113,000
1985	382,000	106,000
1986	389,000	111,000
1987	411,000	121,000
1988	403,000	112,000
1989	405,000	105,000
1990	422,000	95,000
1991	442,000	100,000

Personnel expenses run high: in 1991:

- . Expenses related to employees: NT\$ 10,390 million
- . Pensions, etc: NT\$ 3,098 million
- . Total: NT\$ 13,488 million or 59% of total expenses.

Since 1981, 4,025 employees have been dismissed and 5,134 are planned to be laid off by fiscal year 1996 (25% of the work force). However, the resulting savings will be partly offset by the extra burden of the pensions.

Table 3-8 :

## TRA PERSONNEL

(source: Statistical Reports of TRA. Taiwan Statistical Data Book)

Calendar Year	Number of Persons						TRA's EXPENSES FOR EMPLOYEES					
	=====		Pass-km	Tonne-km	Unit-km	U-km/Empl	Salaries		Empl. Earnings		Total Expenses	
	Employee	Pension	million	million	million	million	Total million	/person NT\$	Total million	/person NT\$	Total million	/person NT\$
1980	21617	?	7919	2588	10507	0,49			3770	174400	3770	174400
1981	20969	?	7947	2393	10340	0,49			4767	227336	4767	227336
1982	21793	10692	8173	2175	10348	0,47			5154	236498	5154	236498
1983	21196	11296	8524	2466	10990	0,52	3731	330294	5255	247924	5255	247924
1984	21028	11995	8447	2386	10833	0,52	3714	309629	5269	250571	5269	250571
1985	20715	12443	8299	2186	10485	0,51	4033	324118	5579	269322	5579	269322
1986	20410	13170	8305	2265	10570	0,52	4542	344875	6036	295737	6036	295737
1987	19661	13665	8446	2399	10845	0,55	4415	323088	5917	300951	5917	300951
1988	19539	14256	8223	2178	10401	0,53	4817	337893	7216	369313	7216	369313
1989	19273	14803	8133	2013	10146	0,53	5227	353104	7680	398485	7680	398485
1990	18919	15074	8312	1793	10105	0,53	5812	385565	9190	485755	9190	485755
1991												

TRA's EXPENSES  
For PENSIONERSCOMPARISON TO AEE (Average Earnings of Employees = Transportation, Storage and Communication)  
AND CPI (Consumer Price Index)

		AEE	Consumer	% increase year/year					
		NT\$/month	Price	=====					
million	NT\$/Pens.		Index	AEE	CPI	Salary	Earning	Expenses	Pension
1980		10949	82,0						
1981		13200	95,3	20,56	16,22		30,35	30,35	
1982	?	14458	98,2	9,53	3,04		4,03	4,03	
1983	1041	92157	14636	1,23	1,32		4,83	4,83	
1984	1053	87787	15712	7,35	0,00	-6,26	1,07	1,07	-4,74
1985	1203	96681	17555	11,73	-0,20	4,68	7,48	7,48	10,13
1986	1446	109795	18677	6,39	0,70	6,40	9,81	9,81	13,56
1987	1584	115917	19730	5,64	0,50	-6,32	1,76	1,76	5,58
1988	1904	133558	21720	10,09	1,29	4,58	22,72	22,72	15,22
1989	2267	153145	25683	18,25	4,42	4,50	7,90	7,90	14,67
1990	2607	172947	29117	13,37	4,14	9,19	21,90	21,90	12,93
1991		33581	114,7	15,33	3,61				
1992									

NOTE: Expenses related to Employees and Retirees are taken from Table 55 and 74 of TRA Statistical Reports :

EXPENSES FOR PERSONNEL SERVICE	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Expenses related to Employees on the Payroll											
Regular Staff Salaries	2545	3071	3062	2941	2954	3272	3530	3627	4017	4430	4880
Temporary Staff Salaries	215	243	197	308	341	287	542	325	334	334	274
Overtime	314	440	438	444	444	539	538	515	1285	1057	1654
Allowance	135	135	133	127	130	130	139	136	141	96	52
Bonus	372	648	1072	1193	1157	1070	988	963	1055	1261	1785
Welfare Allowance	189	230	252	242	243	281	299	350	384	502	544
Appropriation for Employee Aff	Nil	Nil	Nil	Nil	Nil	Nil	Nil	1	0	0	1
Sub-total	3770	4767	5154	5255	5269	5579	6036	5917	7216	7680	9190
Expenses related to Retired Employees											
Dismissal Allowance	0	Nil	0	0	7	0	0	2	1	1	18
Pension	631	861	1021	1041	1159	1202	1446	1584	1908	2267	2607
Sub-total	631	861	1021	1041	1166	1202	1446	1586	1909	2268	2625
Total	4401	5628	6175	6296	6435	6781	7482	7503	9125	9948	11815

## Statute of TRA Staff

Article 23 of the Railway Law provides that "matters related to recruitment, salaries, management, services, examination, meritorious and disciplinary norms, welfare, retirement and compensation of employees of the National Railways are governed by relevant laws and regulations. Matters not governed by such laws and regulations are subject to rules to be formulated by the MOTC" (and this applies equally to national, local or private railways).

Around fifteen years ago, TRA's and other public enterprises of the transportation sector (Harbors, Post, Telecommunications, etc.) were given an option between two alternatives: one whereby salaries and other compensations would be linked to the enterprise's financial results and achievements and one whereby the more rigid system which applies to most civil servants (employees of ministries and other government agencies, teachers, etc.) would apply to these enterprises. TRA elected the second alternative in full agreement between management and unions. As a consequence, TRA staff salaries and associated benefits are automatically subject to whatever increase the Central Government decides from time to time (in practice, every year) in favor of civil servants in general.

It would seem that the option of sticking to that system or adopting a system more suitable to an enterprise intended to offer services to a demanding public in a context of free competition, remains open: nothing in the Railway Law precludes it. This would necessitate (as mentioned above) a decision by the Executive Yuan, following deliberation by the Supervision/Control Commission and approval by the Provincial Government, but none of these parties are likely to object if this is conducive to improving the railway's efficiency and reducing its deficit. This would also necessitate the consent of TRA's employees; the latter may not be easy to coax out of the present situation which is said to be rather attractive, both in terms of basic salaries and in terms of fringe benefits (overtime compensation, housing, retirement scheme and, as regards senior employees, staff cars, etc.).

The Labor Standard Law (LSL) is, and will remain, applicable to TRA personnel (permanent staff and contract labor force). It is noteworthy that, whereas this law was enacted in August 1984 and the MOTC determined in August 1986 that it was applicable to TRA's staff, it became effective to TRA only in 1988, following a one-day demonstration by the staff. Its application, retroactive to August 1984, did much to worsen TRA's financial situation: on the one hand, it resulted in a sizable increase (around NT\$ 1,000 million per year) of recurrent personnel expenditures; on the other hand, its retroactive effect cost TRA around NT\$ 4,000 million in overtime payback.



## TRA Retirement Scheme and Comparison with its Competitors

Whereas, as mentioned above, the Railway Law provides that "matters related to retirement are governed by relevant laws and regulations and matters not governed by such laws and regulations are subject to rules to be formulated by MOTC", retirement at TRA is regulated by two legal texts: the "Rules of Retirement of TRA Staff" (hereafter referred to as the "Rules") which governs the permanent personnel only, and the "Measures of Retirement of TRA Labor Force" (hereafter referred to as the "Measures") which regulates the contract labor force of TRA and its related businesses, according to the LSL. The "Rules" was drawn up by TRA, approved by the Provincial government in the first place, then approved definitively by the Executive Yuan and came into force on Nov. 1, 1973. The "Measures" was also drafted by TRA, modified and approved by DOT in June 1987, and finally approved by the Social Bureau of the Taipei City Government in July, 1987. Both texts became effective in the day of their publication.

Permanent staff designates employees having civil servant status, employed according to the "Rules of Employment for Public Enterprises in the Transport Industry" of December 22, 1947. It does not include employees recruited for their special skills referred to as "Invitation personnel" in the Statistical Reports of TRA; they are basically computer/data-processing specialists and some senior ranking employees. Their contract term is one year, renewable each year. According to the "Rules Governing Employment by Contract" in the Civil Service of April 28, 1969, they are not entitled to any retirement benefits because they have a higher salary than their civil servant counterparts, neither are they covered by the LSL.

Temporary workers refers to workers hired on a fixed-term contract, normally less than one year. They are not entitled to retirement pensions. However, if their contract is renewed, they join the category of contract labor and automatically benefit from the retirement scheme as provided according to the LSL.

Contract labor refers to workers hired according to the LSL. Only part of those workers have civil servant status, but none of them is entitled to benefit from the ranking system of permanent staff (they are referred to as "Unauthorized workmen" in the English versions of the Statistical Reports of TRA and, more exactly, as "rankless workers" in the Chinese versions).

### TRA's Retirement Scheme

#### . Permanent Staff

As for conditions of retirement, there are two kinds of retirement (art. 3 of the "Rules"), voluntary retirement and compulsory retirement. Voluntary retirement applies to employees age 60 with 15 years of service, age 55 with 25 years of service or employees with 30 years of service. Compulsory retirement applies to employees age 65, employees

unable to work due to insanity or physical disability and employees suffering long-term illness and needing long recovery period as certified by a public hospital (art. 4-5 of the "Rules").

All retired employees are entitled to one of the two pension payments:

- . lump-sum pension: length of service less than 10 years
- . lump-sum pension + monthly pension: length of service over 10 years.

The amount of a pension is calculated on the basis of an employee's last month of service salary + position perquisites (Not applied. cf. 4/ Practice), which makes up the monthly pension rate (art. 8), allowing the following computation of pension payments:

. lump-sum pension: for length of service ranging from one to twenty years, a monthly pension (basic point) is given for each year; for length of service over twenty years, each full year from the twenty-first year gives the right to an additional half monthly pension.

. monthly pension: for length of service ranging from one to twenty years, 2.5% of the monthly pension is given for each year; for length of service ranging from twenty-one to thirty years, each full year from the twenty-first year gives the right to an additional 1.5% of the monthly pension; for length of service over thirty years, each full year from the thirty-first year gives the right to an additional 0.5% of the monthly pension. Pensions are adjusted accordingly whenever there is a salary increase for TRA employees.

Example: A retiree has thirty-one years of service, his last month of service salary was NT\$ 25,000, and he had a monthly position perks of NT\$ 5,000. He must have a monthly pension calculated as follows:

- . monthly pension basis:  $25,000 + 5,000 = 30,000$
- . from one to twenty years:  $2.5\% * 30,000 * 20 = 15,000$
- . from twenty-first to thirty years:  $1.5\% * 30,000 * 10 = 4,500$
- . for the thirty-first year:  $0.5\% * 30,000 * 1 = 150$
- . his monthly pension is:  $15,000 + 4,500 + 150 = \text{NT\$ } 19,650$

#### . Contract Labor Force

As regards conditions of retirement, there are also two kinds of retirement: voluntary and compulsory retirement, but with different conditions. Voluntary retirement applies to employees age 55 with 15 years of service or with 25 years of service. Compulsory retirement applies to employees unable to work due to insanity or physical disability, or suffering long-term illness and needing long recovery period as certified by a public hospital.

There are no provisions in the "Measures" regarding methods of payment of labor pensions. In practice, pensions are paid only on a lump sum basis. The "Measures" provides different methods of calculation for periods of service before and after application of the LSL (principle of non-retroactiveness of law).



. After application of LSL: for length of service under 15 years, each year gives the right to two basic points; over 15 years, each year gives right to one basic point. But the total number of basic points is limited to 45. Service length less than six months is counted as half a year; when it is more than six months, it is counted as one year.

. Before application of LSL: to apply "Rules of Retirement for Factory Workers in Taiwan Province". For length of service under 15 years, each year gives the right to two basic points; over 15 years, each year gives the right to 0.5 basic point; the remaining service length is counted as one year when it is equal to or over six months, and is not counted when it is less than six months. Compulsory retirees are entitled to two basic points per year for length of service under 15 years; the remaining service time is counted as one year (two basic points) when it is equal to or over six months, and is counted as half a year (one basic point) when it is less than six months.

#### . Evolution

On December 7, 1987, the Railway Rehabilitation Commission decided in its 18th session to "rescind the provisions that allow pension allocations in excess of 30 years, and to apply this modification as soon as it is approved by the Executive Yuan". In January 1987, the Provincial Government submitted the proposal of modification to the Central Personnel Administration of the Executive Yuan, which replied by document No. 4751 dated February 4, 1989, that:

. "modification of article 8 of the Rules does not seem to be of great help in easing the financial burden of TRA, and may only undermine personnel morale.

. "a Reform Plan of Retirement has been submitted by the Examination Yuan to the Legislative Yuan for deliberation and approval.

. "modification of article 84 of the LSL as regards retirement of civil servants who have labor status is under close consideration. Under the circumstances, it would be more prudent to consider whether it is the right moment to tackle the modifications of the Rules of Retirement of TRA Staff."

In September 1991, the Provincial Government set up the TRA Operations Improvement Supervision/Control Committee, which considered modifications of the "Rules". A draft of the modified clauses of the "Rules" was adopted by the Provincial Government in session No. 2084 of April 27, 1992, and the Provincial Government is considering submitting the draft to the Executive Yuan for acceptance. The main points of the modifications are:

. using article 4 of the "Civil Servant Retirement Law" as a model as regards length of service and age limits, to offer voluntary retirement to staff who have completed 25 years of service.

. to rescind the provisions that allow pension allocations in excess of 30 years, in specifying that employees recruited before this modification will not be affected, so as to preserve their vested interests.



There are two categories of pensions: a lump-sum pension for length of service over 5 years but under 15 years and various options for retiring employees with more than 15 years of service:

- . lump-sum pension only
- . monthly pension only
- . 50% of lump-sum pension + 50% of monthly pension
- . one third of lump-sum pension + two thirds of monthly pension
- . one quarter of lump-sum pension + three quarters of monthly pension.

Bases of computation for lump-sum pension:

. for employees who have five full years of service: last month of service salary + fringe benefits in kind = 9 basic points; over five years, every six-month length gives right to an additional basic point.

. for employees who have more than 15 years of service: 2 additional basic points are added to previous years' points at the completed fifteenth year, then the calculation goes on the same way as before, i.e. two points for each year, until the total number of basic points reach 61, which is the ceiling of the calculation basis.

. in addition, the retiree is entitled to an extra amount of two-year family allowance and an extra two-year family allowance in kind.

Bases of computation for monthly pension for employees who have completed fifteen years of service: 75% of the monthly salary of the same rank of employee in service; after the fifteenth year, each year gives one more percentage point, but not exceeding the ceiling of 90%. Full monthly family allowances, in cash and in kind, are attached to the monthly pension.

Note: "Monthly salary" here means the basic salary + other cash allowances attached to monthly payment. The amount of these cash allowances is subject to decision of the Examination Yuan, in consultation with the Executive Yuan.

For employees on contract basis (LSL), the conditions of retirement are similar to what is described in the conditions for the Contract labor force of TRA, but with stricter age limits for compulsory retirement. Voluntary retirement applies to employees age 55 with 15 years of service and employees with 25 years of service. Compulsory retirement applies to employees age 60 or unable to work due to insanity or physical disability.

As for the pension scheme, Article 56 of the LSL provides that any employer should make regular provisions for a pension fund, which allows a lump-sum payment of pension within thirty days after the retirement of employee. Instalments are allowed only with approval of the relevant authorities in case of : 1/ pension fund is insufficient to provide the payment; 2/ serious financial difficulties of the company.

The calculation basis is relatively simple:

. for length of service under 15 years, each year gives the right to two basic points; over 15 years, each year gives the right to one basic point. But the total number of basic points is limited to 45. Service of less than six months is counted as half a year; when it is more than six months, it is counted as one year.

#### Private Bus Companies' Retirement Scheme

As private entities, all these companies have had to comply, as regards retirement schemes for their employees, with provisions of the LSL since August 1984. Prior to this date, their retirement system was regulated by the "Rules of Retirement for Factory Workers in Taiwan Province". There are no comprehensive statistics about these companies, hence figures concerning their retired employees and retirement pensions are not available. As for Wild-Chicken Bus companies' obligations toward employees' retirement, these companies are bound, in theory, by the provisions of the LSL. Therefore, their employees should have the same retirement treatment as that of other private bus companies. There is no available information, however, to allow reliable estimates of the retirement expenses of these companies, and far less the portion of retirement charges imputable to the cost structure of the Wild-Chicken Buses.

#### Comparison

As a supporting document, the "TRA Financial Analysis Report" made a comparison between the TRA retirement scheme and that of the Civil Service in general. The main result can be summarized as follows:

. With TRA pension scheme, retiring employees with 30 years of service may have 25 basic points lump-sum pension + 65% yearly pension. Retiring employees with 40 years of service may have 30 basic points lump-sum pension + 70% yearly pension.

. With the Civil Service scheme, retiring employees with 30 years of service may have one of the following options: 1/ 30.5 basic points lump-sum pension + 45% yearly pension; 2/ 90% yearly pension; 3/ 61 basic points lump-sum pension. Retiring employees with 40 years of service may have one of the three options, but no additional pension granted to service over 30 years.

. On the basis of the assumption of an average life expectancy of 13 years after retirement, actual pensions cashed-in by TRA retirees are lower than those of the Civil Service (Cf. Table on page 14 of the "Report").

The following examples are calculated according to the schemes of the Civil Service, TRA and LSL criteria with the following assumptions: last month of service salary + perks = NT\$ 30,000 (basic point); length of service (A): 35 years; length of service (B): 10 years.

. Civil Service

(A) 35 years of service (choosing the option: 50% lump-sum + 50% monthly pension)

. lump-sum portion:

- 1-5 years: 9 basic points
- 6-15 years: 20 b.p.
- 16-30 years: 2 b.p.+ 30 b.p.
- Total: 61 b.p.
- $61 * 30,000 = 1,830,000$ ;  $1,830,000 * 50\% = 915,000$
- lump-sum portion = NT\$ 915,000

. monthly portion:

- 1-15 years: 75% of b.p. = 22,500
- 16-30 years: 15% of b.p. = 4,500
- $22,500 + 4,500 = 27,000$ ;  $27,000 * 50\% = 13,500$
- monthly portion = NT\$ 13,500

So, (A) should cash in NT\$ 915,000 at the retirement, and has every month a NT\$ 13,500 pension.

(B) 10 years of service (lump-sum pension only)

- 1-5 years: 9 b.p.
- 6-10 years: 10 b.p.
- Total: 19 b.p.
- $19 * 30,000 = 570,000$

So, (B) should have NT\$ 570,000 lump-sum pension.

. TRA

(A) 35 years of service

. lump-sum portion:

- 1- 20 years: 20 b.p.
- 21-35 years: 5 b.p.
- Total: 25 b.p.
- $21 * 30\ 000 = \text{NT\$ } 630,000$  lump-sum portion

. monthly portion:

- 1-20 years:  $2.5\% * 30,000 * 20 = 15,000$
- 21-30 years:  $1.5\% * 30,000 * 10 = 4,5000$
- 31-35 years:  $0.5\% * 30,000 * 5 = 750$
- $15\ 000 + 4\ 500 + 750 = \text{NT\$ } 20,250$  monthly portion

At TRA, (A) should cash in NT\$ 630,000 at the retirement, and has every month a NT\$ 20,250 pension.

(B) 10 years of service (lump-sum + monthly pension)

. lump-sum portion:

- 1-10 years: 10 b.p.
- $10 * 30,000 = \text{NT\$ } 300,000$



. monthly portion:  
 -1-10 years:  $2.5\% * 30,000 * 10 = 7,500$   
 - monthly portion = NT\$ 7,500

At TRA, (B) should cash in NT\$ 300,000 at retirement, and has every month a NT\$ 7,500 pension.

. Private Bus Operators (LSL)

(A) 35 years of service (lump-sum pension only)  
 - 1-15 years: 30 b.p.  
 - 16-30 years: 15 b.p. (total points limited to 45)  
 $45 * 30,000 = 1,350,000$

(B) 10 years of service (lump-sum pension only)  
 - 1-10 years: 15 b.p.  
 $15 * 30,000 = 450,000$

At UMTC, for instance, (A) should cash in NT\$ 1,350,000 at the retirement, and (B) should cash in NT\$ 450,000. None of them has any monthly pension.

Therefore, for the same salary basis, (A) and (B) would have different retirement treatments under different schemes:

	NT\$		
	Civil Service	TRA	LSL
With 35 years of service (A)			
Lump Sum	915,000	630,000	1,350,000
Monthly pension	13,500	20,250	0
With 10 years of service (B)			
Lump Sum	570,000	300,000	450,000
Monthly pension	0	7,500	0

With ten years of life expectancy after retirement, (A) and (B) would have, on the basis of 12 monthly pensions multiplied by 10 in addition to the lump-sum pension received at retirement, the following amounts:

	Civil Service	TRA	LSL
35 years of service	2,535,000	3,060,000	1,350,000
10 years of service	570,000	1,200,000	450,000

However, considering the impact of interest rate on the money, it is better to look at the likely outcome of pensions over a long period. Suppose interest rate will remain at 10% yearly over a ten year period. Using the Present Worth Factor (PWF), one may obtain coefficient for ten year period at 6.144. Computing the monthly pensions within ten years, then add it up to the lump-sum pensions received at retirement,

one can have the following results (these figures indicate the present value of the money ten years and twenty years hence, at a annual interest rate of 10%).

	Civil Service	TRA	LSL
35 years of service	1,910,328	2,122,922	1,350,000
10 years of service	570,000	852,960	450,000

Likewise, the same computation can be extended to a longer period, say, twenty years for example. From the same method, we have a coefficient of 8.514 for a twenty year period:

	Civil Service	TRA	LSL
35 years of service	2,294,268	2,698,902	1,350,000
10 years of service	570,000	1,066,260	450,000

From this quick computation, it is obvious that, from the employee's viewpoint, TRA's retirement scheme is more advantageous than the others. However, it would be more cautious to look also at other factors which may affect the real cash-in money under different schemes. For example, one may look at the different perquisites attached to the salary of a civil servant (family allowance, other cash allowances, etc.), while TRA employees seem not to have such perquisites. Another interesting factor to look at is inflation. Over a long period, inflation is likely to affect a lot the real value of the money. If, for instance, there is a preferential saving-rate scheme offered to certain categories of people and not accessible to others, this will change the worth of money for many who do not benefit from the preferential scheme. More details and factors should be taken into account for a thorough comparison before drawing any conclusion.

On the other hand, from the employer's viewpoint, the cost to TRA of each individual pensioner is very high: significantly higher than the cost to the nation of pensioners from the civil service and very much higher than the cost to employers of pensioners from the private sector, and specially the transport sector. This is due to historical reasons which are beyond the control of the incumbent TRA management and it is clear that not much can be done in this respect as regards employees recruited up to now (and former employees who are now retired), the vested interests of whom must be preserved. By contrast, less generous schemes might be considered for employees to be recruited in future, more in line with the prevalent practices in the private transport sector which is the context of TRA' survival.

### 3.5. TRA ACCOUNTS

Table next page gives a summary of TRA's income statements over the past decades. Accounts have been improving from 1981 to the point of being balanced in 1985 and 1986. From 1987, revenue has become increasingly higher than expenses in the context of an aggressive competition. From 1988, expenses have skyrocketed due to the impact of the Labor Standard Law and its retroactive application. Table 3-9 to Table 3-18 give more details on major items of revenues and expenses and call for the following comments:

#### Revenues

Over recent years, increases of passenger fares compared rather fairly well to commodity price evolution:

	Index of Prices		TRA Passenger Tariff Indices			
	Wholesale	Consumer	Ordinary	Fu Sing	Chu Kuang	Tze Chiang
1986	100.00	100.00	100.00	100.00	100.00	100.00
1987	96.75	100.52	99.48	99.69	100.00	100.00
1988	95.19	101.81	111.73	101.81	101.77	103.70
1989	94.88	106.30	136.21	106.04	105.30	111.11
1990	94.30	110.69	137.30	106.98	106.33	112.40

As for freight traffic, in relation to index 100.00 in 1986,  
. the carload rate index in 1990 was 127.16  
. the LCL rate index in 1990 was 131.81

#### Expenses

Table overleaf shows an itemization of TRA's expenses over the 1980-1990 period. Salient features are as follows:

Personnel expenses of TRA are of the order of NT\$ 14000 million rather than 12700 million if one accounts for the staff of Rolling Stock Workshops and Car Depots: as these facilities are separate cost centers, their personnel expenses are hidden under Repair and Maintenance, Maintenance and Supplies. There is a jump in Overtime Allowance from 1988 onwards. This is a consequence of a decision by the Provincial Government in May 1988 (following a 1-day quasi-strike of locomotive drivers), that TRA should comply with the directive (August 1986, by the Ministry of Interior) of the Central Government) that TRA personnel is entitled to the benefit of the LSL.



Table 3-9 :

INCOME STATEMENT OF TRA  
(source: IOT)

(FISCAL years)

Millions of NT\$

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
OPERATING REVENUES											
Passenger & Freight Revenue	7957	8551	8908	9897	10552	10187	10307	10362	11100	11462	12105
Other Operating Revenues	2496	2510	2492	2613	2531	2432	2207	2419	2536	2660	2788
Sub-total	10453	11061	11400	12510	13083	12619	12514	12781	13636	14122	14893
NON OPERATING REVENUES											
Government Grants	1848	1773	1516	1131	842	593	344	190	123	108	71
Disposal of Land	199	542	580	491	257	562	535	65	867	763	258
Other Revenues	184	216	217	331	674	347	459	312	584	121	190
Sub-total	2231	2531	2313	1953	1773	1502	1338	567	1574	992	519
TOTAL REVENUES	12684	13592	13713	14463	14856	14121	13852	13348	15210	15114	15412
OPERATING EXPENSES											
Transportation Expenses	7514	9011	9357	9291	10180	10663	10682	11607	12726	14373	17193
Other Operating Expenses	2328	2381	2395	2488	2390	2333	2140	2229	2630	2565	2746
General/Administr. Expenses	613	696	741	717	767	763	674	744	837	1003	1112
Sub-total	10455	12088	12493	12496	13337	13759	13496	14580	16193	17941	21051
NON OPERATING EXPENSES											
Interest Charges	2649	2311	1866	1677	1207	874	523	290	266	552	1067
Police Expenses	179	215	225	231	243	277	287	327	371	456	0
Other Expenses	23	135	57	51	53	81	38	39	741	1428	776
Sub-total	2851	2661	2148	1959	1503	1232	848	656	1378	2436	1843
TOTAL EXPENSES	13306	14749	14641	14455	14840	14991	14344	15236	17571	20377	22894
PROFIT/LOSS											
Oper. Revenue - Oper. Expenses	-2	-1027	-1093	14	-254	-1140	-982	-1799	-2557	-3819	-6158
Non Oper. Rev - Non Oper. Exp	-620	-130	165	-6	270	270	490	-89	196	-1444	-1324
REVENUES - EXPENSES	-622	-1157	-928	8	16	-870	-492	-1888	-2361	-5263	-7482
Ratio Oper.Exp/Oper.Rev	1,00	1,09	1,10	1,00	1,02	1,09	1,08	1,14	1,19	1,27	1,41
Ratio EXPENSES/REVENUES	1,05	1,09	1,07	1,00	1,00	1,06	1,04	1,14	1,16	1,35	1,49

Table 3-10:

TRA's SCREENED REVENUES AND EXPENSES (FISCAL years) (million NT\$)  
 (source: TRA's Statistical Report, Tables 50, 51)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
REVENUES											
Operating Revenues											
Passenger Traffic	6018	6630	7153	7830	8417	8265	8266	8371	8904	9431	9985
Freight Traffic	1939	1921	1755	2067	2135	1921	2042	1991	2195	2031	1993
Others	2496	2510	2491	2613	2531	2432	2207	2419	2537	2660	2677
Sub-total	10453	11061	11399	12510	13083	12618	12515	12781	13636	14122	14655
Non-operating Revenues	2231	2531	2313	1953	1774	1502	1337	567	1574	993	555
Total	12684	13592	13712	14463	14857	14120	13852	13348	15210	15115	15210
EXPENSES											
Operating Cost											
Stations	1433	1816	1829	1884	1981	2150	2237	2577	2598	3346	3490
Running	2245	2595	2649	2664	2709	2773	2593	2837	3237	3470	3753
Civil Engineering	1124	1475	1452	1354	1672	1795	1754	1889	2104	2348	2681
Electric	412	483	554	507	746	761	785	874	966	982	1214
Mechanical	2300	2642	2873	2883	3072	3184	3312	3427	3821	4266	4491
Others	2291	2338	2360	2453	2351	2299	2106	2199	2596	2529	2404
Sub-total	9805	11349	11717	11745	12531	12962	12787	13803	15322	16941	18033
Operating Expenses											
Business	215	222	283	273	293	286	235	264	288	330	365
General and Administrative	397	475	458	444	473	477	440	483	549	669	727
Others	37	43	34	35	39	34	34	30	35	36	47
Sub-total	649	740	775	752	805	797	709	777	872	1035	1139
Non-operating Expenses	2851	2661	2148	1959	1503	1232	848	656	1378	2402	1323
Total	13305	14750	14640	14456	14839	14991	14344	15236	17572	20378	20495
PROFIT OR LOSS	-621	-1158	-928	7	18	-871	-492	-1888	-2362	-5263	-5285

Table 3-11:

TRA's REVENUES AND EXPENSES (CALENDAR years) (million NT\$)  
 (source: TRA's Statistical Report, Table 51)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>REVENUES</b>											
Operating Revenues											
Passenger Traffic	6355	6875	7529	8156	8420	8164	8371	8578	9209	9528	10622
Freight Traffic	1947	1794	1937	2074	2033	1944	2080	2037	2177	1968	2050
Others	2604	2504	2574	2537	2469	2569	2297	2476	2574	2764	2777
Sub-total	10906	11173	12040	12767	12922	12677	12748	13091	13960	14260	15449
Non-operating Revenues	1947	2273	2157	1981	1458	1569	1036	526	1217	1073	512
Total	12853	13446	14197	14748	14380	14246	13784	13617	15177	15333	15961
<b>EXPENSES</b>											
Operating Cost											
Stations	1669	1836	1820	1948	2022	2214	2281	2785	2927	3535	3768
Running	2547	2645	2639	2670	2739	2681	2641	2970	3109	3694	3886
Civil Engineering	1238	1527	1423	1561	1676	1742	1798	2083	2344	2603	3430
Electric	386	550	520	643	739	759	830	934	978	1070	1446
Mechanical	2392	2703	2924	3151	2888	3247	3281	3663	3939	4613	4768
Others	2398	2333	2453	2368	2290	2409	2122	2386	2540	2656	2725
Sub-total	10630	11594	11779	12341	12354	13052	12953	14821	15837	18171	20023
Operating Expenses											
Business	220	245	283	285	292	253	256	292	321	352	410
General and Administrativ	448	472	454	465	466	465	459	514	600	788	701
Others	38	42	31	37	38	45	33	34	37	40	45
Sub-total	706	759	768	787	796	763	748	840	958	1180	1156
Non-operating Expenses	2663	2315	2095	1767	1368	1042	744	610	2381	2531	1111
Total	13999	14668	14642	14895	14518	14857	14445	16271	19176	21882	22290
PROFIT OR LOSS	-1146	-1222	-445	-147	-138	-611	-661	-2654	-3999	-6549	-6329



Table 3-12 :

TRA REVENUE 1990 and 1991 (calendar years) million NT\$

(source: Statistical Report of TRA)

	1990	1991
OPERATING REVENUE		
Passengers		
Passenger Tickets	9275	10372
Excess fare of Supplemental Fare Tickets	8	6
Special Trains	6	5
Platform Tickets	12	13
Mail	1 (1)	1
Parcels	81	83
Miscellaneous Parcels	89	90
Newspapers and Magazines	4	4
Forwarding Baggage and Handling Motorcycles	34	32
Others	17	16
Sub-total	9527	10622
Freight		
Carload	1651	1697
LCL	27	21
Containers	108	163
Special Supplies	133 (2)	131
Railway Service Stores	45	34
Demurrages	1	0
Others	3	2
Sub-total	1968	2048
Other Operating Revenues		
Rentals earned from Operating	9	9
Agent Fees earned	195 (3)	204
Advertisement	61	25
Freight Service (Subsidiary)	1925 (8)	1898
Catering Service (Subsidiary)	574	641
Others	0	
Sub-total	2764	2777
Sub-total	14259	15447
NON OPERATING REVENUE		
Interest	3	2
Gain on Exchange	10	25
Gain on Investment Enterprise	14 (4)	16
Gain on Disposal of Assets	859 (5)	255
Credited Balance on Physical Inventory	2	1
Sales from Scraps	35	28
Compensation revenue	6 (6)	11
Subsidies from Government	96 (7)	53
Miscellaneous revenue	47	120
Sub-total	1072	511
TOTAL	15331	15958

## NOTES

Total revenue given in the PROFIT AND LOSS STATEMENT for Fiscal Year 1990 (July 89-June 90) is MNT\$ 15114

(1) TRA has lost entirely its business with the Post Office

(2) Military Transport, charged at 85% of commercial rate

(3) Payment for services rendered (expert services, maintenance of private shunters, cars, sidings, etc.

(4) Dividends from companies of which TRA is a share holder

(5) Essentially : sale of land

(6) Claims against contractors

(7) Government's contribution to interest on loans contracted for 1974-1979 Electrification

(8) So-called "subsidiaries" Freight Service (forwarding activities) and Catering are separate cost centers

Table 3-13:

## ANALYSIS OF TRA EXPENSES (calendar years)

Million NT\$

(source: Statistical Reports of TRA)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>PERSONNEL SERVICE</b>												
Employees												
Regular Staff Salaries	2545	3071	3062	2941	2954	3272	3530	3627	4017	4430	4880	5483
Temporary Staff Salaries	215	243	197	308	341	287	542	325	334	334	274	374
Overtime	314	440	438	444	444	539	538	515	1285	1057	1654	1565
Allowance	135	135	133	127	130	130	139	136	141	96	52	51
Bonus	372	648	1072	1193	1157	1070	988	963	1055	1261	1785	1676
Welfare Allowance	189	230	252	242	243	281	299	350	384	502	544	587
Appropriation for Employee Affairs								1	0	0	1	1
Sub-total	3770	4767	5154	5255	5269	5579	6036	5917	7216	7680	9190	9737
Pensioners												
Dismissal Allowance	0		0	0	7	0	0	2	1	1	18	
Pension	631	861	1021	1041	1159	1202	1446	1584	1908	2267	2607	2963
Sub-total	631	861	1021	1041	1166	1202	1446	1586	1909	2268	2625	2963
Sub-total	4401	5628	6175	6296	6435	6781	7482	7503	9125	9948	11815	12700
<b>CHARGES FOR SERVICE</b>												
Water, Gas, Power	441	641	631	634	676	666	625	581	546	550	647	654
Postage, Telecommunication	7	7	7	7	6	6	6	6	6	6	7	6
Travel Allowance	932	1038	934	805	797	812	748	807	1009	1077	1254	1241
Printing, Advertisement	43	54	47	43	38	27	28	28	29	31	27	26
Repairing and Maintenance	1403	1643	1683	1566	1233	1304	1345	1302	1416	1482	1824	1043
Insurance Premium	4	3	3	4	4	4	3	3	4	3	4	4
Package	72	93	99	202	327	295	296	299	312	379	387	250
Special Service	13	17	18	11	18	18	24	13	11	15	14	19
Entertainment	2	2	2	2	2	2	2	2	2	2	2	2
Sub-total	2917	3498	3424	3274	3101	3134	3077	3041	3335	3545	4166	3245
<b>MATERIAL COST</b>												
Material Cost												
Materials	39	16	11	5	5	8	6	7	8	9	9	7
Supplies	471	644	682	772	941	928	909	908	863	869	854	1099
Fuels	500	622	629	647	636	614	505	450	402	383	374	422
Oils and Fats	47	47	48	49	48	33	33	33	30	28	26	27
Repair Parts	6	2	2	2	2	2	2	2	2	2	1	9
Sub-total	1063	1331	1372	1475	1632	1585	1455	1400	1305	1291	1264	1564
Material and Supplies Cost												
Office Supplies	9	9	8	7	8	8	8	8	8	9	10	9
Newspapers and Magazines	3	3	3	3	4	4	4	4	5	5	6	5
Clothes	20	34	36	36	30	33	35	36	32	30	49	52
Beautifying and Cleaning Environment	29	21	23	79	153	149	180	167	231	249	301	357
Food for Training	4	4	4	5	5	5	4	4	5	5	5	3
Medical Instruments	3	3	3	3	4	3	6	1	0	0		
Medicines	32	33	34	33	33	33	36	6	0	0		
Others	6	7	6		5	5	4	4	5	5	7	3
Sub-total	106	114	117	166	242	240	277	230	286	303	378	429
Sub-total	1169	1445	1489	1641	1874	1825	1732	1630	1591	1594	1642	1993
<b>RENTS</b>												
Land and Water	4	4	4	3	3	3	3	3	3	6	5	5
Houses	4	7	9	2	5	5	6	5	4	5	5	3
Machinery	11	12	16	14	15	15	12	16	12	9	5	12
Transportation Equipment and Other	19	11	0	0	0	0	0	0	0	1	1	0
Sub-total	38	34	29	19	23	23	21	24	19	21	16	20

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
INTEREST												
Domestic Debts	1918	1602	1334	1214	1015	741	465	275	156	357	922	952
Foreign Debts	1088	843	645	547	469	283	232	113	59	37	36	0
Other Debts									11	22	-5	
Sub-total	3006	2445	1979	1761	1484	1024	697	388	226	416	953	952
DEPRECIATION AND AMORTIZATION												
House Depreciation	89	57	90	101	118	125	128	136	143	138	131	173
Machinery Depreciation	91	-15	41	38	113	126	145	131	126	125	113	155
Transportation Equipment Depreciation	857	510	908	1048	1384	1070	1254	1364	1425	1428	1356	1384
Other Equipment Depreciation	17	13	12	21	18	24	30	30	33	36	45	99
Non-operating Fixed Assets Depreciation						4	4	5	6	6	2	
Amortization	8	50	23	67	33	33	19	4	1	4	27	18
Sub-total	1062	615	1074	1275	1666	1382	1580	1670	1734	1737	1674	1829
TAXES AND FEES												
Land Tax	8	13	14	8	3	3	2	2	2	3	3	9
House Tax	5										11	17
Land Improvement Tax	5	7	7	7	7	6	7	7	9	11		
Tax on Vehicles for using Fuel	13	13	14	14	13	14	14	13	13	11	10	9
Vehicle License Tax	6	6	7	7	6	7	7	6	6	5	5	5
Business Transaction Tax	80	83	85	96	88	89	26	0	1	1		
Stamp Tax	18	21	22	21	21	18	11	6	2	3	0	1
Surtax for Education	11		21	24	22	22	7	0	0	0		
Defense Tax	-8	20										
Other Taxes	4	1	0	0	0	0		0	0			
Fees	0	2	3	4	4	3	3	3	3	2	2	2
Sub-total	142	166	173	181	164	162	77	37	36	36	31	43
MEMBERSHIP FEES, DONATION AND ALLOTMENT												
Membership Fees	1	1	1	1	1	1	1	1	1	1	1	1
Donation and Subsidy	2	1	2	2	2	2	2	2	2	2	3	8
Allotment	4	1	48	1	2	3	2	2	3	2	3	1
Sub-total	7	3	51	4	5	6	5	5	6	5	7	10
LOSS AND COMPENSATION												
Error of Weighing Machine	0	-1	0	5	-2	1	9	3	8	-3	0	0
Loss on Bad Debts and Guarantee Loss	0	0						0		11	0	
Transportation and Conveying Loss	0	0										
Loss of Assets	19	39	70	104	78	86	117	46	89	84	151	1195
Damage Loss	7	72	109	13	16	13	15	30	42	94	147	158
Loss on Exchange	0	2	-1	1	-2	18	-16	11	-10	0	8	-5
Loss on Investments	5	4	4	2	4							
Compensation for General Loss	11	13	21	19	14	20	12	20	21	14	15	28
Compensation for Transportation	41	45	31	26	26	25	18	22	18	18	23	15
Compensation for Public Damage	0	0		0	0							
Sub-total	83	174	234	170	134	163	155	132	168	218	344	1391
OTHERS												
Expenditure of Previous Year											1220	95
Other	0										15	12
Sub-total	0	-7	37	19	11	20	34	19	31	1654	1235	107
TOTAL	12825	14001	14665	14640	14897	14520	14860	14449	16271	19174	21883	22290



