

FIFTY-FIFTH REPORT

PUBLIC ACCOUNTS COMMITTEE (1981-82)

(SEVENTH LOK SABHA)

METRO RAILWAY, CALCUTTA

MINISTRY OF RAILWAYS

(RAILWAY BOARD)



Presented in Lok Sabha on
Laid in Rajya Sabha on

LOK SABHA SECRETARIAT
NEW DELHI

August, 1981/Bhadra, 1903 (Saka)

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CORRIGENDA TO THE FIFTY FIFTH REPORT
OF THE PUBLIC ACCOUNTS COMMITTEE (1981-82)

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PART II*

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28-1-81

13-8-81

*Not Printed. One Cyclostyled Copy Laid on the Table of the House and Five Copies placed in Parliament Library.

PUBLIC ACCOUNTS COMMITTEE
(1981-82)

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INTRODUCTION

I, the Chairman of the Public Accounts Committee, as authorised by the Committee, do present on their behalf this Fifty Fifth Report on Paragraph 13 of the Report of the Comptroller and Auditor General of India for the years 1978-79, Union Government (Railways) relating to Metro Railway, Calcutta.

2. The Report *inter alia* highlights the question of inordinate delay in progressing the Metro Railway Project, Calcutta, for want of adequate funds. While expressing their displeasure at the long time taken in execution of the project, the Committee have recommended that the matter may be reviewed at the highest level and a time bound schedule may now be laid down for the completion of the project at the earliest.

In another section of the Report the Committee have dealt with a case of changes in the scope of the work and the construction methodology in contract section 2 and the extra contractual payments sanctioned to the extent of more than 29 lakhs of rupees. The Committee have recommended that the whole matter may be placed before the Minister for Railways for early investigation by a high powered body independent of the Railway Board with a view to fixing responsibility and taking necessary action against those found guilty.

3. The Report of the Comptroller and Auditor General of India for the year 1978-79, Union Government (Railways) was laid on the Table of the House on 19 March, 1980.

The Committee (1980-81) examined Para 13 at their sitting held on 28 January, 1981. The Committee considered and finalised the Report at their sittings held on 13 August, 1981. Minutes of these sittings of the Committee form Part II* of the Report.

4. For reference facility and convenience, the observations and recommendations of the Committee have been printed in thick type in the body of the Report and have also been reproduced in a consolidated form in Appendix II of the Report.

*Not printed. (One cyclostyled copy laid on the Table of the House and five copies placed in Parliament Library).

5. The Committee would like to express their thanks to the Officers of the Ministry of Railways (Railway Board) for the co-operation extended by them in giving information to the Committee.

6. The Committee also place on record their appreciation of the assistance rendered to them in the matter by the Office of the Comptroller and Auditor General of India.

NEW DELHI;

August 24, 1981

Bhadra 2, 1903 (S).

SATISH AGARWAL,

Chairman,

Public Accounts Committee

REPORT

METRO RAILWAY, CALCUTTA

Concessions given to a contractor for construction of sub-way structure.

Audit Paragraph

I. Introduction

1.1. In the Calcutta Metro Railway, the Railway line in most of its length (16.43 km. from Dum Dum to Tallyganj) is to be laid in rectangular reinforced cement concrete boxes constructed underground. For the execution of engineering works the Project has been divided into a number of contract sections and the cut and cover method is mainly being adopted. In the cut and cover method a trench is excavated along the proposed alignment and reinforced cement concrete boxes are constructed in the trench at appropriate depth. On completion of the construction of boxes the trench is filled with earth and the surface is restored. The sides of excavation, during excavation and construction of the sub-way structures, are supported either by sheet piles or 'H' piles driven into the ground or by construction of diaphragm walls.

1.2. A review in Audit of the execution of sub-way structure works between Dum Dum and Belgachia stations (Contract Section 2) indicated grant of extra contractual payments and changes in the scope of work and method of construction which are discussed below.

1.3. The changes in the scope of work and construction methodology as well as extra contractual payments sanctioned during the execution of the contract vitiated the comparative evaluation of tenders made initially for purpose of awarding the contract and also involved additional liability of about Rs. 72.28 lakhs. As a result, the work estimated to cost Rs. 175 lakhs at the tender stage and evaluated at 259.92 lakhs under the contract awarded eventually may cost over Rs. 332 lakhs.

