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INTERNATIONAL DEVELOPMENT ASSOCIATION

APPRAISAL OF
THE PAKISTAN RAILWAYS PROJECT

August 31, 1962

Department of Technical Operations

CURRENCY EQUIVALENTS

1 Pakistan Rupee	=	US $0.21
1 U.S. Dollar	=	Pak. Rs. 4.762

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SUMMARY

i. The Government of Pakistan has asked the Bank to help finance the Pakistan Railways' Second Five-Year Development Program; and more specifically the acquisition of freight cars, passenger coaches, plant and machinery for workshops, signalling equipment and sleepers, and the payment of ocean freight charges, for which foreign exchange would be needed during fiscal years 1962/63 and 1963/64.

ii. This report covers appraisal of the Railways' Second Five-Year Development Program, estimated to cost Rs. 1,623 million over a period of five years 1960/61-1964/65, inclusive. Of the total cost Rs. 1,024 million would be for foreign currency. The Government reduced the total figure and included Rs. 1,400 million (Rs. 900 million in foreign currency) for the Railways in its Five-Year Plan. During fiscal years 1962/63 and 1963/64, the cost of the Project would be Rs. 672 million of which Rs. 409 million would be foreign exchange.

iii. Since 1959, the Railways have been under the jurisdiction of a semi-autonomous Board. In 1960, the Railways' budget and in 1961 their finances were separated from those of the Central Government, and the Board thereby acquired substantial financial autonomy. Organization has been sound and management has been competent. Operations have been reasonably efficient, except for redundancy of staff on the Pakistan Eastern Railway.

iv. The Railways were reorganized on July 1, 1962, in accordance with the provisions of the President's Order of June 9, 1962. The Railways were transferred to the jurisdiction of the respective Provincial Governments. This move brings with it problems concerning continued implementation, now in progress, of accounting reforms recommended in 1959 by Price Waterhouse and Co., and continued separation of the Railways' finances from those of Government.

v. Railways' traffic has increased substantially in the recent past and in the aggregate they have operated profitably in the past. Earnings on the Western Railway have compensated for losses or meager operating profits on the Eastern Railway.

vi. The Project's main objective is to provide additional capacity to cope with present traffic demands which may reasonably be expected to increase materially during the Government's Second Five-Year Plan. The Project is technically, economically and financially sound for the Railways as a whole. Considered as separate Provincial Railways, the future financial position of the Western Railway will be sound but the Eastern Railway may encounter shortage of local funds which is intended to be made up by the Government.

vii. Understandings have been reached during negotiations concerning redundant staff on the Pakistan Eastern Railway, and the continuation of the separation of railway finances from those of Government, effected in 1961.

viii. The Project is suitable for loans to the Central Government of Pakistan of US$18.25 million and US$4.75 million equivalent for the Pakistan Western Railway and the Pakistan Eastern Railway respectively. A term of 20 years including a $3\frac{1}{2}$ year period of grace would be appropriate.

I. INTRODUCTION

1. The Government of Pakistan has asked the Bank for loans of US$18.25 million and US$4.75 million equivalent, as financial assistance in carrying out the Pakistan Western and Eastern Railways' revised Second Five-Year Development Programs. The Bank has made prior loans to the Government of Pakistan for its Railways, in March 1952, in October 1957 and in November 1959 in an aggregate amount of US$70.7 million equivalent.

2. This report is based on an appraisal of the Pakistan Railways and their development program by a mission which visited Pakistan in April 1962, and on information received subsequently from the Railways.

II. THE RAILWAY BOARDS

A. Background

i) Former Ownership and General Powers

3. Prior to July 1, 1962 the Pakistan Railways consisted of the Pakistan Western Railway and the Pakistan Eastern Railway which operated in the western and eastern sectors of the country, respectively, (See Map) under a Railway Board which was a part of the Central Government. Both Railways were owned by the Central Government. Until 1959, the Central Government administered both railways through the Railway Division headed by a Director General of Railways in the Ministry of Communications.

4. By the Railway Board Ordinance, 1959, a semi-autonomous Railway Board was established and vested with the principal powers of the Central Government contained in the Railways Act IX of 1890. The Central Government continued through the Board to administer the affairs of the Railways. There was no transfer of property or change in the financial relationship of the Railways to Government. The Board had general supervision over railway operations, referring to Government matters of general policy.

5. The Board had no financial autonomy and all funds were subject to Government control, until July 1, 1960 when the Railways' budget was separated from that of the Central Government, and as of July 1, 1961, the Railways have had control of their own funds. This is referred to more specifically under the general heading of finances.

ii) Former Organization and Management

6. From 1959 to July 1, 1962 the Board consisted of the former Director General of Railways, a financial member and an engineering member. The Board was assisted by a small staff of experts in the fields of operations, finances and engineering. Each Railway had its own general manager who was in full charge of day-to-day operations referring to the Board such matters as procurement, personnel and rates. Below the General Managers,

the organization of the Western Railway was based on the divisional system and that of the Eastern Railway, on a departmental basis. Increased traffic and operational movements on the Pakistan Eastern Railway have disclosed the inherent weakness of a departmental system whereby decision making is centralized in the General Management. The PER management is aware of this problem and has planned establishment of railway divisions, starting west of the Brahmaputra river. In other respects, the Railways' organization has functioned well. Management has been competent.

B. Changes in Organization

i) Transfer from Central to Provincial Governments

7. By the Transfer of Railway Order, which is President's Order No. 33, dated June 9, 1962, the assets and liabilities of the Pakistan Eastern Railway were transferred to the Government of East Pakistan and those of the Pakistan Western Railway to the Government of West Pakistan. The Presidential order followed the recommendations made by a special Commission established to study procedures for setting up new provincial organizations for each railway.

8. The President's Order became effective on July 1, 1962, concurrent with the planned establishment of a Railway Board by each provincial government and the repeal of the Railway Board Ordinance, 1959. In the case of East Pakistan the Board consists of three members, and for West Pakistan, four members including a Vice-Chairman, to be appointed by the Governor of each province with the prior approval of the President.

ii) Powers and Functions of New Boards

9. The Central Government, through a newly-established Central Railway Division (Annex 1), has retained the responsibility of dealing with international organizations and foreign countries; implementing agreements with such organizations and countries; coordinating rail movements to and from ports; and coordinating Development Programs of each railway as a part of the National Development Programs. The Provincial Government may not, except with the prior approval of the Central Government, alter any priority of movement in respect of defense traffic, nor close or dismantle any railway line or modify any Ministry of Defense line. The statute states that "The Central Government may from time to time issue such directions to the Provincial Governments with regard to questions of policy and the running operation and maintenance of the Railways and in particular directions to meet the requirements of the defence of the country as may be deemed necessary, and it shall be the duty of Provincial Governments to comply with any directions so issued".

10. All powers and functions of the Central Government exercisable by the Railway Board established in 1959, with exceptions noted above have been vested in the Provincial Railway Boards established in the respective Provincial Governments, (see Annex 2).

11. In discharging its functions, the new Boards are required (a) to conduct railway operations in accordance with business principles with due regard to the interests of agriculture, industry, commerce and the general public; (b) to meet from revenues all appropriate expenditures chargeable thereto under existing regulations; (c) to be guided by directives of the Provincial Government on main questions of policy and major financial issues; (d) to obtain prior approval of the Provincial Government for the capital and revenue budgets, construction and abandonment of lines, changes in the pay of railway staff and conditions of service of Class I officers, and appointment of officers in the Senior Administrative Grade. They may not, without prior approval of the Central Government, alter terms and conditions of defence-traffic contracts.

iii) Financial Agreements

12. The provisions of the Resolution of May 10, 1961, in respect of separation of railway finances from those of the Government (see paragraph 50.) apply to regulate the separation of railway finances from those of the Provincial Governments, but only until such time as the provisions of the Resolution may be modified by the Provincial Governments. The Bank feels that separation of finances should be maintained and the Provincial Governments have indicated that it is not their intention at present to change the Resolution. The interest on Central Government's investment in the Railways up to June 30, 1962 amounted to 4 percent per year; interest on existing and future foreign loans, and amortization of such loans obtained by the Central Government are payable by the East and West Pakistan Provincial Governments to the Central Government.

iv) Other Arrangements

13. It is the intention that, in each province, a Commission for Transport Coordination would be established. Its composition and main functions would be as shown in Annex 3. One of its main activities will be fixation of the upper and lower limits for rates and fares. It will also coordinate the operations and development of all forms of surface transport.

14. All Class I railway officers (from the rank of assistant engineer upward) have been given an option to serve either in West or in East Pakistan. Hitherto a large number of Western Railway officers had to serve three or more years in East Pakistan because of a shortage in the East of experienced and qualified managerial personnel. About 22 of 30 top management personnel of the Eastern Railway are originally from West Pakistan. Only two have been transferred to PWR; the other staff has been retained in PER service so that sound management is assured. Moreover, the Central Government has reserved the right to retain or appoint an adequate number of these or other Western Railway officers to serve in East Pakistan if necessary to assure sound management in the future.

v) Attendant Problems

15. The reorganization of the Railways under jurisdiction of the Provincial Governments brings with it questions concerning implementation of

accounting changes recommended in 1959 by Price Waterhouse Co.; continued separation of Railways budget and finances from those of Government as effected in 1961; the future financial position of the Eastern Railway; and relationships in the future between the Bank, the various Governments and the separate Provincial Railways. These questions and attendant problems are discussed more fully later in this report.

C. Arrangements for the Proposed Loans

16. The Railways are in a position different from other entities of Government in that their transfer to the Provinces was established by way of a special Presidential Order. Under this Order the Central Government retained certain powers and in particular the responsibility of dealing with international organizations and of implementing agreements with such organizations. For this reason the Government requested that the proposed Loan be made to the Center. The Central Government would relend the proceeds of the Loans to the Provincial Governments on terms and conditions not more lenient than those of the Loan Agreement between the Central Government and the Bank.

17. However, the financial and managerial responsibility for the Western and Eastern Railways rests with the respective Provincial Governments and their Railway Boards, and the Bank considers it essential that project agreements concerning the proposed loans be concluded between the Provincial Governments and the Bank.