Table 3-14:

TRA ANALYSIS OF TRA's EXPENSES, 1990 and 1991 (CALENDAR years) million NT\$

(source: Statistical Report of TRA, pages 213 and 274)

	1990	1991	ANALYSIS :	1990	1991
OPERATING COST					
Transportation and Storage			PERSONNEL SERVICE	(3)	
Stations	3535	3768	Regular Staff Salaries	4880	5483
Train Operation	3694	3886	Temporary Staff Salaries	274	374
Civil Engineering Maintenance	2603	3430	Overtime	1654	1565
Electric Maintenance	1070	1446	Travel Allowance	52	51
Mechanical Maintenance	4613	4768	Bonus	1785	1676
Sub-total	15515	17298	Dismissal Allowance	18	
Other Operating Costs			Pension	2607	2963
Agent Fees	107 (1)	?	Welfare Allowance	544	587
Freight Service (Forwarding Subsidia	1955	?	Appropriation for Employee Affairs	1	1
Catering (Subsidiary)	594	?			
Others		?	Sub-total	11815	12700
Sub-total	2656	2725			
Sub-total	18171	20023	CHARGES FOR SERVICE		
OPERATING EXPENSES			Water, Gas, Power (incl. for Traction)	647	654
Business Expenses	352	410	Postage, Telecommunication	7	6
General and Administrative Exp.	788	701	Travel Allowance	1254 (4)	1241
Other	40	45	Printing, Advertisement	27	26
Sub-total	1180	1156	Repairing and Maintenance	1824 (5)	1043
NON OPERATING EXPENSES			Insurance Premium	4	4
Police	274	?	Package	387 (6)	250
Civil Defense	14	?	Special Service	14	19
Others	2243 (2)	?	Entertainment	2	2
Sub-total	2531	1111	Sub-total	4166	3245
TOTAL	21882	22290	MATERIAL COST		
NOTES (with reference to 1990 figures)			Material Cost		
Total expense given in the Profit & Loss Statement			Materials	9	7
for FISCAL Year 1990 (July 89-June 1990) is MNT\$ 20,378			Supplies	854 (7)	1099
(1) Expenses incurred in rendering such services			Fuels	374	422
as maintenance of private shunters, cars and sidings			Oils and Fats	26	27
(2) Analysis of NON OPERATING OTHERS is given page 2			Repair Parts	1	9
(3) Do not include :			Sub-total	1264	1564
== Personnal Service of Mechanical Workshop and Rolling			Material and Supplies Cost		
Stock Depots, which is under MAINTENANCE and MATERIALS			Office Supplies	10	9
== Retroactive payment of Overtime (due to Labour			Newspapers and Magazines	6	5
Standard Law) which is under OTHERS			Clothes	49	52
(4) 89% to Freight Service (TRA's Forwarding Subsidiary)			Beautifying and Cleaning Environment	301 (8)	357
(5) 91% to Mechanical Maintenance. Includes Personnel			Food (for Training)	5	3
Service in Workshops and Depots			Others	7	3
			Sub-total	378	429
			Sub-total	1642	1993
			RENTS		
			Land and Water	5	5
			Houses	5	3
			Machinery	5	12
			Transportation Equipment and Other	1	0
			Sub-total	16	20

## NOTES (continuation)

(6) 79% to Stations and 21% to Freight Service (Forwarding)

(7) 21% to Civ.Eng. Maintenance, 25% to Mech. Maintenance and 45% to Catering

(8) 86% to Mechanical Maintenance for routine washing and cleaning of coaches, which includes shadow costs

(9) 94% to Mechanical Maintenance

(10) Civil Eng. Maintenance: 267 millions

Electric Maintenance: 316 millions

Mechanical Maintenance: 751 millions

Freight Service: 22 millions

Civil Engineering covers station buildings, marshalling yards, bridges, etc. Track is not depreciated

(11) 99.98% to "Other Non Operating Expenses". Means gradual amortization of losses due to disasters

(12) Bad accidents, Natural disasters

(13) Compensation to Passengers for accidents and damage

(14) Compensation to Freight Owners for damage and loss

(15) Compensation or allowances for other casualties

(16) Mostly retroactive payment of Overtime

(17) Mostly retroactive payment of Overtime

## (2) ANALYSIS OF "NON OPERATING OTHERS" (1990)

Personnel Service	30
Charges for Service	4
Materials and Supplies	1
Rents	0
Interest	958
Depreciation and Amortization	27
Taxes	0
Donation, Subsidy and Allotment	3
Loss and Compensation	39
Expenditure of Previous Period	1171 (17)
Others	10

Total	2243
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## INTEREST

Domestic Debts	922	952
Foreign Debts	36	0
Other Debts	-5	
Sub-total	953	952

## DEPRECIATION AND AMORTIZATION

House Depreciation	131	173
Machinery Depreciation	113 (9)	155
Transportation Equipment Depreciation	1356 (10)	1384
Other Equipment Depreciation	45	99
Non-operating Fixed Assets Depreciation	2	
Amortization	27 (11)	18
Sub-total	1674	1829

## TAXES AND FEES

Land Tax	3	9
House Tax	11	17
Tax on Vehicles for using Fuel	10	9
Vehicle License Tax	5	5
Business Transaction Tax		
Stamp Tax	0	1
Surtax for Education		
Fees	2	2
Sub-total	31	43

## MEMBERSHIP FEES. DONATION AND ALLOTMENT

Membership Fees	1	1
Donation and Subsidy	3	8
Allotment	3	1
Sub-total	7	10

## LOSS AND COMPENSATION

Error of Weighing Machine	0	0
Loss on Bad Debts and Guarantee Loss	0	
Transportation and Conveying Loss		
Loss of Assets due to obsolescence	151	1195
Damage Loss	147 (12)	158
Loss on Exchange	8	-5
Compensation for General Loss	15 (13)	28
Compensation for Transportation	23 (14)	15
Compensation for Public Damage	(15)	
Sub-total	344	1391

## OTHERS

Expenditure of Previous Year	1220 (16)	95
Other	15	12
Sub-total	1235	107

TOTAL	21883	22290
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Table 3-15:

ANALYSIS OF TRA's EXPENSES, 1991 (CALENDAR year)  
(source: Statistical Report of TRA)

million NT\$

	Total	Stat	Run	Civil	Elect	Mech	Agent Fees	Freight Serv.	Cater	Oper. Exp	Non- Oper
PERSONNEL SERVICE											
Regular Staff Salaries	5483	1495	1112	903	336	1059		202	28	343	5
Temporary Staff Salaries	374	18	77	2	1	1	77	50	93	53	2
Overtime	1565	558	558	100	60	196	3	31	12	46	1
Travel Allowance	51	15	9	11	3	9		2		2	1
Bonus	1676	414	413	248	89	295	4	87	18	106	2
Dismission Allowance											
Pension	2963	798	495	490	126	562		200	30	258	2
Welfare Allowance	587	122	70	72	23	88		27	7	150	27
Appropriation for Employee Affai	1										
Sub-total	12700										
CHARGES FOR SERVICE											
Water, Gas, Power	654	103	500	8	14	25		5	8	-8	
Postage, Telecommunication	6	1						1		2	
Travel Allowance	1241	83	3	12	2	15	5	1105	1	12	3
Printing, Advertisement	26	7	2	1		1		1	2	10	
Repairing and Maintenance	1043	25	1	92	37	851	1	24	1	11	
Insurance Premium (2)	4			1				2		1	
Package	250		161					89			
Special Service	19							1	1	17	
Entertainment	2							1		2	
Sub-total	3245										
MATERIAL COST											
Material Cost											
Materials	7	2								5	
Supplies	1099	4	17	200	28	433	25	4	387		
Fuels	422	1	386	5	3	4		22		1	
Oils and Fats	27	1	23			2					
Repair Parts	9	1	8						1		
Sub-total	1564										
Material and Supplies Cost											
Office Supplies	9	2	2					1		2	
Newspapers and Magazines	5	1		1				1		2	
Clothes	52	17	12	8	3	9			1	2	
Beautifying and Cleaning Environ	357	33	8			306			1	8	
Food (for Training)	3									3	
Others	3	1	1		1						
Sub-total	429										
Sub-total	1993										
RENTS											
Land and Water	5			4				1			
Houses	3	1						1		1	
Machinery	12									12	
Transportation Equipment and Oth	0										
Sub-total	20										



## INTEREST

Domestic Debts	952								952
Foreign Debts	0								
Other Debts									
Sub-total	952								

## DEPRECIATION AND AMORTIZATION

House Depreciation	173	68	2	62	5	21	2	13	
Machinery Depreciation	155				148	6			
Transportation Equipment Depreci	1384			292	341	16			
Other Equipment Depreciation	99				1	1	5	93	
Non-operating Fixed Assets Depreciation									
Amortization	18								18
Sub-total	1829								

## TAXES AND FEES

Land Tax	9					9			
House Tax	17					10	7		
Tax on Vehicles for using Fuel	9			1		8			
Vehicle License Tax	5					3			
Business Transaction Tax									
Stamp Tax	1							1	
Surtax for Education									
Fees	2					1			
Sub-total	43					1			

## MEMBERSHIP FEES. DONNATION AND ALLOTMENT

Membership Fees	1								
Donation and Subsidy	8								7
Allotment	1								
Sub-total	10								

## LOSS AND COMPENSATION

Error of Weighing Machine	0								
Loss on Bad Debts and Guarantie Loss									
Transportation and Conveying Loss									
Loss of Assets due to obsolescen	1195			769	366	20		1	39
Damage Loss	158		3	143	11		1		
Loss on Exchange	-5								-5
Compensation for General Loss	28		19	5			3	1	
Compensation for Transportation	15						15		
Compensation for Public Damage									
Sub-total	1391								

## OTHERS

Expenditure of Previous Year	95					41	9		46
Other	12					1		3	8
Sub-total	107								

TOTAL 22290

Table 3-16 :

## ANALYSIS OF CERTAIN ITEMS OF TRA EXPENSES

(CALENDAR years)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<b>REPAIRING AND MAINTENANCE</b>										
Total	1643	1683	1566	1233	1304	1345	1302	1416	1482	1824
Out of which										
Stations									1	21
Civil	242	273	282	156	165	152	114	81	71	71
Electric	103	94	94	53	39	37	40	37	35	33
Mechanical	1231	1246	1222	937	1019	1087	1072	1226	1309	1654
<b>SUPPLIES</b>										
Total	644	682	772	941	928	909	908	863	869	854
Out of which										
Running									5	21
Civil	58	82	80	202	210	192	206	202	208	179
Electric				15	34	23	33	26	33	30
Mechanical			123	231	216	189	197	153	177	211
Catering	303	11	381	394	401	398	417	410	404	382
<b>BEAUTIFYING</b>										
Total	21	23	79	153	149	180	167	231	249	301
Out of which										
Mechanic	3	3	56	131	125	156	145	204	225	259
<b>MACHINERY DEPRECIATION</b>										
Total	-15	41	38	113	126	145	131	126	125	113
Out of which										
Mechanical	-23	30	24	100	113	135	121	118	117	106
<b>TRANSPORTATION EQUIPMENT DEPRECIATION</b>										
Total	510	908	1048	1384	1070	1254	1364	1425	1428	1356
Out of which										
Mechanical	406	635	763	903	519	705	731	738	751	751

Table 3-17:

ANALYSIS OF TRA EXPENSES (FISCAL year (with some PERSONNEL EXPENSES included elsewhere)  
(source: REPORT ON TRA's FINANCIAL SITUATION)

	1987	1988	1989	1990	1991	1992 (10 MONTHS)
PERSONNEL SERVICE						
Employees						
Staff Salaries	3959	4139	4632	5048	5410	5344
Overtime	520	951	1179	1604	1568	1269
Bonus	971	980	1159	1503	1646	1614
Indemnities for accidents	194	211	241	284	333	326
Welfare	316	498	423	521	556	501
Sub-total	5960	6779	7634	8960	9513	9054
Pensioners						
Pension, etc.	1274	1518	1786	2139	2415	2420
Sub-total	1274	1518	1786	2139	2415	2420
Sub-total	7234	8297	9420	11099	11928	11474
CHARGES FOR SERVICE						
Traction	487	447	438	440	454	384
Water, Electricity	111	109	105	153	189	140
Postage, Telecommunication	6	6	6	7	5	4
Travel Expenses	55	52	41	39	32	26
Printing, Advertisement	27	28	30	29	26	19
Repairing and Maintenance	1397	1328	1425	1654	1867	145
Freight Loading/Unloading	773	894	1076	1090	1262	1026
Service on board Trains	213	226	267	294	290	
Special Service	13	11	13	14	17	12
Others	23	5	25	98	29	22
Sub-total	3105	3106	3426	3818	4171	1778
MATERIAL COST						
Materials	1435	1362	1287	1275	1318	1468
Supplies	247	266	306	353	404	300
Sub-total	1682	1628	1593	1628	1722	1768
RENTS	22	21	22	18	19	15
INTEREST	514	290	267	549	1045	948
DEPRECIATION AND AMORTIZATION	1607	1707	1760	1709	1690	1638
TAXES AND FEES	32	35	35	32	42	31
MEMBERSHIP FEES, DONNATION, ALLOTMEN	5	5	7	4	5	15
LOSS AND COMPENSATION	126	128	221	174	1485	193
OTHERS	17	19	820	1346	787	9
TOTAL	14344	15236	17571	20377	22894	17869
PERSONNEL EXPENSES INCLUDED UNDER OTHER HEADINGS						
under Repair and Maintenance	771	731	868	1047	1204	0
under Service on board Trains	159	164	187	212	231	0
under Material	80	76	90	109	125	0
Sub-total	1010	971	1145	1368	1560	0
REAL PERSONNEL EXPENSES	8244	9268	10565	12467	13488	11474



JBB/TRAexp4 July 31, 1992

Million NT\$

Table 3-17:

ANALYSIS OF TRA EXPENSES (FISCAL year (with some PERSONNEL EXPENSES included elsewhere)  
(source: REPORT ON TRA's FINANCIAL SITUATION)

	1987	1988	1989	1990	1991	1992 (10 MONTHS)
PERSONNEL SERVICE						
Employees						
Staff Salaries	3959	4139	4632	5048	5410	5344
Overtime	520	951	1179	1604	1568	1269
Bonus	971	980	1159	1503	1646	1614
Indemnities for accidents	194	211	241	284	333	326
Welfare	316	498	423	521	556	501
Sub-total	5960	6779	7634	8960	9513	9054
Pensioners						
Pension, etc.	1274	1518	1786	2139	2415	2420
Sub-total	1274	1518	1786	2139	2415	2420
Sub-total	7234	8297	9420	11099	11928	11474
CHARGES FOR SERVICE						
Traction	487	447	438	440	454	384
Water, Electricity	111	109	105	153	189	140
Postage, Telecommunication	6	6	6	7	5	4
Travel Expenses	55	52	41	39	32	26
Printing, Advertisement	27	28	30	29	26	19
Repairing and Maintenance	1397	1328	1425	1654	1867	145
Freight Loading/Unloading	773	894	1076	1090	1262	1026
Service on board Trains	213	226	267	294	290	
Special Service	13	11	13	14	17	12
Others	23	5	25	98	29	22
Sub-total	3105	3106	3426	3818	4171	1778
MATERIAL COST						
Materials	1435	1362	1287	1275	1318	1468
Supplies	247	266	306	353	404	300
Sub-total	1682	1628	1593	1628	1722	1768
RENTS	22	21	22	18	19	15
INTEREST	514	290	267	549	1045	948
DEPRECIATION AND AMORTIZATION	1607	1707	1760	1709	1690	1638
TAXES AND FEES	32	35	35	32	42	31
MEMBERSHIP FEES, DONNATION, ALLOTMEN	5	5	7	4	5	15
LOSS AND COMPENSATION	126	128	221	174	1485	193
OTHERS	17	19	820	1346	787	9
TOTAL	14344	15236	17571	20377	22894	17869

## PERSONNEL EXPENSES INCLUDED UNDER OTHER HEADINGS

under Repair and Maintenance	771	731	868	1047	1204	0
under Service on board Trains	159	164	187	212	231	0
under Material	80	76	90	109	125	0
Sub-total	1010	971	1145	1368	1560	0
REAL PERSONNEL EXPENSES	8244	9268	10565	12467	13488	11474

Table 3-18:

ANALYSIS OF TRA EXPENSES (FISCAL years) With ALL PERSONNEL EXPENSES INTEGRATED  
(estimated from REPORT ON TRA's FINANCIAL SITUATION)

Million NT\$

	1987	1988	1989	1990	1991	1992 (10 MONTHS)	1992 (12 MONTHS)
PERSONNEL SERVICE							
Employees	6591	7374	8301	9743	10390	8720 *	10464 *
Pensioners	1653	1902	2264	2724	3098	2754 *	3305 *
Sub-total	8244	9276	10565	12467	13488	11474	13769 *
CHARGES FOR SERVICE							
Traction	487	447	438	440	454	384	461 *
Water, Electricity	111	109	105	153	189	140	168 *
Postage, Telecommunication	6	6	6	7	5	4	5 *
Travel Expenses	55	52	41	39	32	26	31 *
Printing, Advertisement	27	28	30	29	26	19	23 *
Repairing and Maintenance	626	597	557	607	663	145	174 *
Freight Loading/Unloading	773	894	1076	1090	1262	1026	1231 *
Service on board Trains	54	62	80	82	59		0 *
Special Service	13	11	13	14	17	12	14 *
Others	23	5	25	98	29	22	26 *
Sub-total	2175	2211	2371	2559	2736	1778	2134 *
MATERIAL COST							
Materials	1355	1286	1197	1166	1193	1468	1762 *
Supplies	247	266	306	353	404	300	360 *
Sub-total	1602	1552	1503	1519	1597	1768	2122 *
RENTS	22	21	22	18	19	15	18 *
INTEREST	514	290	267	549	1045	948	1138 *
DEPRECIATION AND AMORTIZATION	1607	1707	1760	1709	1690	1638	1966 *
TAXES AND FEES	32	35	35	32	42	31	37 *
MEMBERSHIP FEES, DONNATION, ALLOTMEN	5	5	7	4	5	15	18 *
LOSS AND COMPENSATION	126	128	221	174	1485	193	232 *
OTHERS	17	19	820	1346	787	9	11 *
TOTAL	14344	15244	17571	20377	22894	17869	21443 *
PERSONNEL EXPENSES RE-INTEGRATED FROM OTHER HEADINGS							
from Repair and Maintenance	771	731	868	1047	1204		
from Service on board Trains	159	164	187	212	231		
from Material	80	76	90	109	125		
Sub-total	1010	971	1145	1368	1560		

\* : to be checked

Repairing and maintenance expenses have remained remarkably stable over the 1980-1989 period. A sudden jump in 1990 is due to their content of personnel expenses (effect of the LSL); 91% of these expenses were related to Mechanical Maintenance (Rolling Stock).

Package expenses have been increasing steadily over the 1980-1990 period. In 1990, 79% of these expenses were related to Stations and 21% to the Freight Service subsidiary.

Materials and Supplies expenses are on the decline. This is partly due to TRA's impecuniosity and may denote a maintenance backlog.

Fuel and Oil and Fats expenses have been decreasing steadily over the 1985-1990 period. This is due to both the oil glut in the world market and the increasing share of electric traction in TRA's activity.

The Beautifying and Cleaning Environment item, which is increasing steadily and very significantly from 1983, include some uplifting of station buildings. However, for the most part (86% in 1990), it is related to Mechanical Maintenance: it covers the cleaning and washing of Rolling Stock. This job is contracted by TRA to the Loading-Unloading Co. This company is a public enterprise of which both TRA and the Province are shareholder. It is not profitable, it is on the Provincial Government's request that TRA subsidizes it by accepting to be charged prices exceedingly high for its washing services.

As regards interests, foreign debts are extinct; part of them have been redeemed and other re-structured into domestic debts. A huge jump of Domestic debts in 1989 and again in 1990, and the emergence of "Other Debts" result from TRA's needs to borrow money to make ends meet. As of April 1992, TRA's total indebtedness was:

- . Long Term: NT\$ 15,300 million
- . Short Term: NT\$ 18,500 million

House Depreciation expenses have been somehow decreasing from 1989. This is likely to go on as TRA's workforce is being reduced. Machinery and Transportation Equipment Depreciation (which cover Infrastructure --though not Track-- and Electric Facilities as well as Rolling Stock) has also be decreasing, though procurement of new rolling stock and construction of new line have resulted in an increase of depreciable assets. It might be wondered if this was due to TRA's impecuniosity and denoted insufficient provisions for the future. However, TRA is affirmative that annuities are calculated in strict accordance with the accounting rules determined in the Railway Act and that this rules are basically well adapted to the specificities of railway equipment. In fact, TRA's impecuniosity results in diverting almost 50% of the product of the depreciation to cover operating expenses instead of transferring it to Capital.

One notes huge jumps in Loss of Assets and Damage Loss in 1991. This is the consequence of an accident.



As for "Others", the enormous jump in 1989 is due to the retro-active payment of overtime.

#### Evolution of Financial Ratios

- (1): Operating Ratio: Operating Expenses / Operating Revenue
- (2): Liabilities Ratio: Total Liabilities / Owner's Equities
- (3): Long Term Liabilities / Fixed Assets
- (4): Owner's Equities / Fixed Assets

	(1)	(2)	(3)	(4)
1980	122.00	210.41	70.14	41.64
1981	100.02	140.06	57.34	50.99
1982	109.28	123.55	51.30	53.86
1983	109.59	52.90	30.41	72.87
1984	99.89	37.47	22.46	80.28
1985	101.94	26.43	17.40	86.64
1986	109.03	20.72	13.01	91.52
1987	107.85	13.59	8.65	97.23
1988	114.08	10.90	5.11	100.82
1989	118.75	12.87	4.17	102.30
1990	127.29	17.05	3.09	96.14
1991	141.35	27.77	4.10	89.71

#### TRA's Analysis of the Causes of it's Losses

A "Financial Analysis Report" was prepared by TRA in May 1992 and, with approval from the Province, was presented to the Minister, MOTC.

The analysis of the causes of losses is as follows:

(QUOTE)

The major cause of TRA's losses is the drastic change of the domestic transportation market structure due to the completion and putting into service of the freeway, which put the railways in a disfavored position to operate. Insufficient capacity, limited growth of traffic, and fares disproportionate to the costs, make the increase of revenues very difficult. On the other hand, expenses of personnel are running up because of salary increase and the application of Labor Standard Law, and the burden of retirement pensions is aggravated. Moreover, accumulated losses from previous years have not been absorbed, TRAA relies only on borrowing more money to face the situation, which resulted in swelling interests charges.

Finally, expenses for depreciation and maintenance have been increasing after completion of major projects, while no corresponding increase of revenue could be achieved. For all these reasons, TRA can not balance its accounts and is bearing huge losses which are analyzed as follows:

#### 1) Financial burden of TRA's personnel

In fiscal year 91 (June 1st 1990 - June 30th 1991), expenses of TRA's personnel amounted to NT\$ 13.5 billion, up to 87.5% of the total revenues. Around NT\$ 3.1 billion are spent yearly on retirement. TRA's personnel is today totaled to 20,606, with a burden of retired employees up to 15,502, which means that each TRA's employee is bearing 0.75 retired person's pension. The total number of retired persons will reach such a point that in five years, each TRA's employee will bear 1.32 person's retirement pension. TRA is practically impossible to be rid of such a historical burden by the solely efforts of its own employees.

#### 2) Effect of application of the Labor Standard Law

The Labor Standard Law (LSL) was promulgated on August 1st, 1984, and the LSL Implementation Rules on March 1st, 1985. In August, 1986, according to the interpretation note of the Ministry of Interior, the LSL is applicable to TRA. The application of the LSL resulted in yearly extra expenses of NT\$ 1 billion. Retroactive to August 1984, the LSL application required TRA's additional payment on overtime up to around NT\$ 4 billion, which has been realized between 1988 and 1991.

#### 3) Increase of interest charges due to heavy indebtedness

In the heyday of its operations, TRA contributed every year its profits to the Provincial Treasury. From 1950 to 1974, the accumulated contribution of TRA amounted to NT\$ 1.412 billion. At 10% yearly interest rate, this amount is equal to a present value of about NT\$ 21 billion.

Starting from 1978, however, TRA suffered losses for the first time from its operations. Since then, those losses have been increasing every year, to reach a NT\$ 23.8 billion high of accumulated deficits in fiscal year 1991. This year's (fiscal 1992) losses, till the end of April, have already been accounted for NT\$ 3.7 billion according to preliminary statistical data. Those losses remaining unsettled, shortage of working capital has become serious. TRA has been being compelled to rely on borrowing to maintain its railway operations. So far, TRA's long-term/short-term debts amount to NT\$ 18.6 billion, including:

- . NT\$ 1.138 billion (Long Term): Electrification projects
- . NT\$ 2.128 billion (Long Term): Non-electrification projects
- . NT\$ 15.287 billion (Short-term)

#### 4) Unprofitable branch lines and small stations

The five branch lines of TRA, namely Pinghsi line, Tunghsih line, Shengkang line, Chichi line and Tungkan line, made a loss totaled to NT\$ 170 million in fiscal year 91. The total number of stations is 220, of which 62 are at loss. The total revenue of the money-losing stations for the year is NT\$ 226 million, with total expenses of NT\$ 486 million. That gives a total loss of NT\$ 260 million, which means that each of the 62 stations lost about NT\$ 11,500 every day. From economic point of view, it would be better to close down these small stations. But local authorities hold the idea that one more transport means is always more helpful to the development of the areas, thus, they are opposed to the close-down. This fact shows that, apart from carrying on low-fare to comply with Government's policy, TRA has also to implement policy of social services.

#### 5) Burdened charges stemmed from major projects

The total investment of the Taipei Railway Underground Project cost NT\$ 17.7 billion. However, set aside the renewed facilities and a better service quality, completion of the project does not raise TRA's revenue accordingly, but increases water/electricity supply and maintenance cost by NT\$ 160 million each year, together with NT\$ 200 million more yearly depreciation.

The South Link Line project cost NT\$ 23.2 billion, and it is absorbing about NT\$ 300 million each year for depreciation after completion of the project. The imbalance of the project's accounts burdened TRA's losses.

#### 6) Burden from railway fare-reduction

TRA has to bear each year about NT\$ 600 million for fare-reduction given to different categories of passengers, such as students, civil servants, military commuters, the aged, the National Salvation, journalists, and ordinary reduction for the military. The discount rates are ranging between 75% and 25%.

#### 7) Railway fares do not reflect transportation cost

Domestic transport mainly consists of railways and motor ways, both should sustain their normal operations and development by business revenue. However, infrastructures and signaling systems of motor ways are of Government investment, only a small amount of fees is shouldered by motor ways users. In contrast, railways have to bear maintenance cost of basic facilities of infrastructures and signaling systems at a yearly cost of around NT\$ 3.4 billion. This difference of cost structure between railways and motor ways resulted in a cheaper transport tariff of motor ways, and consequently, TRA has been compelled to lower its fares accordingly so as to avoid drastic fall in traffic.



Notes:

1. TRA's financial situation has worsened during last five fiscal years (1987-1991):

- . total revenue in 1991: NT\$ 15,412 million
  - . total revenue in 1987: NT\$ 13,852 million
- giving a growth rate of 11.26%;
- . total expenses in 1991: NT\$ 22,894 million
  - . total expenses in 1987: NT\$ 14,344 million
- running up at a rate of 59.6%.

The large discrepancy between the two rates resulted in a deficit of NT\$ 7.482 billion in 1991, equaling a daily loss of NT\$ 20.5 million for TRA.

2. TRA's budgeted deficit for fiscal 1992 was NT\$ 3.82 billion; until end of April 1992, the result of the budget execution has been settled at a loss of NT\$ 3.671 billion; the projected total loss for fiscal 1992 is about NT\$ 5 billion, which is a noticeable reduction from previous year's NT\$ 7.482 billion. This shows a first result of TRA's efforts in reforming its operations.

3. Notes to analysis of passenger/freight revenues:

A. Impact of the two rate-adjustments on revenues:

a. Average rate-adjustment on Sept. 1, 1988:

- . passenger fare: 12.23%
- . freight fare: 20.83%

One year later, compared with previous year's revenues (i.e. Aug. 1989 with Aug. 1988):

- . passenger revenue increased by NT\$ 673 million, or an increase of 8.07%, which is 4.16% less than the 12.23% rate-adjustment;
- . freight revenue increased by NT\$ 257 million, or an increase of 13.05%, which is 7.78% less than the freight rate-adjustment.

b. Average rate-adjustment on Nov. 24, 1990:

- . passenger fare: 9.38%
- . freight fare: 5.43%

One year later, compared with previous year's revenues (i.e. Nov. 1991 with Nov. 1990):

. passenger revenue increased by NT\$ 1,119 million, or an increase of 11.84%; minus revenues from newly purchased Ts Change Limited Express for the East Line to replace a certain number of Chu kuang limited Express out of operations, the actual revenue increase was NT\$ 989 million, or an increase of 10.47%, which is 1.09% higher than the 9.38% rate-adjustment;

. freight revenue increased by NT\$ 52 million, or an increase of 2.62%, which is 2.81% less than the 5.43% rate-adjustment.

B. In recent years, the number of personal cars has been increasing rapidly. However, with the freeway congestion, TRA's passenger traffic suffered only slight decrease and remains relatively steady: from 1987 to 1991, the p/k has been respectively 8,414 billion., 8,352 billion., 8,65 billion., 8,313 billion., 8,359 billion.; of which the traffic of Ordinary Express has been decreasing every year and the traffic of Ts Change Limited Express has been increasing steadily.

C. Freight traffic has decreased from year to year for three reasons:

- 1/ Government's multi-harbor policy ;
- 2/ competition from motor way trucks through price-cutting;
- 3/ loading/unloading fees higher than transport fees.

As a result, freight traffic from 1987 to 1991 fiscal years has been (million tonne-km):

1987: 2,395  
1988: 2,292  
1989: 2,121  
1990: 1,860  
1991: 1,828

(UNQUOTE)

### 3.6. ROLE AND GUIDELINES ASSIGNED TO THE RAILWAY BY THE NATION

#### The 6-Year National Development Plan

The Republic of China is now engaged in the implementation of its 1992-1997 6-year National Development Plan. One third of the total amount of the overall cost of that Plan is allocated to the Transportation and Communication sector and it is reckoned that the timely and effective completion of the projects in that sector will be a key factor in the achievement of the Plan's goals.

Here are some excerpts of the Preface and Foreword to the Railways sector of the Plan. PROJECT SUMMARIES and HSR Construction Project figures are inserted hereafter.

(QUOTE)

Whereas highways are suited for short distance passenger transport, and the transport of small volume, high value goods over short distances, railways on the other hand are suited for long distance passenger transport and the transport of large volume, low value goods over large distances. Highways provide door-to-door service, but in terms of wasted land and resources, represent a less economically viable system, and produce greater environmental pollution. Railways provide a somewhat less flexible transport service between stations and are capable of large scale transport and, in terms of wasted resources and protection of the environment, represent a superior and more economic alternative to highway transport.

Therefore (as the foreword to the Plan goes), although highways have enjoyed higher priority in the development of both passenger and freight transport of Taiwan for the last ten years, the railways offer unique advantages well beyond the scope of the highways. Taking into account Taiwan's limited land area and geographical barriers, as well as socio-economic factors and problems caused by the over development of private transport in recent years such as traffic congestion, parking difficulties and air pollution, it is imperative now to establish clear goals for the railway and mass transit systems at the same time as establishing policy for the development of transport on the island. Only then can the pace of developments be stepped up, transport times reduced, the quality of service improved, and traffic gradually transferred from the roads to the railways, achieving a balance of functions between road and rail, and the realization of a more rational transport structure.

Most of the planned investment in the railway sub-sector (NT\$ 427.6 billion out of 480 billion) will go to the creation of Taiwan's western corridor HSR system. In addition to enabling the balanced development of public and private transport and in conjunction with better planning for the use of coastal land and industrial development, and encourage well-balanced regional development.

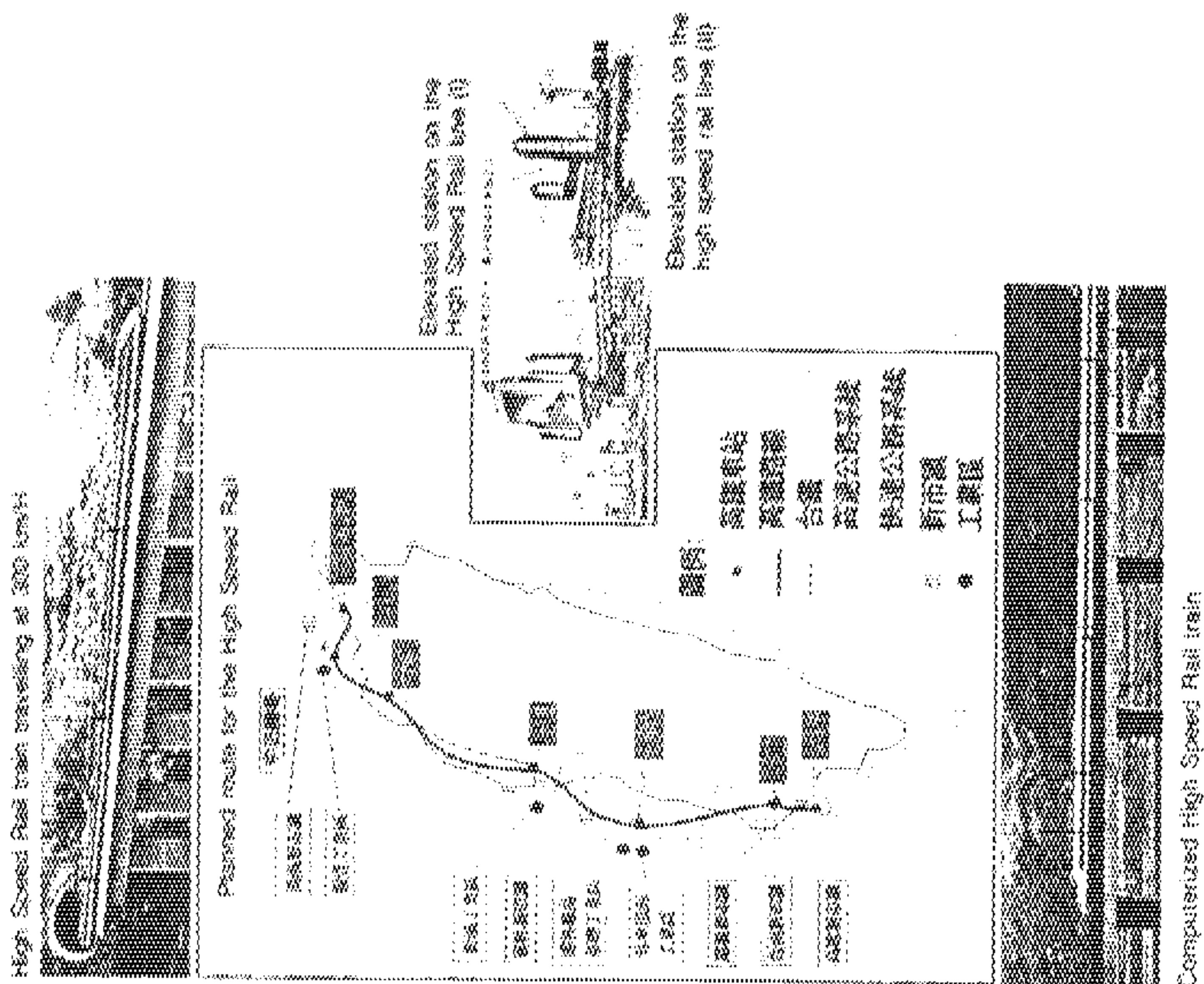


Figure 3-4 : Six Year National Plan - Project Summaries

Project:	Supervisory organization	Responsible organization	Time frame (fiscal years)	Estimated cost (NT\$ billion)
High Speed Rail Construction Project	MOTC	Provisional Engineering Office of the High Speed Rail	1992 - 1999	426.60
Laying of Dual Track on the Mountain Line between Chunan and Fengyuan	Taiwan Provincial Government	Taiwan Railway Administration	1988 - 1993	*6.94
Completion of South-link Railway	Taiwan Provincial Government	South-link Railway Construction Office	1980 - 1992	*2.59
Improvements on the Eastern Railway	Taiwan Provincial Government	Department of Transportation	1992 - 1998	*41.90
Laying of Four Track Railway Underground Between Wanhua and Panchiao	MOTC	Engineering office of the Taipei Railway Underground Project	1992 - 1999	*41.79
Eastward Extension of Taipei Railway Underground to Sungshan	MOTC	Engineering Office of the Taipei Railway Underground Project	1989 - 1994	*14.72
Round-the-Island Support Facilities	Taiwan Provincial Government	Taiwan Railway Administration	1988 - 1992	1.09
Car Addition and Replacement	Taiwan Provincial Government	Taiwan Railway Administration	1992 - 1997	13.77
Introduction of New Electric Trains	Taiwan Provincial Government	Taiwan Railway Administration	1991 - 1996	10.34
Elevation of Metropolitan Railway	Taiwan Provincial Government	Department of Transportation	1991 - 2006	26.26
Plan for Improvement of Stations	Taiwan Provincial Government	Taiwan Railway Administration	1993 - 1995	0.88

\* Estimated cost for fiscal years 1992-1997

Figure 3-5 : Six Year National Plan - High Speed Rail Construction Project



the Commission's report. "We are not aware of any other country which has been able to achieve such a high degree of success in the development of its own economy," the report says. "The Commission is convinced that the success of the Commission's work is due to the fact that it has been able to secure the cooperation of the member countries in the development of their own economies."

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On the contrary, according to the reliability of the high speed flow component, the flow component is completely absent, and a large quantity of oxygen gas, which is not a gas, is produced.

[illegible]

g) Usage of electrical energy to service 14 of western corridor transport assets; decreasing reliance on petroleum and reducing environmental pollution.

萬曆二十九年丁巳歲次  
正月十五日庚申日  
二月十六日辛酉日  
三月十七日壬戌日  
四月十八日癸亥日  
五月十九日甲子日  
六月二十日乙丑日  
七月二十一日丙寅日  
八月二十二日丁卯日  
九月二十三日戊辰日  
十月二十四日己巳日  
十一月二十五日庚午日  
十二月二十六日辛未日

To this, however, will be added the continuing construction, extension, expansion, improvement, elevation, moving underground and modernization of existing lines, as well as the retirement of obsolete train cars and station improvement, among other things. When all aspects of the Plan are completed, the cities of the Western plain of Taiwan will be consolidated into a unified, metropolitan belt, hastening prosperity across the region. Moreover, capacity of the Mountain line and the North-link will be dramatically increased.