II. Evaluation of tender and award of contract

1.4. The Railway Administration invited (November 1972) open tenders for construction of sub-way structures (rectangular reinforced cement concrete boxes) to form sub-way tunnels for carrying underground railway lines in Contract Section 2 between Dum

Dum and Belgachia stations at an estimated cost of Rs. 175 lakhs. According to the tender, sheet pile and 'H' pile technique and open sloped excavation were to be adopted for the substructure work. The Project Report (October 1971) of the Calcutta Mass Rapid Transit System (MRTS) envisaged extraction of the imported sheet piles and re-using them once, keeping in view the depth to which the sheet piles would have to be driven and the corrosive nature of Calcutta soil.

1.5. The tender documents indicated following quantities of sheet piling to be done with imported sheet piles:

	(Quantity in MT)
(i) Initial driving of sheet piles (1st use)	1820
(ii) Re-driving of once used sheet piles (2nd use)	1746
(iii) Extraction of sheet piles (driven and re-driven, vide (i) and (ii) above.	3566

Steel material for these works as well as other temporary steel works (like 'H' pile steel strutting and walling were to be supplied by the Railway Administration subject to the recovery of full (100 per cent) cost from the contractor's running bills. On return of the material in good condition, the contractor was to be refunded 90 per cent of the cost.

1.6. Out of seven firms which quoted against the tenders (opened in March 1973) the offer of firm 'A' was in accordance with the tender conditions stipulated by the Railway Administration. Firm 'B', a public sector undertaking, submitted two offers. The first offer was as per Railway's conditions in addition to some special conditions. The second alternative offer was entirely as per its own conditions. The alternative offer of firm 'B' was on the basis that no recovery for cost of material issued for temporary works should be made at the outset; only 10 percent recovery might be made for each cycle of operation subject to a maximum of 25 per cent.

1.7. The Tender Committee evaluated the tenders taking into account the special conditions. The offers of firms 'A' and 'B' were evaluated as under:—

	(Rs. in lakhs)
(i) Firm 'A'	265.19
(ii) Firm 'B' with their own conditions	274.80
(iii) Firm 'B' with Railway conditions and special conditions.	279.23

The Tender Committee in June 1973 recommended for acceptance of the lower offer (Rs. 265.19 lakhs) of firm 'A', who had not stipulated any special conditions. Accordingly, the Railway Administration recommended (June 1973) to the Ministry of Railways (Railway Board) the acceptance of this offer, as this was considered "reasonable taking the tender as a whole".

1.8. In response to various queries from the Ministry of Railways (Railway Board), the Railway Administration clarified (June 1973—September 1973) *inter alia* as under:—

- (i) If the portion of work to be done by sheet piling was deleted from the scope of the tender, the *inter se* position of the tenderers would change very substantially.
- (ii) The condition of work in this particular section was best suitable for trying out the sheet pile method.
- (iii) It would not be very difficult to get the required quantities of steel sheet piles from indigenous sources.

1.9. The Ministry of Railways (Railway Board) directed (October 1973) the Railway Administration:

- (i) to conduct negotiations with firms 'A' and 'B' with a view to obtaining reduction in rates and withdrawal of unusual conditions stipulated by firm 'B'.
- (ii) to have a 'hard look' again at the quantities of bulk work (like sheet and 'H' piling etc.) as during execution these quantities may significantly change the overall cost and competitiveness amongst the tenderers.
- (iii) to stipulate terms for realising cost of material on the basis of actual depreciation for final adjustment and for initial recovery of specified depreciation from contractors' bills, and
- (iv) to make it clear to the tenderers that full deduction for unextracted piles would be made as per tender conditions.

1.10. Accordingly, the Railway Administration reviewed and revised (October 1973) the quantities for sheet pile work as under:

	(Quantity in MT)	
	Indigenous	Imported
	piles	piles
(i) Initial driving of sheet piles (1st use)	1595	1000
(ii) Re-driving of once used sheet piles (2nd use)	1435	600

- (iii) Extraction of sheet piles
[driven and re-driven vide (i)
and (ii) above].