III. RAILWAY PROPERTY

A. Permanent Way

18. The Western Railway consists of 5,326 route miles with a total track mileage of 7,515 miles (see map). Broad gauge (5'6"), by far the most important of the three existing gauges, measures 4,628 route miles. The balance of 698 miles is almost equally divided between meter gauge and narrow gauge (2'6") lines. In general the track is well maintained.

19. The Eastern Railway network consists of 1,715 route miles and 2,592 track miles. Meter gauge with 1,149 route miles is the most important serving principally the eastern part of the country (see map). Broad gauge routes total 546 miles, while there are only 20 route miles of narrow gauge. The track is built to relatively low standards in respect of weight of rail, spacing of ties and lack of ballast. These factors contribute to low line capacity. Track maintenance is not mechanized and while below modern standards is reasonably adequate considering existing conditions.

B. Equipment

20. Western Railway motive power and rolling stock as of June 30, 1961 included 697 steam locomotives, 206 diesel units, 29,710 goods wagons and 3,055 coaching vehicles. Almost half of the steam locomotives are over 45 years old and thus over-age, but most of these will remain in service to meet

traffic demands during the current Five Year Plan period. Of the rolling stock about 20% is over-age. Maintenance of equipment is good.

21. Eastern Railway motive power and rolling stock as of June 30, 1961 consisted of 421 steam locomotives, 60 diesel units (all meter gauge), 18,637 goods wagons in terms of four wheelers and 1,611 coaching vehicles. About 40% of the steam locomotives and coaching stock and about 22% of the goods wagons are over-age (over 45 years old). Maintenance of rolling stock is even better than on the Western Railway.

C. Other Property

22. Western Railway buildings, stations, bridges and other structures, are on the whole well maintained. Workshops are adequate. The Moghalpura (Lahore) workshop's capacity for wagon manufacture has been increased from 1,000 to 1,500 broad gauge wagons per annum. A shop for heavy repairs of diesel locomotives is under construction at Rawalpindi.

23. On the Eastern Railway, maintenance of buildings, stations and bridges is adequate. In the workshop at Pahartali (near Chittagong) a production line has been established for manufacturing meter-gauge goods wagons, which is to be put into operation shortly.

IV. RAILWAY OPERATIONS

A. Manpower and Wages

24. On the Western Railway the total number of employees had reached 120,544 by June 30, 1961 a rise of 20% since 1955. The total wage bill decreased from about 57% to slightly less than 50% of costs from 1955 to 1960. The number of employees is not excessive and the percentage of wages to total operating costs is reasonable. Mechanization of various railway activities is not an attractive proposition in view of the foreign exchange involved and of the low wage level. Over-all average annual wage in 1959-60 was Rs. 1,180 or US$248 equivalent.

25. At partition the Eastern Railway had to include in its labor force many thousands of refugees, and since then it has employed much redundant labor. Average labor force for the period 1951 to 1955 was about 54,000 employees. The number has been kept at approximately the same level till 1959/60 (54,700) in spite of large increases of traffic; nevertheless, the wage bill in that year amounted to about 60% of total working costs which is high. At June 30, 1961 the number of employees had increased to 56,700, and was about 55,000 in June 1962. Wage costs related to the total ton miles and passenger miles were double those of the Western Railway, only partly because the average annual pay is about 25% higher than on the Western Railway, (Rs. 1,488 or US$312 equivalent). The Eastern Railway should reduce its excess labor force, by not replacing losses due to attrition. The PER management has given assurances that it will closely

watch recruitment of new staff in order to implement its policy of keeping the number of staff to the minimum required.

B. Traffic

26. The Western Railway is the principal carrier of freight and passengers in West Pakistan. In 1960/61, freight traffic amounted to 4,129 million ton miles and passenger miles were 5,716 million, as shown in Annex 4.

27. During the 1954/55 - 1960/61 period freight traffic increased by about 46% and passenger traffic by more than 30%.

28. During the seven months from July 1, 1961 to January 31, 1962, the volume of freight traffic declined slightly, about 1.5%, compared with an originally estimated increase for the complete year of 6.7%. The reasons for this decline are mainly temporary in character, i. e. the suspension of transit traffic to and from Afghanistan and a substantial shortfall of traffic for the Indus Basin Settlement Plan works below prior estimates (90,000 tons actual for the first six months as against an estimated 1,600,000 tons for the entire year). However, figures for carloadings of February and March 1962 show a reversal of the downward trend being 7.6% higher than in the corresponding months of 1961. The Railway recently has been able for the first time in many years to move all goods when offered and has abolished the former system of priorities for movement of various commodities.

29. In East Pakistan the main carrier is inland water transport including numerous non-motorized craft plying the deltaic waters that traverse the country. The Railway carries about one-third of all goods moved and three-fourths of organized intercity traffic. In 1960/61, its traffic amounted to 945 million ton miles and 1,882 million passenger miles. Since 1954/55, there has been an increase in freight traffic of 100% and in passenger traffic, 37%. The most recent data available (July-December 1961) show a sustained increase as compared with the corresponding period in 1960: 3% for goods traffic, and 12% for passenger traffic.

30. The Eastern Railway has not yet reached the point where it can move without delay all traffic offered and has classified various commodities in priority groups for movement. Main bottlenecks are shortages of line and yard capacity; improvement of track condition and signalling and extension of yards are underway and should relieve traffic congestion by 1963/64.

31. About 17% of the Railway's ton miles consist of Indian cross traffic, moving between the Calcutta area and the part of India which lies east and northeast of East Pakistan. It is possible that this traffic, or part of it, may be diverted over the (Indian) North East Frontier Railway after completion of the Brahmaputra bridge on that system, expected in the first half of 1963.

C. Competition

32. In West Pakistan, until mid-1960, road services could be operated only on licenses restricting them to distances of about 500 miles. About that time road transport was given complete freedom to operate over all distances throughout the country. The newly won freedom of operation and the absence of rate regulation have resulted in diversion of high rated commodities from rail to road transport. In the period July 1961 to January 1962 rail ton miles decreased by 1.4 percent whereas freight revenues declined about 8 percent. The Railway has taken several measures to expedite movement of goods and considers introduction of door-to-door delivery service in the large cities. It has intensified solicitation of traffic. A new rate structure which would make rail traffic less vulnerable to road competition by narrowing the spread between highest and lowest rates has been worked out by the Railway. Its application has been held in abeyance because of impending organizational changes transferring the Railway to the Provincial Government.

33. The Railway believes the situation will improve particularly after establishment of the Commission for Transport Coordination which is expected to fix equitable rates and fares for all modes of surface transportation.

34. In East Pakistan, there are relatively few roads parallel to the Railway and road competition is of little consequence. It is not expected to reach significant proportions at least during the next five years.

35. Inland water carriers compete with railroad transport particularly in respect of export and internal movements of jute. However, in view of increasing industrialization and the inability of the Railway to meet demands for service, the inland water services in many cases are helpful to rather than competing with the Railway.

V. FINANCES AND EARNINGS

A. The Rate Structure

36. The freight rate structure consists of both class and commodity rates. They are published in the form of distance scales and specific point to point rates. Distance rates are constructed on the tapering principle. The "value of service" factor dominates the establishment of the precise rates to be assessed. Lower than normal rates are assessed in some instances in order to foster the development of specific industries and to encourage exports. Passenger fares are based on uniform charges per passenger mile for each of three classes of service.

37. The structure, carried forward without change after partition in 1947, has had no substantial revision since then. No increases have been effected recently in the over-all rate or fare structures. The railways have contemplated substantive rate changes since 1960 when studies of both freight rates and passenger fares were initiated; and it has been the policy to maintain the general rate levels on fully compensatory bases. A report was submitted in 1961. However, it does not refer directly to the general

level of existing rates and contains the following basic recommendations: (i) the rate structure should be adapted to conditions prevailing in the Province concerned; (ii) minimum rates should cover out of pocket expenses; (iii) the Railways should adopt the liability of common carrier, rather than the present one of bailee, for all commodities except perishables; (iv) discounts on rates intended to assist certain industries or exports should either be reimbursed to the Railways by the Government or be replaced by other government measures; (v) rates should continue to be based on the principle of the ability of traffic to pay, and (vi) the Railways should be as free to quote special rates, as other carriers are, however, observing rule (ii) above. Although the general rate level would not be raised, freight revenue would increase slightly to compensate for higher expenses to be expected from application of rule (iii) above. The recommendations would simplify the rate structure and enhance the Railways' capability to meet competition from other carriers; the Bank considers them to be sound. Implementation of the report has been deferred due to the organizational changes (see paragraph 7). The final decisions concerning the rate structure will be taken by the respective Provincial Governments.

B. The Budget, Accounting and Auditing

38. The Railways' budget has been separated from that of the Central Government's since July 1, 1960. It is subject to the approval of Government which may exercise considerable control over its provisions.

39. Accounting is in accordance with a modified double account system. It has differed over the years from normal commercial accounting but is now in the process of change to more commercial lines in several important respects. These changes are not as yet reflected in the accounts up to June 30, 1961, which are the latest available and therefore necessarily the bases for the financial appraisal.

40. At the Bank's suggestion, an international firm of accountants, Price Waterhouse and Company, London, reviewed the accounting system of the Pakistan Western Railway, with particular reference to the accounts for (a) capital assets; (b) purchasing and stores; (c) provident fund; (d) preparation of salary bills and (e) certain aspects of traffic accounting procedures. As a result of the firm's report and recommendations, dated June 12 1959, the Pakistan Railways, among other things, are preparing a record of existing assets and their present book values. The data to be obtained would facilitate the recording of depreciation on generally-accepted commercial-accounting principles and of fixed assets less accumulated depreciation. The Railways will keep the Bank informed of their progress in implementing the recommendations of Price Waterhouse and Company.

41. The Railway Accounts are audited annually by the Director of Railway Audit. The Auditor's certificate states that the profit and loss account and balance sheet are correct according to the auditor's best information as a result of a test-audit of the books and consideration of explanations given to the auditor.