With these concepts and goals, the future development of railway transport on Taiwan will begin with the high quality service of the round-the-island network, which will become the mainstay of inter-city transportation, and restrain the over-development of private transport.

In the future, conventional railways in the western region will focus on commuter and cargo transport. To maximize the system's capacity, new cars will be introduced, and a complete review will be made of all lines, yards and stations, to ensure the smooth handling of operations, fulfill urban development needs along the lines and eliminate existing bottlenecks. Railways in the eastern region will moreover undergo comprehensive improvements to meet the growing needs of passenger and cargo transport in the area. This will include the electrification of the Ilan line, the electrification and dual-tracking of the North-link railway, and signal automation and dual-tracking of the Hualien to Taitung line, as well as the introduction of new locomotives, cars and workshop facilities. Besides increasing the capacity of the eastern region system, this will allow greater efficiency and a higher quality of service, and will set the standard for the railway system of both the eastern and the western region.

The completion of these projects will enable construction of a high speed and round-the-island railway system, providing a high quality transport service, maximizing the transport potential of the railways, balancing the roles played by railway and highway in future development, and encouraging the rationalization of the structure of transport on the island.

(UNQUOTE)

This demonstrates the Government's will that TRA's present network go on contributing significantly to provide the Island with a high quality, inter-modally well balanced public transport service. Hence the need for placing TRA in a position to fulfill its role efficiently and economically, on sound economic bases.

### The Railway Improvement Plan

As mentioned above, a "TRA Operations Improvement Plan" was drawn up under the aegis of the Supervision/Control Commission on Taiwan Railways and approved by the Executive Yuan in May 1990. The main points of the Plan are summarized as follows in "TRA Financial Analysis Report" prepared by TRA in May 1992:



(QUOTE)

### 1. Operations improvement

To pursue different major construction projects, renew operating facilities, purchase trainsets, simplify categories of trains, implement ticket-automation system, reduce money-losing branch lines and small stations, improve cleanliness of stations and trains, enhance quality of service.

### 2. Streamline organizations and staff

To restructure organizations, change modes of operations, simplify working procedures, cut staff on a large scale, reduce number of stations to be set up, no replacement for retired staff, to reach a total reduction of 5134 people by fiscal year 1996, in order to relieve the cost of personnel.

### 3. Diversify activities

To operate joint development of existing especially out-dated stations and buildings, manage efficiently joint development of land resources or disposal/purchase of property, increase revenues from advertisements and parking, free part of buildings of some stations for rent, rent out some warehouses of the Freight Traffic Service or exploit them in different ways, and contract out catering services etc.

### 4. Improve financial situation

#### A. Revenue increases

To raise passenger/freight revenues, expand business diversification to increase other revenues, enhance related businesses (subsidiary services) to raise income of freight and catering services.

#### B. Cost reduction

To streamline organizations and staff, strictly control the budget, reduce expenses, have more flexibility in cash management, lower interest charges, improve management efficiency, implement profit center system.

## 5. Improve internal management/staff relationship

To coax the staff out of the present situation and spread reform spirit within the organization, improve communication and coordination through railway trade union, in order to have better relationship between management and staff, strengthen adherence of the staff to TRA, through thick and thin, so as to overcome together the present difficulties.

(UNQUOTE)

This calls for the following comments:

As regards Item 1/:

. Pursuance of major construction projects, renewal of operating facilities (including ATS/ATC), and purchase of train sets (along simplifying categories of trains) were well on their ways, thanks to grants from the Central Government and the Province, which are under serious consideration.

. Implementation of ticket-automation system is expected to be achieved next year.

. Enhancement of quality of service will result from above-mentioned major projects; however much depends also on minor investments (e.g. up-lifting of ageing rolling stock) and routine operating expenses (e.g. cleanliness of stations and trains) for which TRA must obtain adequate resources; and, of course, much depends also of the staff spirit and dedication.

. Reduction of money losing branch lines and small stations much depends on the cooperation of both the Provincial and Central Governments.

As regards Item 2/:

. A reduction of 5,134 staff by Fiscal Year 1996 (i.e. before end-June 1996), mostly by attrition, is deemed not to be out of reach provided the unions can be coaxed into agreeing to it. However, no indication was provided as how TRA intends to proceed to restructure organizations, change modes of operations and simplify working procedures.

As regards Item 3/:

. Information is discrepant about the leeway TRA might enjoy to diversify its operations, specially as regards taking advantage of building and land resources.

As regards Item 4/:

. On the one hand, raising passenger/freight revenue depends on the feasibility of coping with the demand; purchase of rolling stock of the attractive, high-priced Tze Chiang class will help; it would seem that flat cars for containers are also needed.

. On the other hand, raising fares and rates, even though it were approved by the Government, might over-reduce TRA's competitiveness, specially in the face of such competitors as Wild Chicken Buses and money-losing airlines.

#### TRA's Demands for Help

As for TRA, in the afore-mentioned "TRA Financial Analysis Report" prepared by TRA in May 1992 to be presented to the Minister, MOTC, it formulates the following requests:

(QUOTE)

In the heyday of its operations, TRA contributed its profits every year to the Provincial Treasury, the accumulated contribution could be evaluated at present NT\$ 21 billion. In recent years, TRA suffered a worsening financial situation, with accumulated losses of NT\$ 23.8 billion from fiscal years 1978 to 1991. Set aside NT\$ 5.4 billion compensated by TRA's reserves, there are still NT\$ 18.4 billion losses. We kindly ask the Central Government to grant TRA subsidies to cover the total remaining deficits in a two or three-year period.

TRA has to pay yearly about NT\$ 3.1 billion for retirement pension, that makes one employee bear 0.75 retired person's pension. Such historical burden cannot be relieved by the solely efforts of TRA's staff. Further more, TRA has to bear each year NT\$ 0.6 billion for fare-reduction granted to students, the military, the aged and alike. This makes, with the pension, a total burden of about NT\$ 3.7 billion a year. To ease these charges, we propose the following solution:

For the two major projects approved by the Central Government, namely the "Mountain Line Dual Track Project" and the "Eastern Railway Improvement Project", it was decided that the Central Government and the Provincial government share the investment on a 50-50 basis. We propose that the Central Government raises its share to 75% and the Provincial government shares 25%. In this way, the Provincial government could use the saved 25%, or NT\$ 2.3 billion each year (calculated on six-year basis), to help TRA.

Uneconomic branch lines and small stations are losing every year about NT\$ 0.4 billion. If the Central Government does not agree, for policy reasons, to close down these lines and stations, we kindly ask the Central Government to bear the consequent losses.



TRA has huge amounts of compensation payment for bridge construction accidents, around NT\$ 0.15 billion a year, burdening TRA's financial charges. We propose to establish an "Accident Compensation Fund" by adding 0.48% additional insurance to passenger fare, at the next fare-adjustment. In this way, TRA could have, on the basis of NT\$ 10 billion passenger revenue in 1991, about NT\$ 48 million yearly extra revenue for the Fund.

(UNQUOTE)

### 3.7. CONCLUSIONS

TRA is plagued by a huge and ever-growing indebtedness which results from a chronic deficit that has heavily aggravated in recent years.

Deficit results primarily from an increasing gap between operating revenues and operating expenses.

Operating revenues stagnate because, on the one hand, passenger ridership increases but very slowly (while freight traffic is on the decline) due to a very aggressive competition: traditionally from bus, recently from an explosive expansion of private car ownership and utilization (16% per year over 1986-1991), and lately from private airlines. On the other hand, fares increase also slowly, both because government is consistently reluctant to let tariff rise fuel inflation and because too high raises would result in further evasion to competition. In addition, TRA is compelled to transport students, civil servants, senior citizens, etc. at privilege discounts rates, for which it is entitled to no compensation.

Impact of competition on TRA is two-fold. Not only do buses chip away on rail ridership, but they set the standard price for intercity travel at an unsoundly low level because they do not pay their fair share of the cost of maintaining and policing the road infrastructure, not to speak of the social cost of pollution, accidents and the like. Road vehicle purchase, ownership, utilization and maintenance are subject to specific taxes (license fee, tax on vehicles using fuel) and specific rates of non-specific taxes (commodity tax on vehicles and parts, fuel, customs duties, etc.) and, when traveling on Freeway N°1, to toll. But these are systematically biased to make private sedans cross-subsidize buses; they are still more biased in favor of the so-called "Wild Chicken Buses", around two-hundred vehicles operating in total illegality. The situation is similar as regard domestic airlines which, at this stage of the deregulation process, do not pay the full cost of maintaining the airport and navaid infrastructure. As regards freight, heavy trucks and trailers derive still more benefit than buses from the bias of taxes and toll.

In the meantime, expenses are increasing steadily and they have recently skyrocketed.

On the one hand, TRA is compelled to develop money losing services such as running poorly patronized suburban trains off-peak, and has little freedom to curtail other such as servicing secondary lines and small stations. In addition, whereas TRA benefits from grants from the State to renew and upgrade its rolling stock, rebuild its ageing bridges, etc., which contribute positively to its operating account, other grants have rather resulted in worsening its financial situation: specially major projects of building new lines to complete the round-the-island rail way and putting tracks underground in Taipei area. Whereas those projects aimed at strengthening national defense, promoting national integration, developing tourism, easing urban traffic congestion and incidentally, vacating in Taipei much sought-after valuable land (but to no profit to TRA), they did little to enhance TRA's ridership

and revenue. But, in the contrary, they burden it with higher depreciation and operation expenses: extra maintenance costs due to increased track kilometrage and, in Taipei area, to working underground plus the cost of lighting and ventilating tunnels; around the South and East Coasts, operation of poorly patronized lines and stations.

Second, TRA is a labor-intensive industry. So are its competitors (bus, truck and air) but TRA's staff enjoys a status whereby they (whether active or pensioners) benefit automatically from general wage increases which Central Government determines from time to time in favor of civil servants; and moreover, such increases also apply to some (overtime, etc.) of various fringe benefits which are substantially more generous than for civil servants, not to speak of employees of the private enterprises of the transport sector. Application of the LSL, enacted in 1984 for the benefit of all workers of the nation, whether civil servants or not, to the particular status of TRA personnel resulted in a recurrent increase of personnel expenses more than 10%. And, whereas TRA resisted the application of the LSL to its own case, it had finally to surrender in 1988 and, due to the retroactive effect, had to hand over a considerable pay back to its employees and pensioners. Last but not least, thanks to productivity improvements, TRA has undertaken to reduce its work force but the resulting saving is partly offset by the cost of serving more pensions: now, each employee bears the burden of 0.75 pensioners. Not only are TRA's competitors subject to the less generous to pensioners, and more lenient to employers, system of the common LSL but, from the "demographic" viewpoint, these competitors bear the burden of a much lower pensioner-employee ratio than TRA.

Finally, as a result of insufficient revenues to balance expenses, accumulated losses from previous years cannot be absorbed and TRA has to rely more and more heavily on short-term bank loans to make ends meet. This results in an ever-increasing debt service: interest amounted to 2% of operating expenses in 1989, 3% in 1990 and 5% in 1991.

In total, TRA's deficit in 1991 was NT\$ 7.5 million. The projected deficit for 1992 is about NT\$ 5 million. This shows a first result of TRA's efforts in reforming its operations, however not a decisive step toward recovery because (as will be shown in Chapter 4), the overall trend remains one of ever increasing personnel + pension expenses.

TRA's impecuniosity places it in a vicious circle because it makes it difficult to significantly improve its services to attract more patronage. Major projects are suitably taken care of, with government grants, through the 6-year National Development Plan. However, renewing operating facilities, bettering cleanliness of stations and trains and, in general, improving quality of service would also require TRA's management to be able to draw up and implement multi-year schemes with adequate funding. This is not possible in the present situation where the operating budget is much dependent on subsidies which are allocated on a strictly annual basis, and regularly come short of allowing sufficient cash to carry out normal overhaul of buildings, rolling stock, etc.



TRA being an administration, management has little leeway to maneuver. And government entities, which in the end foot reluctantly TRA's bill, are multiple. Taiwan Province is, more or less admittedly, the owner of TRA. But it is Central Government which has the final say in many an instance: rate fixing, wage increase and the personnel-pensioner status, disposal of property (real estate) and the competition footing. And the legal system for apportioning national tax revenue is such that Province relies on subsidies from Central Government to make its own ends meet. For that reason, TRA budget is dependent on intricate negotiations between provincial and central executive and legislative bodies; the process is cumbersome, the outcome is haphazard, particularly as regards outlays which may have a decisive bearing on TRA earnings and/or expenses. And as this is a yearly exercise, TRA (as mentioned above) is precluded to engage in any earnest medium-term planning of its own.

All these are issues which have to be addressed if the railway is to fulfill the role assigned by the nation. To contribute significantly to providing the island with a high quality, inter-modally well balanced public transport service, TRA must be placed in a position to do it efficiently and economically, on a sound economic basis.

Of special concern is the retirement problem (which, incidentally, is not mentioned in the "TRA Operations Improvement Plan" drawn up under the aegis of the Supervision/Control Commission and approved by the Executive Yuan in May 1990, which otherwise provides invaluable guidelines toward the achievement of this goal). It has two aspects:

. On the one hand, the cost to TRA of each individual pensioner is significantly higher than the cost to the nation of pensioners from the civil service and very much higher than the costs borne by employers of the private sector, and specially the transport sector (except TMTC). This is due to historical reasons which are beyond the control of the incumbent TRA management and it is clear that not much can be done in this respect as regards employees recruited up to now (and former employees who are now retired), the vested interests of whom have to be considered. By contrast, less generous schemes might be considered for employees to be recruited in future, in full compliance with the LSL but more in line with the prevalent practices in the private transport sector which is the context of TRA' survival.

. On the other hand, having entered a phase of streamlining organizations and staff, TRA bears the burden of much more pensioners, in relation to number of employees, than the average employer in the private sector and specially TRA's competitors. And this predicament is doomed to aggravate since TRA has still to make redundant in the coming years 25% of its remaining work force. If TRA's competitiveness is to be organized on an equal footing with the private sector, it is therefore essential to find ways to exclude from its operating account a proportion of the retirement expenses deemed to represent the extra charges which are inherent to its unbalanced "demographic" situation until it returns to normal: in other words, until such time the ratio pensioners/employees of TRA reaches a par with the average ratio pensioners/employees in the private sector.

## CHAPTER 4

### SYNTHESIS OF PRESENT EXPERIENCES

#### 4.1. SYNTHESIS OF THE TAIWANESE AND FOREIGN EXPERIENCES

Table 4-1 is a brief summary of the main features characterizing the Taiwanese and the foreign experiences. The advantage of such a synoptic organizational, managerial and institutional review of railways is to provide comparisons and to highlight specificities. Let us draw lessons from it.

i) None of the foreign railways is an administration working on behalf of a state ministry. The last one were the Italian railways, but it changed its status into a corporation in 1985. However TRA has still the status of an administration working on behalf of public authorities.

ii) Apart from France and Spain, which are still reluctant to privatization, there is now a general transfer of the railways from the public sector to the private one. The recent decisions in Italy clearly call for privatization. The reorganization decided in Germany can be considered as a step towards privatization. The Swedish system provides rights of access to the network for private operators. The British "Railway White Book" envisages the privatization of services as far as possible, i.e within acceptable limits (on profitability) for the private sector. The Japanese experience looks like a precursor of the privatization although the very privatization will only begin by the end of this year when shares will be sold on the stock exchange market. The European (EEC) directives do not include any compulsory article about the railway corporation ownership but rights of access to the network and for transit, for various operators are to be allowed. Up to now, TRA has not moved in such a direction.

iii) This quite general ownership change do not apply to the totality of the railway system in any country. In fact, the change previously depicted simultaneously takes place with another evolution. This latter evolution consists in sharing the railway activity in two parts, the **infrastructure activity** and the **operating business**. As previously seen the operating business tasks are subject to privatization whereas the infrastructure activity is generally considered as one of the state government responsibility as well as providing the country with a road system, and this can be assimilated to the so-called "right of everybody for transportation" in the French transportation law (LOTI). Consequently, the infrastructure should remain in the public sector hands whereas the operating business may be devoted to the private sector hands.

Since many years, French railways have created special accounts dedicated to the infrastructure expenditures because the Railway Set of Specifications mentions that the fair competition between modes can be partly (the other part relates to the pension fund) obtained through a financial compensation of the corresponding interest, depreciation and fixed maintenance expenditures.

Sweden fully developed this approach and created the railway infrastructure state owned company called BANVERKET. The German reform will lead to an independent Department in charge of the infrastructure which is likely to remain in the public sector. In the United Kingdom, one of the strongest country supporting the economic liberalism, a state owned infrastructure company is to be created and called RAILTRACK. Italy and Spain need to comply with the European directive which considers that the French separation system is the minimum solution.

On the Japan side, although the said private companies have recently bought their part of the high speed network, a Railway Development Fund settled in 1991 is now in charge of promoting the high speed network extensions as well as urban lines, partly thanks to state subsidies.

TRA does not have a formal accounting system corresponding to such a separation from the other operating business activities, but does have elements which could be efficiently used in this perspective.

iv) The high speed networks have mostly been developed in Japan, France and Germany. In each of these three countries, the initial enhancement of the investments came from the public sector (Central or local governments and public enterprises) and this is still quite true now.

The Japanese case is highly interesting. The very privatization will start now, once most part of the investments is achieved and all financing, constructing, operating and commercial risks are mastered.

In Taiwan, the studies performed up to now demonstrate the necessity of public grants in order to fund the HSR project. Deeper financial studies have recommended not to introduce private actors too early in the project implementation process, either for administrative reasons (land acquisition) or for the limitation of the private profitability requirements. Effectively, the earlier these latter actors are involved, the higher they consider the risks they take, the higher are the guaranties and the financial return they expect.



v) Whatever is the way followed, almost all railways are modifying their organization. We can consider that two different systems are being currently used but they have the same goal. One system (Germany, United Kingdom, Japan) consists in selecting a business activity, like freight services, and in creating a separate and generally private company or subsidiary company in order to handle it. The other system (France, Spain, Sweden) aims at identifying all the means (staff, assets, and other inputs) which contribute to the production of such services and at creating a special department, within the company, in charge of the corresponding responsibility. This department is called a **business unit** and is supposed to set and balance its own accounts.

vi) All railways which balance their accounts have initiated and developed their activity diversification. Generally speaking, it consists in real estate development, retail business, advertising, ... Two reasons fundamentally support such diversification although one could think it is paradoxal to do so. Effectively, since public services are sufficiently compensated and the other services operated under the condition of profitability, why is there a need for this diversification?

The first reason addresses the traffic volume and the competition. It is not easy for railways not to fall in the red because the competitors are always improving their offer. The total market is also subject to variations and sometimes economic recession or international events (such as the Gulf war) may reduce it. And one of the weak points of the railway systems is that its inertia is rather great, i.e. has not much flexibility.

The second reason is that the railway properties are generally huge and under-developed from a commercial viewpoint. There are virtually lots of potential business opportunities to catch and which were unexplored before. It should be a pity, for any country, to leave this resource asleep, particularly in those areas where land price is high (urban areas). This matter has not to be considered only in a commercial perspective but also taking into consideration the community interest. To take an example, why should a government buy at high price a piece of land in order to create a hospital while there are unused railway properties also belonging to the state which could fit for this purpose?

Today, TRA has not taken great advantage of the extremely large properties and the conflicting views between the province and the central government and also with other authorities seems to prevent such policy development.

vii) Another aspect of the sweeping reforms the foreign countries are currently undertaking is the treatment of the financial burdens of the railways. Two items are to be addressed: the problem of the pensioner number and the indebtedness question.

Two countries are considered to have best solved the first one: Japan and France. In Japan, the Settlement Corporation has inherited of the former JNR debts. Part of the revenues collected from this corporation come from the new operating companies. Part of the revenues also come from the government. In France the railways debt has been cut into two pieces. The "productive" debt (money borrowed for profitable investments) remain in the railway accounts. The "non productive" debt (resulting from the "bad" management of the firm or from the insufficient compensation of constraints put on railways by the state) is assigned to an auxiliary account to be essentially serviced by the government. In fact both method proceed from the same spirit: to clarify the financial situation of the railways and put them on a sound financial basis. Now the dispute about the proper share in order to judge if too many debts are or not assigned to the railways and if the "non productive" debt will be reimbursed is another issue.

As far as the retirement costs are concerned, quite all railways have to face the problem of an atypical demography. They are confronted to a paradoxal issue: the more they improve productivity by personnel reduction, the more they support indirect expenses since the ratio retired/active people increases.

France seems to have best formalized the problem. The railways cannot bear such a burden since their competitors which have been more recently created generally support, through another pension fund mechanism, less retired persons and consequently have less indirect expenses. It is a matter of fair competition. This way of considering the problem is particularly relevant when considering the European guidelines. How could the present railway companies struggle against new operators, to whom the network access is given, if these new operators do not support or support in much lesser proportions the social burden of retirement.

In the two fold perspective of the intermodal competition in Taiwan and of the future emergence of the HSR as a new independent company, it seems to be of utmost importance to find a fair solution to this problem which is one of the most stringent for TRA.

viii) Once adopted the rules which settle the conditions of a fair competition, it is easily understood that any impediment to the company management or fare policy freedom is in full contradiction with the whole transportation policy based on liberal principles. Most of the countries are progressively admitting this point and let their railways free to define their fares. Any obligation or constraint, such as social fare discounts, inevitably lead to financial compensation. For those which have taken the step of privatization, interference of public authorities in the fare policy looks like an heresy, mainly if simultaneously such interference does not affect all operators and all competing modes.



This issue is one of the most difficult because privatization may lead to the creation of monopolies when the service quality of the competitors is much worse. This partly explains the French attitude when facing privatization.

We know that TRA is regularly claiming for the fare constraints which are dictated to its activities while competitors seem to have less pressure. A private operator in charge of the HSR operations would likely invest money in the project under the condition of fare freedom. How could the present ways about TRA fare could be perpetuated in such a perspective?

ix) Finally the public service obligations are to be evocated. The European guidelines voluntarily explore alternative solutions.

The most recommended solution is the termination of public services. This seems to be globally unacceptable for political and also for economic reasons. However a pragmatic attitude is useful. In particular circumstances, the public service is nothing but a fiction. For example, people care for a station or a train or a line and are opposed against their suppression or closure. However the railway technique is no longer relevant for this kind of traffic, and other techniques, should be cheaper to operate, eventually on behalf of a private operator, while they would provide a better service.

If such a solution cannot be adopted, then the authority asking for the public service has to pay for it. It is a sound principle to charge those who ask for. Theoretically the compensation must be calculated so as to balance the accounts of the operator in charge of the operations. The full application of this principle may lead to a very expensive public service, since the operator, having the insurance of being reimbursed of the extra costs, is not inclined to a strong and efficient management.

This is why, in Germany, instead of an a-posteriori adjustment of the compensation fitting with the account balance, they have preferred to give an a-priori agreed lump sum, which is an incentive for the railways to improve also the public service productivity. However, the organizing authority does not take benefit of this productivity improvement except if, from time to time, the lump sum is re-adjusted.

It has not been found in the TRA relationship with public authorities any mechanism of this kind ruling the public service obligations.



TABLE 4-1 : COMPARISON BETWEEN RAILWAY SYSTEMS  
IN FOREIGN COUNTRIES

	FRANCE	SPAIN	ITALY	GERMANY	SWEDEN	UNITED KINGDOM	JAPAN
Company ownership	State	State	State ↓ Subsidiaries for some business activities ↓ Privatization 6/92	State ↓ Project for privatization	State System allows private access to the network	Freight+Parcels (private) ↓ Passenger projects for private companies	Private
Infrastructure Management	Separation in the corporate accounts since about 10 years (contribution for infrastructure fixed expenses) + social marginal approach	Need to comply with European Guidelines	Need to comply with European Guidelines	New Infrastructure Department	BanVerket Company + social marginal approach	Railtrack Company	Shinkansen Holding Corporation + Railway Development Fund
Organization	5 business units	5 business units	No detail	Passenger Dept. Freight Dept.	No but through privatized companies	Through privatized companies Franchising system	Not necessarily
Integration of High Speed services	Yes	Yes	No TAV (45% State 55% others)	Yes	Yes	Do not apply	Yes
Indebtedness management	Non productive ----> State	No			Yes, formerly	Big improvements	Yes, Settlement Corporation
Accounts Results	Balanced	No	No	No	Yes, balanced	Yes, quite	Quite
Property development	Yes	No	Beginning	No	Yes	Yes	Yes
Financial Stabilization	Yes Auxiliary account	No	To be handled through the privatization process		Yes	To be handled through the privatization process	Yes
Retirement compensation	Yes	No			Yes		New personnel status

EUROPE
No obligation but provide free access and transit rights to individual operators
At least French solution
No directive
No directive Help for missing links
Yes
Yes
No directive
Yes
Yes

TAIWAN
TRA is an administration not a corporation
Not separately managed from the rest of the operations
No business unit
Under study
No
Not balanced
No
No
No

## 4.2. PROJECTION OF TRA REVENUE AND EXPENSES

This exercise is made in the hypothesis that:

- . TRA pursues its current effort to improve operations and streamline organizations and staff; in particular, it succeeds in reducing the work force by 5,134 persons by 1996.

- . However, no special steps are taken by the State to alleviate the burden of TRA's debt service and employee/pensioner unbalance, to normalize the competition context and to facilitate real estate utilization for significant diversification activities.

This exercise is based on the following data presented in Chapter 3:

- . Income Statement for Fiscal Years 1981 to 1991.
- . Modified Income Statement, to integrate the totality of Personnel Expenses under a specific heading. 1992 expenses are supposed to be 12 tenths of 10-month expenses (July 1991-April 1992) given in the Report on TRA's Financial Situation,
- . Analysis of Expenses for Calendar Years 1981 to 1991.

Inflation is supposed to be 5% per year over the coming years.

Our assumptions are detailed hereafter; results of the calculations are given in the Table 4-2 next page.

### Revenues

Ridership (passenger-km) will increase at the same rate as between 1981 and 1991, or 0.82% per year. Average revenue per passenger-km will merely follow the 5% inflation rate.

Freight tonne-km will remain at their present level. Average revenue per tonne-km will merely follow the 5% inflation rate.

Other Operating Revenues will increase by 6% per year, as they have done in the past.

Government Grants will remain at their 1991 level: NT\$ 71 million.

Proceeds from Disposal of Land totaled NT\$ 2,488 million over the 1987-1991 period, or an average NT\$ 498 million per year. We assume the same amount in future, inflated by 5% per year.

Other Revenues totaled NT\$ 1,666 million over the 1987-1991 period, or an average NT\$ 333 million per year. We assume the same amount in future, inflated by 5% per year.

Table 4-2:

## PROJECTION OF TRA REVENUES AND EXPENSES (FISCAL years)

	Million NT\$									
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
REVENUES										
OPERATING REVENUES										
Passenger Revenue	8266	8371	8904	9431	9985	10570	11190	11846	12540	13275
Freight Revenue	2042	1991	2195	2031	1993	2093	2197	2307	2423	2544
Sub-total	10308	10362	11099	11462	11978	12663	13387	14153	14962	15818
Other Operating Revenues	2207	2419	2536	2660	2788	2955	3133	3321	3520	3731
Sub-total	12514	12781	13636	14122	14893	15618	16520	17473	18482	19549
NON OPERATING REVENUES										
Government Grants	344	190	123	108	71	71	71	71	71	71
Disposal of Land	535	65	867	763	258	523	549	576	605	636
Other Revenues	459	312	584	121	190	350	367	385	405	425
Sub-total	1338	567	1574	992	519	944	987	1033	1081	1132
TOTAL REVENUES	13852	13348	15210	15114	15412	16562	17507	18506	19563	20681
EXPENSES										
PERSONNEL SERVICE										
Employees	6591	7374	8301	9743	10390	10464	10612	10714	10763	10749
Pensioners	1653	1902	2264	2724	3098	3305	3776	4296	4872	5508
Sub-total	8244	9276	10565	12467	13488	13769	14388	15011	15635	16257
CHARGES FOR SERVICE	2175	2211	2371	2559	2736	2134	2240	2352	2470	2593
MATERIAL COST	1602	1552	1503	1519	1597	2122	2228	2339	2456	2579
RENTS	22	21	22	18	19	18	19	20	21	22
INTEREST	514	290	267	549	1045	1138	1530	1950	2399	2874
DEPRECIATION AND AMORTIZATION	1607	1707	1760	1709	1690	1966	2242	2463	2778	2916
TAXES AND FEES	32	35	35	32	42	37	39	41	43	45
MEMBERSHIP FEES, DONNATION, ALLOTMENT	5	5	7	4	5	18	5	5	6	6
LOSS AND COMPENSATION	126	128	221	174	1485	232	243	255	268	282
OTHERS	17	19	820	1346	787	11	20	21	22	23
TOTAL EXPENSES	14344	15236	17571	20377	22894	21443	22953	24457	26097	27597
PROFIT/LOSS	-492	-1888	-2361	-5263	-7482	-4881	-5446	-5951	-6534	-6916
=====										
Number of Employees						20606	19323	18039	16756	15472
Number of Pensioners						15502	16536	17569	18603	19636
Depreciation Dual Track Chunan Fengyuan								83	83	83
Depreciation Underground Sungshan									177	177
Depreciation Cars & Trains							276	414	552	690
							276	497	812	950



## Expenses

In 1992, with 20,606 employees on the payroll, TRA is expected to spend NT\$ 10,865 million in salaries, overtime, bonus, indemnization of accidents, welfare allowance, etc., or an average NT\$ 507,813 per employee. Our assumptions are:

- . the number of employees will be reduced by 5,134, to 15,472 in 1996.
- . the cost per employee will increase by 3% per year to reward their increased productivity and to account for the more elaborate skills involved in the operation of a modernizing railway, compounded with the 5% rate of inflation.

In 1992, with 15,502 pensioners, TRA expects to spend NT\$ 3,305 million in pensions, or an average NT\$ 213,198 per pensioner. Our assumptions are:

- . until 1996, the number of pensioners will increase by 5,134 on the one hand and decrease by 1,000 on the other hand, due to natural attrition.
- . the cost per pensioner will increase by 2% per year, in proportion to the basic salaries of employees, compounded with the 5% rate of inflation.

Charges for Service and Material Costs will merely increase by the 5% rate of inflation because, on the one hand, traffic will not increase much and, on the other hand, due to its impecuniosity, TRA will remain in no position to carry out normal replacement and overhaul of its equipment.

Rents, Taxes and Fees will increase by the 5% inflation rate.

Interests will be incremented each year by 10% of new borrowings made the preceding year. These borrowings are equal to the loss of preceding year minus cash taken from the depreciation fund. Cash taken from the depreciation fund is equal to Depreciation & Amortization of that preceding year minus what was effectively spent for renewing equipment. It is assumed that effective spending for renewal will be NT\$ 1,000 million every year.

Depreciation and Amortization will be incremented:

- . from 1994, due to the incorporation in TRA's assets of the Dual Track Chunan-Fengyuan, capital cost NT\$ 6,940 million, or a NT\$ 83 million annuity.
- . from 1995, due to the incorporation in TRA's assets of the Underground Extension to Sungshan, capital cost NT\$ 14,720 million, or a NT\$ 177 million annuity.

. from 1991 to 1997, due to the incorporation in TRA's assets of new Cars and Electric Trains, capital cost NT\$ 24,110 million, or a NT\$ 964 million annuity. We further assume that this incorporation will be spread evenly over the 1992-1998 period; the annuity will thus be incremented by NT\$ 138 million each year.

Loss and Compensation: we expect the sudden surge noted in 1991 to be due to exceptional circumstances. In forthcoming years, we retain NT\$ 232 million, subject to the 5% rate of inflation.

Similarly, as regards Membership Fees, Donations and Allotment, we retain NT\$ 5 million, subject to the 5% rate of inflation.

As regards "Others", the sudden surge noted in 1989, 1990 and 1991 was due to exceptional circumstances (the retroactive effect of the Standard Labor Law). In forthcoming years, we retain NT\$ 20 million, subject to the 5% rate of inflation.

## Conclusion

In this "do-nothing" alternative, TRA will remain perennially in the red, with expenses exceeding revenues by 31% in 1993, increasing to more than 33% in 1996 (around NT\$ 7,000 million)

This is because:

- . savings on employee costs, thanks to a 25% reduction of the work force, will be partly offset by the increasing burden of pensions: by 1996, each employee will support 1.27 pensioners.

- . accumulated deficits will result in an ever-increasing indebtedness: in 1996, the debt service will be NT\$ 2.9 billion, or 42% of that year's NT\$ 6.9 billion deficit.

To reduce the deficit, one might consider resorting to increasing fares and rates. However, in order to balance fully the accounts, such an increase would have to be of the order of at least 31% since, with exactly 31%, the balance could be achieved only if no traffic evaded, and this a totally unrealistic hypothesis. In fact, it may well be that traffic elasticity to transport price, now assessed to be in-between 0 and -1, should not remain in that bracket if such a huge tariff increase was enacted. In that case, the tariff increase would have virtually no effect on the overall income: the only benefit would stem from the marginal reduction of operating costs in proportion to the traffic evasion.

## CHAPTER 5

### RECOMMENDATIONS FOR THE FUTURE

#### 5.1 A 3-STAGE PROCESS

In this chapter we suggest to apply several lessons drawn from the foreign experience and from the diagnosis of the TRA.

As previously seen, if no strong action is undertaken, TRA situation is to worsen. However, the magnitude of the financial challenge (positive net annual result) is not beyond of what can be expected from institutional, managerial and organizational stabilization reforms.

In this perspective, we recommend a 3-stage process, to be progressively carried out in succession:

i) an institutional reform changing the TRA administration status into a corporation status, this change including simultaneously a normalization of the relationships between the governmental and local authorities on the one hand and the railways on the other hand, particularly from the financial viewpoint.

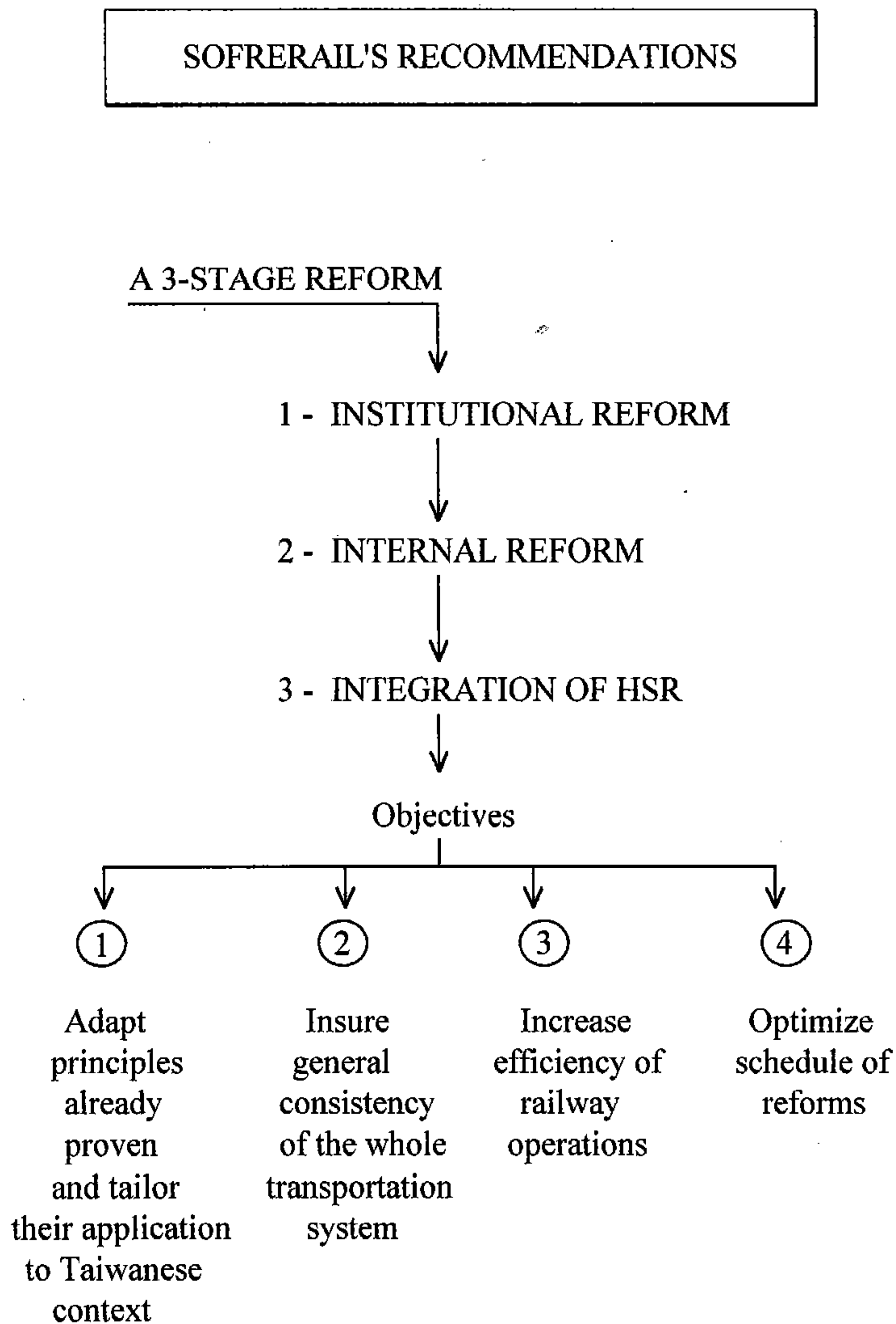
ii) an internal reform improving the railways efficiency thanks to a new decentralized organization aiming at establishing full responsible units which will be tailored to the new rights and duties assigned to them.

iii) in due time, an integration of HSR in this context, in a way consistent with the institutional, managerial and organizational structures applied to the conventional railways.

The various countries confronted to similar issues have defined different solutions more or less efficiently working. We are aware of this variety of solutions and we consider that strictly adopting the system experienced in one country should be the wrong way to an harmonious transportation policy in Taiwan. However there are common principles which are worth considering because they did reveal productive functionalities. Therefore, we shall base our recommendations on these principles trying to explore the widest range of possibilities.



FIGURE 5-1 :



## 5.2 THE FIRST STAGE OF THE REFORM (Institutional Reform)

The reform must focus on TRA problems but cannot ignore the whole transportation context.

We consider that the present situation needs clarification. As an administration, TRA is not sufficiently empowered to take key decisions. No important decision can be applied without preliminary and lengthy negotiations between the provincial and the central governments. Incidentally, some aspects of TRA activity also involve other actors such as Taipei or Kaohsiung cities. This procedure is incompatible with the market evolution which requires quick reactions and flexibility of the offer and of the organization when confronted to a more accurate competition or to ever more changing and demanding transportation needs.

Seen from governmental viewpoints, TRA may also appear as an ever claiming organism, raising issue the solution of which is always embarrassing because it involves other entities than the one to whom the question is raised. Tentative solutions have been implemented, such as the creation of the Supervision/Control Commission and Committee, but the problems are not solved and even get an increasing extent and nobody has a clear-cut responsibility.

The rules of the game are not clear. There is confusion between the role of the administrative authority in charge of TRA and the role of TRA itself and some matters which would normally be dealt at the operating level are raised up to the ministry.