3030

1600

1.11. Negotiations were conducted (November 1973) with the two firms 'A' and 'B' taking into account the revised quantities, revised basis of recovery for cost of sheet piles at 50 per cent as against 100 per cent originally proposed in tender documents and possible use of indigenous piles.

After negotiations, the Railway Administration recommended (November 1973) for acceptance by the Ministry of Railways (Railway Board) of the revised negotiated offer of firm 'A' at a total value of Rs. 259.92 lakhs indicating that this firm had offered the same rates for sheet piling irrespective of the use of imported or indigenous sheet piles.

1.12. The Ministry of Railways (Railway Board) pointed out (December 1973) that the rates quoted by firm 'A' for various sheet piling work "were not rational as very high rates had been quoted for the first use and very low rates had been quoted for the same work for the second use." It further observed that the intention (of the firm) appeared to recover the entire cost of steel at the first available opportunity. This point assumed great importance inasmuch as that the firm might not have any incentive to execute the second operation (extraction). The Tender Committee was, therefore, asked to go into the analysis of all the rates offered by firm 'A' with a view to judge their reasonableness.

1.13. The Tender Committee after a discussion with firm 'A' in December 1973 indicated that the firm's clarifications on the structure of its rates were of general nature and did not enable the Committee in forming any accurate judgment about the reasonableness of rates. The Tender Committee further reiterated their earlier view that it would not be practicable to establish the reasonableness of each itemised rate in the first few project contracts to be awarded by Metro Railway and that decisions might be taken on the basis of reasonableness of the overall value of the tenders.

1.14. The Ministry of Railways (Railway Board) in January 1974 accepted the negotiated offer of firm 'A' valued at Rs. 259.92 lakhs, based on initial recovery of 50 per cent cost of steel material for temporary work and revised quantities of sheet piling. Accordingly, the letter of acceptance was issued to firm 'A' in March 1974, stipulating that the rates would hold good for both imported and

indigenous piles and that the discretion to use either of the two types rested with the Administration. The contract executed stipulated completion of the entire work within 36 months i.e. by 5th March, 1977. However, the work from km. 1.118 to km. 1.452 (Phase I) should be given priority and completed in 18 month i.e. by 5th September, 1975. The time was to be the essence of the contract. The contract was a firm price contract and no escalation was permissible.

1.15. During the execution of the contract firm 'A' was allowed certain financial concessions not stipulated in the contract. Further the scope of work was modified in that certain items of work required to be performed by firm 'A' were dispensed with. These are as below:

- (i) Escalation in rates was allowed to the firm even though it was a firm price contract. The financial implication of the escalation in rates is (as estimated by the Railway Administration) Rs. 15 lakhs (see para 1.25) below).
- (ii) Amounts recovered from the firm towards the cost of material for temporary steel works were refunded to the firm prematurely, even before the material was returned to the Railway Administration in contravention of the conditions of contract (see para 1.51 below).
- (iii) The Railway Administration decided (4th April, 1977) to leave the once driven sheet piles buried in the ground. Accordingly the second and third stages of operation—extraction and second driving of sheet piles by way of reuse (the firms rates for which had been considered very low as compared to the rates for first driving) were given up (see paras 1.34 and 1.35 below).
- (iv) The relaxation of contract conditions mentioned in sub-para (ii) above resulted in the recovery of material being restricted to 10 per cent of their value as against 50 per cent decided upon in negotiations and as stipulated in the contract.

1.16. In the context of concessions shown to firm 'A' viz.

(i) escalation in rates.

(ii) restricting the recovery for the value of material to 10 per cent as against 50 per cent, and

(iii) non-extraction of sheet piles,

the original offer of firm 'B' (a public sector undertaking) on its own conditions which *inter alia* stipulated 10 per cent recovery by the Railway Administration of the cost of material, would become lower by Rs. 18.92 lakhs than the tender of firm 'A'. In other words, the comparative evaluation of tenders made at the time of negotiation was vitiated by the subsequent modifications made in the contract in favour of firm 'A' as against firm 'B'. The comparative financial implications are indicated below:

	(Rs. in lakhs)	
	Firm 'A'	Firm 'B'
Value of basic offer modified for use of indigenous sheet piles.	249.29	239.98
Less value of entire quantity of sheet pile work	(—)24.69	(—)29.64
Add value of sheet pile work actually done	18.40	17.29
Add value of special conditions of firm 'B' including escalation limited to Rs. 7 lakhs.	..	13.85
Add escalation allowed to firm 'A'	15.00	..
		241.48
Less 1% rebate offered by firm 'B' during negotiation.		(—)2.40
	258.00	239.08
Difference Rs. 18.92 lakhs		

Note:— In making the comparison the rates tendered by firm 'B' with 10% recovery of the cost of material (sheet piles etc.) and the rebate of 1% offered for use of indigenous sheet piles at the negotiation stage have been taken into account.