C. Finances

42. The finances of the Pakistan Railways for the purposes of this report are reflected by the balance sheet of June 30, 1961, which is the latest available, as shown in Annex 5.

i. Current Assets

43. The Government has been the Railway's banker. Contributions by the Railways to the general revenues of the Government have been substantial over the years, amounting to Rs. 129 million in 1959/60 and to Rs. 50 million in 1960/61. Current assets do not reflect any part of these surplus funds. As a result, the current ratio of 1.47 to 1 and the liquid ratio of 0.92 to 1 on June 30, 1961, are somewhat low.

ii. Fixed Assets

44. Gross fixed assets reflect at original cost the investment by Government since the inception of the Railways, less retirements, sales and transfers. The assets are recorded at cost, less depreciation written off, on assets taken over on August 14, 1947. Expenditures represented by the deficit balance of the depreciation reserve fund insofar as betterments and higher prices are concerned, are not included in the fixed assets accounts. The precise amounts to be added to gross fixed assets for these factors, excluding replacements in kind, are not known and no adjustment is predictable.

iii. Capital

45 The Railway's capital consists entirely of funds provided by Government, currently at a fixed interest of 4 percent, without obligation to repay. This equity capital is akin to preferred stock held entirely by the Central Government. Thus, external loans obtained by the Government and made available to the Railways become equity capital in respect of additions and development of the Railways and the balance sheet shows no debt capital. As of December 31, 1961, the Government had expended for the Railways about Rs 450 million in foreign exchange funds made available by three prior Bank loans, three DLF loans and various UK and German credits. These are reflected in the Railways' accounts as Government investments, insofar as they are additions.

iv. Depreciation Reserve Fund

46. Annual contributions have been made to a Depreciation Reserve Fund and charged directly to revenue in order to provide for the total cost of renewals and replacements. The amount of the contribution progressively has been increased and has been one-thirtieth of the capital at charge in recent years. Charges to the fund have been for the total cost of replacements including the element of improvement and increased cost due to rising prices. Since the costs of rehabilitating assets since 1947 have been heavy, the depreciation reserve fund has shown a progressively larger deficit balance over the last several years, with the result that renewals and replacements have been financed by loans from Government, the depository of the fund, without interest. The deficit balance measures a related understatement in the Government's investment as of June 30, 1961.

D. Earnings

47. Based upon financial statements as submitted, the earnings position has been satisfactory in West Pakistan and marginal in the Eastern Province. The income accounts for the fiscal years ending on June 30, 1956 to 1961, and for the nine-month period ending March 31, 1962, are shown in Annex 6, which reflects the operating ratios and interest-earned ratios shown below:

		1956	1957	1958	1959	1960	1961	1962 (9 mos.)
Operating ratio %	PWR	66	68	66	72	65	69	71
	PER	88	92	85	92	89	84	80
Times interest earned	PWR	4.2	3.9	4.3	4.3	5.3	3.9	
	PER	1.1	0.7	1.5	1.0	1.1	1.6	

48. The ratios for the PWR are satisfactory and less so for the PER. The return on net fixed assets has not been calculated as appropriate bases are not available under the accounting procedures employed by the Railways. The rate of return in 1960/61 on gross fixed assets as recorded was 12.5% for both Railways together. Were gross fixed assets adjusted to include total investment, the return would be somewhat lower. The present method of accounting for "depreciation" by arbitrary contributions to a depreciation reserve fund do not permit a clear determination of the financial results of operations. As stated, however, the Railways are giving attention to this matter, and an inventory of capital assets and their cost is being prepared which would permit the calculation of depreciation based on historical cost.

E. Financial Changes after 1960/61

49. In addition, procedures beyond the scope of the Price Waterhouse study have been adopted. However, they are not reflected in the financial statements up to June 30, 1961.

50. To enable the Railways to function on a more commercial basis, their finances by Resolution dated May 10, 1961 were separated from those of Government beginning on July 1, 1961, in the following respects:

(1) Railways will pay to Government's general revenues a fixed interest of 4% on Government investment. The Railways' annual earned surpluses, instead of being contributed to the national general revenues, will be retained for credit to such Railway reserve funds as may be considered necessary. Separate Railways' bank accounts have been established.

(2) The interest free loan advanced to the Railways in order to meet the deficit in the Depreciation Reserve Fund (Rs. 345 million on June 30, 1961) will be written off and a sum of Rs. 218 million will be added to the Government investment account. The balance in the Depreciation Reserve Fund would therefore be nil on July 1, 1961.

(3) The Railways will pay actual interest charges on all foreign loans including existing foreign loans obtained for them. They will also be responsible for repayment of the foreign loans required for rehabilitation and replacement of their assets. The Government will repay from its general revenues foreign loans raised for additions and development of the Railways. When an installment towards the latter repayment of a loan is paid by the Government from general revenues, the Railways will cease to pay interest on the loan to that extent and the amount of the installment will be added to the Government's investment in Railways and will qualify for the 4 percent interest by the Railways referred to in section (1) above.

VI. RAILWAYS DEVELOPMENT PLANS

A. General Description

51. The Railways, early in 1961, prepared, as part of the Central Government's Second Plan, a Second Five-Year Program estimated to cost Rs. 1,623 million of which foreign exchange requirements would amount to RS. 1,024 million or US$ 215 million equivalent. The Central Government reduced this figure and included in its Second Five Year Plan Rs. 1,400 million for the Railways of which Rs. 900 million (US$ 190 million equivalent) in foreign currency; however, the total program, as formulated by the Railways, forms the basis of this report since a complete breakdown of expenditure during the Plan period has been worked out for the latter only. Its phasing and breakdown between the two Railways is set forth and described in some detail in Annex 7 and summarized below.

Rupees millions

	TOTAL			P.W.R.			P.E.R.		
	Total	Internal	External	Total	Internal	External	Total	Internal	External
1960/61	314.7	108.5	206.2	241.6	79.2	162.4	73.1	29.3	43.8
1961/62	389.8	135.6	254.2	264.3	89.8	174.5	125.5	45.8	79.7
1962/63	365.0	147.3	217.7	239.7	104.7	135.0	125.3	42.6	82.7
1963/64	306.6	115.4	191.1	210.9	73.7	137.1	95.7	41.7	54.0
1964/65	264.4	92.0	154.5	174.6	64.6	110.1	71.8	27.4	44.4
	1,622.5	598.8	1,023.7	1,131.1	412.0	719.1	491.4	186.8	304.6

52. The program has progressed in respect of expenditures somewhat slower than expected early in 1961, with the result that anticipated requirements in 1962/63 and 1963/64 for foreign exchange have been recently re-estimated at US$81.36 equivalent for those years, on a lower basis than indicated in the table above. The breakdown between the two railways of various credits from countries comprising a consortium to supply Pakistan's need for foreign exchange is as follows, in millions of U.S. dollars equivalent:

	Pakistan Railways			P.W.R.			P.E.R.		
Source of Funds	Total	1962 1963	1963 1964	Total	1962 1963	1963 1964	Total	1962 1963	1963 1964
A.I.D.	31.000	14.750	16.250	20.530	11.700	8.830	10.470	3.060	7.410
I.B.R.D.	23.000	7.180	15.820	18.250	5.360	12.890	4.750	1.820	2.930
Eximbank	11,900	11.900	-	7.050	7.050	-	4.850	4.850	-
German Credits	10.000	7.500	2.500	2.020	2.020	-	7.980	5.480	2.500
U.K. Credits	5.460	-	5.460	-	-	-	5.460	-	5.460
	81.360	41.330	40.030	47.850	26.130	21.720	33.510	15.210	18.300

B. The Project

1. General Description

53. The Project is the Railway's Second Five-Year Program. As a result of discussions with the Railway Board, and with other departments of Government, a part of the over-all Railway Second Five-Year Plan has been designated as the portion for which the Bank would consider giving financial assistance. Bank financing would be confined to those items for which foreign exchange would be needed during fiscal years 1962/63 and 1963/64 and to which credit from the United Kingdom, the United States and West Germany would not be applied by mutual agreement between the various lenders and the Borrower. These items may be generally outlined as:

1. Passenger coaches
2. Freight cars and materials therefor
3. Plant and machinery for workshops
4. Signalling equipment
5. Wooden sleepers
6. Ocean freight
7. Unallocated

2. Cost Estimates

54. The foreign exchange costs for the items which the Bank has been asked to finance, by item, by each year and for each Railway separately are as shown below, in US$000,000.

	Pakistan Railways			P.W.R.			P.E.R.		
	Total	1962-63	1963-64	Total	1962-63	1963-64	Total	1962-63	1963-64
Passenger Carriages	7.620	1.510	6.110	7.620	1.510	6.110			
Wagons & Materials therefor	7.220	3.870	3.350	5.600	3.050	2.550	1.620	820	800
Plant & Machinery for Workshops	900		900	600		600	300		300
Signalling Equipment	1.830		1.830	1.560		1.560	270		270
Wooden Sleepers	1.210		1.210	1.100		1.100	110		110
Ocean Freight	3.050	1.800	1.250	1.100	800	300	1.950	1.000	950
Unallocated	1.170		1.170	670		670	500		500
	23.000	7.180	15.820	18.250	5.360	12.890	4.750	1.820	2.930

The amount shown for shipping freight is for freight charges on Railway equipment being financed under the United Kingdom and German credits for the Railway program. This program has been appraised by the Bank, and the Pakistan Government has already allocated all of the equipment to be acquired among the Consortium member countries in accordance with the most advantageous pattern from Pakistan's point of view by permitting the standardization of equipment and the purchase of goods and services at the lowest possible cost, leaving the freight charges on the United Kingdom and German equipment to be met from the Bank loan. The financing of the above freight charges out of the proposed Bank Loan would be in accordance with this pattern and would enable the Pakistan Railways to obtain more favorable freight rates.

53. The estimates are in a large measure based upon firm quotations recently received from bidders or upon recent experience in purchasing similar equipment; therefore, the "Unallocated" amount has been placed at a low percentage (5.4) of the total amount.