To clarify the situation, we suggest to transform TRA into a corporation. This corporation could tentatively be called Taiwan Railway Corporation (TRC).

What does it mean?

This means that TRA, whether privatized or not, must become an enterprise and behave as a self-governing firm trying to balance its accounts and to make profits, according to rules clearly written and fully respected. In this perspective a TRC Board of Directors has to be set up.

In other terms, if TRC is actually given autonomy, there is a need to establish one, and only one, administrative governmental counterpart to whom TRC will have to report. There is also a need for establishing rules general enough to still hold good on long period and precise enough not to let permanent interpretations and disputes.

This single administrative governmental counterpart can be called "the Railway Administrative Tutelage".

In order to better characterize both the Railway Administrative Tutelage and the Railway Corporation, we need first to give more detail about their respective roles.

The Railway Administrative Tutelage would be in charge of four main tasks:

- i) create and control the conditions of a fair competition between the competing modes;
- ii) define the public services and eventually the constraints to be laid on the railway activity (for safety, for example);
- iii) check a posteriori that the railway management is suited to guide the Corporation on a financial healthy route and to keep or improve the quality of the public services since it will have to pay for;
- iv) appoint part of the members of the Railway Corporation (TRC) board of directors.

The Railway Corporation (TRC) role would be to:

- i) operate the public services that the Railway Administrative Tutelage will require and provide an agreed service quality, for a given price;
- ii) define, initiate and operate all other business activities on a pure market basis without any financial subsidy;
- iii) comply with all constraints laid upon its operations as far as they do not distort the competition between modes and operators;
- iv) balance its accounts;
- v) periodically report to the Railway Administrative Tutelage information about its own management.

For such a system to work, two conditions are adamantly to be met. The first condition consists in writing the legal texts which will set the rules for this game, on an equitable basis. The second condition is that the Railway Administrative Tutelage first takes the measures allowing a fair game.

The legal context can be inspired on the European Directive for Railways which insists on four major aspects: fair competition between modes and between operators, separation of infrastructure activity from other business activities, financial stabilization of the railway indebtedness and compensation for public services. Let us discuss these four items now.

**Fair competition between modes and separation of infrastructure activity.** The best way to rule this issue is to review the whole transportation system, evaluate whether each transportation mode pays for the same proportion of its expenditures (including infrastructure costs but also safety and environmental costs), examine if within one mode (the road and highway, for example) there is not any cross subsidy between operators (private car versus buses and trucks) and if all operators are equally treated (TMTC versus Wild Chickens), decide, function of this analysis, a new taxation system on oil, car



ownership,... This is really a huge task. Its consequences may also be extremely important on the state budget. Sweden has undertaken such a reform. We recommend it because of its rationality. However, we are very conscious of the big difficulties it would raise in many fields and the length of the period needed to achieve it may be rather long. This is why, we propose a more pragmatic approach restrained to the railway field which is not so elegant and objective, but can be credited of a rapid application.

This pragmatic approach consists in bounding the two first items previously listed by saying that an approximate fair competition can be obtained by charging on public budgets,

- the railway infrastructure construction costs,
- the operation costs (operation of infrastructure mainly consists in central control posts, electric supplying control, and train switching) and the fixed maintenance costs,
- and the related interest and depreciation expenditures.

This requires knowing exactly what are these expenditures and therefore implies that at least a separate account in the Railway Corporation (TRC) accounting system or, more drastically, a separation of the Railway Corporation into two Corporations, one for Infrastructure and the other for business Operations:

- Taiwan Railway Infrastructure Corporation (TRIC),
- and Taiwan Railway Operation Corporation (TROC), which will have to pay TRIC for the infrastructure use.

Whether TROC will be privatized or not will be discussed latter. By contrast, TRIC is definitely a public owned company, as it is in Sweden and will be in the United-Kingdom. The members and of course the chairman of its board of directors should mainly be designated by the authorities who bring in the initial capital and/or assets and whose budgets will support the corresponding annual expenditures.

Another aspect of the fair competition rules addresses the pension system. Already now by comparison with the other transportation means, we have seen that TRA draws an unbearable burden which makes competition unfair, essentially due to unfavorable demography. It is of utmost importance to define a reference pension system (the system applied to most of the railway competitors, or the general national system LSL-Labor Standard Law) and to evaluate what the railways should have to pay if they had the same proportion of pensioners as in this reference system. In some extend we could add to this amount the costs of some retirement privileges which do not apply in the so-called reference system. This would correspond to the normalized retirement charges. All costs in addition to this normalized level should be charged to public authority budgets.

**Stabilization of railway indebtedness.** The European (EEC) Directive, as well as the Swedish and the Japanese experiences tell us that there is a necessity to give a strong solution to the indebtedness issue. Generally this solution consists in dividing the historical debt into two parts, one remaining on the railway side and corresponding to money borrowed for fruitful investments and the other part being absorbed by public authority budgets. We recommend to apply this approach to the Taiwanese context.

Summing up the foregoing, the railways must be relieved from the following financial burdens:

- part of the railway debt by a governmental capital grant given for reimbursement or by an annuity of capital and interest corresponding to its payback during an agreed period,
- the additional retirement costs by comparison to the reference retirement costs charged to the railways,
- the annual fixed expenditures related to infrastructure maintenance, operation and capital charges (the marginal operating and maintenance costs will still have to be paid by the railways- being imputed to the business activity accounts of TRC or being charged to TROC by TRIC).

Whatever this amount is, it appears that public parties will sooner or latter have to pay for in the present institutional organization, since in the predicted accounts of TRA the net result is to stay in the red and no drastic foreseeable improvement can be seen which would reverse this tendency. So, let us pursue the analysis expecting that this money will be given in a vertuous system in which future needed budgets can be correctly predicted and mastered and in which each party will not take decision having impacts on the other party budgets.

We can say that the provincial government is not in a position to handle the totality of this burden. A share is certainly needed between all the actors who take benefit of the existence of the railway system (central government, provincial government, Taipei and Kaohsiung local governments). This share should be decided according to the initial capital these entities bring in the bargain (properties, assets, etc) as well as to the capitalized present value of the forthcoming continued contributions (such as for the demographic compensation for retirement).

Function of these considerations, either the composition of the Railway Tutelage Authority or the composition of the TRC (or the TRIC if TRC is divided to put infrastructure apart) board of directors should be decided.

**Public service obligations.** Our recommendation is to clarify the procedure by attributing clear roles. On the one side there are those parties who take benefit of these public services: Taipei and Kaohsiung cities as far as commuter services are concerned, provincial government as far as other regional services are concerned, eventually the central government if it asks for services in relation with the national defense or for fare discounts for civil servants... On the other side there is

the railway operator (TRC or TROC if infrastructure has been put apart) who needs not to lose money while accomplishing the said obligations.

There must be separate negotiations for each of these public services and public constraints. These negotiations must exclusively involve the party which requests these services and the railway operator. The compensation must be equitable and given in a way which is an incentive for the operator to minimize the corresponding cost.

The requesting party has to be watchful about the service quality provided for these obligations and may apply penalties reducing the compensation if the actual quality is less than the formerly agreed upon quality when the financial negotiations took place.

The status of the TRC (TROC) company. The TRC company will operate services on a pure market basis. Freight, parcel and intercity passenger activity are likely to belong to this category.

The rationale of the formerly portrayed new railway game pushes strongly for allowing the maximum autonomy to the operating company. This autonomy is particularly crucial for the fare policy. If fare freedom is not given to the said company, for those activities managed on a market basis, the whole system is ruined.

If there is one contract ruling the issue of the public service compensations, which do not let any latitude for interpretation (i.e. the corresponding financial risks are mastered), the TRC (or TROC) company may be a private one.

The difference between the public/private status is not very important since the public company should behave as a private one, once put on an equal footing with the competing modes. However, the composition of the board of directors will not be the same. The board members of a public company will be nominated by the Railway Tutelage Authority whereas those of a private company will be chosen among the share holders.

If TRC is not divided into two companies, we do not recommend its privatization: the part of its activity (infrastructure plus public services) will still be strongly linked with the governmental policy.

If TRC is divided into TRIC and TROC companies, we recommend to keep TRIC in public hands but to devote TROC to the private sector. This would be consistent with the general privatization process which is now under the responsibility of an Ad Hoc Committee set up in 1989 for promoting privatization and introducing relevant legislation.

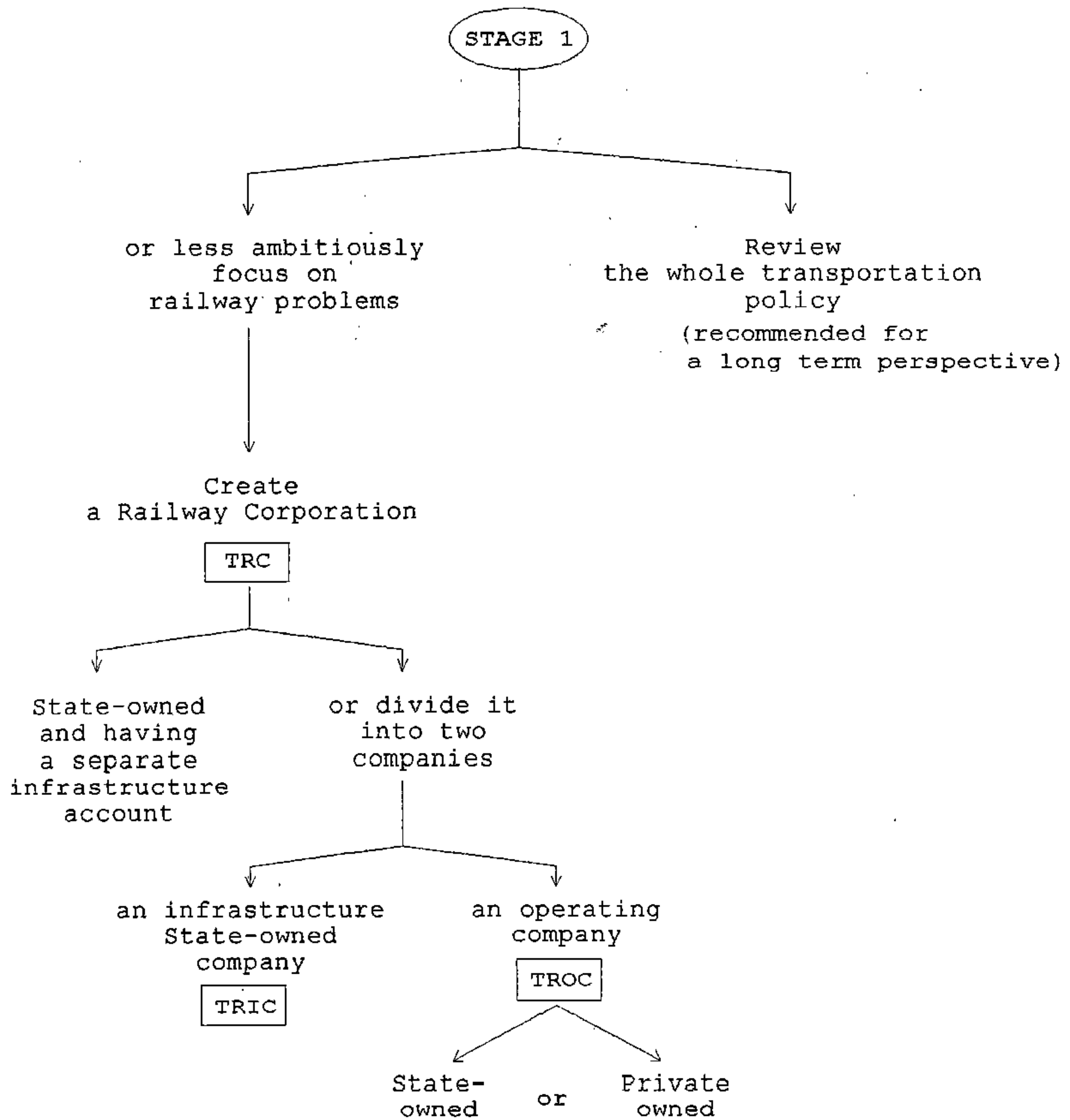


A scenario similar to the one followed for the China Steel Corporation is to consider with a venture between public and private capital. We learn from this latter experience that the experts belonging to the board of directors were mainly selected by the MOEA and the chairman of the board as well as the managing director were appointed by the MOEA. Nevertheless, the firm has total autonomy in employment of the rest of personnel, who have no civil servant status, which is not the case in a normal state-owned company in ROC. So, the private solution seems to better open the opportunity of hiring new staff on the basis of private personnel contract, while the former personnel (which number will be decreasing because of retirements) would keep vested interests. In this perspective, present railways workers should be given the first right to purchase stock in their company, both to reduce their resistance to privatization and to give them a stake in the company's success.

These fundamental changes should be subject to legal modifications. This means, at least:

- likely some changes in the railway law,
- the approval of one (TRC) or of two (TRIC + TROC) sets of specifications, defining the reciprocal rights and duties of both public authorities (Taiwan Railway Tutelage) and company(nies) (TRC or TRIC+TROC), in a long term perspective,
- the negotiation of one (TRC) or of two (TRIC + TROC) contract plan(s), specifying for a medium period (4 or 5 years long) these rights and duties and giving precise indications for the evaluation of the corresponding financial compensations;
- the negotiation of a contract between the TRIC company and the TROC company, in order to establish the rate according to which the second will use the infrastructure financed, built, operated and maintained by the first one.

FIGURE 5-2 : STAGE 1 - Institutional Reform



### 5.3. THE SECOND STAGE OF THE REFORM (Internal Reform)

The objectives to be pursued in parallel would be to:

- . Endow General Management with a structure which enables it to really steer the corporation.
- . Set up an Infrastructure Department with competence and authority on all matters described above (i.e. a larger scope than Civil Engineering and Mechanical Engineering).
- . Establish Business Units, with a view to giving enhanced responsibilities over the corporation activities and results, to more persons.
- . Streamline production means.

The following recommendations are based on the tentative hypothesis that, in a first stage, Infrastructure remains inside TRC (i.e. TRIC and TROC are not established from the outset as separate corporations). It is also based on the hypothesis that, for the time being, TRC is not privatized.

#### General Management

With the current structure, it is presumed that the Directors, specially those in charge of Departments with the largest work force, enjoy a somewhat baronial power since the Managing Director, having to devote much of his time to liaising with government, can but leave them with much leeway. We recommend setting up around the Managing Director a permanent advisory committee which will give him the necessary muscle to actually drive the corporation. This would be a 2-level team:

#### Closest to the Managing Director:

- . A Senior Aide, thoroughly knowledgeable in the corporation's institutional context so as to be able to assist the Managing Director in all its dealings with the Tutelage.
- . Several junior aides thoroughly familiar with the corporation's internal lore and functioning.
- . The Chief Secretary, thoroughly knowledgeable in the intricate financial and administrative issues.
- . The Chief Engineer: he would act as an advisor to the Managing Director rather than the hierarchical overseer of technical Directors.
- . One Deputy Managing Director; in the hierarchy, he would be the second man in command, specially in charge of day to day management.



#### More remote from the Managing Director:

- . The Secretariat, the Administrative and Accounting Departments and the Personnel Office, with roughly the same functions as currently.
- . A Strategy Department: this could be the current Planning Department, duly strengthened.
- . A Budget & Management Control Department or Division, to be created and which would absorb and expand upon some of the current tasks of the Administrative and Accounting Departments.
- . A Public Relation Department or Division, to be created.
- . An Organization Task Force, to be created to follow the internal reform of the corporation.

The Chief Secretary close to the Managing Director might be specially in charge of overseeing these overall support services.

#### **Infrastructure Department**

This should be built up in such a way that it can be smoothly separated from TRC if and when the latter is split into two separate corporations, TRIC and TROC.

It would aggregate:

- . The whole of the Civil Engineering Department.
- . The whole of the Electrical Department
- . A large portion of the Transportation Department: train dispatching, control rooms of CTC and, in stations, cabin men, level crossing keepers, etc.

#### **Business Units**

With the present organization and chain of command, the Managing Director is the only manager who has both the possibility to compare revenues and expenses stemming from his decisions and actions, and the authority to take steps toward increasing revenues and/or reducing expenses to improve the results of his performance. We recommend to vastly increase the number of persons vested with such possibility and authority, each one in its own sector of responsibility. This would be achieved through splitting most of the corporation activities into Business Units and Production Units. Various foreign experiences do demonstrate that it is an efficient solution.

As regards Business Units, they would be in charge of:

On the one hand:

- . Defining, timetabling and tariffing profitable services.
- . Negotiating (under the aegis of General Management) non-profitable services with the government entities who request them: definition, timetabling, tariffing and compensation for un-profitability. This would cover the impact of imposed restrictions to general fare increases as well as fare reductions demanded in favor of various categories of users (students, civil servants, military commuters, senior citizens and the like), and also levels of services: amenities in stations, seat availability during peak hours, train frequency off-peak in urban/suburban zones, privilege stops of intercity trains at pork-barrel stations, servicing of money-losing secondary lines and small stations, etc.

On the other hand, negotiating "supplier/customer contracts" within TRC (or within TROC and with TRIC if Infrastructure is established as a separate corporation):

- . With Infrastructure: allocation of train paths and their respective tolls.
- . With Rolling Stock depots: provision of locomotives, cars, electric or diesel multiple units, driving crews, etc. and/or, if rolling stock is determined to belong to Business Units, negotiating with Rolling Stock depots and workshop their maintenance; and the respective charges.
- . With Stations, the kind of level of services: selling tickets, air-conditioning waiting rooms, etc.; and the respective charges.
- . With the Mechanical Department and Purchasing & Stores Department the specifications and price of rolling stock they want to procure or to have overhauled to attend to profitable services as well as to non-profitable services specified by government entities.

Last but not least, determining the number of employees they require, discussing with General Management the pattern of their internal organization and their preferred system for recruiting, dismissing and rewarding personnel and having the final decision in such matters, at least up to a certain rank of the personnel.

Tentatively, the following Business Units could be considered for creation, bearing in mind fields of activities as well as foreseeable interfaces with geographical areas of provincial and municipal governments whom with these units will have to deal:

- . Intercity Passenger, inheriting part of the Passenger Traffic Division.
- . Commuter, Greater Taipei, inheriting part of the Passenger Traffic Division, responsible for negotiating urban/suburban train services with the municipal and, to a lesser extent provincial authorities.

- . Commuter, Greater Kaohsiung, ditto.
- . Possibly, Regional Passenger, responsible for local trains in areas where minor stations are poorly attended by intercity services.
- . Catering Service, already established as "separate unit under direct control"
- . Freight & Parcels, merging the Freight Traffic Division with the Railway Freight Service (currently a "separate unit under direct control").

Creation of other Business Units might be considered in such fields where joint ventures with outside organizations could be advantageous, e.g Real Estate development.

### Production Units

Again with a view to endowing managers, the closest possible to where work is carried out, clients are attended to, etc., with personal responsibility over the quality and economy of the production, Production Units should be constituted in many instances, similar to what was done already by TRA for workshops and rolling stock depots. This would apply to Special Class Stations, Transportation Sections, Locomotive Sections, etc.

Production Units would have the responsibility of negotiating supplier-customer contracts with Business Units, with other Production Units and with Departments.

They would be endowed with a large degree of autonomy degree in such matters as defining their own organization and number of employees, introducing new plant and machinery, sub-contracting to other Production Units within TRC or sub-contracting outside TRC, selecting suppliers of materials and spare parts, etc., and recruiting, dismissing and rewarding employees.

As regards hierarchical jurisdiction over Production Units, two main alternatives are available:

- . either to place each Unit, according to its discipline, under the respective Technical Director: Transportation (stations), Mechanical Engineering (locomotive sections, car depots), etc.
- . or to place all of them under a to-be-established Director, Production Department.

The first alternative looks more "natural" as it means less drastic changes in relation to the current set up; it is apt to maintaining strong functional links between local and departmental levels and this,



as far as technology is concerned, is conducive to keeping up high standards of quality. It has the inconvenience of easily generating a confusion between functional advice or rulings issued by the Department, and hierarchical commands. In addition, this alternative does not lend itself to multi-functional management since, with this scheme, the Managing Director is the only multi-function manager in the corporation.

With the second alternative, multi-functional management is made easy, and there is no risk of confusion between hierarchical and functional links. In addition, being exempt from hierarchical responsibilities, Technical Departments can devote exclusively their attention to their technical missions: norm fixing, training and inspection. In the French context, this second alternative proved to be the preferable one.

However, it should not be applied to Infrastructure Business Units since that branch must remain clearly separated from the others. On the other hand, there may also be various sub-alternatives for certain Production Units. Thus:

- . Passenger-only stations working exclusively for one Business Unit e.g. suburban stations with no intercity or freight traffic can be hierarchically placed under that Business unit,

- . A rolling stock depot working almost exclusively for one Business Unit (e.g. Intercity Passenger) can be hierarchically placed under that Business Unit and would then contract its services to other Business Unit(s) (e.g. Freight and/or Regional Passenger).

## Organization Chart

Figures 5-3 and 5-4 next pages illustrate tentatively a possible application of the foregoing principles.

Under the Board of Directors, the Managing Director and Deputy Managing Director are assisted by the Advisory Committee and the Support Force. The latter, as explained above, comprises the Secretariat, the Strategy, Administrative, Accounting, Budget & Management Control and Personnel departments, divisions or offices, and the Organization task force.

At the 2nd level, there are in parallel:

- . The Business Units.
- . The Production Department.
- . The Technical Departments: Transport, Mechanical Engineering, possibly Traction and Purchase & Stores.
- . The Infrastructure Department.

**FIGURE 5-3 :**  
**POSSIBLE ORGANIZATION CHART**  
**OF TRC**

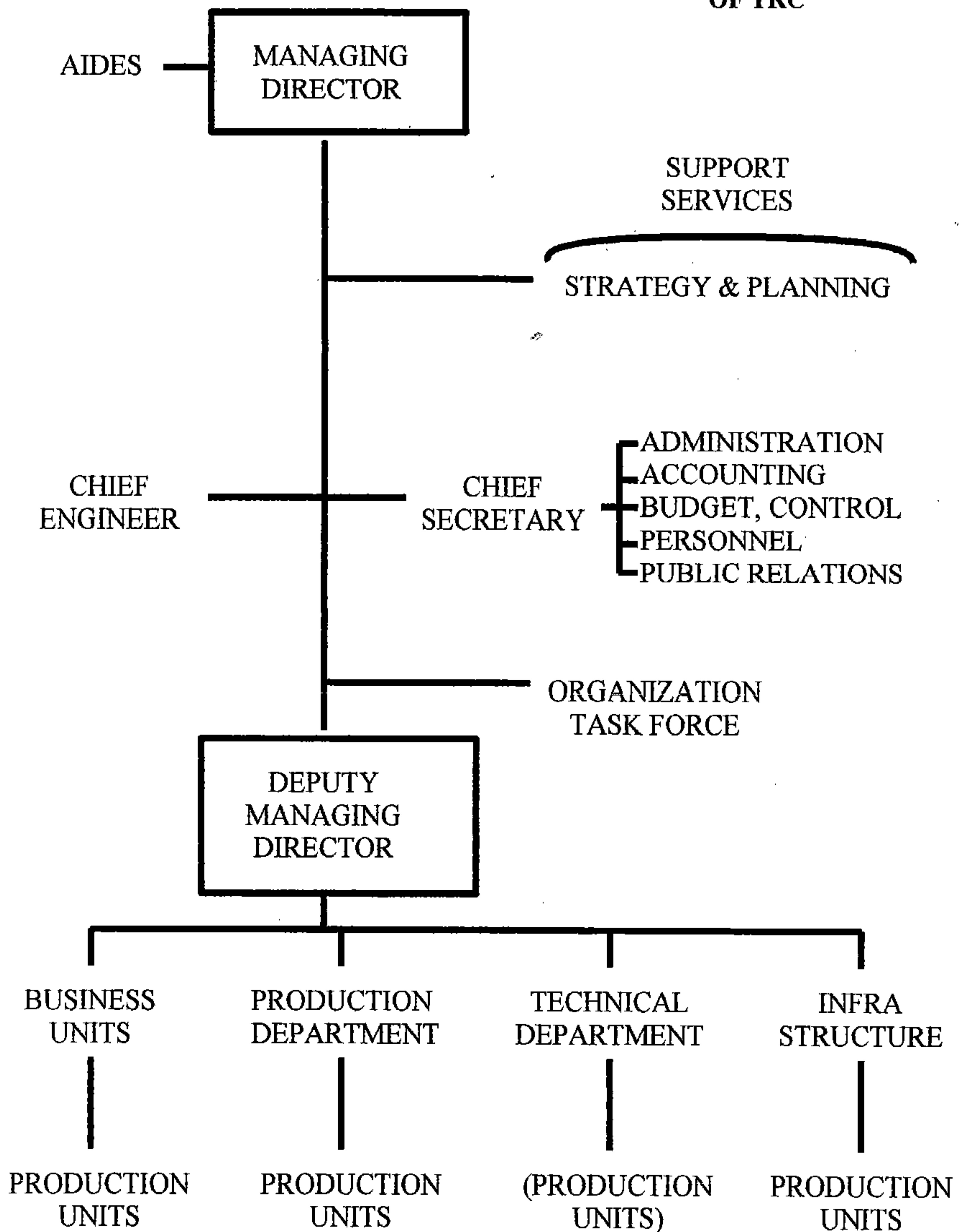
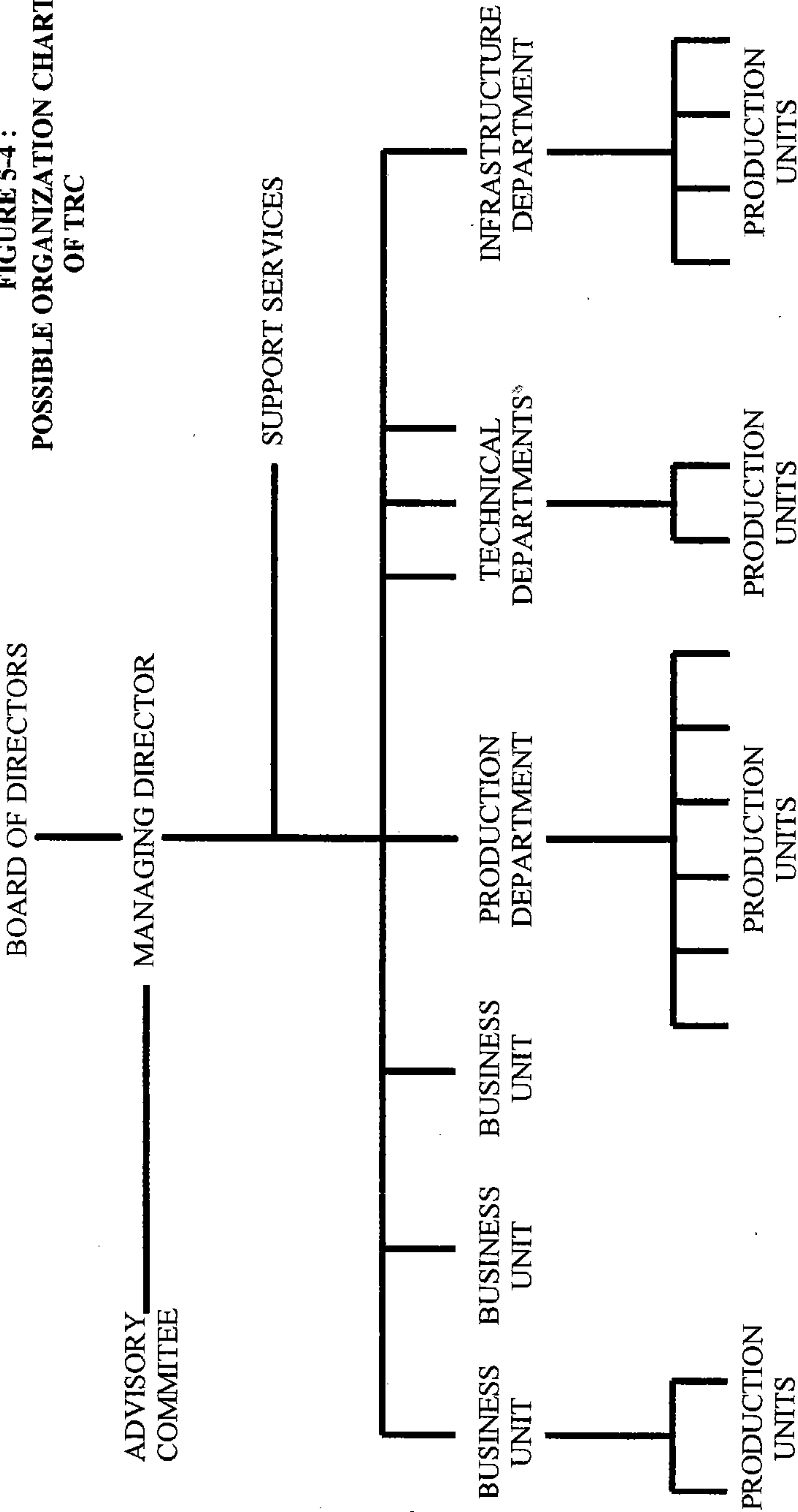


FIGURE 5-4 :  
POSSIBLE ORGANIZATION CHART  
OF TRC





At the 3rd level, there are the Production Units, each under the Production Department or the Infrastructure Department or, exceptionally, under a Technical Department. The latter case may apply to major stores and the Controlling Center of the Purchase & Store Department.

### Interfaces and Liaisons

Figure 5-5 to Figure 5-9 following pages depicts the liaisons within and outside TRC.

Between Tutelage and TRC General Management through the Board of Directors:

- . Set of Specifications.
- . Contract-Plan. To be periodically (e.g. every five years) reviewed.

Between General Management and each Business Unit:

- . Target Plan defining objectives and resources and the financial surplus which the Unit is requested to generate (it must be adequate to cover the corporation's overheads). To be reviewed every year. Data Processing Service of General Management produces income statement of each Business Unit on a monthly basis.

- . Based on Target Plan, each Business Unit prepares and submit to General Management its Activity Plan. General Management aggregates Activity Plans of all Business Units to make up the Corporate Plan.

Between each Business Unit (under the aegis of General Management) and government entities which request non-profitable services:

- . Public Service Contracts. May be reviewed from time to time at one of the parties' request.

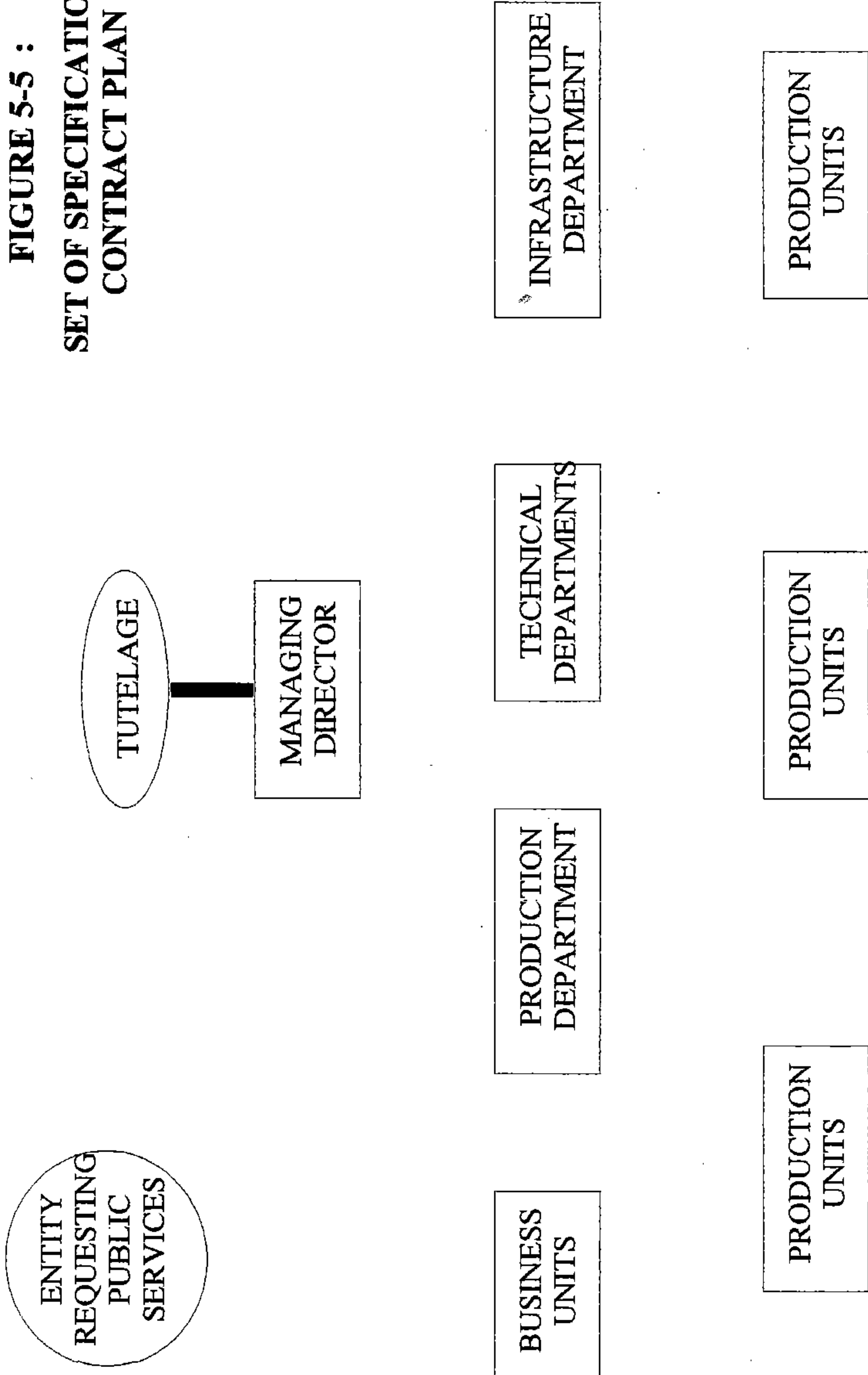
Between each Business Unit and Infrastructure Department:

- . Consumer-Supplier Contract to define train paths and tolls. Toll must be adequate to compensate the marginal social cost of using the infrastructure.

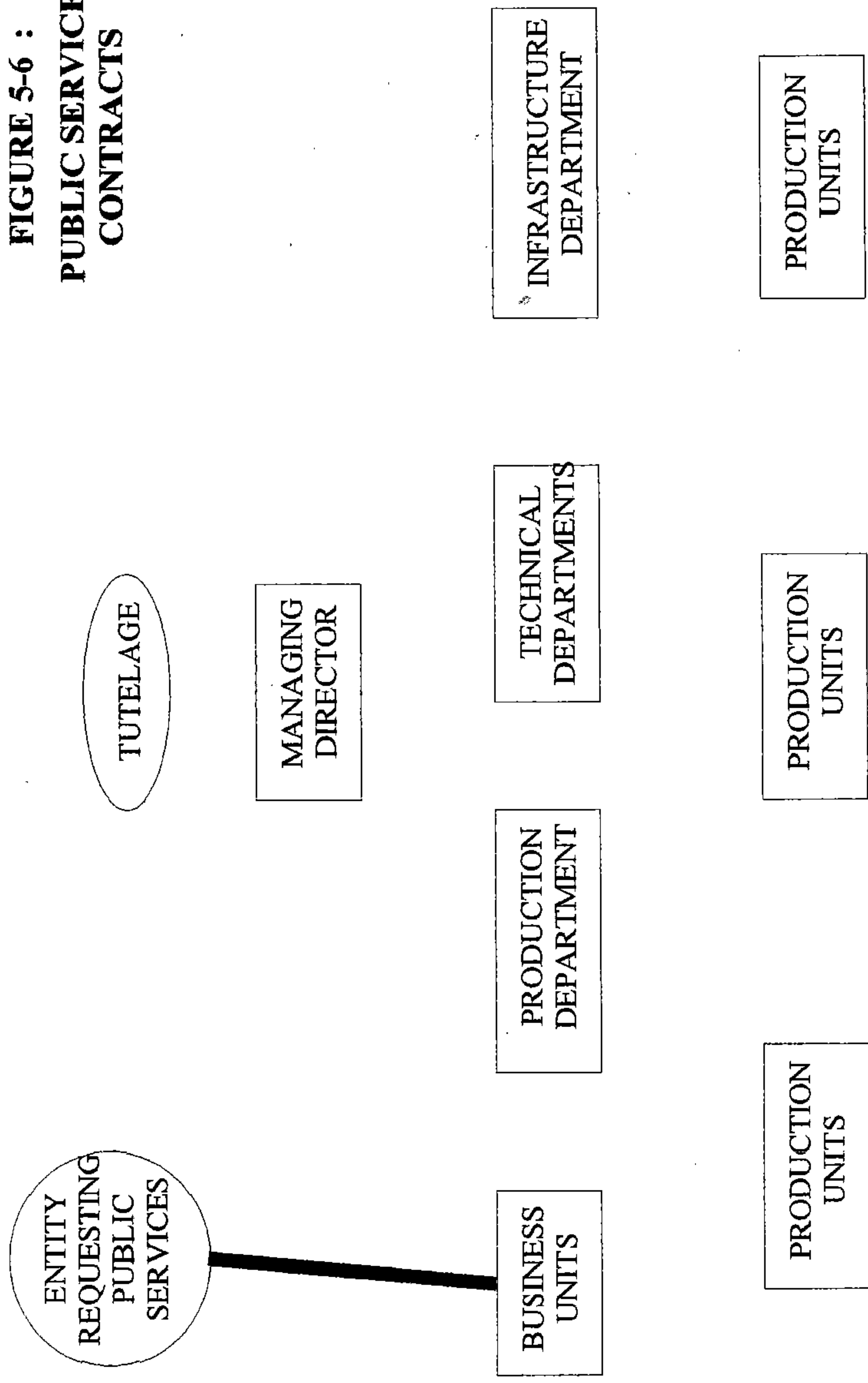
Between each Business Unit and Production Units (other than of Infrastructure):

- . Consumer-Supplier Contract. Contract terms, conditions and prices must be adequate to cover all expenses of the Production Unit (including depreciation and its own overheads); Production Units are not expected to generate a profit.