1.17. The Railway Administration stated (October 1979) that changes in nature and scope of work were dictated by imponderable circumstances which arose during execution of the work and hence ipso facto could not have been envisaged before the award of the contract and that any reference to the original offer of an unsuccessful tender for the purpose of a notional comparison with the offer of the existing contractor is a highly theoretical exercise.

1.18. It may be mentioned that the issues of escalation, quantum of recovery of cost of steel material issued to contractors and the reasonableness of itemised rates quoted by firm 'A', the successful tenderer, which had a crucial bearing on the evaluation of tenders were known even at the stage of scrutiny of the tenders. The comparison made by Audit is the actual financial impact of the concessions and modifications introduced after the award of the contract at the cost of additional expenditure to the Railway.

III. Escalation payment

1.19. In September 1975 when the progress on the work was 18 per cent, firm 'A' wrote to the Railway Administration asking for increase in rates stating *inter alia* that the prices had increased by more than 40 per cent since the award of the contract and it was a mistake on its part to have quoted firm rates for such a costly venture.

1.20. During November 1976—April 1978 firm pressed its claim for enhancement of rates through several petitions/memoranda addressed to the Railway Administration, Ministry of Railways (Railway Board) and the Railway Minister mainly on ground of abnormal and unprecedented price increase. The Railway Administration initially held (April/September 1976) that since the contract was a 'firm price' one, the firm's claim was extra contractual and, therefore, the Railway Administration had no contractual obligation to grant any enhancement in the accepted rates. It further held that the increasing trend of price indices was clearly discernible even at the tender stage and as the firm did not quote any escalation clause in the tender, nor did it insist for its introduction at the stage of negotiations, its rates must have included sufficient cushion to cover market fluctuations.

It appears that having secured the contract on 'firm price' basis, the firm had started pressing for escalation shortly thereafter.

1.21. However, as the firm had been repeatedly representing to the Ministry of Railways (Railway Board) a committee of Heads of Departments of the Railway Administration examined the whole question and recommended (May 1978) grant of price escalation subject to a ceiling limit of 15 per cent of the net value of the contract "to meet the ends of justice", although the firm's claim for escalation was not contractually tenable.

1.22. The Ministry of Railways (Railway Board) approved (April 1979) the payment towards escalation *inter alia* on the following basis:

- (i) that no payment for escalation is to be made for work done upto original date of completion *viz.* 5th March, 1977,
- (ii) for the work done after the original date of completion but only for the period necessitated entirely by reasons beyond the contractor's control (which must be gone into thoroughly by General Manager, Metro Railway), escalation may be paid on standard escalation clause with 30 per cent for contractor's material and 25 per cent for labour, keeping the base date as the date of negotiations, *viz.* November 1973, and
- (iii) that the ceiling for escalation will be 20 per cent on the value of work done (by the contractor) excluding the net cost of railway stores after the original date of completion, *viz.* 5th March, 1977.

1.23. The Ministry of Railways (Railway Board) authorised payment of Rs. 10 lakhs on *ad hoc* basis, as requested by the contractor, to be adjusted against the extra contractual amount that might be found due to him by way of escalation now decided upon. The Ministry of Railways (Railway Board) estimated the escalation payable on the value of work (less cost of Railway stores issued to the contractor) after 5th March, 1977 at Rs. 16—18 lakhs. This *ad hoc* payment was authorised without a specific finding that an amount not less than Rs. 10 lakhs had become due as escalation for reasons beyond the contractor's control. As such, this *ad hoc* payment of Rs. 10 lakhs constituted financial accommodation to the contractor.

1.24. The *ad-hoc* payment was made in April 1979. Even till date (December 1979) the amount due by way of escalation for reasons entirely beyond the contractor's control has not been determined.