3. Economic Aspects

(a) Traffic Forecasts

54. Both the Pakistan Western Railway and the Pakistan Eastern Railway have made thorough studies of the freight and passenger traffic which will move over their lines for the years 1961/62 to 1964/65 inclusive. The Railways carefully studied past trends and worked closely with the Planning Commission in 1960 in order to correlate Railway planning with the Government's Second Five Year Plan. They were able to take advantage of national estimates of production and consumption of commodities of major importance to rail traffic. The forecast of traffic has been recently revised to account for loss of Afghan international movements and up-dated estimates of increased traffic demand arising from the Indus Basin Settlement Plan Works. The revised forecast assumes no resumption of the Afghan traffic, no increase of foodgrain imports under the U.S. Public Law 480 program, and no increase

in traffic diversion to road. In addition, the forecast for East Pakistan assumes no growth of Indian Cross Traffic, at present about 17% of Eastern Railways ton-miles , owing to completion of the Brahmaputra bridge on the Indian North East Frontier Railway, expected by the middle of 1963, after which date this Railway would take care of any future traffic increase to and from the Indian territory involved.

57. The Railway's forecast of future traffic which is set forth below, appears to be conservative on an over-all basis. An element of uncertainty exists here as in any traffic forecast. However, the estimated data may be taken as reasonable.

	Freight (Ton-Miles Millions)			Passengers (Passenger-Miles Millions)		
Actual	PWR	PER	Total	PWR	PER	Total
1960/61	4,129	945	5,074	5,716	1,882	7,598
Estimated						
1961/62	4,150	1,014	5,164	5,695	1,964	7,659
1962/63	4,488	1,088	5,576	5,866	2,049	7,915
1963/64	4,771	1,167	5,938	6,037	2,139	8,176
1964/65	4,924	1,252	6,176	6,208	2,233	8,441
Percent Increase	19.3	32.5	21.7	8.6	13.3	11.1

(b) Economic Justification

58. During World War II, the Pakistan Railways, like most railways throughout the world, were necessarily over-worked and under-maintained. The war was followed closely by Partition in 1947. The first years after partition were devoted to reorientation of the railways and the solving of pressing problems which made daily operations difficult. Rehabilitation in the early post-partition period was understandably slow. Maintenance and replacement programs were large and overcoming the backlog was a problem of major proportions.

59. The Railways' First Five-Year Plan 1955-1960 did not get well under way until about 1956/57 and provided a very substantial amount of rehabilitation but did not overcome a shortage of capacity which still exists on the Eastern Railway and which has only recently been made up on the Western Railway because of the loss of Afghan international traffic.

60. The Railways must remain for the foreseeable future the backbone of Pakistan's transport network.

61. The economic development of Pakistan has accelerated during recent years. Investment in the private and public sectors has been substantial. Industrial production has risen sharply since 1954. Past railway traffic growth affords substantial support to estimates of future traffic. The Central Government's Second Five-Year Plan will accelerate economic growth. Basic railway services have in the main not been able to meet existing demands and further investment in improving and expanding railway facilities will be needed.

62. The Government's Second Five-Year Plan has been approved generally by the Bank's Economic Mission which studied the economy of Pakistan in 1960/61. The railway development program is an essential part of the Government's over-all planning. The success of the Central Government's efforts to accelerate economic development in Pakistan may well depend in a large measure on the success of the Railways in meeting Pakistan's future transportation needs. The Project is necessary to achieve that success.

4. Construction and Procurement

63. Much of the construction has been started and most of the orders for equipment have been placed. The goods and services for which the Railways have requested financial assistance by the Bank have been or will be obtained after international competitive bidding except for signalling equipment and passenger wagons.

64. The Railways have requested the Bank to finance the acquisition of component parts for signalling equipment, to an amount of US$1,829,000 equivalent, from the proceeds of the proposed loans. A contract has been drawn up between the Government of Pakistan and the firm of Siemens, Halske of Germany for delivery of these component parts. This firm has associated itself with the Government in the establishment of a jointly-owned enterprise, Telephone Industries of Pakistan Ltd. (TIP), for the local manufacture of telephones, and of signalling equipment for the Railways. At the present stage of manufacture most of the component parts of this equipment, however, have to be imported; the Railways would forward the component parts obtained abroad to TIP for incorporation in the final signalling equipment. The Bank financed signalling equipment ($2.54 million) in the last Railway Loan (No. 241-PAK) for which the order was placed on Siemens, Halske on the basis of international competitive bidding. The proposed order for US$1,829,000 equivalent would be subject to a special discount of 2% on the last order and to an escalation clause with a 5% ceiling. Lists giving the complete breakdown of the equipment in all its component parts with the cost of each component, both for the previous order and the proposed one, have been submitted to the Railways enabling them to compare prices exhaustively. The foregoing procurement arrangements are acceptable and financing by the Bank of this item is recommended.

65. The Railways have further requested that the Bank finance a proposed contract with Linke-Hoffman Busch in the amount of $7.17 million for the supply of passenger wagons. Linke-Hoffman Busch is presently supplying the Pakistan Railways with passenger wagons under a contract in the amount of $5 million. Final deliveries under this contract are scheduled for September. The Railways state that the new contract with Linke-Hoffman Busch would enable deliveries of passenger wagons to continue in a steady flow and avoid the delay which would inevitably result from advertising for new tenders, analyzing the bids and awarding the contract to a new supplier. The proposed contract with Linke-Hoffman-Busch for the supply of 129 passenger carriages would be based, as to price, upon an international competitive bidding in 1960 which Linke-Hoffman-Busch won, subject to an escalation clause with a ceiling of 8 percent. In these circumstances the financing of this contract would be acceptable to the Bank.

VII. FUTURE EARNINGS AND FINANCES

66. The Railways have prepared estimates of future revenues and expenses up to and including fiscal year 1964/65 based upon its traffic studies. Estimated revenues assume no major changes in the rate and fare structures and estimated expenses are related to current wage and salary scales. The forecast assumes that should wage and salary increases be granted, compensating upward adjustment of rates would be made. The estimated income accounts are set forth in Annex 8. A related statement of estimated cash flow is shown in Annex 9. The forecast financial data are necessarily made on the same bases as employed earlier in this report, without reference to prospective changes in accounting procedures.

67. A summary of estimated earnings in millions of rupees is shown in Annex 8 and summarized below:

Period	Operating Revenues		Operating Expenses		Net Income After Interest		% Operational Ratios	
	PWR	PER	PWR	PER	PWR	PER	PWR	PER
Actual								
1960/61	484.2	137.5	335.5	157.7	110.2	10.6	69	84
Estimated								
1961/62	470.0	195.4	328.9	164.1	79.9	6.4	70	84
1962/63	470.0	204.3	343.9	165.6	58.6	10.7	73	81
1963/64	490.0	210.0	355.4	175.1	60.5	4.1	73	83
1964/65	510.0	215.0	368.6	180.0	62.1	2.2	72	84

Note: Operating expenses include contributions to the Depreciation Reserve Fund.

68. The future earnings position as forecast for the Western Railway will be satisfactory, for the Eastern Railway it will be marginal. For the period from July 1, 1960 to June 30, 1965, as shown in Annex 8, the yearly operating ratios would range from 70 to 73 for the Western Railway, from 81 to 84 for the Eastern Railway. The interest earned ratios would decline, because of sharply rising interest charges, from 3.9 to 1.8 for the Western Railway, from 1.6 to 1.1 for the Eastern Railway.

69. The Railways' cash needs and sources of funds for future fiscal years ending on June 30, 1965 are shown in Annex 9 and the 2-year period 1962/63 and 1963/64 is summarized below:

	Rupees Millions		US$ Million Equivalent		Percent of Total	
Cash Requirements	PWR	PER	PWR	PER	PWR	PER
Capital Investment	450.6	221.0	94.7	46.4	76.2	78.9
Interest	141.6	58.8	29.7	12.3	23.8	21.1
Total	592.2	279.8	124.4	58.7	100.0	100.0
Cash Available						
Proposed Bank Loan	86.9	22.6	18.2	4.8	14.2	9.1
Other Loans	185.2	114.1	38.9	24.0	30.3	46.0
Railway Operations	339.1	110.8	71.2	23.3	55.5	44.9
Total	611.2	247.5	128.3	52.1	100.0	100.0

70. The submitted forecasts indicate that about 13 percent of cash requirements during the 1962/63 - 1963/64 period would come from the proposed Bank loan, more than 50 percent from the Railways' own operations and the balance, about 35 percent, would be provided from other loans.

71. Annex 9 shows the variant cash flow positions of each railway, and the deficiencies of local funds which will be experienced on the Pakistan Eastern Railway in carrying out its capital investment program. It is the intention of the Government to make up whatever deficiencies there may be.

72. The Railways have not submitted estimated balance-sheet data for the future. Under existing circumstances of transition to more commercial accounting procedures and to reorganization under separate provincial jurisdictions, the usual problems of estimating pro-forma balance-sheet data have been substantially magnified.