**FIGURE 5-5 :  
SET OF SPECIFICATIONS  
CONTRACT PLAN**

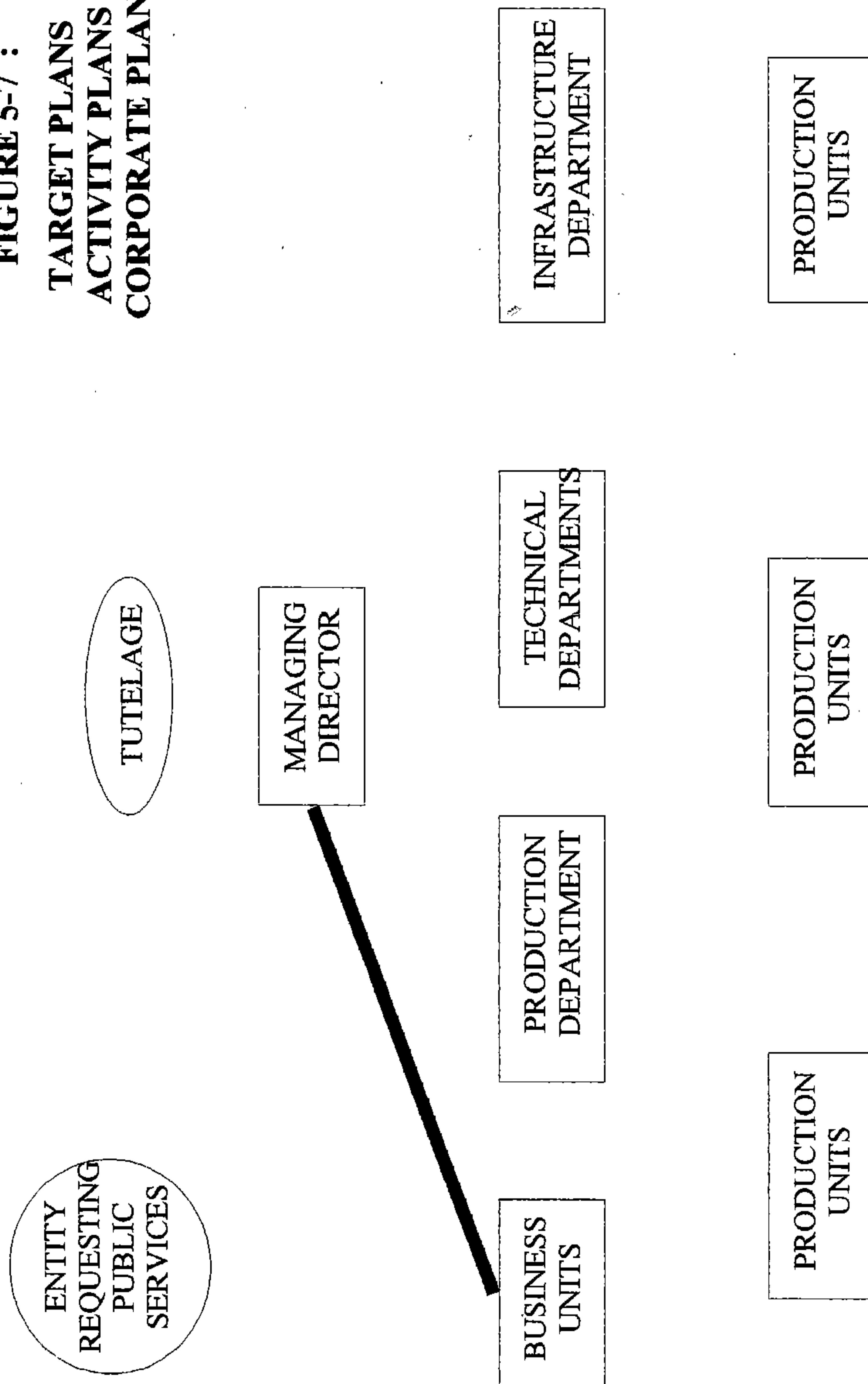


**FIGURE 5-6 :  
PUBLIC SERVICE  
CONTRACTS**

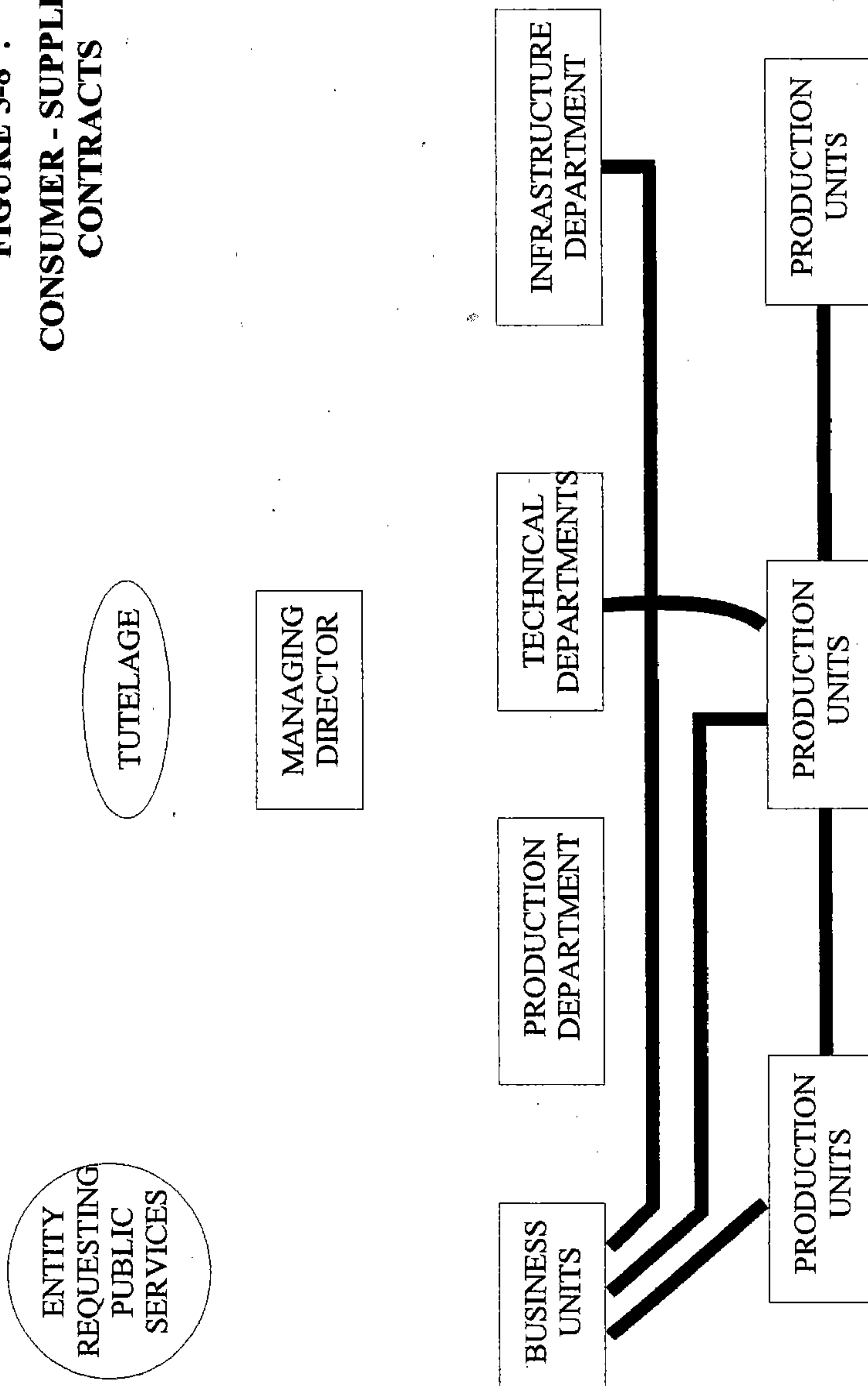




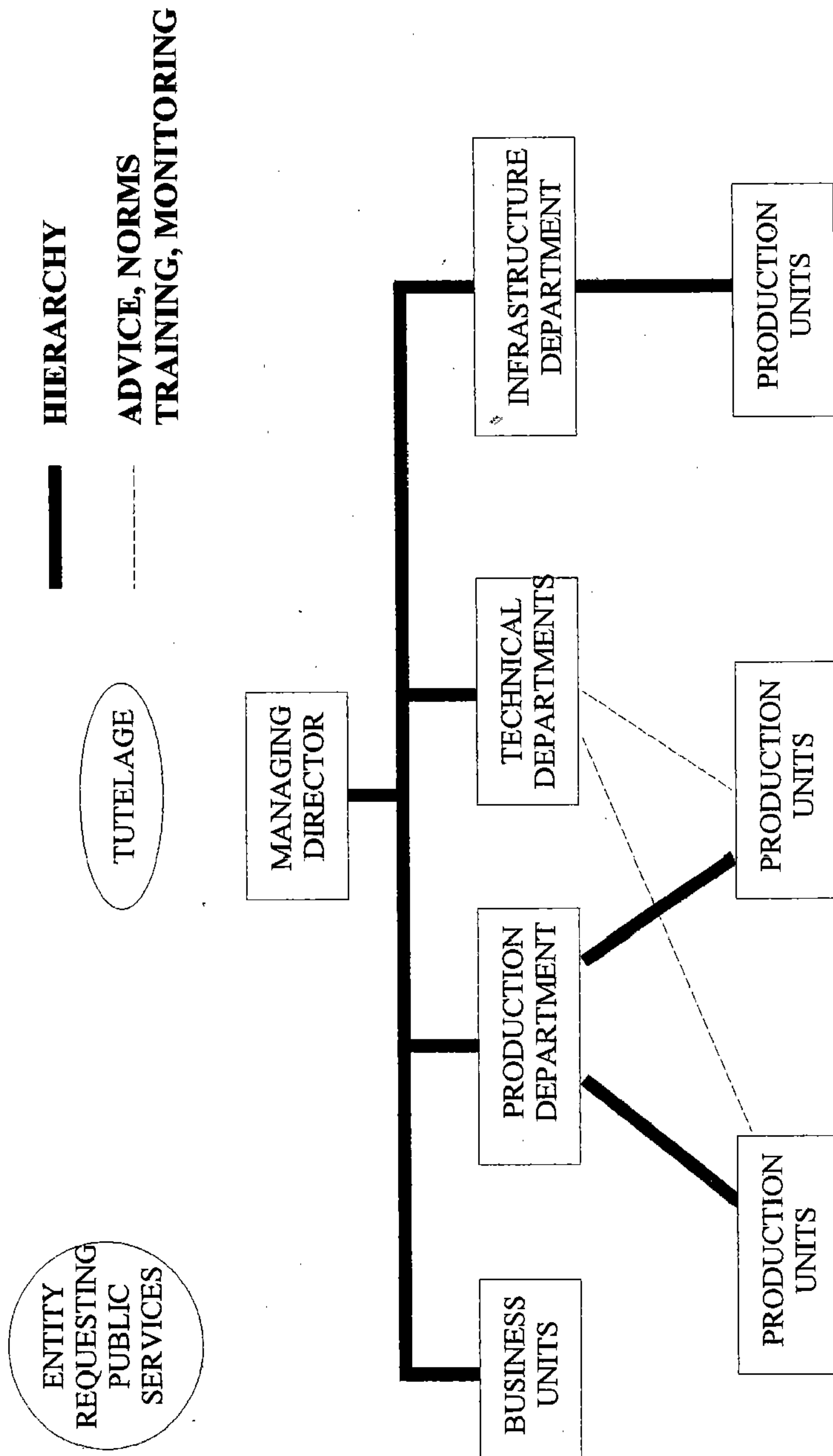
**FIGURE 5-7 :  
TARGET PLANS  
ACTIVITY PLANS  
CORPORATE PLAN**



**FIGURE 5-8 :  
CONSUMER - SUPPLIER  
CONTRACTS**



**FIGURE 5-9 : LINES OF COMMAND**





Production Units between each other and between Production Units and Technical Departments:

. Consumer-Supplier Contracts. Contract terms, conditions and prices must be adequate to cover all expenses of the supplier Unit (including depreciation and its own overheads); Production Units and Technical Department are not expected to generate a profit. As regards Technical Departments, such contracts apply to procurement of materials and supplies and to services provided by laboratories, drawing offices, etc. which the Production Units may request.

Between Technical Department and Production Units:

. Technical Department provide Production Units with norms, work rules and advice; they impart them training; and they monitor their compliance with rules, specially as regards "safety.

Between General Management and Production Units through Production Department:

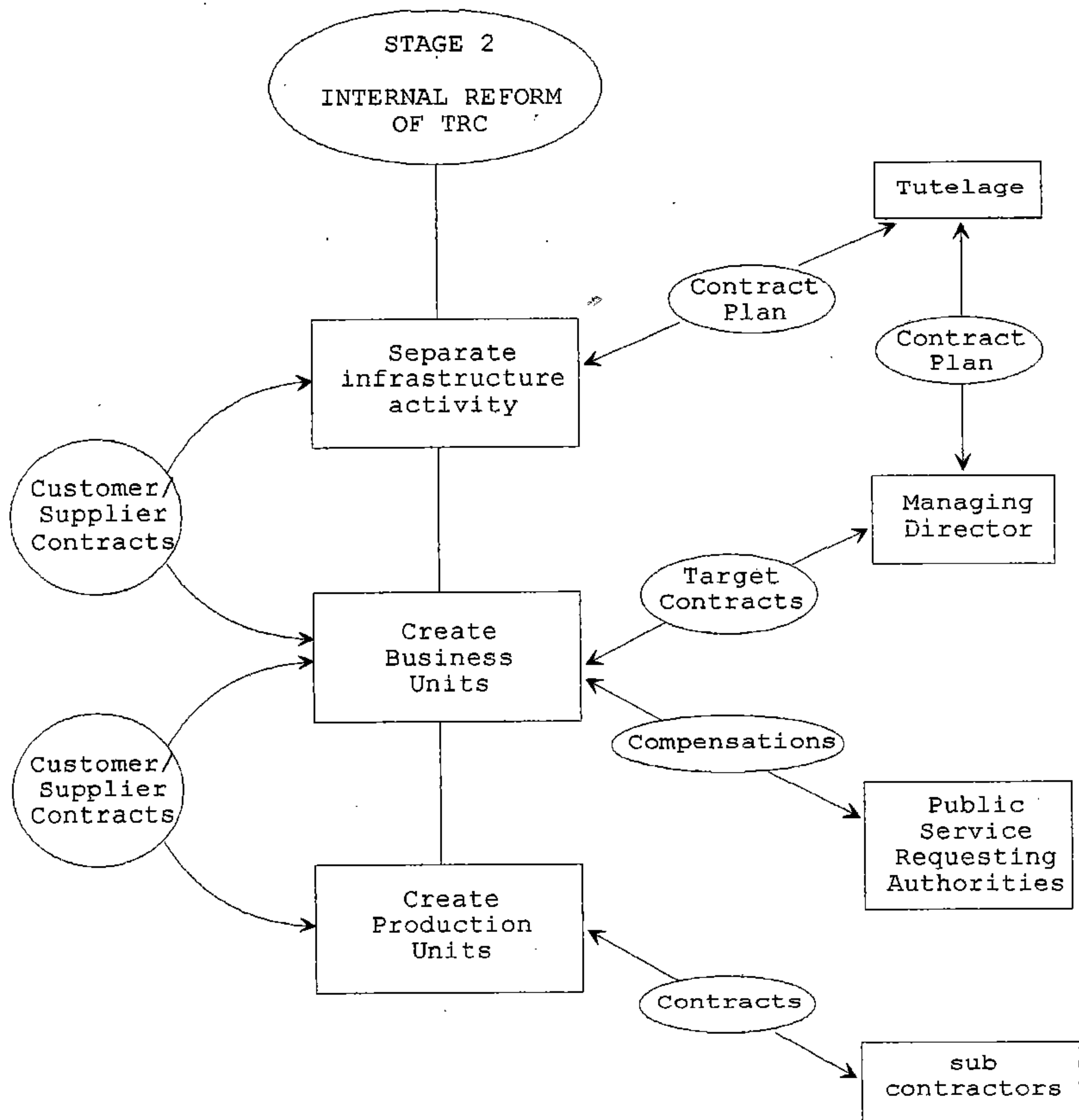
. Provision of guidelines to Production Units as regards negotiation of Consumer-Supplier Contracts. Arbitration between Business Units, Production Units, etc.

. Hierarchical chain of command, in general.

#### Control and Audit by Government

Most important though not shown on the chart is the exercise of the power of Control and Audit by relevant agencies of the state which will, to that effect, have the same access to all sectors (including Business Units and Production Units) of TRC as they may now have to TRA's. They will remain in a position to check accounts, contracts, compliance with labor laws, environmental , etc. laws, and of course, the correct application of safety regulations.

FIGURE 5-10 : STAGE 2 - Internal Reform



## 5.4. IMPACT OF THE FUTURE HSR

### 5.4.1. Impact on the Existing Modes

Ridership forecasts for the HSR were studied in 1991 by SOFRERAIL during the preliminary study. Various items regarding the global economic environment and its predicted evolution were taken into account as mainly :

- . the annual national growth
- . the new town development policy
- . the fuel cost
- . the electricity cost
- . the labor cost
- . the labor productivity
- . the road congestion
- . the fair competition between modes.

Even if the sensitivity of the forecasts to these items can occur some changes, commissionary of the HSR in the west corridor of Taiwan will have an important impact on the other intercity competitive modes such as domestic air transport, TRA, bus traffic and private car traffic by modifying significantly the structure of the total market. For air and TRA the main impact in the year 2011 will lead to a reduction by 75 % and 32 % respectively of aircraft and train passenger car fleets for intercity service in comparison with the reference situation (without HSR). Diagrams 1 and 2 illustrate such effects. However an additional 10-20 million new TRA local passengers are forecasted for 2011 on feeder services co-located with the HSR stations. This will require additional service and train passengers cars. For bus traffic, the HSR will affect the bus stock development by 32 % (see diagram 3 hereafter) but will also contribute to limiting the total road traffic development on the freeway by about 1 %.

As far as private car traffic is concerned, it is difficult to evaluate the effects of HSR on the carstock because the decision to buy or not a private car calls for several personal considerations where the existence of HSR service does not play an important role. In exchange for the relief of road traffic on freeway (see diagram 4), HSR service will contribute significantly to about a 4 % relief.

Simultaneous impacts of HSR on bus and car traffic would provide a 5 % relief on the total freeway traffic in the year 2011 which would represent a saving of about 8 years of traffic increase. This traffic saving will allow to postpone, with the same magnitude (8 years), the needed capacity investments.



#### 5.4.2. Impact on TRA Ridership

In the reference situation, the total intercity TRA traffic in the western corridor was estimated at approximately 22 millions of passengers per year in forecast years 1998 and 2011.

With HSR, this traffic, although quite constant in passenger volume, would rapidly decrease in terms of passenger-kilometers.

HSR operation will affect TRA because of :

- . traffic diversion from intercity trains
- . increase in local traffic : access and egress through TRA stations connected with HSR stations.

#### Intercity Diversion

The TRA traffic diverted to HSR and the TRA rolling stock fleet consequently saved are given in Table 5-1. In year 2011, it represents 5.4 million trips and 586 million passenger-kilometers.

TABLE 5-1 : IMPACT OF HSR ON TRA  
for intercity ridership and operation

	1998	2011
Number of passengers diverted to HSR (1000)	4525	5394
Number of passenger-kilometers diverted to HSR (millions)	510	586
Number of seat kilometers saved (based on an occupancy rate of 0.6) in million	850	976
Reduction in seats based on a yearly mileage of 168,630 km	5040	5788
Number of TRA intercity trains (12 cars) saved per day (both directions)	12	13
Number of locomotives saved	6	7
Estimated capital cost saving* (cumulative value in million of NT\$ in constant money of 1990)	1570	1820

\* based on an average cost per passenger car of NT\$ 16 million and per locomotive of NT\$ 70 million.

The effect on the operating balance sheet of TRA for its intercity traffic is given by Table 5-2 below. The saved expenses depend on the policy adapted when facing HSR competition. If TRA decides to reduce significantly such services then the saved expenses can be estimate using the average cost per traffic unit. On the contrary, if no reorganization of such services is undertaken, only marginal expenses can be saved. Using a marginal coefficient, the marginal saved expenses would be approximately one third of the average saved expenses.

In year 2011, the loss in gross margin would therefore be between NT\$ 250 and 650 millions. But indeed, this range is not representative because, in case of significant reduction in long distance services, capital costs estimated at NT\$ 1,820 millions would release financial charges of about NT\$ 180 millions (interest rate of 10 %), and therefore the loss for intercity services of NT\$ 250 millions would be only NT\$ 70 to NT\$ 470 depending on whether TRA reorganizes its services or not.

**TABLE 5-2**  
**TRA REDUCTION IN CASH FLOW FOR INTERCITY SERVICES**  
(1990 NT\$ in millions)

Yearly operating expenses saved :		
- with significant service reduction	522	600
- without any significant service reduction	170	200
Yearly revenue reduction	740	850
Reduction in financial charges	157	182
Total TRA intercity	- 61 to - 413	-68 to -468

#### **Increase in Local Traffic**

On the other hand, TRA will feed passengers to the HSR trains and help HSR riders to egress to their local destination.

For example, a proportion of people diverted from car (or bus, or air even from TRA), will use TRA as access to the departure HSR station and/or to egress from the arrival HSR station. This means that one trip diverted from any mode may induce one or two short trips on TRA. HSR induced traffic will also bring short distance riders to TRA

The short distance trips induced on TRA by HSR (for access or egress) is in the range of 10 to 20 million. The mid-point of the range, 15 million, is chosen for the following discussion.

Most of the access or egress trips will be in the range of 2 to 20 kilometers. Today, the minimum fare is NT\$ 10 which corresponds to a trip length of 7.7 km. This is less than the forecast average trip length (about 10 km) of people accessing or egressing to/from HSR by TRA. The average fare assumed is NT\$ 15, (calculated from the minimum of 10 and an average of 13 based on average trip length) and the revenue for this ridership is about NT\$ 225 million in year 2011.

To develop cost figures for carrying the extra passengers is quite difficult. There are no separate TRA accounts for short distance services. Undoubtedly, they presently lose money as do many other comparable services elsewhere in the world, but the addition of traffic will not generally cost as much as the current average cost. A reasonable assumption to make at this stage, therefore, is that the added NT\$ 225 million in revenues will be offset by the incremental cost of carrying the traffic. Detailed planning and costing is needed to determine the exact effect.

TABLE 5-3 :  
EFFECT OF HSR ON TRA LOCAL TRAFFIC (YEAR 2011, NT\$ 1990)

Added local passengers	10-20 million
Added revenue	225 million
Added cost including financial charges (assumed).	225 million

#### 5.4.3. Lessons to be Drawn

HSR will have a considerable impact on the TRA. The most profitable part of the existing long distance TRA passenger traffic will be diverted to the HSR new service offering modernity, rapidity and frequency.

Nevertheless, both HSR and TRA will benefit of their mutual activity in term of total railway traffic, one feeding the other.

The global efficiency of the whole railway system is to be considered as regards :

- . the total traffic which can use the railway system ;
- . the accessibility of the system (tarification and ticketing system) ;
- . the common development due to the collocation of installations.



## 5.5 THE THIRD STAGE OF THE REFORM (Integration of HSR)

The Six-Year National Plan of the Republic of China (1992-1997) mentions, as the first listed project, the construction of this high speed project. The objectives assigned to it are both to "relieve traffic congestion" on freeways and to "provide an increased transit capacity" for intercity demand along the western corridor. One of the expected benefits is a "linkage of mass rapid transit, rail, and highway systems of Metropolitan areas along the line, integrating them into a high-efficiency mass transit network".

Both the official objectives of the project (Six-Year National Plan of the Republic of China -1992-1997) and its impacts on other modes (POHSR planning study) demonstrate that the HSR project cannot be considered as an isolated project but will change the transport sector in-depth.

In this perspective, we already know that the project

- has a national size,
- is not profitable enough to be a private stand-alone project,
- is very costly (NT\$ 426.0 billion) and needs the state financial support,
- will have important positive and negative impacts on other transportation modes,
- will share some of the existing facilities which are today devoted to TRA and will also be used by MRT,
- will take benefit of common carriers and particularly of TRA and MRT to facilitate its access and egress,
- ...

These considerations lead to the idea that the implementation of the HSR project should give the opportunity of a major methodical review of the whole transportation policy and, at least, is strongly connected to the institutional, organizational and managerial reform of TRA.

During the HSR planning study, SOFRERAIL already made recommendations about the integration of the project.

These recommendations were partly based on the financial simulations carried out for various scenarios. The central scenario assumed:

- project cost: NT\$ 426.0 billion
- net operating result: NT\$ 17.3 billion in 2001 and NT\$ 144.0 billion in 2029
- inflation rate: 3.5%
- interest rate of bonds: 10%
- short term interest rate: 8.5%
- internal rate of return calculated over a 30-year period including construction: 4.5%
- project funding is fully supported by the state between 1993 and 1996; then, 25% of the construction costs are borne by the public budget.

In this scenario, the expected rate of return on equity (dividends alone without any profit drawn from joint development) was 15%. This figure was considered as acceptable only because most of the risks, especially on land acquisition, were borne by the state. In fact, if the state construction subsidies amounted to barely 45% of the project nominal cost, in terms of net capitalized present value they almost represented 60% of it.

In other terms, this shows that the project cannot be implemented without a strong financial support of the state mainly required at the beginning of the construction. If the risks are to be taken during the very first years by private actors, a return on equity higher than 15% would be requested and consequently still bigger state capital grants than those formerly described would be needed.

So, the SOFRERAIL recommendation, being said that a nominal 45% state capital grant was considered as a maximum, was not to call private investors in the bargain too early.

Another argument militates in favor of handling the project initially as a public one was that it will be much easier to buy land on behalf of public authorities than for the benefit of private hands.

SOFRERAIL's opinion on the project implementation also involved institutional aspects. Among these aspects, emphasis was put on the necessary coordination between transportation modes. MRT as well as TRA will feed HSR and therefore will contribute to its success. Simultaneously, HSR and TRA will compete on the intercity market. Which incentive would TRA have to help a competitor by providing good connections to HSR trains in some nodal common stations?

Another issue is raised by the use of common pieces of land and of common facilities. How to share their capacity between the two operators (TRA and HSR)? Will HSR pay a rent to TRA which formerly was the owner of these facilities? And why should real estate activity developed on TRA domain only profit to HSR?

The best solution found to answer these questions, from the institutional viewpoint, is to put both HSR and TRA under the same authority in charge of ruling all matters related to transport coordination and to property development.

Now, when combining the financial and the institutional considerations, during the HSR planning study, SOFRERAIL came to the following recommendations:

- i) if HSR is a public-owned corporation, it can be simply and purely integrated with TRA in the same entity;
- ii) if HSR is a private corporation, or if it is a joint public-private venture, or if there is a strong will to create a separate only-public corporation, it is deemed of utmost importance to create a tutelage authority common to both HSR and TRA, in order to solve all conflicting matters between them.

It is now possible to go further since the foregoing recommendations presented for HSR one year ago and this report's recommendations proposed for the first two stages of the TRA reform, need harmonization. Both institutional and financial axes remain to be simultaneously followed.

From the institutional viewpoint, we have to bear in mind the general Taiwanese background policy related to the privatization of major public enterprises. It would look paradoxical to simultaneously privatize the most important firms and create a new public one (HSR) in an activity sector (transportation market) where already private operators are involved (bus corporations, air corporations) and where the Taiwan Navigation Corporation is also to be privatized.

The situation would look still more paradoxical if, in the context of the second stage of the recommended reform, it was decided to divide TRC into two corporations, the operating one (TROC) being a private or a joint public-private enterprise whereas HSR would be a public entity. Reciprocally the choice of a private or of a joint public-private status for the HSR operator would raise difficulties if the TROC corporation remained in the public hands. One reason for that is that private investors will never accept to handle HSR without sufficient freedom for the fare policy, while one of the argument for keeping the TROC corporation in the bosom of public authorities would likely be, for the state, to keep an eye on its tariffs. So, we consider there is a need to keep consistency between the institutional solutions chosen for both the conventional and the high speed railways.

We have also previously seen that, to ensure fair competition matters between modes, the fixed costs of railway infrastructure should be borne by public budgets. This was one of the reasons for dividing TRC into two entities:

- the TRIC corporation in charge of infrastructure, public-owned,
- and the TROC corporation in charge of operations, receiving compensations for public services, and working without any financial support for other business activities strictly ruled by the market.

Of course, there is a link between these two corporations: TROC should have to pay for the use of the infrastructure maintained by TRIC. TROC could perfectly be a private corporation. Now, when we apply this scheme to the high speed railway, it seems rational to positively state that the infrastructure of the new line has no reason to become an exception. Because of the same considerations about the modal competition, it should remain in public ownership. Then why create another entity for that since we have an available one especially dedicated to this purpose, the TRIC corporation?



As a matter of conclusion of the institutional aspect, the introduction of private funds in HSR militates for:

- dividing TRC into two corporations, TRIC and TROC,
- put both the conventional and the high speed infrastructures under the responsibility of the TRIC corporation,
- in a further step, take the opportunity of the creation of the HSR for privatizing the TROC corporation and negotiate with it a set of specifications and a contract plan fully consistent with the corresponding documents which will rule the private or the joint public-private HSR operator.

Pushing the rational to its very end, one could integrate the HSR activity within the TROC corporation, operated on a private or joint public-private basis. We do not recommend that since, the general worldwide tendency is to enhance competition within the railway sector by giving rights of access to a variety of operators.

From the financial viewpoint, a big issue is the enormous construction cost of the high speed project in relation to the state budget and to the size of the domestic financial market. To solve this problem, one solution consists in involving private capital in the project (another reason is that private enterprises are expected to be more commercially dynamic than public ones). Several possibilities have been explored. As for example, a BOT (Build Operate and Transfer) system is envisaged, with a concession awarded to private entities for an agreed period. Whatever is the final solution given to this question, the volume of the capital needs pushes strongly for the participation of the private sector. Thus a private or a joint private-public HSR operator is likely to be created. This reinforces the former considerations about an indispensable harmonization of the status of the TROC corporation (privatization) with that of the HSR operator when the latter is created.

But it is also clear that the HSR project needs money from public entities. This money will be primarily invested in the early construction years. It will be spent for land acquisitions, earthworks, structures, ... i.e. for infrastructure. This is perfectly consistent with the idea of entrusting the new line infrastructure construction and maintenance with a public-owned enterprise such as TRIC.

The synergy between the commercial appeal of the new high speed project and the huge but mainly idle present railway properties could be enhanced. Indeed, the new high speed stations should be located as close as possible to the conventional railway stations in order to improve access and egress and the value of the corresponding land will increase in proportion. Joint development activities (real estate and retail business) backed by the high speed public image and commercial efficiency could financially support both the re-location of conventional railway facilities (sometimes needed for interconnecting stations with HSR) and the high speed infrastructure, thus alleviating the public budget contribution to the HSR construction.

Putting in the same hands the financial responsibility to adapt the existing railway (where needed) and to build the new high speed fixed assets, avoids conflicts. It contributes to an harmonious infrastructure policy conducive to savings where both high speed and conventional systems share the same facilities such as in the Taipei Main Station.

This way of handling the institutional and financial matters somehow gives a solution to the question of how dividing the high speed project in two parts: the one belonging to the state and the other allotted to the private or the joint public-private HSR operator. The first part is now clearly defined and it consists in all assets included in the definition given to infrastructure when dealing with the problem of fair competition between modes.

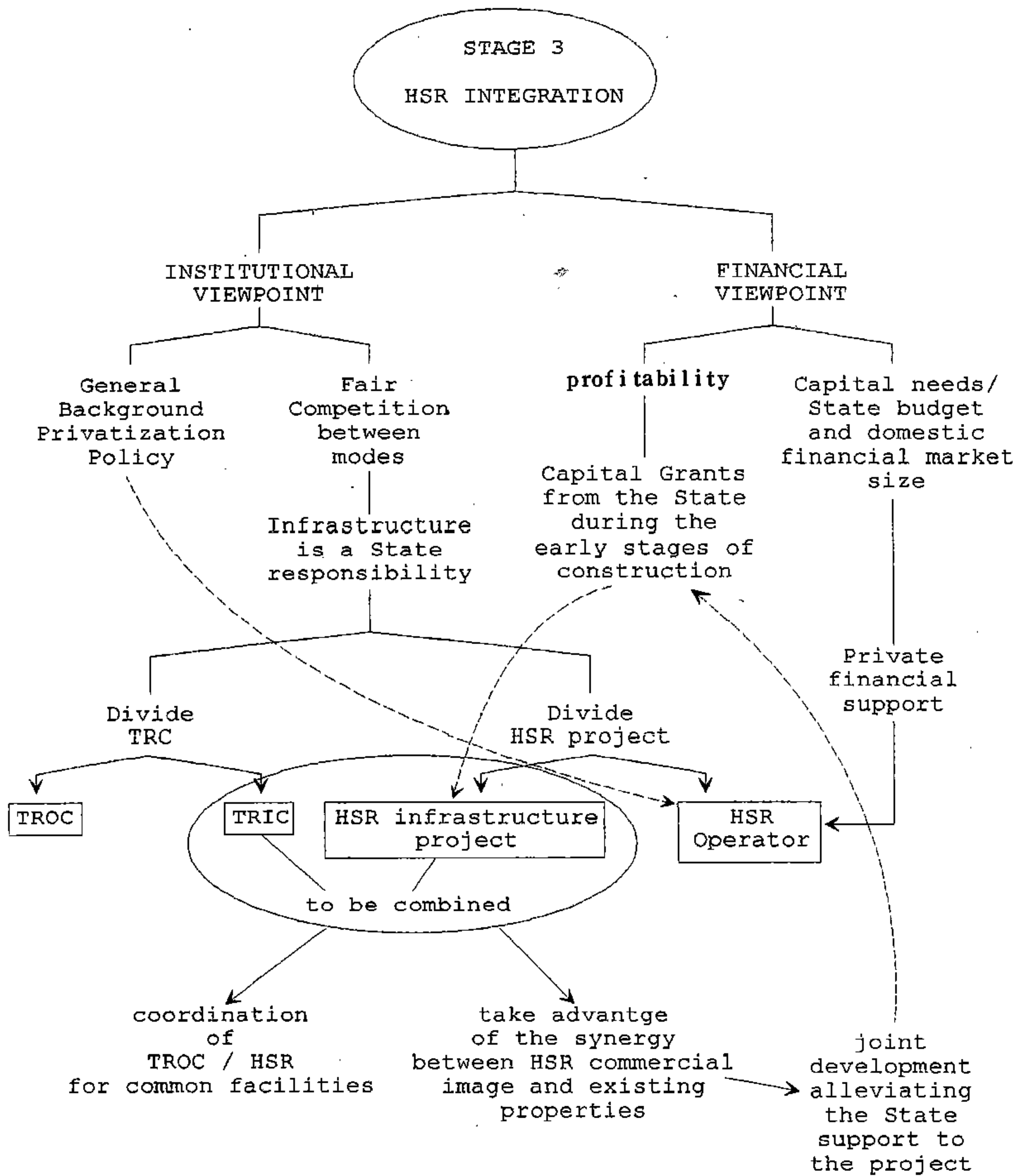
At this stage, we propose to adopt the European Directive definition of infrastructure:

- proper infrastructure (earthworks and structures),
- track and ballast,
- electric power supply and catenary systems,
- signaling and telecommunication systems including CTC
- and all related equipment and offices for the related maintenance.

Of course this definition applies to the conventional and the high speed railways as well. By contrast, all other assets such as rolling stock, commercial terminal facilities, commercial buildings and the like are attributed to the respective operators.

Both TROC and HSR might coordinate their commercial policies in order to better struggle against the non-railway competitors, by offering combined services including well connected-through trips thanks to easy connections. For example a combined ticket for a trip from Keelung to Tainan could be sold at Keelung TROC station. TROC and HSR would provide in Taipei a connection between the two trains stopping on each side of the same platform. A commercial contract between HSR and TROC would allow a lump sum to TROC for the commercial task achieved when selling the ticket and possibly booking the seat(s). The remaining part of the receipt could be shared on a basis which is not necessarily proportional to the length of the trips run on each network. Thus TROC would have an incentive to feed HSR. Such commercial arrangements will be easily and naturally agreed upon as soon as both operators have the same incentive to make profits and balance their accounts, which goes along with private status.

FIGURE 5-11 : STAGE 3 - HSR Integration





## 5.6 CONCLUSION

As a matter of conclusion for the 3-stage reform, we recommend to:

- 1- Convert TRA into a corporation called TRC (Taiwan Railway Corporation); by the way, this means endowing it with a board of directors;
- 2- Create simultaneously a Railway Administrative Tutelage which will negotiate with the corporation a set of specifications and then contracts plans; this Tutelage should be sufficiently empowered with authority and resources in order to handle such negotiations; its composition should take into account both the value of the assets and properties of the existing TRA and the net present capitalized value of future contributions as defined in next point 3;
- 3- With a view to putting all modes and operators on the same competition footing, take measures for the financial stabilization of TRC:
  - transfer non productive debts to public bodies,
  - define a reference system (mainly on the basis of an average demographic ratio of pensioners / employees) for the calculation of the TRC contribution to the pension fund and charge public bodies for all additional costs,
  - determine which are the public services (services which cannot be operated on a pure market basis) and designate the public bodies empowered to request them; then, evaluate the financial compensation needed to balance the accounts of these services and charge the budget of the corresponding bodies;
- 4- Put apart (in a special account at least, but preferably by creating a state-owned corporation to this effect) all costs related to infrastructure, according to the definition of the infrastructure given by EEC. Such a corporation could be set up by dividing TRC into an infrastructure corporation called TRIC (Taiwan Railway Infrastructure Corporation) and an operating corporation called TROC (Taiwan Railway Operating Corporation) which both could be state-owned at the beginning; each of these corporations should have its own board of directors;
- 5- Streamline the TRC organization and workforce;
- 6- Determine the toll to be paid to the TRIC corporation by the TROC corporation for using the infrastructure;
- 7- Elaborate sets of specifications and negotiate contract plans between the Tutelage and each of these two corporations (TRIC and TROC);
- 8- Divide the HSR project in two parts: infrastructure (according to the EEC definition) and other assets related to operations, ;
- 9- Considering that providing transport infrastructure to the public is an inherent responsibility of the state, start the HSR construction on a purely public basis and entrust TRIC with this task;



10- Define the best moment for introducing private investments in HSR. It should not be too early in order to limit the risks and the requirements of the private investors; any solution, such as BOT or other, should aim at defining the optimum date for awarding a concession;

11- simultaneously change the status of TROC; the new status should be as similar as possible to the HSR operator status; both TROC and HSR should be put under the same Tutelage which will negotiate with them sets of specifications and contract plans; contracts are also needed, between TRIC on the one hand and TROC and HSR on the other hand, to define the tolls for using the new and conventional infrastructures.

We do not pretend to have solved all institutional, organizational and managerial issues. The foregoing recommendations aimed essentially at defining general principles which have demonstrated their efficiency and at illustrating how they could be adapted to the Taiwanese context.

Each of these principles may raise numerous questions. All of them do not need to be answered at the same time. The TRA institutional changes seem to be rather urgent because of critical financial issues. Separation of infrastructure from the rest of the other activities may be progressive. Privatization of TROC may be handled at a further stage, simultaneously with the creation of a private HSR operator. The schedule should be adapted function of the governmental administrative rules. One should also consider whether a sudden or a smooth reform will be more efficient.

## 5.7 TASKS AHEAD

Hereafter are listed ten issues which need further studies. This list cannot be considered as an exhaustive one.

- 1 - Analysis of the social marginal costs of transport. Solutions for addressing concerns about public utility, safety, environmental preservation,...
- 2 - Analysis of the competition between modes. Evaluation of the proportion of total costs paid by each mode.
- 3 - Definition of infrastructure in the Taiwanese context.
- 4 - Drafting of a set of specifications for conventional railways.
- 5 - Definition of public non-profitable services. Identification of the government bodies which request such services. Setting up rules for the calculation of the corresponding compensations.
- 6 - Definition of a reference system in view of calculating the normalized pension costs to be charged to railway corporations.
- 7 - Streamlining railway internal organization aiming at commercially orientate the activities and strengthen the productivity.
- 8 - Preparation of a High Speed Section to be inserted into a Railway Act, consistent with the transportation policy based on the previous analyses and recommendations.
- 9 - Simulation of financial funding systems for both HSR infrastructure and HSR operations.
- 10 - Stimulation of the synergy between HSR commercial attractiveness and the property development potentialities of TRIC.

# APPENDIX I

## **COUNCIL DIRECTIVE of 29 July 1991 on the development of the Community's railway (91/440/EEC)**

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 75 thereof,

Having regard to the proposal from the Commission <sup>(1)</sup>,

Having regard to the opinion of the European Parliament <sup>(2)</sup>,

Having regard to the opinion of the Economic and Social Committee <sup>(3)</sup>,

Whereas greater integration of the Community transport sector is an essential element of the internal market, and whereas the railways are a vital part of the Community transport sector;

Whereas the efficiency of the railway system should be improved, in order to integrate it into a competitive market, whilst taking account of the special features of the railways;

Whereas, in order to render railway transport efficient and competitive as compared with other modes of transport, Member States must guarantee that railway undertakings are afforded a status of independent operators behaving in a commercial manner and adapting to market needs;

Whereas the future development and efficient operation of the railway system may be made easier if a distinction is made between the provision of transport services and the operation of infrastructure; whereas given this situation, it is necessary for these two activities to be separately managed and have separate accounts;

Whereas, in order to boost competition in railway service management in terms of improved comfort and the services provided to users, it is appropriate for Member States to retain general responsibility for the development of the appropriate railway infrastructure;

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<sup>1</sup> OJ No C 34, 14.2.1990, p. 8 and OJ No C 87, 4.4.1991, p. 7.

<sup>2</sup> OJ No C 19, 28.1.1991, p. 254.

<sup>3</sup> OJ No C 225, 10.9.1990, p. 27.

Whereas, in the absence of common rules on allocation of infrastructure costs, Member States shall, after consulting the infrastructure management, lay down rules providing for the payment by railway undertakings and their groupings for the use of railway infrastructure; whereas such payments must comply with the principle of non-discrimination between railway undertakings;

Whereas Member States should ensure in particular that existing publically owned or controlled railway transport undertakings are given a sound financial structure, whilst taking care that any financial rearrangement as may be necessary shall be made in accordance with the relevant rules laid down in the Treaty;

Whereas, in order to facilitate transport between Member States, railway undertakings should be free to form groupings with railway undertakings established in other Member States;

Whereas, such international groupings should be granted rights of access and transit in the Member States of establishment of their constituent undertakings, as well as transit rights in other Member States as required for the international service concerned;

Whereas, with a view to encouraging combined transport, it is appropriate that access to the railway infrastructure of the other Member States should be granted to railway undertakings engaged in the international combined transport of goods;

Whereas it is necessary to establish an advisory committee to monitor and assist the Commission with the implementation of this Directive;

Whereas, as a result, Council Directive 75/327/EEC of 20 May 1975 on the improvement of the situation of railway undertakings and the harmonization of rules governing financial relations between such undertakings and States <sup>(4)</sup> should be repealed,

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<sup>4</sup> OJ No L 152, 12.6.1975, P. 3.



HAS ADOPTED THIS DIRECTIVE:

## SECTION I

### Objective and scope

#### *Article 1*

The aim of this Directive is to facilitate the adoption of the Community railways to the needs of the Single Market and to increase their efficiency;

- by ensuring the management independence of railway undertakings;
- by separating the management of railway operation and infrastructure from the provision of railway transport services, separation of accounts being compulsory and organizational or institutional separation being optional,
- by improving the financial structure of undertakings,
- by ensuring access to the networks of Member States for international groupings of railway undertakings and for railway undertakings engaged in the international combined transport of goods.

#### *Article 2*

1. This Directive shall apply to the management of railway infrastructure and to rail transport activities of the railway undertakings established or to be established in a Member State.

2. Member States may exclude from the scope of this Directive railway undertakings whose activity is limited to the provision of solely urban, suburban or regional services.

#### *Article 3*

For the purpose of this Directive:

- 'railway undertaking' shall mean any private or public undertaking whose main business is to provide rail transport services for goods and/or passengers with a requirement that the undertaking should ensure traction,
- 'infrastructure manager' shall mean any public body or undertaking responsible in particular for establishing and maintaining railway infrastructure, as well as for operating the control and safety systems,

- 'railway infrastructure' shall mean all the items listed in Annex 1.A to Commission Regulation (EEC) No 2598/70 of 18 December 1970 specifying the items to be included under the various headings in the forms of accounts shown in Annex 1 to Regulation (EEC) No 1108/70 <sup>(5)</sup>, with the exception of the final indent which, for the purposes of this Directive only, shall read as follows: 'Buildings used by the infrastructure department',
- 'international grouping' shall mean any association of at least two railway undertakings established in different Member States for the purpose of providing international transport services between Member States;
- 'urban and suburban services' shall mean transport services operated to meet the transport needs of an urban center or conurbation, as well as the transport needs between such center or conurbation and surrounding areas;
- 'regional services' shall mean transport services operated to meet the transport needs of a region.

## SECTION II

### Management independence of railway undertakings

#### *Article 4*

Member States shall take the measures necessary to ensure that as regards management, administration and internal control over administrative, economic and accounting matters railway undertakings have independent status in accordance with which they will hold, in particular, assets, budgets and accounts which are separate from those of the State.

#### *Article 5*

1. Member States shall take the measure necessary to enable railway undertakings to adjust their activities to the market and to manage those activities under the responsibility of their management bodies, in the interests of providing efficient and appropriate services at the lowest possible cost for the quality of service required.

Railway undertakings shall be managed according to the principles which apply to commercial companies; this shall also apply to their public services obligations imposed by the State and to public services contracts which they conclude with the competent authorities of the Member State.

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<sup>5</sup> OJ NoL 278, 23.12.1970, p. 1. Regulation amended by Regulation (EEC) No 2116/78 (OJ No L 246, 8.9.1987, p. 1).

2. Railway undertakings shall determine their business plans, including their investment and financing programmes. Such plans shall be designed to achieve the undertakings' financial equilibrium and the other technical, commercial and financial management objectives; they shall also lay down the method of implementation.

3. In the context of the general policy guidelines determined by the State and taking into account national plans and contracts (which may be multiannual) including investment and financing plans, railway undertakings shall, in particular, be free to:

- establish with one or more other railway undertakings an international grouping;
- establish their internal organization, without prejudice to the provisions of Section III;
- control the supply and marketing of services and fix the pricing thereof, without prejudice to Council Regulation (EEC) No 1191/69 of 26 June 1969 on action by Member States concerning the obligation inherent in the concept of a public service in transport by rail, road and inland waterway <sup>(6)</sup>,
- take decisions on staff, assets and own procurement,
- expand their market share, develop new technologies and new services and adopt any innovative management techniques;
- establish new activities in fields associated with railway business.

### SECTION III

#### Separation between infrastructure management and transport operations

##### *Article 6*

1. Member States shall take the measures necessary to ensure that the accounts for business relating to the provision of transport services and those for business relating to the management of railway infrastructure are kept separate. Aid paid to one of these two areas of activity may not be transferred to the other.

The accounts for the two areas of activity shall be kept in a way which reflects this prohibition.

2. Member States may also provide that this separation shall require the organization of distinct divisions within a single undertaking or that the infrastructure shall be managed by a separate entity.

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<sup>6</sup> OJ No L 156, 28.6.1969, p. 1; Regulation last amended by Regulation (EEC) No 1893/91 (OJ No L 169, 29.6.1991, p. 1).



*Article 7*

1. Member States shall take the necessary measures for the development of their national railway infrastructure taking into account, where necessary, the general needs of the Community.

They shall insure that safety standards and rules are laid down and that their application is monitored.

2. Member States may assign to railway undertakings or any other manager the responsibility for managing the railway infrastructure and in particular for the investment, maintenance and funding required by the technical, commercial and financial aspects of that management.

3. Member States may also accord the infrastructure manager, having due regard to Article 77, 92 and 93 of the Treaty, financing consistent with the tasks, size and financial requirements, in particular in order to cover new investments.

*Article 8*

The manager of the infrastructure shall charge a fee for the use of the railway infrastructure for which he is responsible, payable by railway undertakings and international groupings using that infrastructure. After consulting the manager, Member States shall lay down the rules for determining this fee.

The user fee, which shall be calculated in such a way as to avoid any discrimination between railway undertakings, may in particular take into account the mileage, the composition of the train and any specific requirements in terms of such factors as speed, axle load and degree or period of utilization of the infrastructure.

## SECTION IV

## Improvement of the financial situation

*Article 9*

1. In conjunction with the existing publically owned or controlled railway undertakings, Member States shall set up appropriate mechanisms to help reduce the indebtedness of such undertakings to a level which does not impede sound financial management and to improve their financial situation.

2. To that end, Member States may take the necessary measures requiring a separate debt amortization unit to be set up within the accounting departments of such undertakings.



The balance sheet of the unit may be charged, until they are extinguished, with all the loans raised by the undertaking both to finance investment and to cover excess operating expenditure resulting from the business of rail transport or from railway infrastructure management. Debts arising from subsidiaries operations may not be taken into account.

3. Aid accorded by Member States to cancel the debts referred to in this Article shall be granted in accordance with Articles 77, 92 and 93 of the EEC Treaty.

## SECTION V

### Access to railway infrastructure

#### *Article 10*

1. International groupings shall be granted access and transit rights in the Member States of establishment of their constituent railway undertakings, as well as transit rights in other Member States, for international services between the Member States where the undertakings constituting the said groupings are established.
2. Railway undertakings within the scope of Article 2 shall be granted access on equitable conditions to the infrastructure in the other Member States for the purpose of operating international combined transport goods services.
3. Railway undertakings engaged in international combined transport of goods and international groupings shall conclude the necessary administrative, technical and financial agreements with the managers of the railway infrastructure used with a view to regulating traffic control and safety issues concerning the international transport services referred to in paragraphs 1 and 2. The conditions governing such agreements shall be non-discriminatory.

## SECTION VI

### Final provisions

#### *Article 11*

1. Member States may bring any question concerning the implementation of this Directive to the attention of the Commission. After consulting the committee provided for in paragraph 2 on these questions, the Commission shall take the appropriate decisions.

2. The Commission shall be assisted by an advisory committee composed of the representatives of the Member States and chaired by the representative of the Commission.

The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft, within a time limit which the chairman may lay down according to the urgency of the matter, if necessary by taking a vote.

The opinion shall be recorded in the minutes; in addition, each Member State shall have the right to ask to have its position recorded in the minutes.

The Commission shall take the utmost account of the opinion delivered by the committee. It shall inform the committee of the manner in which its opinion has been taken into account.

#### *Article 12*

The provisions of this Directive shall be without prejudice to the Council Directive 90/531/EEC of 17 September 1990 on the procurement procedure of entities operating in the water, energy, transport and telecommunications sectors <sup>(7)</sup>.

#### *Article 13*

Decision 75/327/EEC is hereby repealed as from 1 January 1993.

Reference to the repealed Decision shall be understood to refer to this Directive.

#### *Article 14*

Before 1 January 1995, the Commission shall submit to the Council a report on the implementation of this Directive accompanied, if necessary, by suitable proposals on continuing Community action to develop railways, in particular in the field of the international transport of goods.

#### *Article 15*

Member States shall, after consultation with the Commission, adopt the laws, regulations and administrative provisions necessary to comply with this Directive not later than 1 January 1993. They shall forthwith inform the Commission thereof.

When Member States adopt these provisions, they shall contain a reference to this Directive or be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by the Member States.

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<sup>7</sup> OJ No L 297, 29.10.1990, p. 1.

*Article 16*

This Directive is addressed to the Member States.

Done at Brussels, 29 July 1991

For the council

The president

H. VAN DEN BROEK

## 附錄二

# 《法國運輸指導法》

(Franch Law for Transportation,  
LOTI, March, 1983)

一九八二年十二月三十日頒佈之第八二之一一五三號法國  
運輸指導法（載於一九八二年十二月三十一日法國政府公報）

資料來源：法國國家鐵路公司



本法經國民議會與參議院審議，國民議會通過，憲法委員會宣佈符合憲法及共和國總統頒佈，其內容如下：

## 第一編 適用於不同運輸方式之一般性條款

### 第一章 運輸享有權及適用於國內交通運輸之一般性原則

第一條 國內運輸系統應在對全體國民最有利之經濟與社會條件下，滿足使用者之需要，該系統促進統一與國家團結、國防、經濟與社會發展、土地之均衡整治以及國際（尤其歐洲）貿易之擴展。此等需要係經由若干設施之興建而使之得以滿足；亦即此等設施可使每一使用者充分發揮其行動權利，選擇其運輸工具之自由，以及自行載運其財物或將之委交其選擇之機構或公司之權利。

第二條 運輸享有權之逐步付諸實施讓使用者得以在合理之方便、品質、價位等條件下旅行；尤其是使用一種向大眾開放之運輸工具時，本此精神，得為行動不便者採取若干特別措施。處於不利環境之社會群，尤其是島嶼及偏遠或本土不易到達地區之民衆，可享有適於彼等之安排。運輸享有權包括使用者獲悉有關提借給他們的交通工具及其使用方法之權利。

第三條 客運與貨運總政策確保各類個人與集體運輸方式之和諧與互補性發展，同時亦考慮到此等交通工具在區域發展、都市規劃、環保、國防、能源合理使用、安全及其特性等各方面所具備之優點與缺點，亦慮及使用者與第三者需負擔之與建造、維護及使用運輸基礎設施、設備、器材有關之實際經濟費用與社會費用，包括貨幣與非貨幣支出。

總政策為不同交通工具之間及公司之間的公平競爭奠定合法基礎，主要通過協調其使用與經營條件，總政策通過合理發展聯

(合) 運 (輸) , 尤其在基礎設施之選擇之互補與合作, 總政策亦有助歐洲交通政策之發展與改善。

第 四 條 交通運輸總政策之擬定與實施, 係由國家與有關地方政府在採取分權、契約與民主方式之計劃範圍內共同辦理, 有相關方面之代表亦參與辦理。此項總政策屬於國家計劃範疇; 爲此應擬定運輸發展綱要。該綱要建立在以國家與地方國土整治方針爲念對運輸模式通盤考量之基礎上。發展使用大眾客運應予優先考慮並予鼓勵。爲達上述目標, 國家可與地方政府簽訂契約。

第 五 條 運輸公用事業之政府主管機關負有籌劃與推動客貨運輸之一切任務。此等任務如下:

- (一) 興建與經營用於運輸之基礎設施和設備, 並讓使用者在正常保養, 運作與安全條件下使用;
- (二) 制定運輸規章並監督其實施, 及策劃國防運輸;
- (三) 發展有關運輸系統之資訊服務;
- (四) 發展研究規劃、統計業務, 以便達到運輸系統之指定目標;
- (五) 策劃公共運輸事業。

以上任務由國家、地方政府及其公營事業會同負責或參與之私營或公營企業依本法律之條文執行。

主管機關與公共運輸企業間之關係形態, 依運輸方式及運輸活動之性質 (客運或貨運) 而定, 在法律規定範圍內, 國家保證私營企業之經營自由。

所有客運或貨運均視爲公共運輸; 但公務人員或私人爲其自身目的自行安排之運輸除外。

第 六 條 公共運輸之經營條件, 特別是價格與實際費率之形成及運輸契約之條款等, 使運輸者能夠於支付在正常營運及生產情況下, 所提供服務之實際成本後獲得合理之報酬。

第 七 條 第一款: 客運公共運輸公司須向政府機關辦理註冊登記。此項登記得取決於一張職業能力證明書之頒發; 必要時亦需依中央

政府之規定辦理財務保證。若公司嚴重或一再違反交通、勞工或安全法規，即可被註銷其登記。於本條文生效日原已登記之企業，其原有登記繼續有效。

第二款：國家暨地方政府於其權限內籌辦定期客運。此項服務可由一工商性公營事業形式之法人代替政府執行；或由一家公司與主管機關特訂定期協議經營之。

此一協議規定服務之一般內容及其運作和投資條件，亦確定雙方為便利交通享有權之實施及推動客運所採取之行動。該協議於公司登記註銷之時依法自動解除。

第三款：由籌辦機關規定之定期客運服務投資由使用者負擔，必要時亦由地方政府負擔或依特別法律條款，由其他非使用者但從中直接或間接獲益之公私受益者負擔。票價政策由主管機關在能使相關運輸系統獲得最佳經濟、社會用途之考量下予以釐定。

主管機關在國家當局在價位上保有權力之情況下決定或核准費率。

公法人\*與公司所訂任何契約或協議，凡導致使用公款，或公法人提供財務擔保者，均須備有專款專用監督條款，以利該公法人承諾之款項或擔保之監督，否則無效。

\*「公法人」係大陸法概念，即公法（與私法相對）所規範之法人，如各級政府及其附屬機構、公營事業等等。

第 八 條 第一款：貨運運輸，運輸用工業車輛出租與輔助運輸業之經營，依照中央政府法令規定方式，取決於職業能力證明之頒發，政府機關之註冊登記及必要時之財務證明條件。若公司嚴重或一再違反交通、勞工或安全規則，即可被註銷登記。

在本條款之條文生效日登記之企業，其登記仍然有效；本法生效之日持有運輸代理商執照者，無需辦理此項登記。

依前項規定，為他人從事包裹集中、租賃或一切與貨運有關作



業者均被認為是輔助運輸業者。

第二款：所有公眾貨運契約均需包括若干條款，載明運輸之性質與目的，有關運輸本身與被運送貨品之取貨與交貨條件，發貨人、代理商、運輸者及收貨人各自之義務，以及運輸費用與預計之附加雜費等。

如無書面協議以確定簽約各方間之關係時，標準契約之條款即可適用。此等標準契約是在徵詢有關專業機構與國家交通委員會之意見後，以法律予以訂定。

第三款：票價與費率之訂定方式，是讓得到服務之企業或個人負擔運輸之實際經濟成本。

為此目的，有關費率之規定可由國家與企業、專業機構及使用者共同商討訂定。當進口或出口、前往或來自港口之貨物發送作業屬於國際運輸線路時，應用於此方面之規定應考慮到此類作業之特殊情況。

第四款：補助運輸業者之酬勞依其實際提供之服務而定，並由受益人支付。

## 第二章 社會福利與安全條件

第九條 國家確定用於運輸方面之社會福利規範、安全與技術管制規定，亦注意此一規範之實施並監督其應用。

運輸作業無論是委託第三者或由負責之企業自行辦理，均不可在與勞工及安全條件規定不符之情況下進行，發貨人、代理人、租賃人、受託人、收貨人或任何票據簽發人均須為其過失負責。

在運輸或勞工契約中，凡會危害到與安全有關之主要或附加酬勞條款，尤其是直接或間接鼓勵逾時工作或超時駕駛之條款，均屬無效。

第十條 勞工法中關於工作環境與時間之條款，適用於負責駕駛車輛或



飛機之雇用人員及與彼等從事相等工作者。

有關工作時間與駕駛時間之規定，應顧及技術、經濟與社會環境之進展，週期不規律之工作、強制之工作地點與時間，以及為所載人員與第三者負起之責任所帶來之特殊不便；至於非領薪人員，其駕駛車輛或飛機之時間、耗費在附屬業務之時間，均另以考慮安全要求之特別條款予以規範。

第十一條 擔任車輛或飛機駕駛之員工，其工作時間包括駕駛時間及在法令規定情況下，受雇主支配之時間。

第十二條 為確保車輛與飛機駕駛人與第三者之安全，由政府監督或委託監督此類駕駛者之健康情形，並鼓勵施行預防無能力工作者之政策。至於運輸事業或出租帶駕駛員之工業用運輸工具企業之員工無能力工作時，一旦經醫學認定而且非當事人自願或故意所造成時，即可讓當事人享有一項特別保護待遇，包括現金津貼，或必要時實物津貼；另有機會在接受補充訓練後重返職業生活，此一制度由企業與其所雇人員繳付之會費資助，並由其代表在政府同意下管理之。

本條規定之適用條件，由中央政府以法令定之，並於必要時，制定前項所定制度。

第十三條 各省均設諮詢委員會，對本省所轄運輸業車輛或飛機駕駛人員執行駕駛安全與工作時間有關規定之狀況進行督查。委員會由雇主公會與雇員工會派代表組成，雙方人數相等，主席由一位勞工督察擔任。

委員會之權限、具體組織及運作方式，由中央以法令訂之。

### 第三章 基礎設施、設備、器材與技術

第十四條 與運輸基礎設施、設備及器材有關及需要部份或全部公共投資之選擇，建立在經營之經濟與社會效率上。此等選擇須考慮到使用者之需要、安全需要、國家計劃與土地整治目標、國防需

要、可預見之國內與國際運輸量發展、財務成本。總之，須考慮到實際經濟成本與社會成本。

大型基礎設施計劃與大規模技術選擇，係以在同一種運輸模式內與不同方式內或混合方式內，以同品質標準做比較之基礎加以評估，此等評估會在最後通過相關計劃之前予以公佈。

此類工程建設凡有政府補助者，最遲在設施啓用五年後，均應提出經濟與社會效益報告，並公諸大眾。在國家與地方計劃和整治導向範圍內，若干基礎設施之整體規劃分別由中央與地區研商制定或由地方政府制定，以確保不同運輸方式所定網路之長期一致性，及決定在運輸網路現代化、適應與擴展方面之優先次序。

一項基礎設施之建設與調整可以使中央政府與有關地方政府簽約進行。

本條第二項所述之基礎設施與技術選擇、工程規劃方式、以及整體規劃內容與實施範圍、其程序規定等，均由中央政府以法令定之。

第十五條 主管機關、特許權人或特許權受讓人負責匯集與建造基礎設施或整治現有基礎設施所需之投資款項，以此理由，公立機構和企業或使用者之贊助，係透過特許費或補助金方式交付。不同類別之受益人雖不是基礎設施之使用者，但卻可直接或間接受益，亦可能被要求依據特殊之條款參與投資，基礎設施保養、運作之資金籌措方式，亦由主管機關決定。

基礎設施與附屬設備之使用會導致稅捐、權利金與有助達成運輸政策總目標費用之徵收。

#### 第四章 機關

第十六條 國家交通委員會、區域交通委員會與省交通委員會共同擬定與推行國家權限範圍內之國內運輸政策。

此等機構可供中央政府諮詢有關交通系統與其不同組成方式之規劃與運作問題，國家交通委員會可被諮詢有關基礎設施發展之綱要。

第十七條 交通委員會由以下各界代表組成：

- 一國會與地方政府代表；
- 一參與運輸作業之企業代表；
- 一代表全國運輸員工之工會代表；
- 一不同類別之使用者代表；
- 一中央政府代表；
- 一因其才能被任命之人士。

區域委員會與省委員會由參與運輸作業之企業代表、企業之員工代表與不同類別使用者以及中央政府和因其才能被任命之人士所組成。而籌辦都市運輸之區域、省與中央主管機關只要被要求即可參加區域交通委員會之工作；同樣，籌辦都市運輸之省與中央主管機關可在同樣情況下參與省交通委員會之工作，在此兩種情況中，上述主管機關均得於其權責範圍內，將有關問題交與其所參加之委員會辦理。特別是本法規定之註銷措施，須於行政懲戒委員會提出通知後始可決定。行政懲戒委員會設置於大區域交通運輸委員會，由行政法官或司法官員擔任主席，其訴訟程序要求各方當事人到場。

此類機構之組成與職權，由中央政府以法令定之。其組織與運作規程、及參與此類機構之各行業相關企業之分攤運作費用方式亦同。

## 第二編 不同運輸方式之特殊條款

### 第一章 鐵路運輸

第十八條 一九八三年一月一日成立一被稱為「法國國家鐵路公司」之工



商公立機構，此機構旨在依據公用事業原則經營、管理與發展國家鐵路網。此機構獲授權從事一切直接或間接與其任務有關之活動，該機構可成立子公司或參加若干相關或輔助性公司、團體或機構之管理。其子公司於集團目標範圍內在財務方面採獨立核算制度，不得接受在本法律第廿四條第二款中預定之財務補助。其他公共鐵路網之管理方式另由特別條文規定。

第十九條 原委託一九三七年八月卅一日成立之混合經濟股份有限公司經營，屬於公家或私人之不動產捐贈給此一公立機構，屬於國家之其他鐵路網之不動產，可依據中央政府之法令，在不影響原先授予之經營權前提下捐贈予該公立機構。原委託該公司經營之動產，現完全免費交予此一公立機構。

其餘屬於國家鐵路網之動產可依中央政府之法令，在不影響原授經營權情況下，完全與免費交予該公立機構。

所有因該股份有限公司所簽契約或協議，或因其參加某些公司、團體或機構所獲得之權利與義務均移交予前述公立機構。

此等移轉不致招致賠償、稅捐、權利金、工資或酬金之支付。

第二十條 調整後撥交鐵路運輸公用事業專用之不動產，及為此目的整治之不動產具有公有財產性質。

該公營事業全權管理其接收或購置之不動產，特別得許可占用、同意租約、決定租費並收取租金、房租或其他孳息。但法律認定公共利益或公用事業工程者，不在此限。

該機構亦可進行任何建築或拆除工程，負起不動產所有人之全部義務，並在法院代替政府起訴與應訴。

該公營事業以國家名義購置不動產。如該財產已屬國家所有，而欲將之併入其所管之財產，則須按市價繳付政府補償費。

被該公營事業用來執行其任務之不動產，得由政府收回或為公益之用而讓予地方政府，但須繳付重建價值之補償金。

該公營事業所有之不動產，如不再用以執行其任務，可作為公



產撥作其他用途，或改變其公產性質，由該公營事業自行出讓並獲其利。在第一種情況下，政府或有關地方政府付給該公營事業相當於該財產市價之補償金。

由此獲得之款項必須用於鐵路產業之整治或發展。

本條文之適用方式，尤其是改變公產性質、變更用途或讓與等種種作業之法律與財務條件，均依中央政府之法令定之。

第廿一條 該公營事業機構之董事會由以下十八位人士組成：

- 政府代表七人；
- 因其專長而遴選並依法任命者五人，其中至少一人為使用者代表，且係依法任命者；
- 由至少雇用兩百名員工之企業或其子公司員工選出之代表六人，其中包括高級管理人員一位；

董事長由董事會成員提名一人，經董事會推薦，由內閣會議以法令任命之。

本機構之章程及確定任命或選舉董事會成員之方式，由中央政府法令定之。

第廿二條 第一款：區域運輸計劃中鐵路之籌辦，由區域政府與法國國家鐵路公司簽定協議進行，此區域計劃由區域政府於聽取籌辦都市運輸之各省政府與中央主管機關之意見後予以制定完成。

法國國家鐵路公司於該區域範圍內，有關運輸計劃基本內容之變更事項，應與該區域政府商討。

一切新線之開闢、舊線之關閉、車站之興建或拆除，均須事先徵求有關區域、省與市鎮政府之意見。

第二款：應有關區域政府要求，可於該公營事業之每一地區分處設立一諮詢委員會，該委員會之組成與職權、組織與運作之規定，由中央政府以法令定之。該委員會主要負責就法國國家鐵路公司之營運對該區經濟與社會生活之影響，與該區域政府協商，並得就該公司營運及其發展提出建議。

第廿三條 本法以工商性公營事業代替原股份有限公司「法國國家鐵路公司」，但有關該公司及其子公司員工待遇之法律、規章或契約等，不因本法之施行而受影響。有關集團委員會，企業委員會及衛生、安全與工作條件委員會之規定均依法適用，不過必要時，因該企業之特殊結構、因其負擔公共服務任務之需要、及其以子公司組成集團之組織上之需要，中央政府得以法令適當調整此等規定。

第廿四條 第一款：法國國家鐵路公司享經營自主權，其權利與義務、運作方式，本法第三條規定協調經營條件之規則、經營收支平衡之定義、公共服務之執行條件等，均由《權責規範》定之。該《權責規範》係由中央政府聽取法國國家鐵路公司意見後，以法令核準之。依據一九八二年七月廿九日計劃改革法第八二之六五三號，中央政府與法國國家鐵路公司簽訂計劃合約，決定該公司及其集團在國家計劃範圍內應達成之目標，以及達成目標之方法。

第二款：政府補助國家鐵路公司之運作與發展，因鐵路運輸對全國經濟與社會之貢獻頗大，亦因其在運輸享有權之實施方面所起之作用，以及其在安全和節源方面所具之優點。

此項補助考慮到該企業在基礎設施方面及經濟狀況須逐漸整頓目標方面所負之特殊責任，政府以補助來鼓勵該企業發展業務、改善經營、提高生產力、並改善財務狀況。其具體方式主要由《權責規範》規定之。

第廿五條 法國國家鐵路公司在財務與會計管理方面，適用於商業企業之法規。該公司依照一般會計準則管理帳務，並開發一種可計算出有關中央與地方政府賦予任務之實際經濟成本之會計方式，其亦有權妥協與商定仲裁協議。

該公司在政府法令規定條件下，接受政府之經濟、財務與技術監督。

第廿六條 一九三七年八月三十一日成立之混合經濟股份有限公司之董事會可行使職權直至新董事會開會為止；此期間混合股份有限公司其他領導機構之權力均轉移至該董事會。

適用於混合股份有限公司之管理規定與管制經營方式依然有效，直至本章預定之措施開始實施為止。

## 第二章 都市客運

第廿七條 都市運輸之範圍包括一市鎮之土地或有規劃客運公立機構任務之土地。應市長或公立機構負責人之要求，中央政府代表確認範圍之劃分，如果涉及到省區計劃，該代表須於聽取省議會意見後再確認。此等意見須在法令規定之最後期限前收到。

至於法國海外各省，經市長或公立機構提議，中央政府代表得確定其都市運輸涵蓋範圍，將部分市鎮土地排除在外。

如相鄰市鎮決定共同規劃其大眾客運服務，則可將其土地納入同一都市運輸範圍。該範圍之劃分及定界由中央政府代表應有關市長鎮長要求，聽取當地議會意見後決定。

在範圍之內，非都市客運之公路客運如新設或變更線、站，應與規劃都市公共運輸之主管機關協商辦理。

第廿八條 有關全部或部份包括在都市運輸範圍內土地之都市交通計劃，由規劃此等運輸之主管機關於聽取有關議會之意見後加以擬定。都市交通計劃在都市運輸範圍內確定辦理運輸、交通與停車之一般性原則。其目的在於更合理的使用汽車，並確保行人、二輪車輛及大眾運輸工具各行其道，互不干擾。此計劃並同時研究其投資方式以及所定措施之營運成本回收問題。此計劃可接受公眾調查。如計劃僅為一個市鎮而訂，即由市議會通過。如計劃涉及一個都市運輸範圍內數個市鎮之土地，則由負責規劃大眾客運之公立機構在得到有關市議會同意後通過。計劃之各項規定由規劃都市運輸之主管機關及都市運輸範圍內

之道路管理機關與交通警察機關付諸實施。

都市交通計劃之內容，其擬定、磋商與通過程序及都市交通計劃實施情形，均由中央政府法令定之。

### 第三章 長途公路客運

第廿九條 長途公路客運運輸包括以下類別：

- (一)定期公營客運；
- (二)應要求須由超過法令規定容量限制之車輛提供之服務；
- (三)民營客運；
- (四)不定期公營客運。

定期長途客運與應要求之服務由省予以籌辦，不包括區域級或國家級公路在內。此等服務由省負責或由與其簽訂具一定限期協議之公民營企業負責辦理，此等服務登記於省之計劃內；該計劃由省政府於聽取有關市鎮意見後確定並完成。都市運輸範圍與私人服務均載於此計劃之附件中。

跨省長途客運納入區域運輸規劃中；區域議會根據省議會及都市運輸規劃的主管機關意見後，確定區域運輸規劃並隨時予以修正。區域長途客運由區域、有關省份與運輸者定期協議辦理之。

民營客運得由地方政府、企業及社會團體經辦，以應其正常運作之需，特別是機關、企業員工與社團之成員通勤之需。此類客運應向中央政府駐省代表報備。

不定期客運依中央政府規定條件，由中央政府駐省代表核准之。

第三十條 自第廿九條條款生效起四年內，所有長途客運非由主管機關直接經營者，均需有一協議。

如主辦機關決定實質取消或改變經營中之服務內容，或將其委交另一經營者，而且不提供該企業幾乎同等的服務機會時，即



須賠償該企業可能受到之損失。

若四年期滿，因主辦機關之故未能取得協議，原授予公共運輸者之許可證可充當最多十年效期之協議。

中央政府與省份簽定發展合約以便利非都市公共客運網之現代化。

#### 第四章 公路貨運

第卅一條 公路貨運之發展建立在此種運輸方式本身之優點上，且係依經濟需要而調整。其發展有賴生產力之提高，尤其是借重現代技術，亦需要加強職業訓練與專業資格、改善工作環境與安全、企業與企業間之合作及與其他運輸模式間之合作。

地方政府可鼓勵企業在發展合作與推動改善其生產率與運輸系統生產率之技術或設備方面所採取之主動性。

第卅二條 公路貨運契約應考慮到（否則失效）預估完成不同工作所需之時間與計算方式；一方面應顧及當時間因發貨人、代理人、收貨人或任何一個實際票據簽發人之故而超過時，該如何算出運輸者之報酬；另一方面亦應考慮到如果時間之超過屬運輸者之過失時其應付之罰金。

第卅三條 簽有運輸合約之公路運輸公司必須在中央政府法令限制內自己運送或借重其職員之助，或在其責任下全部轉包或部份分包給另一公共運輸企業，或與出租帶司機之工業車公司簽定租車契約進行運送。

公路運輸公司必需具有運輸代理人之身份，或在特殊情況下始得轉包。分包契約適用於規範貨物公共運輸之一切規定與條件，主要運輸者之酬勞係依據適用於運輸代理人商定之租賃契約規定予以計算。

在本法律公佈日，平時從事分包貨運之企業以及不符合執行公共貨運作業條件者應從此日起在兩年內合乎規定。

第卅四條 所有出租帶司機工業用車之契約，必須具備確定締約各方在司機受雇條件方面以及運輸作業執行方面之義務的條款。該合約必須保證在正常營運和生產力情況下，支付所提供服務之實際成本。

如缺乏確定前款中所述契約之締約各方彼此關係之書面協議，則可運用標準契約條款。標準契約之制定，於聽取有關職業機構與國家運輸委員會意見後，以法令爲之。

第卅五條 公路公共貨運與相關作業以及帶司機工業用車之出租，可在法令規定之情況與條件下，由政府於聽取有關職業組織與使用者組織意見後，決定公共費率之規定。

對受費率規定約束之運輸契約而言，此項強制性公路費率規定，不論何種運送方式，均應考慮到契約之性質與標的、運送路線以及運載貨物之特性與數量及運輸中可能遭遇之特別不便。

第卅六條 在本法律確定之貨運政策範圍內，公共公路運輸與貨運工業用車之出租，可依經濟需要與運輸類別獲得許可證。此等許可證發給企業或發給具有法人資格之企業集團，同時特別考慮到其運輸能力，其爲改善生產力而作之努力以及其對本法律條款之遵守。

此許可制度之範圍、方式之實施期限，均由中央政府於聽取有關職業組織與國家運輸委員會意見後以法令決定。

爲實施前兩段而發之許可證，只能由受益企業或企業集團使用，不得與其相連之營業資產之整體分開出讓或出租。

由運輸企業或出租企業在本條文生效日所持有之限期或不限期運輸或出租執照，爲實施本法律，在行政法院法令所定條件之下可等於許可證。

第卅七條 本法律第二編第三章與第四章中規定之登記與許可，可在嚴重違反或一再違反運輸、勞工或安全規定時，被暫時或永久註銷或吊銷。

本條文之實施方式，由中央政府法令定之。

第 卅八 條 參與實施公路貨運規定之職業集團，須依中央政府於聽取國家運輸委員會意見後所制定法令之規定條件與方式，接受政府之財務監督。

## 第五章 河流運輸

第 卅九 條 河運須由一發展方案予以規劃，該方案一方面包括在本法第十四條規定情況下之通航水道整體規劃，與在網路修復、調整與擴大方面之優先次序，另一方面包括可以讓其參與實現國內運輸政策目標之經濟與社會措施。

第 四十 條 設立一具有公立機構性質之國家內河航運職業公會，使其在河運領域內發揮職業公會作用。其任務為協調其成員行動、代表內河航運職業公會之利益，與政府機關及有意涉足河運之經濟實體交涉，並辦理資方與同業登記。此種職業公會由登記有案之勞資雙方退出之理事會管理。

全國河運職業公會之組成、權限與運作方式、理事會成員之選舉方式、勞資雙方資格確定等事宜，由中央政府以法令定之。

第四十一條 國家航務局協助推動河運亦因此負有提供資訊之任務。航務局可供法國運輸部長諮詢並可提送有關適用於租船、費率以及貨艙調度規定之建議。航務局得負責管理所收水上運費，並參考有關河運法規之實施。

## 第六章 航空運輸

第四十二條 第一款：民航法規第三卷第一編第L.三一〇之一條由以下條款代替：

「第L.三一〇之一：空運即藉飛機乘客、貨物或郵件自起點運送至終點。」

第二款：民航法規第三卷第二編第三章由以下條款代替：



### 第三章 飛行器之乾租與濕租

「第L. 三二二之一：飛行器之乾租亦即由出租人將一架無機員之飛行器提供給承租人支配之作業。」

「飛行器之濕租即出租人將有機員之飛行器提供給承租人支配之作業。除非有相反協議，否則機員仍聽命於出租人。」

「第L. 三二三之二：任何出租飛行器用以運輸之企業，無論是為職業用途或為營利，亦不管承租人如何使用該架飛行器，均由適用於公共空運之法律與規定管理之。」

第三款：民航法規第三卷第三編第L. 三三〇之一條與L. 三三〇之三條均由以下條款代替：

「第L. 三三〇之一：公共空運即由飛行器為職業或商業用途，將乘客、貨物或郵件自起點運送至終點。」

「法國自然人及總公司設於法國之法人，如未得到行政當局批准，不得在法國境內或境外使用在法國登記之飛行器進行公共空運之活動。」

「許可證確定有效期限、運輸目的、企業可飛之連接路線或地區以及其可使用之設備。」

「行政法院之法令規定許可證之發給、更改或吊銷之條件。」

「但，乘客運載之起點與終點為同一地點，且無經停站，而且飛行器之載重量不超過中央政府法令所定限制時，則不屬於公共空運範圍。」

「第L. 三三〇之三：國土境內自一地點至終點之定期客運服務一般內容及運作與投資條件由經營企業與中央政府或一有關地方行政單位、工商會或公立



機構之間簽定之協議予以確定。」

「依第L.三三〇之一條規定提供此等服務之必需許可；於簽定本協議及與區域有關機關諮商後始得發給。」

「本條文之實施條件，由中央政府以法令定之。」

第四款：民航法規第三卷第三編中插入第三三〇之八條，其內容如下：

「第L.三三〇之八：經營計劃、購買與租用飛行器材總計劃、運輸條件與空運企業費率均可在利用超過某一載重量之飛行器運輸而獲得官方認許。本條文之實施條件，由中央政府以法令定之。」

第五款：由民航法規第L.三三〇之四條第一段和第二段中刪除「以及，必要時，同意」等字樣。

第四十三條 依據民航法規第L.三三〇之一條之條款，正如以上第四十二條第三段所示，在本條文生效之前所發許可證或同意書一直到第四十二條規定之協議簽定為止仍然有效（參考民航法規第L.三三〇之三條）。

### 第三編 其他條款

第四十四條 國土境內自一地點至一終點間之客貨運，如無國際條約或協議來確定其制度，則可被認為是本法律可適用之國內運輸。本法律之條款完全符合成立歐洲經濟共同體條約所載義務，以及其他依規定生效之國際條文與協議。