VIII. CONCLUSIONS AND RECOMMENDATIONS

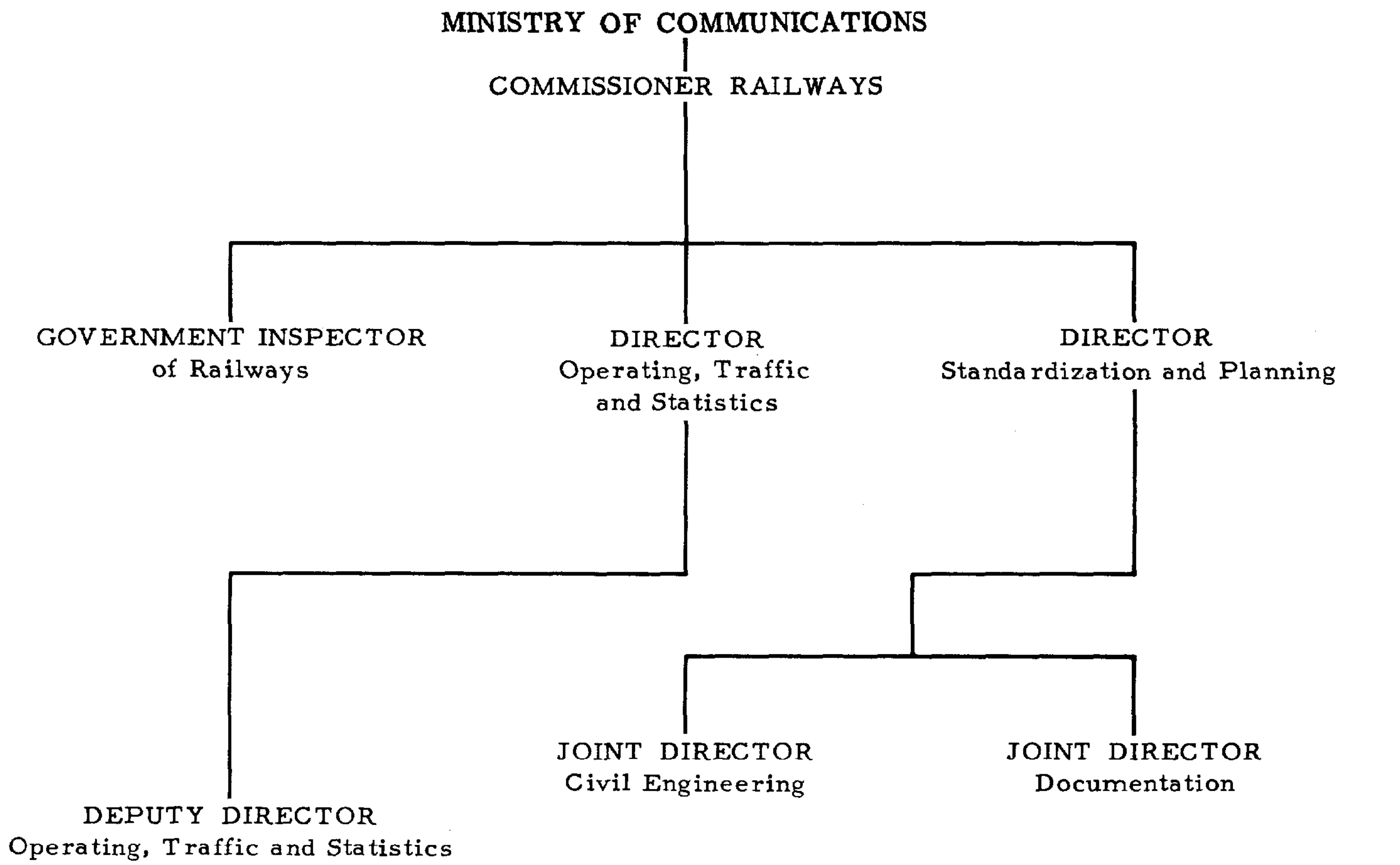
73. The organization and management of the Pakistan Railways have been generally satisfactory; they are undergoing substantial change as a result of the President's Transfer of Railway Order which was dated June 9, 1962.

74. Operations are reasonably efficient. The project before separation was technically, economically, and, based upon existing accounts, financially sound for the Railways as a whole. The Pakistan Eastern Railway may encounter shortage of local funds for its investment program; the Government intends to make up any such deficiencies as they may arise. The project will provide in a reasonable manner additional capacity, the need for which will increase during the Government's Second Five-Year Plan.

75. It is recommended that Bank loans of US$18.25 million and US$4.75 million equivalent be made to the Central Government for the Pakistan Western Railway and the Pakistan Eastern Railway. A term of 20 years including a 3½ year period of grace would be appropriate.

August 31, 1962

PAKISTAN
PROPOSED NEW ORGANIZATION OF THE CENTRAL RAILWAY DIVISION

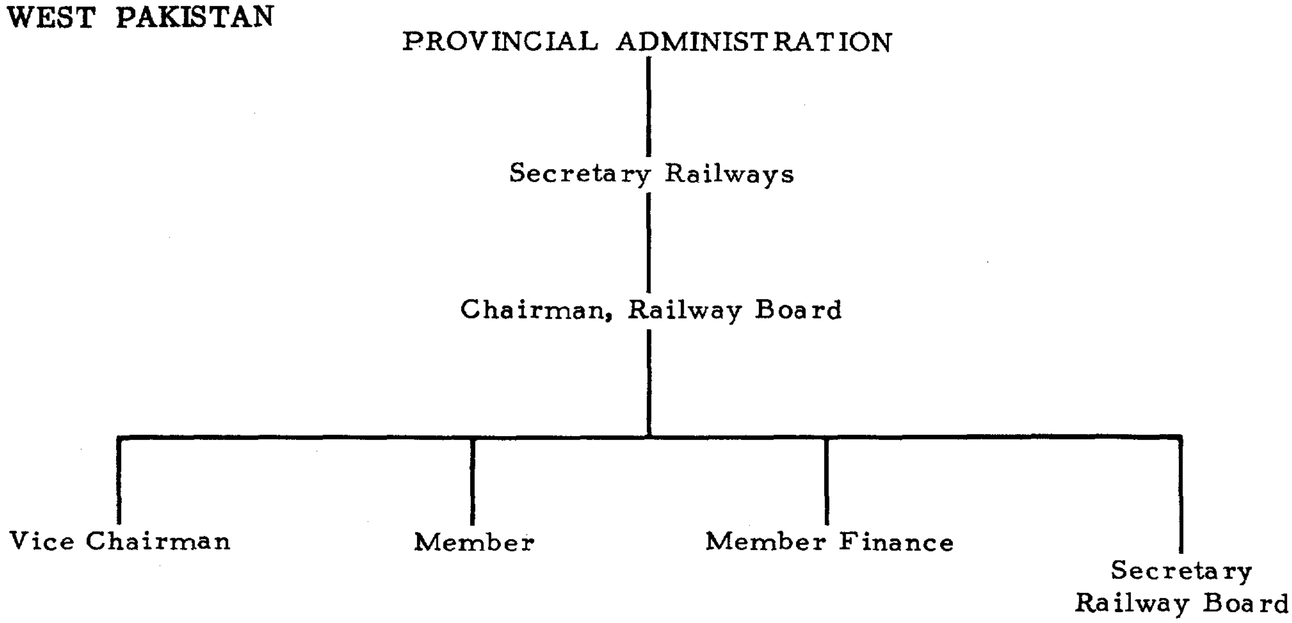


JULY 1962

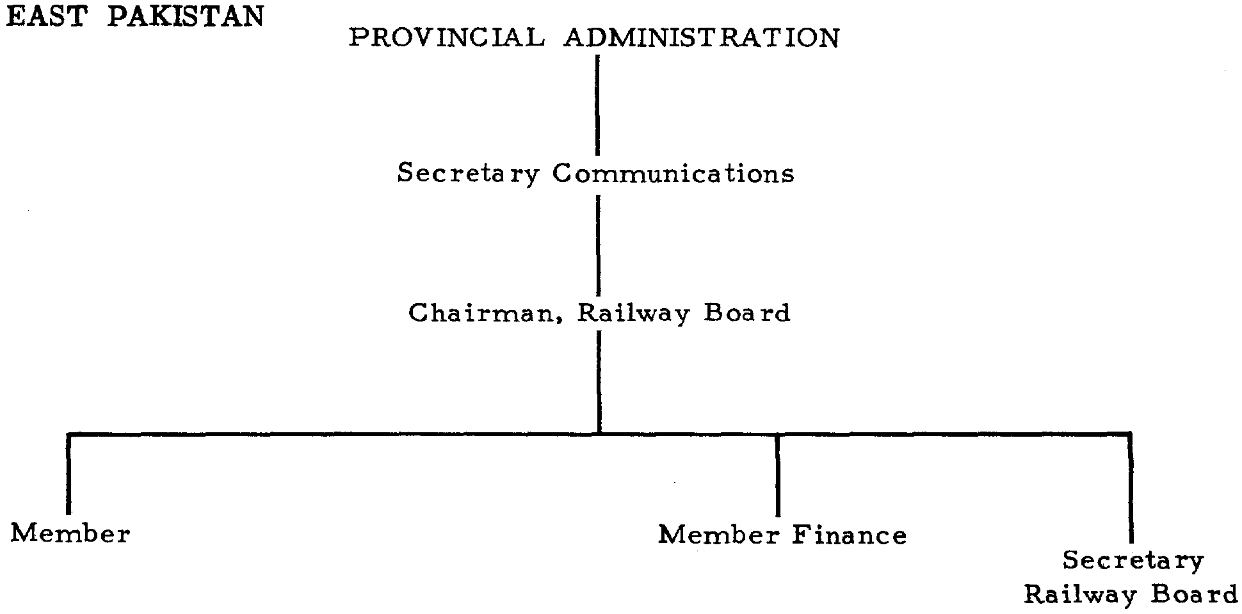
IBRD-1021R

PAKISTAN
PROPOSED ORGANIZATION OF THE PROVINCIAL RAILWAY BOARDS

WEST PAKISTAN



EAST PAKISTAN



AUGUST 1962

IBRD-1022R

STANDING COMMISSION FOR TRANSPORT CO-ORDINATION IN EACH PROVINCE

MEMBERS (PART-TIME)

1. Chief Secretary (Chairman of Commission)
2. Additional Chief Secretary, Planning
3. Chairman, Railway Board
4. Chairman, Provincial Transport Authority
5. Chairman, Inland Water Transport Authority
6. Secretary, Finance Department (for East Pakistan)
7. Secretary, Communications Department
8. Railway Secretary to Provincial Government (for West Pakistan)
9. A representative of the Ministry of Defence
10. Chairman/Chairmen Port Trust

MAIN FUNCTIONS

1. Co-ordination of both the development programs and operation of all forms of surface transport
2. Priorities for movement of traffic by rail, road and inland waterways
3. Fixation of maximum and minimum limits of rates and fares
4. Allocation of capacities between different forms of transport