本法律第一編第三章與第四章之條款適用於運河化之貨運。儘管如此，此等條款不適用於有關煤氣運輸之基礎設施、設備、器材與技術，因煤氣運輸由有關電力與煤氣國有化之一九四六年四月八日頒佈之第四六之六二八號法律予以規範。

第四十五條 在保留法國海外省特有之立法條款之權利下，本法應用於此

等省份；第二編第五章除外。

第四十六條 爲使本法第一編第四章之第七條與第二編第二章與第三章之條款適用於法蘭西島行政區，將以特別立法條款加以調整。

第四十七條 本法條款爲適用於機動牽引裝置，將由特別立法條款在山嶽政策指導法範圍內加以調整。

第四十八條 與以上第四十四條不同者，在此爲使本法應用於海運，亦將海關法規中第二五七之一與二五八之一條所定之保留航行視爲國內運輸。

對於從事前段所述航行之海員，有關工作條件、時間與安全規定仍然由海事勞動法規以及一九六七年五月二十日之六七之四〇五號有關海上人命保障、船上安全與實施此等措施之法律條文予以確定。

由本法轉移予國家運輸委員會之諮詢職權，在海運方面由商船高等委員會與國家運輸委員會聯繫行使。本法第一編第一章之援引條文，當涉及海運時，須與商船高等委員會諮商後採用。

第四十九條 由於某些關於國內運輸之條款違反本法，必須將之廢除，此等條款乃：

- ．一九三八年十一月十二有關運輸協調與船夫身份之法令第一編與第二編第二章；
- ．一九四一年三月廿二日有關航道管理經營以及國內鐵路與水路運輸協調法律之第十九至廿四條。
- ．一九四六年四月廿七日第四六之八五四號法律之第七二條，關於提供與取消一九四六年會計年度貨款之條文；
- ．一九四七年九月三日第四七之一六八四號法律之第一至第四與第九至第十二條有關恢復與管理運輸高等委員會之條文；
- ．一九四九年七月五日第四九之八七四號法律之第五、六、

七與關於不同財經條款之條文；

- ．一九五〇年八月八日第五〇之九二八號法律之第九十條關於一九五〇年會計年度內民政單位運作支出與不同財政條款之條文；
- ．一九五二年四月十四日第五二之四〇一號財政法規之第廿二、廿三、廿四及廿六條，有關一九五二年會計年度之條文；
- ．一九七九年六月十九日第七九之四七五號法律之第七條有關地方利益公共運輸之條文。

以上條款隨其替代條款之生效逐漸廢除。

本法之執行與國家法相同。

一九八二年十二月三十日於巴黎公佈

總理	皮爾．莫瓦
外貿部長	密契爾．喬伯特
土地規劃與整治部長	密契爾．賀加
共和國總統	法蘭索．密特朗
內政與地方分權部長	加斯頓．戴菲
運輸部長	查理斯．費德曼
社會事務與國家團結部長	皮爾．貝赫戈瓦
主管歐洲事務之外交次長	安德．尚戴那高爾
主管預算之財經次長	羅朗．法畢士
主管勞工之社會事務次長	約翰．歐魯
都市規劃與住宅部長	羅吉爾．桂堯
消費部長	凱瑟琳．拉律蜜爾
研究與工業部長	約翰．皮爾．余弗奈蒙
掌璽大臣、司法部長	羅伯．巴汀戴爾
財經部長	賈克．戴勞
國家教育部長	亞蘭．沙瓦瑞
休閒部長	安德．亨利

### 附錄三

## 《法國國家鐵路權責規範》

(Set of Specifications for the  
National Railways, Sep., 1983)

一九八三年九月十三日第八三之八一七號有關核定法國國家鐵路公司權責規範之法令（載於一九八三年九月十四日法國政府公報）

資料來源：法國國家鐵路公司



依據一九四九年十一月十四日第四九之一四七三號有關鐵路運輸與公路運輸之配合與協調修正法令；

依據一九五三年八月九日第五三之七〇七號有關國家對經濟社會性國營公立企業與若干機構之查核修正法令；

依據一九五五年六月三十日第五五之八七五號設立一項社經發展基金之法令；

依據一九五五年十月十八日第五五之一三六八號有關社經發展基金管理委員會職權之法令；

依據一九八〇年十二月一日第八〇之九五六號有關子女衆多家庭在法國國家鐵路公司費率上之優待法令；

依據一九八三年二月十八日第三八之一〇九號有關法國國家鐵路公司章程之法令；

依據一九八三年二月十八日第八三之一一〇號國家對法國國家鐵路公司之財產查核辦法法令；

依據一九八三年五月十日法國國家鐵路公司董事會之決議；經行政院同意後，頒佈以下法令：

第一條 本法令附錄所載法國國家鐵路公司權責規範業經核定。

第二條 凡與本法令及本法令所核定權責規範相抵觸之條款均予廢除，特別是：

一九三七年八月卅一日重組法國鐵路制度之修正法令；

一九四〇年十二月十一日有關辦理國家對鐵路及都市內公路與水路運輸查核之第十一、十二、十三與十四號修正法令；

一九四五年十月十二日核定有關法國國家鐵路公司所有海灣與河港碼頭新權責規範之法令及該權責規範本文；

一九七一年十二月廿三日第七一之一〇二四號核定法國國家鐵路公司新權責規範之法令及該權責規範本文；

一九七二年七月廿六日第七二之七一三號核定法國國家鐵路公司經營專用線基線之鐵路線或路段之技術規範之法令，及該特

別技術規範本文；

第 三 條 財經與預算部長、社會事務與國家團結部長、內政與分權部長、運輸部長、工業與研究部長、主管郵電局之工業與研究次長、總理國務秘書、主管預算之財經與預算部國務秘書及主管海事之運輸部國務秘書各負責本法在其管轄範圍內之執行。本法將載於法蘭西共和國政府公報。

一九八三年九月十三日於巴黎

由總理	皮爾．莫瓦	頒佈
運輸部長	查理斯．費德曼	
財經與預算部長	賈克．戴勞	
社會事務國家團結部長	皮爾．貝赫戈瓦	
內政與分權部長	加斯頓．載菲	
國防部長	查理．艾努	
工業與研究部長	羅朗．法畢士	
主管郵電局之工業與研究次長	路易．梅賽多	
總理 國務秘書	約翰．勒加雷克	
主管預算之財經與預算部國務秘書	亨利．艾瑪奴利	
主管海事之運輸部國務秘書	吉依．朗加寧	

# 法國國家鐵路公司權責規範

## 第一編 鐵路公用事業之原則與執行條件

第一條 法國國家鐵路公司係法國國內運輸系統之要素，其業務應有助於對全體國民最有利之經濟與社會條件下滿足使用者之需要，促進達成國家一致與團結及國防。爲此目的，法國國鐵在考量相應成本之際，主動採取措施，發展使用鐵路進行客運與貨運。其任務爲：

一方面，依本權責規範第五編之條件，管理、計劃與發展國家鐵路網；另方面，考量現在方法，在最佳安全、方便、快捷、舒適與準點情況下，經營在此鐵路網上之服務；國鐵所提供之所有服務均依照公用事業原則，尤其在連續性與使用者搭乘條件方面實施。

國鐵另可在正常費用與競爭情形下，提供與運輸有關之補充性服務以滿足使用者之需要。

第二條 國鐵採取一項積極革新、研究與發展政策，無論是在技術上還是在管理上均相同。該公司與有關工業共同參與並支持發展法國鐵路技術，以設計與研究增進對運輸之社會與經濟方面之更佳認識。亦與外國網路共同發展一項積極合作政策，旨在促進國際鐵路關係，尤其是在歐洲經濟共同體內之合作。

第三條 爲達成此等任務，該公營機構可擁有或成立子公司及持有或取得參與若干目標與鐵路運輸相關或互補之機構或公司，此機構亦可簽訂任何必要協議，特別是針對執行某些服務或連續運用數種運輸技術之協議。

由國鐵決定之子公司成立、取得、讓與或擴大財務參與均由運輸部長、經濟與預算部長以共同決議予以核定。

第四條 國鐵享有經營之自主權，其領導階層有責任善加利用其人員以

及設備與經費，尤其是由國家提供者。領導階層有義務在最佳成本條件下保證其經營並不斷改善其效率與生產率。

## 客運

第五條 國鐵協助逐漸實施運輸享有權，爲此目的，國鐵提供以下數種服務以滿足使用者之需要：

- 在第六條規定條件下提供全國性服務；
- 由國鐵與有關外國網路合作提供國際服務；
- 區域利益性服務，其本身亦分爲兩類：採用區域運輸計劃之線路；按協議提供之區域性服務；
- 其他服務；特別包括在本權責規範生效時，所有無協議約束之現有郊區通勤列車服務；
- 在與地方主管機關共同確定並可能簽約之條件下都市化地區之新設線路；

本法令所指之服務，在特別情形下，可由公路運輸工具提供。

第六條 全國性服務之內容，由國鐵在其管理自治範圍內，考量國家在運輸方面政策之總方針而決定。

第七條 國鐵提供給旅客旅行時必要之服務，特別是行李運輸、餐飲與臥鋪之供應。國鐵在其自治管理範圍內依路線性質、旅客需要以及相應費用去判斷此等服務之必要性。

第八條 國鐵採取一切便利鐵路旅行之條件及其推廣之措施，尤其是火車站內之服務並便利與其他運輸工具之銜接，特別是都市、區域性、航空與海上運輸工具，國鐵亦可於必要時先後運用多種運輸方式，辦理單獨或團體旅客之往返旅行；亦可爲行動不便者採取特別措施。

第九條 客運列車必須具有足夠數量之座位以滿足正常交通量下之需要，此等座位亦包括短程路線之站位。國鐵採取必要措施在可能之最佳情況下滿足每日與每週尖峰時段其通車路線上旅客之需



要。但國鐵可限制某些特定火車之搭乘。

第十條 旅客可免費攜帶手提行李。須辦理託運並繳付費用之行李，由國鐵規定。對託運行李有特殊規定之列車，亦由國鐵規定。

第十一條 國鐵以清楚、容易取得之方式，向旅客提供所有關於火車時間、費率、服務經營一般情形及其提供之補充服務之資料。

國鐵盡力安排大量分發此種資料。

車票之使用條件必須於購買時即有明確說明服務上之意外變動必須通知旅客。

第十二條 發生意外事故時，直接受服務變動影響之旅客必須在最短時間內獲得通知，及必要時得到建議，如何在最佳情況下進行或繼續其中斷或被擾亂之旅程。

當國鐵因技術問題暫時被迫實質性減少或暫停一條路線或一路段上之大眾服務時，應立刻通知運輸部長，及依事故之情況而定，通知地方行政單位與有關旅客。

第十三條 國鐵徵收費用以交換其所提供之服務。

國鐵之費率政策旨在鼓勵使用列車，並幫助實施運輸享有權。但應保證國鐵自我經營收支平衡，並將地方政府及其他公私受益人對國鐵之補償考慮在內，因其雖非使用者，卻直接或間接從中受益。

此項費率政策便利實現政府訂定之目標，以獲致在經濟與社會方面，法國國內運輸系統之最佳使用。

第十四條 全國性服務旅客所付之票價由國鐵依下列條件訂定：

相當於二等票價之基本費率；

包括與實施基本費率相較之數種調整之費率整體，以及應政府要求由國鐵實施之社會服利費率。

鐵路運輸補充服務之價格由國鐵在普通法規範圍內訂定。

第十五條 國鐵可隨時實施國際費率。

此等費率乃與其他國家網路及合夥企業協商後擬定為實施者，

如有必要，即以共同體規則、國際協議及由此簽訂之各國網路間協定規定條件，予以擬定與實施。

此等費率呈報給運輸部長。

第十六條 區域利益服務與都市化地區通勤使用者所付票價，如非第四十五條與第四十九條提及之適用於特別安排之票價，則亦係依據第十四條之情況而定。

第十七條 國鐵將其依第十四條規定所訂費率至少於其生效十五天前呈報運輸部長。

如呈報後八天之內部長無異議，則表示批准國鐵所訂之費率，此等費率在其生效至少六天前向大眾公佈。

第十八條 如國鐵計畫在第十四條與第十七條不同情況下更改其費率，須在新費率生效至少一個月前向運輸部長報備，如自呈報日起十五天之內部長無異議，即表示同意此等新費率。

但此等措施具有公共促銷性質時，亦即對旅客之益處受時間限制時，只需將措施通知部長即可。

第十九條 國鐵可簽訂經雙方同意條件之客運契約，此等契約可預先安排由汽車或特別車輛來進行運輸。

亦可包括在現行有關旅行社之規則範圍內，提供與旅程相關之服務。

此等契約訂定之費率不需經政府核定，契約一旦簽訂即可實施。

國鐵僅提供法律或規章法則條款規定之交通便利。

## 貨運

第二十條 國鐵參與貨運系統並為協助發展其效率，在其本身技術可能範圍內，運送前往本國地區或國外旅客託運之行李、貨品或整批運載，此等服務在特殊情況下可由公路運輸工具來完成。

國鐵提供其顧客若干能夠滿足其需要之各種服務，同時亦考量

此等服務之盈利。國鐵提供之車輛及屬於第三者之車輛，均為在最佳情況下運行，國鐵亦規劃或委請他人規劃若干特別專用路線，亦協助企業製造鐵路運輸之特別設備；在鐵路、產業中設置供旅客使用之地點，並在都市裡設立取送包裹站，在火車站內設置適當裝卸工具，以及較一般性，提供所有可便利鐵路貨運之服務與設備。

此等服務之必要性及在何種情況，尤其是何財務情況下提供此等服務均由國鐵在其管理自治範圍內，依據使用者所表示之需要與相應成本加以衡量。

第廿一條 國鐵向其使用者提供關於其所有服務、費率、運送條件及補充性服務之完整清楚資料。

第廿二條 為確使顧客獲得一種完整之服務，國鐵在遵守運輸業者間公平競爭規則下，可從事輔助性活動，特別是運輸代理，或本身委請一與其相稱之居間者來進行某些如取貨、交貨、存倉或包裝以及所有其他與主要運輸相關之作業。

第廿三條 國鐵參與適用於不同使用技術規定範圍聯運之合理發展。

第廿四條 國鐵所提供之服務乃收費之服務。

貨運之收費係按照其運送前公佈之費率或依第廿五條至廿七條所簽特別契約或協議而訂。

相符之服務有助於達成該機構營運之總平衡。

第廿五條 國鐵主要依據運送之特性與情況，訂定適於國土境內之國內貨運費率。

第廿六條 至於進口、出口、或過境之運輸，國鐵可隨時實施適用於多網路地區之國際費率或特定國內費率。此等費率係依照現行共同體規則與國際協議之規定擬定與實施，並呈報運輸部長。

第廿七條 國鐵在合乎其商業與財務利益時，可在遵守企業間公平競爭規則之下，提出實施費率並與其顧客簽訂特別契約或協議。

## 第二編 政府與國鐵間之契約與財務關係

第廿八條 政府提供給國鐵運作上與發展上之補助係基於以下原則：

協調不同運輸模式之營運條件；

鐵路運輸對國家經濟與社會、國土均衡整治與區域發展，尤其是逐漸實行運輸享有權之貢獻。同時，此項補助考量託付該企業在基礎設施與逐漸整頓其財務狀況之目標方面之特殊責任，鼓勵國鐵發展業務以及改善管理、生產率及財務成果。因此政府補助包括以下不同項目：

存入退休帳戶之退休金補助；

基礎設施開銷補助；

應政府要求由國鐵實施之社會福利費率之補助；

區域鐵路營運之補助；

第三十八條規定之例外補助，亦包括對第六十七條所述應國防需要開支之補助，此外國家尚可依第三十六條捐款補助對國家所做之投資。

第廿九條 政府與國鐵間依據一九八二年七月廿九日第八二之六五三號有關計劃之改革法所定條件簽訂計畫合約，決定在國家計劃範圍內指定目標給該企業及其與子公司組成之集團，同時亦決定為達到此等目標所需採取之辦法，此契約亦明定依據以下第三十、三十一、三十二、三十三、三十六、三十八與第六十七條之原則使用之計算方式來計算政府提供之財務補助。

第三十條 第廿八條所述政府對國鐵之退休金帳戶之撥款，其金額等於辦理國鐵退休金給付之一切開支與正常提撥退休準備金收入間之差額；前項差額係指全部開支減除下列收入之餘額：退休金保管處投資收益、贈款、遺贈及按現行法律規定不同制度之間補償機制所生之收益，再加上正常提撥退休準備金（公司繳納部分加員工薪資扣繳部分）而得。



此項標準化儲金之比率在計劃契約內，係依現行參考制度（一般制度與私營運輸企業最常用之強制補充制度）之比率訂定。鑒於國鐵退休制度因提供額外優惠，而造成額外費用，故其退休準備金提撥比率較高。

國鐵退休制度之額外優惠同時顧及退休金給付之實際差別，以及開始領取退休金之年齡條件所造成之差別。此等優惠成本之估算係對同群勞動人口與退休人口，其有與參考制度人口幾近之相同特點之差數而算出，國鐵特有制度與前述比較制度相較下所可能產生之新優惠，由國鐵及其員工替所有受益人負擔。

第卅一條 為補助如第二十八條所述之基礎設施支出，政府提供一次性補助，其金額及每年調整之計算指數於計劃合約內釐定。計劃合約亦規定國鐵應達成與基礎設施支出有關之生產率目標。

第卅二條 社會福利費率係國鐵應政府要求而實施，因此由政府全額負擔，旨在補償此等費率對該機構盈虧之影響。

此項補助之基本金額以每一項計劃合約之第一年根據以上原則計算，然後將此金額按有關交通量成長指數與基本費率水準成長指數計算，所有在商討計劃合約時應政府要求對社會福利費率所做之更改均須同時修正補助之基本金額。

第卅三條 政府補助第二十八條所提之區域利益服務係付給國鐵整筆款項，每一計劃合約之第一年決定此項補助之金額。每一計劃合約之第一年訂定此項金額乃為平衡此等服務之財務。計劃合約亦確定其發展方式，一方面應考慮到土地整治目標及以此為服務本質之成本變化，另一方面鼓勵交通發展與改善生產率，此外並考慮到全國性服務費率之水準與結構發展。

國鐵為每一區域地方行政單位均開一帳戶，顯示非特約地區利益服務之支出與收入，登記在此帳戶上之收入包括實施本條文所定總補助之一部份，扣除依第四十六條原則所述屬於特約地區服務之一部份。

第卅四條 政府在費率方面所作決定，如非本技術規範內所提或不符合計劃合約之條款且導致國鐵盈餘減少時，政府必須賠償國鐵，但此條款不包括任何一般性之經濟措施。

第卅五條 在第卅、卅一、卅二、卅三與第六十七條內提及政府對國鐵之補貼，此補貼必須在國鐵每一會計年度盈虧預測帳戶內先行估算出來。

第六十七條預定之補貼乃每年依據國鐵實施本條文第一段所作估算，以及下半年第一日之價格而撥付。

第卅與卅一條預定之補貼，乃由相等於國鐵實施本條文第一段所作估算之四分之一之每季付款數按下半年第一日價格預先撥付。

第三十二、三十三與三十四條預定之補貼，乃以按月撥付方式依下半年第一日價格撥付，此項按月撥付之金額相當於國鐵實施本條文第一段所作估算之十二分之一。

當此條不同補貼之最終金額確定後，視情況由政府或國鐵依有關會計年度之下一會計年度十二月卅一日價格撥付差額。

第卅六條 國鐵在計劃合約範圍內，制定一項實施合約所定目標之必要投資多年計劃。在此計劃內，國家利益基礎設施所需投資可由政府授予贈款，其金額由計劃合約訂定，計劃合約亦訂定包括鐵路新線之興建與電氣化；國家利益基礎設施投資，單一計劃（金額超過運輸部長以法令訂定之極限）須經運輸部長依據所呈說明工程內容、相關費用及其經濟社會利益評估資料予以核定。

國鐵投資計劃由經濟及社會發展基金管理委員會依本法加以審查。

第卅七條 鑒於第卅、卅一、卅二、卅三、卅六與六十七條預定政府之經常補助，國鐵必須確保其盈虧之平衡。

第卅八條 考慮因制定政府與國鐵關係之一九八二年十二月卅一日生效之

協議條款而產生國鐵財務狀況欠佳情形，國鐵可於一段過渡時期內不必遵守第卅七條之規定，在此段時期中，政府向國鐵提供一項例外營運補助，旨在助其逐漸整頓財務狀況，並回復到第卅七條規定之平衡。

第 卅九 條 計劃合約之擬定亦建立在一系列關於機構業務以外經濟參數之假定基礎上。此等參數之實際發展與契約內預測發展間之差距，需由國鐵在計劃與支出上之調整，以及政府對營運按照計劃合約內指定之方式提供補助。

第 四十 條 每年五月一日之前國鐵均會提出一份計劃合約執行報告總結，該總結報告顯示所定目標之實現程度及國鐵為適應其環境變化考慮採取之主要措施。

第四十一條 相關部長，尤其國防部長、司法部長、郵電部長可要求國鐵提供特定運輸服務，為此，彼等以國家名義與國鐵簽訂協議以確定執行條件、該服務費用、以及政府視為需要作為優待票，必要時，政府作為優待票或經同意之交通便利之補助。公用事業亦可與國鐵簽訂相同協議。所有本條文所指協議均須經運輸部長與預算部長核可始可簽訂。

第四十二條 當國家安全受到威脅，而且有軍隊或軍備必須立即運往鐵路可到達之國內某一地方時，國鐵必須立刻將其所有運輸工具應共和國總統或總理或國防部長或運輸部長之要求提供國家支配。

如因實施本條文而增加於國鐵之支出，由運輸部長與預算部長以共同協定予以計算，其金額在該部長等決定之條件下撥還國鐵。

其開支估算及償還條件之擬定，應徵求國鐵之意見。

第四十三條 國鐵負擔運輸部負責監督與查核鐵路之單位作業支出，其具體條件由運輸部長以命令定之。

### 第三編 地方行政單位與國鐵之關係

第四十四條 法國國家鐵路公司以其業務，對地區、省份、市鎮之經濟與社會發展具有很大貢獻，其亦在第二編條款之限制內有助土地之均衡整治，國鐵在其內部組織、研究中，以及有關其服務內容為設置位置之決定中，均考慮到以上目標。

#### 區域旅客服務

第四十五條 區域服務，包括代替之公路服務，亦即那些負責區域計畫內運輸連線之服務，須由行政區與國鐵簽訂營運協議，每一協定均規定所有行駛於考慮中之一條或數條路線上，區域列車服務之內容營運特別情況，及其財務平衡條件。

此等協議規定之營運特別條件應符合其權責規範以及運輸部長制定之安全技術標準。

此等協議明確指出適用於區域服務之費率，是否與適用於全國服務之費率相同，或如特約連線之特有費率條款與國鐵整個費率結構相容時，是否可實施此等條款。

營運協議係定期續約並在其規定條件下續約。

第四十六條 國鐵為每一個行政區準備一份年度預算並開立帳戶，顯示特約區域服務之支出與收入，此種作法乃運輸部長、預算部長與內政部長以共同法令決定之方式。

國鐵與各行政區所訂之協議，均明確規定自該帳戶之支出費用之性質，其與第三十三條所述之非特約區域利益服務之支出之費用性質應相同。記入區域帳戶出帳部份之支出係以協議前一年年度成本計算，並按該協議規定之方式計算指數。區域帳戶之進帳部份登入以第三十三條規定之國家補助之一部份，對每一個第一項協議包括之年度，此項補助等於協議前一年成本與收入間差額間差數之升值金額。



無論是第一項協議或者其簽訂後之協議，在協議中對升值機制均有明確規定，尤其爲了考慮不同地區之特有發展及必要，實施以上第三十三條所指之土地整治計劃；此項升值必須與實施第卅三條而獲得之總補助之進展方式相容。

如第四十五第三款所提之特別安排包括降低費率措施，即可構成行政區對國鐵之財務補助，此款亦記入上述帳戶之進帳部份。

區域預算以預估方式予以平衡，必要時行政區可支付其差額，有關協議已訂定區域帳戶差額之撥款與擔保條件。

第四十七條 國鐵與行政區簽訂一項連接線經營協議，雙方亦可就基礎設施與設備，投資簽訂其他協議。

第四十八條 國鐵與行政區簽訂協議內，連接線之客運服務之任何減少或取消，皆作爲協議之附件處理。

## 巴黎運輸地區之旅客服務

第四十九條 本權責規範之條款並不影響一九八二年十二月卅一日適用於巴黎運輸地區旅客服務之特別條款，與其他地區行政單位或地方公營機構之特約旅客服務。

第五十條 第四十五至四十八條爲區域旅客服務制定之原則，可適用於與其他行政單位、集團或地方公營機構訂有協議之服務。

## 國鐵負責之公路旅客服務

第五十一條 國鐵在未納入於區域計劃內之路線上，完全以公路運輸工具提供之服務，須與有關地方行政單位依國內運輸指導法第二編第三章規定之條件簽訂協議。

第卅三條規定之補貼之一部份，在此情況下，即自補貼總額中扣除。

## 與地方行政單位協商非特約鐵路服務之變更

第五十二條 國鐵於作相關決定之前，應就對區域內非特約鐵路旅客服務整體總內容之預定變更通知行政區，因此此變更可能大為影響該行政區內之區域旅客服務，此項通知須於實施相關變更至少四個月前進行。

當預定之變更涉及開闢或關閉一條路線時，國鐵至應少於開闢或關閉計劃實施六個月前通知有關行政區。

當預定變更涉及興建或取消一處火車站或停車站時，國鐵至少於計劃實施三個月前通知有關行政區、省與市鎮。

國鐵應指明地方行政單位之意見須於某一期限內提出，俾使所擬計劃於必要時可加變更，此等期限必須儘可能考慮到地方行政單位之工作時間。當國鐵預定實質性變更貨運服務時，須通知地方行政機關。

第五十三條 當預定變更係非特約區域利益服務之大幅減少或取消計劃時，而且如果在前條所述協商結束時，因國鐵堅持其立場時，則行政區可將有關連接線在預定變更之實施生效至少三個月前納入區域運輸計劃，以便將此線路上之服務依第四十五條至四十七條規定條件以協議制定。

如行政區在前段所定期限內，將有關連接線納入區域運輸計劃中算起之九個月內未付諸執行時，國鐵即可進行其預定之變更。

## 第四編 財務與會計條款

第五十四條 法國國家鐵路公司每年為下一會計年度編列一預算，此一預算包括：

- 預估損益帳；
- 含實體計劃與財務規劃之投資計劃；
- 融資計劃。

第五十五條 國鐵在擬定預算之同時亦作出分析預測

- 依業務範圍制作者；
- 全國性服務之客運；
- 區域性（包括巴黎郊區）服務之客運；
- 貨運；
- 船舶裝備；
- 相關服務；
- 按管理結構，依各預算主管人之部門制作。

第五十六條 委託國鐵在基礎設施方面之特定責任，乃集中所有營運支出與政府、地方行政單位及國鐵各自參與協助完成此一任務於一分析會計帳戶。此帳戶乃預估性帳目與預算同時設定者。

第五十七條 依前條款確定之預算、分析預測與基礎設施管理帳戶，由國鐵董事會於會計年度前一年度之十二月一日決定。

此等項目可於同年度中依相同程序更改。預算得依據所有工商性質公營機構適用之普通法方式通過。

第五十八條 在會計年度中，國鐵每季通知運輸部長、經濟與預算部長該年度盈虧之預測收入與支出，同時按預算項目分析其與總預算預測間之差額。

第五十九條 董事會核定國鐵年度帳目後，即將其呈報運輸、經濟與預算部長。

年度帳目依據所有工商性質公營機構適用之普通法方式予以核定。

第六十條 政府一九八三年一月一日贈予國鐵不可攤還之公有財產，按當日市價記入國鐵總資產。政府後續捐贈亦同，按當日市價記入國鐵總資產。

此類財產及國鐵自購之財產，日後均得重新估價。

第六十一條 政府得為國鐵所發行之公債作保。

## 第五編 國內鐵路網

第六十二條 政府委託國鐵之國內鐵路網內容可由法令修改，當有路線或路段被併入國內鐵路網時，宣佈歸併之法令乃依據運輸部長報告並聽取國鐵意見後而頒佈。

歸併之財務條件由政府與公營機構簽訂之協議訂定。

當歸併路線附帶之不動產屬於國家時，此等不動產即政府贈與國鐵。

第六十三條 國鐵劃定或委請他人劃定並經營若干專用線基線，以通往若干特別支線或通往其讓與或出租給第三者之地點。

專用線基線屬於國內鐵路網所有。

此等專用線基線可由國鐵在第三者出資或依各締約方決定之條件下，使其參與國鐵興建。第三者興建通往特別支線之鐵路或屬於第三者並通往此等支線之鐵路亦可在各締約方訂定之條件下與其稅基土地一起交予國鐵。適用於專用線基線上進行貨運之費用與條件，乃依現行費率或按照本權責規範第一編之條款簽訂之特別契約訂定者。

專用線基線之保養、營運與必要時之更改、擴大或取消之技術與財務條件可由國鐵、特別支線擁有者，以及與基線相關代理人或租用人及，必要時，地方行政單位與有關公營或私營機構間之協議來規定。與國內鐵路網相連之特別支線之興建與經營其技術法律與財務條件由國鐵與支線擁有者決定。

第六十四條 國鐵應運輸部長要求，須保證在與海港及公共內航水運之整治及營運相容之條件下，將車輛通往此等地方。

由國鐵經營之海港或河港碼頭鐵路之興建、營運及必要時之更改、擴大或取消之方式，均由法鐵與港口主管機關，在運輸部長與港口部長及法鐵協調簽訂之協議予以規定。

在本權責規範生效日時，適用於海港或河港碼頭鐵路之營運



規定延至前段預定之協議簽訂後再予實施。

適用於貨運與客運必要時之費率依據本權責規範第一編之條款訂定。

此等鐵路與附屬鐵路所佔土地、街道與港口（土堤除外），其須繳之稅捐以及開發此等鐵路所需之建築費用與商店須繳之稅捐均由國鐵負擔。

第六十五條 國鐵於認為有其需要時，可出租國內鐵路網之一條路線或一個路段，或以協議方式另請業者經營之。

國鐵簽訂之出租或經營協議得由運輸部長批准，本權責規範生效之日，原股份有限公司所簽訂協議如期滿續約，準用本條規定。

第六十六條 國鐵可提供一條國內鐵路網之路線或路段，給一個或數個組成工會之地方行政單位，在此段路線或路段上實施觀光經營。

此項供給之法律與財務條件，以及國鐵技術檢查經營場所、裝置與設備所依據之方式，由國鐵與有關地方行政單位與此等單位指定管理此線上觀光經營之法人間，簽訂之協議予以規定。國鐵對此等協議之簽訂須經運輸部長核可。

第六十七條 國鐵應運輸部長要求，國防部長建議及聽取預算部長之意見後，負責維持或整修被認為係國防所需之路線或設備。

國鐵為實施本條而需負擔之費用，由政府聽取國鐵意見後，給予相應補償。

第六十八條 電信部長有權沿國鐵之鐵路旁裝設電信線路所需之設備。

此等設備不得影響鐵路之經營，並得在國鐵同意下符合運輸部長規定之安全技術標準。

此等設備之監督、保養及國鐵為其本身需要而使用等事宜，均由電信部長以國家名義與國鐵簽訂協議，規定技術與財務方式。

政府電信部門之技術人員，可因公前往各火車站或鐵路線，彼等必須遵守有關警察與鐵路營運之規定。

國鐵可為其本身需要興建、保養與利用電信線路。

此等線路之興建須由電信部長批准，並同意路線之劃定，至於路線之使用必須繳付適用於公用事業之使用專利權費，此等線路無論如何不得讓第三者使用。

鐵路新線或新電氣化鐵路之經營，不得影響位於國鐵管理產地之外及此等路線附近之現有電信設備。

電信部長以國家名義與國鐵訂定設計、設置以及保護位於國鐵管理產地外設備之維護裝備之投資協議。

第六十九條 當國鐵預計將國內鐵路網路線之一改成單向時，應於更改之前至少六個月前通知運輸部長與國防部長，如運輸部長於接到通知後四個月以內未表示異議，則認為更改已被批准。

第七十條 當實施本權責規範第五十三條之條款時，如國鐵決定取消經營國內鐵路網之一條路線或路段，此條路線或路段之鐵軌可予拆除。

國鐵在執行預定拆軌至少六個月前通知運輸部長。

部長被通知後如在四個月內未表示異議，拆軌即被認為業經批准。

第七十一條 當國鐵實施本權責規範第五十三條條款時，如國鐵決定取消其受託網路內之一條路線或路段時，該路線或路段可由國鐵提議自國內運輸網中，依據運輸部長聽取國防部長意見後頒佈之法令去除。

構成國內鐵路網之路線清單由運輸部長之命令決定，此清單至少每年整理一次以考量過去一年當中所宣佈路線之合併或去除。

## 附錄四

# 《法國鐵路計畫合約》 (Contract Plan)

資料來源：法國國家鐵路公司

# 序

國家與法國國營鐵路公司所簽1985-1989之計畫合約即將達其主要設定目標，其中主要是法鐵致力於生產力的提高，已逐步達到收支平衡，而國家亦履行其股東暨監護人之義務，已兌現其財務承諾。因此，本期計畫合約可邁入新的階段，使法鐵今後步入正常發展機制，成為經營自主、收支平衡、在運輸市場有競爭力而又兼顧其公共服務使命的大型公營事業。

為此，本期計畫合約前述原則明確規定國家與法鐵財務關係結構，為平衡競爭條件（第二章）以及確保公共服務之運作（第三章），國家繼續提供補償，但除此之外，法鐵營運將不受其他任何補貼，故法鐵將自負收支平衡之責任。

但若將為彌補歷年赤字而借貨之債務負擔悉數由法鐵承擔，則該機制勢必難以發揮。基於此根本問題，本期計畫合約採取長期逐步解決辦法，於法鐵會計中專設一償債處理部門，依靠國家之補貼，在約十二年內彌補該部分債務。在此架構下，展望實施在即的歐洲單一市場，法鐵與其外圍集團一以鐵路為主導之多模式運輸集團一志在成為運輸市場成竹在胸之經營者。在廣泛協商基礎上制訂的企業規劃確定了法鐵未來付諸實施之策略，而本期計畫合約之訂定亦予以充分考量。

本期合約所涵蓋之投資規劃展示出法國鐵路運輸未來之新發展。我國在高速鐵路建設方面已處領先地位，而繼續保持領先將使我國在未來歐洲高速鐵路網中居樞紐位置。傳統鐵路客運與高速鐵路和諧並存，並將繼續涵蓋全國領土。貨運將依賴長途國際運輸、聯運以及重組零擔運輸系統以改善其競爭力，確保平衡發展，並在將來穩定其市場佔有率。最後，法鐵將在有關地方政府贊助下，大力改進其對各地區及城市大眾運輸公共服務之貢獻。

為實施本期合約所設定之目標及策略方針，法鐵將根據《國內運輸指導法》第二十四條及《權責規範》第四條之規定，享有充分之經營自主權。據此，法鐵將對其組織及人、財、物力之運用負有完全責任。不言而喻



，惟有全體鐵路員工積極襄助，方能達成設定目標，而員工亦應得以分享既得之成果。法鐵計劃實施之員工政策符合此項要求，並成為企業規劃所確定策略完整之一部分。

此外，法鐵應更加努力改善與使用者、客戶、其社團組織及民意代表之關係。交通運輸之準時、旅行之舒適、貨運送達之可靠、旅客之旅行資訊等，乃至用戶對運輸業者之基本要求，法鐵將採用品質指標對用戶之滿意程度加以衡量繼以後續追蹤。

交通運輸安全為全體運輸業者必循之大圭臬。鐵路運輸安全歷年來屢有改善，惟近年來數次重大事故陰影未散，為法鐵及全體員工憂患之首。深刻檢討之餘，法鐵擬訂出安全改善行動綱領，業經政府核準，即將付諸實施。法鐵將繼續不斷探尋肇事原因及改進之可能及保障安全之根本要求。

綜上所述，法鐵在今後五年內應為大型公營事業之表率，在我國特有之混合經濟環境中，同時於競爭力、服務品質、收支平衡及社會進步各層面成功地接受挑戰。

## 第一章 法鐵之策略方針及其實施條件

### 第一條 計劃合約之法律基礎及其施行期間

本期計劃合約係依據一九八二年十二月三十日《國內運輸指導法》第二十四條及一九八三年九月十三日政令批準之《權責規範》第二十九條而訂定。本期合約確定自一九九〇年一月一日至一九九四年十二月三十一日期間法鐵應達之目標及相應之人、財、物資源，特別是國家補償之額度。

### 第二條 法鐵之策略方針

法鐵將於上述期間內實施有關快速客運、一般運輸及貨運之主導策略方針。此策略方針係由法鐵在與全體員工協商基礎上制訂，並於法鐵企業規劃中詳細闡述。該策略方針符合一九八九年七月十日法律所批準之第十期國家經濟社會發展計劃之策政方針。

在該發展計畫期間凡有涉及國家事宜，國家將協助法鐵實施其策略方針。

### 第三條 快速客運

快速客運之發展仰賴高速鐵路新線之投入營運，其營建或營建之承諾預計於本期計劃合約期間執行，計有：高速鐵路、北線，及北線得與英國、西德及荷、比、盧三國建立之連線；高速鐵路里昂線，使高鐵東南線得以延伸至瓦朗斯；高鐵東南線、大西洋線、北線在巴黎地區之匯集連線。高速鐵路網路之後續開發，將依據政府核定設立之高速鐵路路線整體規劃案進行研究，並對聯接法國及其毗鄰國家之歐市鐵路網之構成，予以充分考量。

俟與地方政府協商後，法鐵將採取必要措施，俾高速鐵路與傳統特快、直快列車暨地區客運之間保有良性互補。凡其具有潛在運量需求者，法鐵將繼續開發各線傳統特快、直快客運。凡有利於國內運輸四通八達之線、站，或利於法鐵網路銜接之線、站，法鐵均繼續經營之。

不符上述標準，僅呈負面價值之線、站，法鐵經與有關地方政府協商之後，適當變更之。與地方政府協商之事宜，主要為客運之班次、公路運輸替代之可能選擇，及融資方式等。

### 第四條 幹線網路之客運費率

除非客運市場之現存競爭條件發生質的變化，法鐵基本費率不分地區一律平等之原則將保持不變。

本合約期間內，幹線網路服務之加權平均費率（註：以上一年收入為基礎，依各項服務之具體內容計算之）隨消費者物價實際變動而浮動。在此範圍內，法鐵享有充分自由以調整費率，尤其是臨時性調價以平衡供需關係及充分使用其運能。

每一會計年度內調整幅度之確定，均應考慮以往數年消費者物價上漲預估值與實際值之差距。

法鐵各項客運服務價格之變動，每年按預算之預定調價日期施行之。

如國家非因總體性經濟措施而反對上述費率調整，或反對按預定日期調價，則應依《權責規範》第三十四條之規定給予補償。一九九〇年如有此類補償情事，按法鐵董事會通過之預算為基準計算之。

為確保社會福利票價妥善之經濟平衡而可能實施之調價，不在上述費率變動之列。此類調價亦不計入一般費率調整幅度之內。高速鐵路延伸線實施特定費率時亦同。

#### 第五條 日常生活之大眾運輸

無論在大巴黎地區或其他地區，法鐵為改善大眾運輸之公共服務而擬定之目標與措施主要實施方式，將依本合約第三章之規定，與有關地方政府協調後確定之。

#### 第六條 貨物運送

在激烈競爭環境中，法鐵為顯著提高鐵路運送之競爭力

- 將致力提高整列運送之生產力及改善車輛調配之靈活性；
- 在國內市場鼓勵採用聯運方式，併考慮推廣至歐洲市場；
- 重新安排整車運送，添設直接送達服務，集中設置貨運終點站。