PAKISTAN RAILWAYS

TRAFFIC STATISTICS

Fiscal-Years	Passenger-Miles (in Millions)	Freight Tons (in Thousands)	Ton-Miles (in Millions)
1955-56			
P.W.R.	4,409	10,652	2,874
P.E.R.	1,479	3,862	574
Total	5,888	14,514	3,448
1956-57			
P.W.R.	4,801	10,886	3,174
P.E.R.	1,615	4,603	709
Total	6,416	15,489	3,883
1957-58			
P.W.R.	5,107	11,855	3,362
P.E.R.	1,611	4,475	720
Total	6,718	16,330	4,082
1958-59			
P.W.R.	5,147	12,447	3,531
P.E.R.	1,657	5,121	818
Total	6,804	17,568	4,349
1959-60			
P.W.R.	5,590	12,329	3,814
P.E.R.	1,816	5,629	872
Total	7,406	17,958	4,686
1960-61			
P.W.R.	5,716	13,488	4,129
P.E.R.	1,882	5,885	945
	7,598	19,373	5,074
1961-62			
P.W.R. (July '61-Jan.62 incl.)	3,217	7,483	2,244
P.E.R. (July '61-Dec.61 incl.)	960	2,921	470

PAKISTAN RAILWAYS

BALANCE SHEET
AS OF JUNE 30, 1961

(Rs. 000)

ASSETS

	CONSOLIDATED	P.W.R.	P.E.R.
Current Assets			
Cash & Government Deposits	195,239	149,404	45,835
Accounts Receivable	57,783	9,686	48,097
Miscellaneous Advances	53,487	44,784	8,703
Funds in Transit	6,307	23,956	(17,649)
Stores	189,657	124,443	65,214
Total	502,473	352,273	150,200
Fixed Assets			
Land	25,460	10,607	14,853
Buildings & Structures	967,135	725,193	241,942
Rolling Stock	447,878	299,070	148,808
Other Railway Equipment	64,193	41,048	23,145
Investment - Road Services	17,019	14,519	2,500
Preliminary Expenses, General Charges	307,496	170,331	137,165
Total	1,829,181	1,260,768	568,413
Less			
Depreciation on Assets taken over 1947	217,795	173,385	44,410
Written-off part cost of lines previously treated as strategic	179,217	179,217	-
Gross Fixed Assets	1,432,169	908,166	524,003
Other Assets			
Provident Fund	169,193	95,514	73,679
Depreciation Reserve Fund (Cr)	(345,291)	(331,054)	(14,237)
Improvement Fund 1/	74,179	-	-
Account with Government of India	26,305	16,498	9,807
Advances to Staff	2,067	1,660	407
Account Bank-i-Milli Iran	255	255	-
Stores in Suspense	39,012	23,964	15,048
Total (Cr)	(34,280)	(193,163)	84,704

Ratios

Current Assets to Current Liabilities 1.47 to 1
Current Assets less Stores to Current Liabilities 0.92 to 1

	CONSOLIDATED	P.W.R.	P.E.R.
TOTAL ASSETS	1,900,362	1,067,276	758,907

LIABILITIES

	CONSOLIDATED	P.W.R.	P.E.R.
Current Liabilities			
Accounts Payable	63,541	59,184	4,357
Security & Other Deposits	16,795	12,136	4,658
Account Current - Government	26,740	32,841	(6,100)
Other Miscellaneous	161,708	125,013	36,695
Purchases (Stores)	72,041	53,188	18,853
Total	340,825	282,362	58,463
Revenue Reserves			
Depreciation Reserve Fund(Dr)	(345,291)	(331,054)	(14,237)
Improvement Fund 1/	74,179	-	-
Total (Dr)	(271,112)	(331,054)	(14,237)
Deferred Liabilities			
Provident and Staff Benefit Fund	169,193	95,514	73,679
Central Government Suspense	958	563	395
Staff Advances	2,067	1,660	407
Total	172,218	97,737	74,481
Capital			
Investment by Government	1,597,556	1,010,674	586,882
Surplus	60,875	7,557	53,318
TOTAL LIABILITIES	1,900,362	1,067,276	758,907

Annex 5

1/ Shown only on consolidated balance sheet.

Annex 6

PAKISTAN RAILWAYS

STATEMENT SHOWING REVENUES, EXPENSES AND NET INCOME
(Rs. millions)

	Year Ended March 31			15 months ending 6/30	Year Ending June 30		
	1956	1957	1958	1959	1960	1961	(9 months) 1962
Operating Revenues:							
Western Railway	361.7	389.2	418.9	561.2	482.0	484.2	343.6
Eastern Railway	128.4	145.8	153.1	200.6	171.7	187.5	145.1
Total	490.1	535.0	572.0	761.8	653.7	671.7	488.7
Operating Expenses (excl.depreciation)							
Western Railway	213.1	222.2	243.7	362.9	277.2	300.5	215.9
Eastern Railway	99.3	112.2	113.0	163.0	136.0	140.5	103.7
Total	312.4	334.4	356.7	525.9	413.2	441.0	319.6
Contribution to Depreciation Reserve Fund							
Western Railway	25.2	44.0	32.2	42.7	34.9	35.0	27.5
Eastern Railway	13.3	22.4	16.3	20.9	17.4	17.2	12.9
Total	38.5	66.4	48.5	63.6	52.3	52.2	40.4
Total Operating Expenses							
Western Railway	238.3	266.2	275.9	405.6	312.1	335.5	243.4
Eastern Railway	112.6	134.6	129.3	183.9	153.4	157.7	116.6
Total	350.9	400.8	405.2	589.5	465.5	493.2	360.0
Net-operating Revenues							
Western Railways	123.4	123.0	143.0	155.6	169.9	148.7	100.2
Eastern Railways	15.8	11.2	23.8	16.7	18.3	29.8	28.5
Total	139.2	134.2	166.8	172.3	188.2	178.5	128.7
Interest Charges							
Western Railways	29.7	31.7	33.1	35.8	32.3	38.5	n.a.
Eastern Railways	14.9	15.4	15.5	16.3	16.1	19.2	n.a.
Total	44.6	47.1	48.6	52.1	48.4	57.7	
Net Income							
Western Railways	93.7	91.3	109.9	119.8	137.6	110.2	
Eastern Railways	0.9	(4.2)	8.3	0.4	2.2	10.6	
Total	94.6	87.1	118.2	120.2	139.8	120.8	
Operating Ratios							
Western	66	68	66	72	65	69	71
Eastern	88	92	85	92	89	84	80
Total	72	75	71	77	71	73	74
Times Interest Earned							
Western	4.2	3.9	4.3	4.3	5.3	3.9	
Eastern	1.1	0.7	1.5	1.0	1.1	1.6	
Total	3.1	2.9	3.4	3.3	3.9	3.1	

PAKISTAN RAILWAYS

Second Five-Year Plan (1960-65)
Summary of Development Program
(in millions of Rupees)

	1960-65			1960-61			1961-62			1962-63			1963-64			1964-65		
	Total	PWR	PER	Total	PWR	PER	Total	PWR	PER	Total	PWR	PER	Total	PWR	PER	Total	PWR	PER
Motive Power-Rolling Stock	836.6	547.4	289.2	194.8	152.9	41.9	205.9	133.4	72.5	175.9	96.2	79.7	141.2	90.6	50.6	118.8	74.3	44.5
Plant and Machinery	33.2	18.8	14.4	7.8	4.5	3.3	11.3	5.3	6.0	7.5	4.5	3.0	4.4	2.7	1.7	2.2	1.8	.4
Bridge Works	63.5	54.0	9.5	16.1	14.9	1.2	12.6	11.0	1.6	11.3	10.1	1.2	11.9	9.1	2.8	11.6	8.9	2.7
Track Renewals	229.5	176.7	52.8	34.3	27.6	6.7	61.0	42.5	18.5	48.1	36.6	11.5	45.6	35.0	10.6	40.5	35.0	5.5
Line Capacity Works	111.1	74.9	36.2	7.3	5.4	1.9	29.7	20.6	9.1	26.3	18.5	7.8	31.8	22.0	9.8	16.0	8.4	7.6
Rehabilitation of Buildings	12.1	7.7	4.4	1.5	1.1	.4	2.3	1.7	.6	3.0	2.1	.9	3.2	1.7	1.5	2.1	1.1	1.0
Workshop Rehabilitation and Expansion	13.6	11.4	2.2	1.7	.3	1.4	4.4	3.6	.8	3.8	3.8	-	1.8	1.8	-	1.9	1.9	-
Engineering and Structural Works	114.7	85.9	28.8	29.9	24.0	5.9	27.5	19.8	7.7	23.4	17.3	6.1	19.2	13.7	5.5	14.7	11.1	3.6
Workshop Construction	12.1	12.1	-	.7	.7	-	5.3	5.3	-	3.5	3.5	-	1.4	1.4	-	1.2	1.2	-
Divisional Headquarters	6.8	2.8	4.0	.2	.2	-	1.1	1.1	-	2.5	1.5	1.0	1.5	-	1.5	1.5	-	1.5
Telecommunication Works	1.9	1.9	-	.1	.1	-	.7	.7	-	.5	.5	-	.6	.6	-	-	-	-
New Line Constructions	169.2	127.5	41.7	13.8	8.4	5.4	25.3	17.8	7.5	55.2	42.6	12.6	41.0	29.8	11.2	33.9	28.9	5.0
Participation in Road and/or Water Transport	18.2	10.0	8.2	6.5	1.5	5.0	2.7	1.5	1.2	4.0	2.5	1.5	3.0	2.5	.5	2.0	2.0	-
TOTAL	1,622.5	1,131.1	491.4	314.7	241.6	73.1	389.8	264.3	125.5	365.0	239.7	125.3	306.6	210.9	95.7	246.4	174.6	71.8

Outline and Evaluation of Principal Items
in the
Railways Second Five-Year Plan
1960/61 - 1964/65

Motive Power and Rolling Stock

Locomotive requirements have been based on the assumption that one diesel locomotive will do the work of 1.5 steam locomotives which, at this stage of dieselization can be considered reasonable. At present a diesel locomotive on PWR moves twice as many gross ton-miles as a steam locomotive, and on PER, three times. However, as dieselization on a railway progresses, work done by each locomotive is subject to the law of diminishing returns, and the stage at which this effect will be felt is being reached on the Pakistan Railways. On the Broad Gauge of PWR 69 diesel locomotives will replace some 103 steam locomotives, to be scrapped out of a total of 283 steam locomotives aged over 45 years. On the Meter Gauge of PER, 35 steam locomotives are to be scrapped out of 104 which are over 45 years old.