依據《國內運輸指導法》，第三條確立之原則，法鐵設定如下目標，於本合約期滿後下一五年期期滿時達成貨運帳收支平衡。

董事會每年檢查上一會計年度之貨運帳、本年度之預估貨運帳及與競爭條件有關之項目。檢查帳目後，如發現與上述設定目標不符之情況，法鐵將採取措施糾正之。

為提高經法國海港轉運之多模式聯運之效率，法鐵將繼續發展與各港口之合作關係。

對於相關之鐵路運送，特別是貨櫃運送，法鐵將全力追求最佳

之競爭力。法鐵將與各有關方面共同努力，俾法國港口擁有高品質服務，得以因應身處歐洲市場所面臨之競爭。

關於包裹服務公司之現狀及其可能採取之新措施，由於目前在實施中之重振計劃已設定收支平衡之目標，故俟其一九九一年度決算結果再行審查。

※包裹服務公司（SERNAM）為法鐵集團之子公司，負責包裹運送。－譯註

#### 第七條 貨運費率

法鐵自行確定其貨運費率。凡非因國家總體經濟政策之調整而與此項原則相左，導致法鐵收益下降者，依《權責規範》第三十四條規定給予補償。法鐵與客戶研商特殊費率應恪守與他種運輸模式公平競爭之規則。

#### 第八條 法鐵集團

法鐵集團之政策旨在協助實施前文所載之策略方針。法鐵及其全部子公司所構成以鐵路運輸為主導之大型多模式集團，亦為其策略方針。該政策之重點特別在於：

- －以多模式運輸之組合及多樣化之服務，在客運與貨運方面確保為客戶提供完整之服務。
  - －使集團內各公司以合併或控股之方式，在法國及其他歐洲國家達到足夠之國際規模，並藉此改善鐵路運輸模式於歐洲大一統市場內之地位。
  - －增加各子公司對集團總收益之正面貢獻。
- 尋求法鐵業務與集團各公司業務間之聚合力為一優先重點，特別涉及：
- －聯合運輸，旨在確保其業務擴展。
  - －包裹運送業務，意在改善集團內部之協調及提高整個集團服務之競爭力。
  - －公路客運，使之成為鐵路運送服務品質良好之補充服務。



集團內部各行業不同業者間之協調將按部就班加強之，以確保共同之策略方針得以在最佳條件下付諸實施。

最後，依據一九八九年十一月二十二日董事會決議將其海運公司收納為集團子公司後，法鐵已實施載於附件四之措施。

#### 第九條 運輸安全

法鐵將持續地追求極高程度之鐵路運輸安全。為此，法鐵將特別參考專家委員會一九八九年審查法鐵安全系統後提出之建議，繼續執行董事會一九八八年十月二十二日通過之行動綱領。法鐵將繼續進行運輸安全領域之研究、規劃及內部商討，並將於本計劃合約之初設立法國鐵路運輸安全委員會，特別負責常務安全檢查，並分析檢查該經驗。

法鐵將評估於該領域取得之進展，並將既獲之成果每年呈報主管運輸部長。

#### 第十條 旅客與員工之人身安全與財產安全

法鐵及政府有關部門已於一九八九年採取安全保護措施。在此基礎上，法鐵將繼續在全國鐵路運輸網路及其場站路線設施部署必要之人力及設備，以防範侵害、野蠻破壞，保護旅客、員工之人身安全及財產安全。

#### 第十一條 服務品質

法鐵與其所屬各業務部門將不斷努力以改善服務品質。

法鐵將持續改善對乘客提供服務之品質，尤其是列車準點、進出車站內接待、旅行之舒適、設施之維護保養等，以及任何有助於滿足顧客需要之細節。在票務系統現代化方面，法鐵將特別注意改善旅客資訊，無論其在車站，或使用電話或電腦諮詢及訂購車票，出現意外狀況時，確保旅客獲取可靠資訊，並儘速解決所面臨之問題。

法鐵主要透過與各種用戶協會協商之方式，在全國範圍增進與顧客之關係，並儘快與各協會建立適當之溝通模式。

爲考察改善總體服務品質之措施是否行之有效，董事會將按附件一所載指標定期檢核。

貨運業務方面，法鐵致力於提供客戶滿意之服務，特別是運送服務之品質，以及根據客戶需要迅速提出業務計劃。法鐵將特別注意加強運輸業者與裝卸業者之資訊交換。

## 第十二條 研究政策

法鐵考量其全國性發展方針，繼續執行及發展其研究政策，並積極參與陸運研究發展計劃。

法鐵將增加對研究政策之資源投入，並致力於推動與其他運輸網路之積極國際合作，特別遵循歐市各有關機構訂定並鼓勵採行之程序。

除爲改善鐵路運輸之業務與技術經營條件而不斷採取之措施外（自動化之開發、人工智慧技術之使用、材料及設施之改善等），法鐵將實施三項重大計劃：

- 「高速」計劃：旨在使高速鐵路網之運能與營運速度於本世紀末之前跨進一重要新階段。
- 「ASTREE」計劃：採用電腦技術及電信通訊技術之最新發展，用以重新組織列車運轉。
- 「COMMUTOR」計劃：完成貨車可移動式上部結構快速轉裝設備之安裝調試。

該裝置依靠多模式聯運技術，當爲貨物運送系統提供有利之發展前景。此等研究計劃將在與工業界、研究機構及各有關單位之密切合作下進行。國家對計劃之實施將予以支持。

## 第十三條 國際活動

法鐵致力於推動與歐市及世界上其餘地區國家鐵路運輸網之合作。

凡屬對外介紹與傳播法國鐵路運輸技術之行爲，法鐵均予以支持並得派遣鐵路專家到國際機構，外國機構或法國駐外使館服

務。

法鐵將鼓勵採用與其他歐洲鐵路網路共同研究之成果以開發新設備，特別是在高速鐵路領域，以期建立歐洲高速鐵路網。

法鐵於其集團範圍內，發展自身之服務及工程顧問輸出業務。

## 第二章 競爭條件之平衡

### 第十四條 原則

凡涉及國家與法鐵之關係，本章規定僅適用《國內運輸指導法》第三條所載，並經《權責規範》第二十八條重申之原則，特別有關制訂客、貨運總政策所依據之資料，以及在各運輸模式之間與各企業之間主要透過平衡其經營與使用條件，建立公平競爭之基礎。

所謂平衡，乃基於社會邊際成本之收費標準，即除基礎設施之使用成本外，亦特別考慮到在人員安全及交通運輸基礎設施之擁塞疏解方面鐵路運輸所具之優點。

國家重申：重視逐步改進有關規定以縮小不同運輸模式員工薪資之現有差距，重視該有關規定之實施。

### 第十五條 國家對基礎設施費用之補貼

依據《權責規範》第三十條規定以平衡不同運輸模式之經營條件，並考慮到法鐵在基礎設施方面所負之特殊責任，一九九〇年基礎設施費用補貼訂為一百零一億一仟八百萬法郎（一九八九年法郎幣值）。計劃合約內其餘各年之該項補貼，每年隨國內生產毛額之變動再乘以百分之一點三調整之。

### 第十六條 國家對退休費用之補貼

依據《權責規範》第三十條規定，法鐵之退休開支得受國家補貼。補貼額度逐年確定，俾該帳目（內容詳見附件二）於下列款項支付後得達成平衡：

一法鐵及其員工應繳之退休準備金



一法律規章所規定違反退休制度間之平衡補償。

扣繳退休準備金額應相當於實付薪資總額之某一固定百分比，計劃合約期間每年該百分比為百分之三十六，其中百分之二十七點一為顧主繳額，百分之八點九為員工繳額。

### 第三章 公共服務特殊任務之補償

#### 第十七條 原則

凡因整體利益之考慮而要求法鐵在與運輸市場運作不同之特定條件下提供服務，則國家暨有關地方政府承諾向法鐵提供相應財務補償，以避免此類業務對法鐵之收益造成任何負面影響。有鑒於此，應確保服務內容，以及政府財務補償之額度，均由法鐵與各級政府以協議形式確定之。

#### 第十八條 國防運輸之補償

國家對因國防需要之路線或設施之維護及翻新成本所提供之補償，依據負責國防事務各部首長所表達之需要界定之。補償額度每年經法鐵與各有關部門協商後確定之。

#### 第十九條 地區客運服務

俟一九九〇至一九九四年間各協議期滿續約之際，法鐵將藉地區直快列車帶來之活力，向各地區提出一套整體行動計劃，更加充分考量大都會及其郊區之需要，並對人口稀少地區之公共服務斷然採取現代化的措施。

在此背景下，對於因目前及將來建設通往其他歐洲國家之高速鐵路網而需重新規劃鐵路服務之地區，將予以特殊考量。

每一計劃都將經過法鐵與有關地方政府之協商，其基本目的在於改進地區鐵路運輸服務之效率與生產力。為此，對每一條路線都將事先分析可能採用之不同運輸模式之優劣。如公路技術可提供更適合某些地區需要之服務加以開發。

一九九〇年國家補償額訂為三十五億七仟四百萬法郎（一九八



九年幣值，加值稅除外）。該項補償隨國內生產毛額之變化浮動。

法鐵於每一協議展期之時，向其主管機關提交一份總結報告，綜述協議執行情況及本條重申之基本方針之實施狀況。

## 第二十條 巴黎地區之客運服務

法鐵經與有關地方政府協商後，將在巴黎地區實施一項大眾運輸公共服務計劃，主要包括：

一提高本區之運能；

一改善服務品質，即運行準時、人員及財產安全、旅客接待及資訊、設備與設施之保養及舒適性等；

一改善服務之業務及技術層面之效率，尤其在與巴黎運輸公司運輸網之協調方面。

該計劃之具體內容及其出資方式留待日後研商，研商結果將形成具合約附件效力之文件，附於本期計畫合約。

## 第廿一條 社會福利費率

依據《權責規範》第三十二條規定，法鐵接受國家補償用以消彌實行社會福利費率對企業收益造成之影響。

一九九〇年該項補償之預估基本額度是第一次總付十七億法郎（一九九〇年幣值，含稅），供主體運輸網客運之用。但如有新設社會福利費率，或擴大現行社會福利費率施行範圍，則應根據《權責規範》第三十二條規定之原則調整之。

自一九九一年起，合約期間每年補償金額將依據基本額度確定之，其調幅按下列方式計算：

一基本額度之三分之二

＊比照法鐵幹線客運網之規定

＊以及消費者物價指數，每年增加百分之一

一剩餘之三分之一，按消費者物價指數調整。

## 第四章 員工政策

### 第廿二條 原則

根據政府所制定之總方針，法鐵結合經濟及社會進步，致力於人力資源管理之現代化。於此前提下，法鐵設定目標如下：

- 提昇員工素質及其專業水準；
- 下放責任（分權）及資源；
- 發展勞資溝通、協商及約僱政策；
- 促進發言權及參與方式，使每一鐵路員工投身變革；
- 實行用人與人力資源之預測管理政策。

法鐵將商議並實施新措施，以利員工之提昇自我發展及增強其主動性。法鐵將重新商議員工訓練之整體協議並與員工代表商討薪資等級之現代化。與此同時，法鐵將繼續實施改善鐵路員工生活與工作條件之政策。

為使員工與企業績效之改善息息相關，法鐵與工會組織協商員工分紅之整體協議。

法鐵員工政策之主要取向詳陳於法鐵《企業規劃》。

## 第五章 投資

### 第廿三條 投資之出資條件

法鐵為其投資計劃所設定之目標為合約期滿時當年自有資金占當年投資額百分之三十四，合約期間各年度則不低於百分之二十。

「經濟暨社會發展基金會」理事會將確定各年度支付信貸額度，以便遵守法鐵設定之目標，並實現下列第二十四條所載之投資計劃。

此外，經向「經濟暨社會發展基金會」報備，法鐵於一會計年度內得延後或超支當年信貸，於高速鐵路則無限制，但幹線網

路其餘作業之信貸延後或超支百分之五以內，則其延後或超支，應於下一會計年度調整之。

依據《權責規範》第三十六條之規定，法鐵應事後提出投資之經濟與社會效益總結報告，呈主管運輸部長核準。此外，每年應製作投資年度報告，對實績與預估進行比較並報告董事會。

#### 第廿四條 投資之性質與金額

計劃合約其間，法鐵投資總額（不含稅）應達約七百九十六億（一九八九年幣值）法郎，巴黎郊區不計在內。總投資分配情況如下：

- 用於高速鐵路以外之傳統網路之投資，以一九八九年法郎計約二百八十億法郎（註）：在此範圍內，視法鐵財務狀況或國家總體經濟狀況而定，每年投資額得於五億法郎（一九八九年幣值）限度內增減調整之，但最低不得少於五十一億，最高不得超過六十一億法郎（一九八九年幣值）。該項投資額不含取自專款專用資金之投資，亦不含下文第二十六條所指法鐵於傳統鐵路網投資作業所需併超過規定上限之信用貸款。
- 約八十一億法郎（一九八九年幣值）將用於路線定期大檢修
- 約四百三十五億法郎（一九八九年幣值）將用於正在進行或已核定之高速鐵路計畫（基礎設施及車輛），即高鐵大西洋線、北線、英法海底隧道終端設施、高鐵大巴黎地區匯集連線，以及高鐵東南線至瓦朗斯之延伸線。高鐵建設利息費用未計入該項投資額內。

有關高速鐵路網路可能之繼續開發將另作附件附於本合約。

（註）有關巴黎－康城－瑟堡及普瓦鐵－拉羅榭（Paris-Caen-Cherbourg et Poitiers-La Rochellea）路線電氣化之鐵路現代化投資案不包括在內。

#### 第廿五條 聯合運輸發展計劃

國家參與發展聯運所需之投資計劃（據核準第十期國家經濟與



社會發展計畫之一九八九年七月十日法律）。

#### 第廿六條 國家或地方政府要求投資之出資方式

國家、地方政府或地方公立機構，如要求實施或變更投資計劃，則應同時承諾給予法鐵財務協助，俾計劃之實施不致影響法鐵收益。爲此，其參與計畫之出資額應達一定比例，使法鐵出資部分之預估內在報酬率至少與法鐵自身投資與計畫採用之內在報酬率相等。如法鐵在此類投資出資額超過一億法郎（一九八九年幣值）則應做成附件附於本合約。

爲發展地區鐵路運輸而進行之基礎設施投資，列入第二十四條之投資總額（法鐵出資部分）。

投資計劃中法鐵出資部分如需發行債券融資，若其成本高於經濟暨財政部所定條件下債券市場之融資成本，則高出部分由要求投資計畫之地方政府負擔。

### 第六章 債務管理

#### 第廿七條 利用金融市場

法鐵得在正常法律規範條件下，考量其自身之自償能力而利用金融市場融資，以供其投資政策及償還債務之需。

除發行各類普通債券之外，法鐵亦得應用工商界通常使用之任何集資方式。

法鐵得採用任何融資方式，尤其藉助普通法律所規範之金融手段，以確保其長期、中期及短期資金之最佳平衡。

法鐵將謹慎地但積極地管理其債務。

#### 第廿八條 財務狀況之清理

爲大量減少債務以達持續清理公司財務狀況之目的，國家與法鐵商定自一九九一年一月一日起，採用以下方式代替上期計劃合約規定之例外補助：

法鐵於一九九一年一月一日設立“債務處理部門”其會計記帳



與法鐵會計分立之。

法鐵歷年負債即相當於上期合約期末之累積赤字，計三百八十億法郎。該項債務清單將由法鐵與國家共同協商認定，並悉數移轉至“債務處理部門”，直至其全數清償為止。

“債務處理部門”將完全負責移轉債務之還本付息。

該部門之資金來源如下：

一自一九九一年起，計劃合約期間由國家每年提供三十八億法郎（一九八九年幣值）；

一自一九九一年起，計劃合約期間由法鐵每年提供一次性金額一億法郎（一九八九年幣值）；

一該部門自有可用資金及其孳息。

國家之資助及法鐵提供資金，於計劃合約期內每年隨國內生產毛額價格變動之。

#### 第廿九條 過渡條款

上期計劃合約所規定之例外補助於一九九〇年維持在三十七億六仟三百萬法郎（一九八九年幣值）。

### 第七章 財務平衡

#### 第卅條 企業之管理與競爭力

法鐵應致力於提高其全部生產要素之生產力，包括人員、能源、其他中間消費及設備，以明顯加強其競爭力。

法鐵每年設立管理指標如附件三。

#### 第卅一條 管理之總目標

法鐵期於本合約之條款，自設目標為每年營運於結算時至少達成收支平衡。

## 第八章 合約之執行及後續作業

### 第卅二條 合約之執行及後續作業

法鐵於每年五月一日之前提出全部已知資料，用於評估上一年度內合約設定目標之實施狀況，以及管理指標之變更。

如法鐵於一會計年度末未能達成本合約設定之目標，合約雙方共同探討其原因，並制訂適當之補救措施。

### 第卅三條 補救條款

如有本合約未規定之事項或決定致使部份條款無法實施，或不能達成預定目標，則由國家與法鐵共同協商探討其原因，併制訂適當措施補救之。

一九九〇年三月十四日

財經暨預算部長裝備、住宅、運輸暨海洋部長

皮爾·貝赫戈瓦米歇·德勒巴赫

法國國營鐵路公司董事長

雅克·傳赫尼

# 附 件

附件一、服務品質指標

附件二、國家對退休之補貼

附件三、管理指標

附件四、法鐵海運子公司之成立

## 附件一 服務品質指標

### 旅行整體品質評估指標

1. 依據全國品質指標（每年公佈）訂定：
  - 1-1 乘客對乘車準備之服務滿意或非常滿意率。
  - 1-2 乘客對起點及終點站滿意或非常滿意率。
  - 1-3 乘客對所經旅客車上服務滿意或非常滿意率。
2. 依據技術層面品質指標（採具代表性營運期間）訂定：
  - 2-1 班次準點指標
    - 2-1-1 特快及直快準點率（誤點三分鐘以內）。
    - 2-1-2 特快與直快誤點十四分鐘以上比率。
  - 2-2 幹線車站窗口前等候十分鐘以上乘客比率。
  - 2-3 電話接通之前等候六十秒鐘以上乘客比率。
  - 2-4 幹線車站視覺可察之清潔狀況指標。

## 附件二 國家對退休之補貼

《權責規範》第三十條所指法鐵退休金相關費用如下：

- 一 退休金
- 一 撫恤金
- 一 對無薪人員養老基金之捐款
- 一 補發退休時未領之退休金、補償金、或發給其受益人
- 一 退休金業務辦理費用：
  - 一 施工費、辦公用具、對外服務
  - 一 各類管理費用
- 一 由退休基金負擔之財務費用、攤銷費及準備金
- 一 退休基金負擔之各類稅賦



## 附件三 管理指標

法鐵將依各會計年度合約執行情況，逐步建立下列指標，併於合約後續工作範圍內，將有關結果上報政府。

此類指標之設立既用於企業總體業務之管理評估，亦用於幹線網路業務之評估。（計算時，營運收益中含全部來自顧客之收入，亦含因社會福利減價票而取得之補償、地區鐵路運輸服務之補償，以及對巴黎郊區車服務之補償。）

A1 用人費與營收之比率

A2 經營管理費（用人費除外）與營收之比

A3 每一員工平均創造之加值（以定值法郎計算）

A4 營業毛利（含國家補償）與總產值之比

A5 營業毛利與固定資產淨額之比

C1 等公里單位成本（以定值法郎計算）

C2 地區鐵路運輸服務之等公里單位成本（以定值法郎計算）

C1與C2指標由下文界定之支出之商數得來，此類支出按有關運輸類別之等公里單位定義之。

支出以一九八九年幣值法郎計算，並以國內生產毛額價格指數計算通貨膨脹率。

### • 支出

計算C1指標時，支出係指營業總支出扣除以下各項：

- 折舊值重估之差，以及設備補助金用以減少折舊之部分；
- 法鐵直接租用公路運輸之支出；
- 海運業務支出

此外，此類支出中亦扣除與以下收之相當數額：雜項數入、郵政運輸收入、金融投資收入，以及來源於

計算C2指標時，支出係指按不同業務劃分之支出。

### • 等公里單位

運量將以“等公里單位”表示。運輸劃分為不同基本類別，每一類別帶來一個等值係數，以相等於特快或直快列車（高鐵不計在內）二等車廂座位延人公里之一定數量之等公里單位表示相應業務量。

運輸類別與相等係數如下：

#### 運輸類別係數

一特快及直快（高鐵除外）二等車廂有座位乘客	1, 000
一特快及直快（高鐵除外）頭等車廂有座位乘客	1, 615
一高鐵二等車廂乘客	1, 143
一高鐵頭等車廂乘客	1, 749
一特快及直快二等硬臥乘客	1, 249
一特快及直快頭等硬臥乘客	1, 817
一特快及直快軟臥乘客	1, 845
一地區鐵路運輸乘客	2, 725
一巴黎郊區乘客	1, 936
一包裹運送	1, 936
一用聯運車廂運送	0, 432
一用傳統車廂運送	1, 164
一專列運送	0, 590

此類相等係數適用於所有運輸類別之實際公里單位（註），但包裹運送除外，因其基本單位係由下列相等係數所構成之“相等公斤包裹”總成：

一國內包裹	1, 000
一國際包裹	

（註）民營貨運車廂不含在內。

．郵政包裹	4, 947
．其他	1, 088
一國內快遞	2, 836
一國際快遞	3, 463

—直接快遞	3, 944
—郵件送貨上門	0, 312
—運輸代理業務	0, 331

法鐵每年提供上述各運類別資料，以及依據有關統計資料計算之相等運量。

如有重要新設服務項目不在上述範圍之內，有關各部門將協商一致補充之。

## 附件四 法鐵海運子公司之成立

直到一九八九年，法鐵一直直接經營介於法國和英國之間之海運業務，經營機構為法鐵海運分部。該部門曾長期虧損，但自一九八五年實施重振計劃後財務狀況已切徹底改善。

不過，鑑於英法海底隧道將於一九九三年開通啓用，英國經營英法海峽運輸之公司已紛紛調整投資政策，以期提高生產力，同時大力改善服務品質。

對此，法鐵一方面因高鐵北線建設及隧道配合工程大量投資，且與隧道建設公司“歐洲隧道”集團有合約關係而不能直接介入與歐洲隧道競爭之行業，反而應籌措大量資金以確保歐洲隧道將來之營運，另一方面，法鐵海運分部原與英國“海運線”(Sealink)公司共同經營，但在目前情形下已不再是“海運線”之可靠伙伴。

在此條件下，為將來法國在英法海峽海運業及海峽東部至北海間維持航運，並保證法國船員之就業，法鐵遂提議將其海運分部改制為子公司，更新其架構，將其業務界定於公共服務範疇，併由三家公司組成。

### 一、“海峽運輸公司”(GIE TRANSMANCHE)

法鐵持百分之九十股份，“法國海運總公司”(CGMF)持其餘百分之十；GIE以持股之方式掌控其餘兩家公司（法鐵亦曾建議上諾曼底及北加萊兩地地方政府參股GIE）；

## 二、“海運般東公司”(SPN)

由GIE持百分之五十一股份，英國“海運線”公司持百分之四十九。SPN將購下法鐵“藍色海岸”號，以及“海運號”公司“Fiesta”號大型運輸船，並將租用原法鐵海運分部其他船隻；

## 三、“新海峽海運公司”(SNAT)

其資本初期將由 GIE金額投入，今後百分之十五之股份可開放售於餐飲業、旅遊業及零售業者。SNAT將與“海運線”公司訂之長期合作協議，使用 SPN提供之船隻，經營原海運分部之業務。

此一新架構之意義在於使SNAT得以配備大運量船隊，而法鐵作為 GIE之主要股東亦能保持對SNAT之控制。

此項改組已獲法鐵董事會及主管機關批准。法鐵並已就此項改組做出經濟及社會層面之補充承諾。



APPENDIX 5

Raiway Law

( 英譯中華民國鐵路法部分條文 )

## **Extract from "Railway Law"**

(Promulgated on 3 January 1958 with 64 articles in total; amended (art. 54, 58) on 21 January 1959; amended on 26 July 1978 with total number of articles extended to 76)

### **Chapter I      General Principles**

#### **Art. 1            (*Application*)**

Construction, management, control, transport and safety of railways are governed by this law; matters not stipulated in this law are governed by other relevant laws and regulations.

#### **Art. 2            (*Definition*)**

- 1)      "Railways" means ground facilities in which electrical wires are installed on/or over rails to allow running of powered trainsets.
- 2)      "National Railways" means the railways owned by the State and operated by the Central Government.
- 3)      "Local railways" means the railways operated by the local governments.
- 4)      "Private railways" means the railways operated by nationals.
- 5)      "Special railways" means railways constructed by companies and organizations for the purpose of their own business transport.

#### **Art. 3            (*Principle of State-run railways*)**

In principle, railways are operated by the State.

Construction, extension, transfer or operations of local railways and private railways must be subject to approval of Ministry of Transportation and Communications.

#### **Art. 4            (*Administration and supervision of railways*)**

National Railways are administrated by the Ministry of Transportation and Communications. Local railways, private railways and special railways are under the supervision of the Ministry of Transportation and Communications.

## **Chapter II Construction**

### **Art. 10 (*National railway network planning*)**

The National Railway network plans are worked out by the Ministry of Transportation and Communications, submitted to Executive Yuan for approval, known to the public, and executed following scheduled phases. Modification of the plans should follow the same procedure.

## **Chapter III Administration**

### **Art. 20 (*Establishment of a general institution*)**

For the purpose of administration of National Railways, the Ministry of Transportation and Communications may establish a general institution. The organization of such institution will be governed by other specific laws.

### **Art. 21 (*National Railways' activities and its related businesses*)**

Apart from its principal activities of passenger transport and freight, National Railways are entitled to run related businesses as follows:

- 1) harbors and ferries transport related to railway transportation,
- 2) automobile transfer business related to railway transportation,
- 3) customs declaration and warehouses necessary for railway transportation,
- 4) repairs and manufacturing of tools and equipment related to railway transportation and construction,
- 5) other businesses necessary for the development and prosperity of railway transportation.

### **Art. 22 (*Rules governing national railway transportation*)**

National railway transportation should be planned and administrated in a centralized way. The relevant rules will be laid by the Ministry of Transportation and Communications.

**Art. 23 (*Legal foundations of employment of personnel*)**

Matters relative to recruitment, salaries, management, services, examination, meritorious and disciplinary norms, welfare, retirement and compensation of employees of the National Railways are governed by relevant laws and regulations. Matters not governed by such laws and regulations are subject to rules to be formulated by the Ministry of Transportation and Communications.

**Art. 24 (*Bond issue or foreign fund-raising*)**

For the purpose of activities, the National Railways may, upon approval of the Executive Yuan through the Ministry of Transportation and Communications, issue bonds or borrow money from abroad.

**Art. 25 (*National Railways' accounting system*)**

National Railways' accounting system is governed by (provisions of) the Railway Accounting System.

**Art. 26 (*Fare calculation of National Railways*)**

Formulae of fare calculation of National Railways are elaborated by the Ministry of Transportation and Communications. Those formulae should be submitted to the Executive Yuan, the latter will then transfer them to the Legislative Yuan for approval. Any modification of the formulae should follow the same procedure.

The National Railways' fares, calculated according to the above-mentioned formulae, should be submitted by the Ministry of Transportation and Communications to the Executive Yuan for approval before its implementation. The same procedure should be followed for any modification.

Due to special circumstances or situations, the National Railways may set relatively low fares. Provisional fares may be set for provisional operations during construction periods.

These fares are subject to approval of the Ministry of Transportation and Communications.

**Chapter IV Supervision**

**Art. 28 (*Documents necessary for application of construction of local and private railways*)**

For the construction of local and private railways, the following documents should be submitted to the Ministry of Transportation and Communications for approval, and the latter should inform the Executive Yuan before the start of works:

- 1) Application;
- 2) Construction project;



- 3) Estimated alignment draughts with legends;
- 4) Estimated fixed assets formation, improvement, and increase;
- 5) Forecast income statement;
- 6) Total capital and funds-raising plan.

**Art. 29 (*Documents necessary for application for construction works*)**

After the approval of application for construction, the following documents should be submitted to the Ministry of Transportation and Communications for the issue of license before the start of works:

- 1) Plans and cross-sections of alignment with legend;
- 2) Plans and drawings of civil works and rolling stock;
- 3) Scheduled implementation plan of civil works;
- 4) Total capital, paid-in capital, and time-limit for outstanding capital;
- 5) Organizational chart of management; private railways should provide Articles of Association of the company and list of shareholders and names of directors of the board, names of the management.

**Art. 30 (*Approval of construction of special railways*)**

For construction of special railways, the constructor should submit the following documents to the Ministry of Transportation and Communications for issue of license, the latter will inform the Executive Yuan before the start of the works:

- 1) Application;
- 2) Arguments for the construction and document of approval issued by the authorities in charge of the industry sector;
- 3) Plans of alignment with legend;
- 4) Estimated fixed assets formation, improvement and increase;
- 5) Total capital of the future railway and certificate of the capital.

**Art. 31 (*About road facilities and others*)**

For construction of local, private and special railways affecting existing facilities/works of roads, bridges, rivers and canals, the constructor should previously coordinate with or apply for approval of the relevant authorities.

*Art. 32 (Matters to be reported on)*

Local and private railways should report to the Ministry of Transportation and Communications on the following matters:

- 1) Progress report and financial report during preparatory or construction period, once a month;
- 2) Operations report during operating period, every three months;
- 3) yearly report on railway infrastructures, profit and loss, transport operations and improvement plan, within six months following the end of each fiscal year.

Special railways should make monthly progress and financial report during the construction period.

*Art. 33 (limitation on private railways management)*

Form of private railways is limited to company limited by shares.

*Art. 34 (Approval of foreign employee recruitment)*

Local and private railways should apply to the Ministry of Transportation and Communications for approval if they need to recruit foreign employees.

*Art. 35 (Approval of fares of local and private railways)*

Transport fares of local and private railways must be approved by the Ministry of Transportation and Communications. The same procedure shall apply to any adjustment of fares

*Art. 36 (Correction of inappropriate installations)*

Should the Ministry of Transportation and Communications consider inappropriate any necessary installations for transport on local and private railways, the Ministry may notify the local or private railways to correct such installations.

*Art. 37 (Necessary combined transport for public interests)*

For the sake of public interests, the Ministry of Transportation and Communications may notify local and private railways to operate combined transport with other railway, road, waterway or airway transport. In case of emergency, the Ministry may also order any railways to provide trainsets for combined transport.

**Art. 38 (*Prohibition of related businesses*)**

Unless approved by the Ministry of Transportation and Communications, local and private railways are prohibited from operating related businesses.

Unless approved by the Ministry of Transportation and Communications, special railways are prohibited from operating passenger and freight transport beyond their own business, so as for any other related businesses.

The Ministry of Transportation and Communications must strictly control special railways operating passenger and freight transport services, in order that they comply with laws and regulations governing railways.

**Art. 39 (*Approval of modification of organizations and others, and limitation on mortgage*)**

Matters concerning modification of organizations, increase or reduction of capital, leases for operations, mortgage of property, transfer of management, termination of activities or cessation of operations of local, private and special railways are subject to previous approval of the Ministry of Transportation and Communications.

The mortgageable property defined in the preceding paragraph is limited to buildings, cars and machines.

**Art. 40 (*Report on accidents of running operations*)**

In case of major accidents from running operations, local, private and special railways must immediately inform, through means of telecommunications, the Ministry of Transportation and Communications, and constantly report on the occurrence of the accident. For ordinary accidents, the railways should also report to the Ministry on a monthly basis.

**Art. 41 (*Inspection by the Ministry*)**

The Ministry of Transportation and Communications should send inspectors on a regular basis to visit local, private and special railways concerning progress or situation of construction, materials, operations, transport, accounting, property, etc.. The inspectors may, if necessary, verify relevant documents and books. Should they find any inappropriate management of these matters, the inspectors must guide the railways to correct it.

**Art. 42 (*Limitation on distribution of profits*)**

Local and private railways may not distribute their profits until the total investment of construction and depreciation of facilities have been amortized. When the net profit of a year exceeds 25% of the total paid-in capital, the amount in excess should be used for increase or improvement of facilities.

**Art. 43 (*Accounting system*)**

Local and private railways may apply rules of the National Railways' accounting system.

**Art. 44 (*Clauses applicable to special railways*)**

Special railways, approved to operate passenger and freight transport services, may apply provisions of paragraph 1 of article 32, articles 34, 37 and 42 of the present law to their operations.

**Art. 45 (*Implementation rules*)**

Rules of supervision and implementation governing local, private and special railways will be established by the Ministry of Transportation and Communications.



## **APPENDIX 6**

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**Competence Apportionment  
among Executive Yuan,  
Taiwan Provincial Government,  
Taiwan Railway Supervision / Control Commission,  
Taiwan Railway Administration**

英譯行政院、台灣省政府、台灣鐵路監  
理委員會與台灣鐵路管理局權責劃分表

## COMPETENCE APPORTIONMENT

**Note:** The document thereunder has been established according to the Provincial government circular Transport I., No. 121910 on date of Dec. 5, 1989, which was referred to the Executive Yuan circular Taiwan 89 Transport No. 28275 on date of Nov. 5, 1989.

I. Organizational Chart of the Taiwan Railway Supervision/Control Commission (omitted here)

II. Competence Apportionment among:

- Executive Yuan (Ex.)
- Taiwan Provincial government (Pro.)
- Taiwan Railway Supervision/Control Commission (S.c.)
- TRA

Legend:

- |   |   |              |
|---|---|--------------|
| O | = | decision     |
| D | = | deliberation |
| T | = | transmission |
| I | = | information  |

### II. Competence Apportionment Chart

Items	Apportionment			
	Ex.	Pro.	S.c.	TRA

#### A. Personnel/Organization

1. elaboration of rules establishing S.c.	O			
2. selection of S.c. members		O		
3. modification of TRA organization statutes			O	D1
4. modification of budgeted employee number	O	D1		
5. adjustment of budgeted number of Basic Service Labor			O2	
6. special examination and promotion examination (not including promotion investigation of the two highest ranks) of railway staff, transport sector		I		O
7. criteria of staff number setting	O			
8. designation, removal and secondment of Dept. chief and higher-ranking officers		O		

Items	Apportionment			
	Ex.	Pro.	S.c.	TRA
9. designation, removal and secondment of deputy chief rank, senior rank and junior rank staff		I		O
10. recruitment and dismissal of contract staff (including budgeted contract staff)	I		O	
11. recruitment of contract foreign staff	OT			
12. staff appraisal				
a. Director-General		OT		
b. Deputy Director-General through senior rank staff				OT
c. junior rank staff				OT
13. reward and penalty, retirement, compensation and dismissal of staff (not including Director-General and Deputy Director-General)				O
14. cooperation with universities (pre-recruitment training)	I		O	
15. type of staff salary scheme	O	OT	D	

**Notes A:**

1. Major modifications are to be deliberated by the S.c..
2. Adjustment is allowed within 20% of the total budgeted staff number.

Items	Apportionment			
	Ex.	Pro.	S.c.	TRA
<b>B. Finance</b>				
1. modification of capital		O	D	
2. budget planning and approval	O	D		
3. budget execution				O
4. budget settlement approval		OT1		
5. coverage of expenses in excess of the budget and of authorised standards	O			
6. modification of budget for project capital expenditure		O		
7. modification of budget for non-project capital expenditure			O	

Items	Apportionment			
	Ex.	Pro.	S.c.	TRA
8. handling of losses or destruction of cash, bills, securities, goods or any other assets, or losses due to other unpredictable incidents	OT			
9. sale, exchange, rent out or long-term lease of property (i.e. land and buildings)	O	OT2		
10. disposal of fixed assets (except property )		O		
11. retirement and loss of fixed assets and equipment		O		O/or OT3
12. donation of fixed assets		O		
13. statistical plan execution				O
14. management of goods, financial and accounting matters			O	
15. advance for non-budgeted capital expenditure		O		
16. analysis and control of commercial activities, operating productivity, budget execution and financial situation	I		O	
17. funds management and short-term borrowings				O
18. domestic borrowings			O	
19. borrowings from abroad	O	OT	D	
20. bond issue	O	OT	D	

**Notes B:**

1. Follow the procedure of the Budget Settlement Law.
2. Art. 25 of the Land Law\* will apply.
3. TRA decision for amount equal to or under NTS one million.

\*Art. 25 of the Land Law (promulgatd in June 1930, amended most recently in Dec. 1989):  
 "Any provincial, municipal or county government cannot dispose of, mortgage, or lease for a period exceeding ten years, the public land under its administration, unless it has the agreement of the representative institutions of its jurisdiction, and it has the approval of the Executive Yuan."



Items	Apportionment			
	Ex.	Pro.	S.c.	TRA

**C. Operations/Services**

1. annual plan of TRA	O	D		
2. medium/long-term plans		O	D	
3. major project investment plan	O	OT	D	
4. capital expenditure plan for specific projects	O	D		
5. major R & D projects	O	D		
6. ordinary R & D projects				O
7. fixing and modification of passenger and freight tariff	O			
8. fixing and modification of miscellaneous fees for passenger and freight transport		I		O
9. establishing/modification of regulations and rules for passenger and freight transport		I		O
10. establishing/modification of running rules		I		O
11. establishing/modification of specific rules related to freight transport		I		O
12. renewal plan for station facilities		I		O
13. elaboration/modification of rules relevant to related businesses in stations	I		O	
14. elaboration/modification of rules relevant to advertising businesses in stations	I		O	
15. R & D projects for tourism	I		O	
16. R & D and improvement plans for running safety	I		O	
17. elaboration of plans of preventive measures and of compensation scheme for running accidents	I		O1	
18. installation and improvement of level-crossing facilities		O2	D	
19. setting-up of regular/non-regular trains		I		O

Items	Apportionment			
	Ex.	Pro.	S.c.	TRA
20. handling of contentious matters rising out of property		I		O
21. handling of accidents during construction		I		O
22. manufacturing/construction projects of mechanical facilities		O		
23. elaboration/modification of other rules and regulations		I		O3
24. lost/retired equipment exchangeable against usable equipment				
a. value exceeding certain amount		O		
b. value within certain amount				O
25. disposal of lost/retired equipment				
a. sale of retired equipment				O
b. sale of ordinary waste materials				O
26. lending of goods and materials				O
27. donation of materials				
a. value exceeding NT\$ 0,1 million		O		
b. value under NT\$ 0,1 million			O	
28. application for foreign exchange				O
29. construction/repair works; purchase, order or disposal of goods				
a. invitation for bid over certain amount			O4	
b. selection and negotiation for value over certain amount	O5			
c. signature of contract, acceptance examination and relevant matters		OI		O6

**Notes C:**

1. Within the compensation limit.
2. Improvement projects should be reported to the central Government.
3. Administrative procedures should be followed if laws and regulations are to be elaborated.
4. For construction/repair works, approval of DOT and DBAS (Dept. for Budget, Accounting and Statistics) is necessary, as well as their supervision of the works.  
For purchasing, ordering or selling of goods, TRA should ask DOT and DBAS to send people to supervise these matters.
5. With agreement of DBAS.
6. Ask supervision of DOT and DBAS.