Requirements for coaching stock and wagons were calculated according to sound principles. In the provision made in the Program very little is included for replacement which means that by the end of the Plan period a large amount of stock over 45 years of age will remain in service. This is necessary to keep the Railways' level of capital investment as low as possible.

Plant and Machinery

There is a heavy accumulation of arrears in regard to replacement of plant and machinery. Only such machinery as have finished their useful life and are not able to meet outturn requirements have been included for replacement. Additional plant and machinery is required to meet the expanding activities of the various workshops on the Railways. The expansion of diesel operation, setting up of facilities for wagon manufacture, and increased construction in respect of civil engineering works have necessitated the expansion and balancing of existing facilities.

Plant and machinery required to improve the standards of track maintenance have also been included. They comprise in the main equipment to expedite the production of ballast materials, welding of rails, track testing and research.

Track Renewals

Normal renewal of track fell into heavy arrears since 1940 because of the war and subsequent difficulties after partition. Moreover, scarcity of foreign currency needed for rails and sleepers made it impossible to overtake the backlog in recent years. Another drawback was the scarcity of wooden sleepers on the world market. The following figures present the position of outstanding track renewals, in miles:

	Due at beginning of First Plan Period		Fallen due during the First Plan Period		Total due by end of First Plan Period		Provided in First Plan Period		Carried out during First Plan Period		Balance carried forward to Second Plan Period	
	Rail	Sleeper	Rail	Sleeper	Rail	Sleeper	Rail	Sleeper	Rail	Sleeper	Rail	Sleeper
PWR	1839	2268	300	228	2139	2496	1333	1866	678	636	1461	1860
PER	130	615	139	819	269	1434	130	564	130	564	139	870
Total	1969	2883	439	1047	2408	3930	1463	2430	808	1200	1600	2730

During the Second Plan period, renewals of another 475 miles of rails and 1,300 miles of sleepers will become due. However, track renewals as programmed in the Second Plan aim at clearing most of the renewals which had accumulated to the beginning of the Second Plan period. The track renewal program is as follows:

Rail Renewals

	(Track Miles)
Pakistan Western Railway:	
New rails	514
Second-hand rails	540
Pakistan Eastern Railway:	
New rails	163
Second-hand rails	44
Total	1,261

Sleeper Renewals

Pakistan Western Railway:	
New sleepers, throw forward of First Plan	417
New sleepers	400
Second-hand sleepers	962
Pakistan Eastern Railway:	
New sleepers	464
Second-hand sleepers	307
Total	2,550

The PWR will start welding rails, in lengths of about 200 feet, with its new rails in the Second Plan of which roughly half will be of increased weight (100 lbs per yard). Concurrently sleeper density will be increased from 2,200 to 2,650 per mile and ballast cushion to 12 inches. This will strengthen the track considerably, permitting higher loads and speeds, and is also expected to reduce maintenance cost.

The indigenous supply of wooden sleepers being limited, a large number of sleepers has to be imported to meet the annual requirements of 750,000 on PWR. The Railways have developed capacity to manufacture 60,000 cast iron and 50,000 concrete sleepers annually. Negotiations with a German firm are under way to set up a plant for manufacturing pre-stressed concrete sleepers to step up indigenous production.

Line Capacity Works

These are all related to increasing line and terminal capacity, necessary to handle the expected number of trains and to speed up wagon turnaround.

The principal line capacity improvements involve signalling. Arrangements have been made with a leading foreign firm for establishing an organization in West Pakistan for the manufacture of railway signalling equipment used in relay-interlocking, tokenless block-working, track circuiting, etc., and their installation and maintenance in conjunction with the Railway engineers. The Railways, since several years, maintain a well run and completely equipped signalling school at Lahore, open to personnel of member countries of the ECAFE.

Measures to increase line capacity by modernizing the signalling in the Second Plan are:

i. Relay interlocking with tokenless block working on portions of main line where the traffic has exceeded or is tending to exceed the sectional capacity;

ii. C.T.C. working on sections where heavy concentrated movements take place;

iii. Tokenless block working on a number of busy sections;

iv. Track-circuiting of lines at a number of stations on the main lines;

v. Improvement in the standard of mechanical signalling at stations on important sections to enable trains to run through them at unrestricted speeds;

vi. Mechanical block working on important branch lines to replace the paper line clear system.

Increased line capacity will also be effected by opening new crossing stations, providing more facilities at existing crossings, remodeling and modernization of yards and provision of terminal facilities.

Workshop Rehabilitation and Expansion

Rehabilitation and expansion of workshops include the following main items:

i. Expansion of Loco, Carriage and Electrical Shops at Moghalpura (Lahore) for the provision of adequate facilities for transport and handling of material and for improving layouts to remove bottlenecks in the processing and flow of materials at various stages of manufacture in the workshops;
ii. Expansion of Steel Shop at Moghalpura by the installation of an additional furnace and other equipment for making the shop self-sufficient in the production of ingots from locally available scrap;
iii. Expansion of Signal Shop at Lahore so that it can cope expeditiously with the manufacture of mechanical signalling and interlocking gear required for the large number of improved signalling works in hand as well as those included in the Second Plan;
iv. Development of the capacity of Bridge workshop at Jhelum to fabricate the normal requirements of 1,700 tons of structural steel per annum, the present capacity being only 1,000 tons per annum;
v. Expansion of Diesel shed at Lahore to accommodate about 50 diesel units that will be added to the present fleet in this division during the Second Plan period;
vi. Provision of workshop facilities at Chittagong for the assembly of wagons and carriages.

The existing facilities on PWR can handle heavy repairs of up to 100 diesel locomotives. The total fleet was 176 by the end of the First Plan and will increase to 331 during the Second Plan. This calls for establishment of a new diesel shop (in Rawalpindi) as expansion of existing shops is not feasible. In the first instance the new shop will be built to cater for heavy repairs of 200 locomotives; space will be reserved to extend the shop after the Second Plan.

Engineering and Structural Works

This category of works includes the construction of road over bridges at busy grade crossings; improvement of passenger-handling facilities, such as extension of platforms, shelters, water coolers, waiting rooms and station lighting; staff welfare works; and educational, medical, staff quarters and other facilities.

New Line Construction

Construction of the Karachi circular railway was started during the last year of the First Plan but most of the work will be carried out in the Second Plan. This railway will be about 17 miles long and will provide transport in the industrial area of Karachi for passengers and goods. It will also divert some goods trains to and from the port area from the city stations and thus relieve the traffic pressure on these stations and yards.

The Dacca realignment scheme provided for shifting of the Dacca railway station for goods and passengers from the center of the city, to a site adjacent to the city where adequate land is available to provide for all facilities needed to handle the present as well as future traffic. The existing station and yard at Dacca are one of the main bottlenecks of PER's goods and parcel traffic while passenger trains have to be stabled in Narayanganj to alleviate the traffic situation in Dacca, but which tend to create congestion at the Narayanganj yard. Available space at the present site of Dacca station is not sufficient to accommodate all necessary traffic facilities. Work on the new site has started; the new station will become operational by the end of 1962.

The Bholaganj-Chhattak Ropeway is intended to bring boulders and shingles to the railhead Chhattak Bazar from where this material will be railed to the points of consumption. The annual capacity will be five million cubic feet of which the Railway will need two million for ballasting its track. The shingle deposit at Bholaganj is one of the few known sizeable sources of stone in East Pakistan. The PER has many miles of track without any ballast, which makes maintenance and upkeep of alignment and level rather difficult. Ballasting will undoubtedly be of great help in this respect. Construction of the ropeway started in 1961 and will be completed in the first half of 1963.

In West Pakistan, as far back as 1929, a survey was carried out for a railway line from Kashmor to Kot Adu, 198 miles long and forming a second rail link between the southern and the northern part of the system. This line would run west of the Indus river whereas the existing (double track) line is east of the river. Abnormal floods of the Indus in 1942 and 1948 caused a break in the railway which completely cut off the northern from the southern part of the system during three and two months respectively.

The proposed new line would also serve the land to be brought under cultivation by the Taunsa and Guddu Barrage projects during the Second Plan period. It would provide an alternate route in case of emergencies as described in the foregoing paragraph, and, in addition, is considered to be of strategic value. The line would cross the Indus over the Taunsa barrage which has been built with provision to take the railway track across it. The Railways, to that end, share in the construction cost of the dam to the amount of about Rs. 10 million.

The proposal in the Railways' Program is for construction of the first 48 miles of the line, from Kot Adu across the Indus and southward to Dera Ghazi Khan. This part of the country is included in the new agricultural development area and traffic will undoubtedly increase as development progresses.

Planned conversion of the Hyderabad-Mirpurkhas section from meter to broad gauge is justified on the following grounds:

i. This is the busiest section (42 miles) on the meter gauge system near Hyderabad. But for the difficulties created by the transshipment to broad gauge at Hyderabad, the traffic volume would be much higher with better service after elimination of this transshipment point;

ii. The shifting of transshipment point from Hyderabad to Mirpurkhas will reduce considerably the total volume of transshipment as almost half of the entire meter gauge traffic originates and terminates on this section;

iii. The project would increase the yard and terminal facilities at Hyderabad. At present half of the yard space is taken up by the meter gauge and each part (meter and broad gauge) is inadequate to cope with its traffic requirements. Hence, it would otherwise be necessary to remodel Hyderabad Yard at considerable cost. The project is likely to result in saving in operating expenses, in wagon days and decrease in claims due to lesser chances of damage and pilferage because of reduced freight handling;

iv. The project would provide quicker transport of both passengers and goods;

v. The existing track material is below standard and maintenance expenses are high. After conversion to broad gauge these expenditures will come down.

In East Pakistan the Railways' program includes construction of two new lines:

i. Narsinghdi-Madanganj, 28.6 miles long; and

ii. Kurigram-Chilmari, 19.6 miles long.

The first one connects Madanganj, directly across the Sitalakhya river from Narayanganj, with the main line between Dacca and Chittagong. Madanganj is the jute baling center and grain silos have been built on that side of the river. Presently a considerable amount of jute bales are ferried across to Narayanganj and carried by rail to Chittagong. Grain for storage is brought by rail and ferried across to Madanganj. It would seem that development of IWT could take care of most of this traffic if unloading of more food grains at Chalna Anchorage could be arranged. The jute could also be shipped via Chalna. Furthermore, there is a paved road from Madanganj to Narsinghdi to carry whatever other traffic originates in the area. It seems, therefore, that the proposed new line would not be urgently needed for the development of the country.

The proposed construction of a line from the railhead Kurigram to Chilmari, situated on the west bank of the Brahmaputra, would serve an area of jute growing country. The main commodity would be raw jute to be transported to baling centers at Khulna or Narayanganj. At present IWT does not serve that part of the country, preferring the denser populated regions to the south. Again, a developing IWT should be able to carry the traffic and a new railway line as proposed by the Railways would not seem to be an immediate necessity.

Participation in Road and Inland Water Transport

With a view to coordinating policies with other transport agencies the Railways participate in Government Road Transport in West Pakistan and are going to in East Pakistan, where they have already an interest in the Inland Water Transport.

The PWR holds 25% shares in West Pakistan Government Road Transport. A provision of Rs. 10 million has been made in the Program:

a. to cover the Railways' contribution towards the development activities of the Road Transport Board, and
b. to finance a scheme under preparation for the transport of bulk goods between the port of Karachi and Landhi to relieve pressure of short distance traffic on this section.

In East Pakistan the Government has formed a Road Transport Board for operating road services in the Dacca-Narayanganj and Chittagong areas. The project would cost Rs. 13 million; 51% of the capital would be contributed by the East Pakistan Government, 25% of the shares would be allotted to the PER, and the balance would be open for public subscription.

PAKISTAN RAILWAYS

FORECAST OF EARNINGS
(in millions of Rupees)

	Year Ending June 30				
	1961 i/	1962 ii/	1963	1964	1965
Operating Revenues					
P.W.R.	484.2	470.0	470.0	490.0	510.0
P.E.R.	187.5	195.4	204.3	210.0	215.0
TOTAL	671.7	665.4	674.3	700.0	725.0
Operating Expenses (Excl.Depreciation)					
P.W.R.	300.5	292.3	305.7	315.2	328.0
P.E.R.	140.5	146.9	147.4	156.1	160.2
TOTAL	441.0	439.2	453.1	471.3	488.2
Contribution to Depreciation Reserve Fund iii/					
P.W.R.	35.0	36.6	38.2	40.2	40.6
P.E.R.	17.2	17.2	18.2	19.0	19.8
TOTAL	52.2	53.8	56.4	59.2	60.4
Total Operating Expenses					
P.W.R.	335.5	328.9	343.9	355.4	368.6
P.E.R.	157.7	164.1	165.6	175.1	180.0
TOTAL	493.2	493.0	509.5	530.5	548.6
Net Operating Revenues					
P.W.R.	148.7	141.1	126.1	134.6	141.4
P.E.R.	29.8	31.3	38.7	34.9	35.0
TOTAL	178.5	172.4	164.8	169.5	176.4
Interest Charges					
P.W.R.	38.5	61.2	67.5	74.1	79.3
P.E.R.	19.2	24.9	28.0	30.8	32.8
TOTAL	57.7	86.1	95.5	104.9	112.1
Net Income					
P.W.R.	110.2	79.9	58.6	60.5	62.1
P.E.R.	10.6	6.4	10.7	4.1	2.2
TOTAL	120.8	86.3	69.3	64.6	64.3
Operating Ratio					
P.W.R.	69	70	73	73	72
P.E.R.	84	84	81	83	84
TOTAL	73	74	76	76	76
Times Interest Earned					
P.W.R.	3.9	2.3	1.9	1.8	1.8
P.E.R.	1.6	1.3	1.4	1.1	1.1
TOTAL	3.1	2.0	1.7	1.6	1.6

i/ Actuals
ii/ Preliminary Revised Estimate
iii/ Railway's Figures Adjusted to Correspond to 1/30 "Capital at Charge"

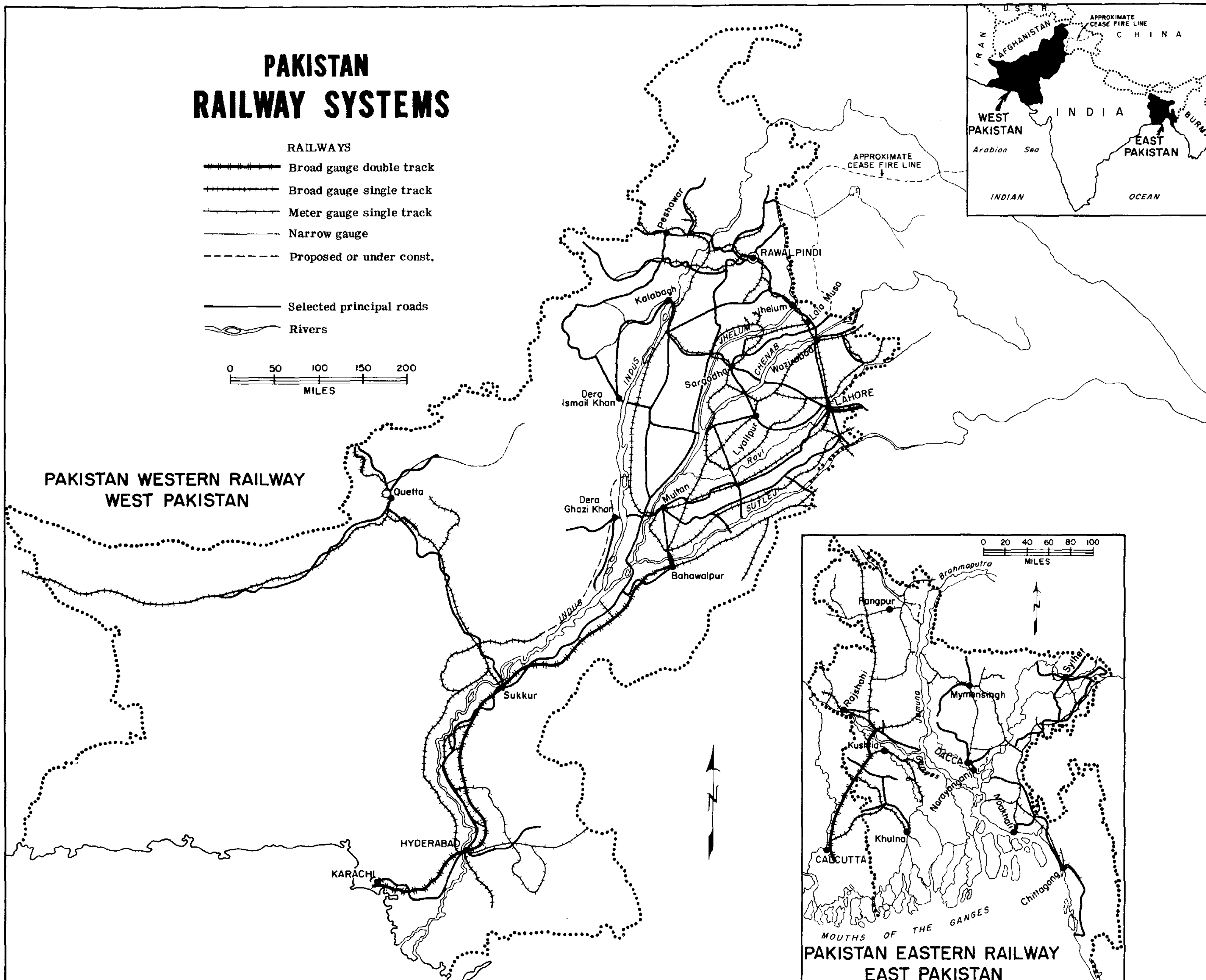
ANNEX 9

PAKISTAN RAILWAYS

STATEMENT OF ESTIMATED CASH-FLOW

(Rs. Millions)

	YEAR ENDING JUNE 30														
	1961			1962			1963			1964			1965		
	Total	PWR	PER	Total	PWR	PER	Total	PWR	PER	Total	PWR	PER	Total	PWR	PER
Cash Requirements															
Capital Investment	314.7	241.6	73.1	389.8	264.3	125.5	365.0	239.7	125.3	306.6	210.9	95.7	246.4	174.6	71.8
Interest	57.7	38.5	19.2	86.1	61.2	24.9	95.5	67.5	28.0	104.9	74.1	30.8	112.1	79.3	32.8
Total Cash Requirements	372.4	280.1	92.3	475.9	325.5	150.4	460.5	307.2	153.3	411.5	285.0	126.5	358.5	253.9	104.6
Cash Available															
Net Operating Revenues	178.5	148.7	29.8	172.4	141.1	31.3	164.8	126.1	38.7	169.5	134.6	34.9	176.4	141.4	35.0
Contribution to Depreciation Reserve Fund	52.2	35.0	17.2	53.8	36.6	17.2	56.4	38.2	18.2	59.2	40.2	19.0	60.4	40.6	19.8
Loans	206.2	162.4	43.8	254.2	174.5	79.7	217.7	135.0	82.7	191.1	137.1	54.0	154.5	110.1	44.4
Total Cash Available	436.9	346.1	90.8	480.4	352.2	128.2	438.9	299.3	139.6	419.8	311.9	107.9	391.3	292.1	99.2
Cash Surplus or (Reduction)	64.5	66.0	(1.5)	4.5	26.7	(22.2)	(21.6)	(7.9)	(13.7)	8.3	26.9	(18.6)	32.8	38.2	(5.4)
Accumulative Cash Surplus	64.5	66.0	(1.5)	69.0	92.7	(23.7)	47.4	84.8	(37.4)	55.7	111.7	(56.0)	88.5	149.9	(61.4)



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