1.25. The Railway Administration had assessed (October 1979) the total amount payable on account of escalation at Rs. 15 lakhs. With the acceptance of firm 'A's claim for escalation, the value of the contract exceeds the next higher negotiated (November 1973) offer of firm 'B' by Rs. 3.29 lakhs.

1.26. The Railway Administration stated (October 1979) that in view of the abnormal inflation following the global oil price hike, escalation was granted, subject to a ceiling, only for the work done beyond the original contract period and that extensions had so far not been due to any default on the part of the contractor.

1.27. It may be mentioned that extensions for completion of the work were granted mainly on grounds like slow progress of extraction of sheet piles and the resultant delay in starting work in other 'elements' with the use of extracted piles, limited working space in the heavily built up areas, delay in handing over sites etc. It is not clear how the extensions on account of slow progress of extraction and limited working space could be held to be not due to any default on the part of contractor, especially when the contractor was aware right from the tender stage itself of his responsibility for extraction and reuse of sheet piles, the availability of the working sites and their condition etc. These were taken into consideration while stipulating the date of completion of the entire work in the concluded contract.

1.28. According to the Ministry of Railways (Railway Board) it cannot be stated (December 1979) with definiteness whether any financial accommodation was actually involved. This can be determined only after the exact amount payable for escalation under the terms of the Ministry of Railways (Railway Board's) order is determined.

IV. Sheet pile work

(a) Non-extraction of sheet piles.

1.29. The rates quoted by firm 'A' for sheet piling in March 1973 (at the tender stage on 100 per cent cost recovery basis for material issued) and in November 1973 (at the negotiation stage on 50 per cent cost recovery basis for material issued) were as under:

	(Rs. /MT)	
	On the basis of 100% cost recovery	On the basis of 50% cost recovery as finally accepted
(i) Driving of sheet piles (1st use)	2450—2650	1440—1500
(ii) Extraction of sheet piles	100—175	400—500
(iii) Driving of sheet piles (2nd use).	250—400	600—700

1.30. At the request of firm 'A' in June 1975, the Railway Administration extended (September 1975) the original date of completion of Phase I of Contract Section 2 upto 15th April, 1976 without any penalty. Further representations were made by the firm during November 1975—March 1976 on the grounds that it was difficult to indicate how long it would take to complete extraction of sheet piles. The Engineer-in-Charge noting that the method of extraction adopted by the firm was safe and practicable, although it was very slow, recommended extension of the contract without any penalty upto 30 October, 1976 and accordingly extension was granted by the Railway Administration.

1.31. The firm again approached the Railway Administration during December 1976—February 1977 seeking extension for completion of work for the entire section upto 31st December, 1979 on grounds like slow progress of the work due to limited working space available, delay in handling over site, inability to start work in other elements, sheet piles not being available for reuse as originally envisaged due to technical difficulties consequent on the interlock friction, horizontal force from inside of the cut, twisting effect of the piles etc. On the recommendation of the Engineer-in-Charge that the extension sought for would not cause any loss to the Railway, the Administration granted (April 1977) extension of time upto 31st December, 1978 without any penalty. The work has not yet (November 1979) been completed and further extension upto December 1980 was granted (September 1979) without penalty.

1.32. After examining the contractor's repeated submissions (in November 1975, August and December 1976) regarding non-feasibility of extraction of sheet piles, the Chief Engineer of the Railway in March 1977 proposed that "the sheet piles already driven be left in position", on the following technical grounds:

- (i) The leader of the Soviet consultants team which visited the country in 1976 stated that in USSR the sheet piles were not extracted. According to him it was not technically possible to extract sheet piles with available means as the clutches got jammed resulting in excessive friction and economically it would not be worthwhile because the sheet piles got distorted during extraction which made their reuse impossible.
- (ii) A book on Foundation Engineering by an Engineer "having great experience in foundations in Mexico City where soil conditions are more or less similar to those at Cal-

cutta" mentioned that "in most cases of deep excavations the sheet piles cannot be recovered because of deformations set on them by the horizontal soil displacement."

- (iii) During (March—April 1976) extraction of 5 sheet piles (quantity of about 3 MT) in elements 1/1 to 1/4 it was noticed that extraction was very difficult; friction was so excessive that pile tops were getting torn and distorted during extraction. (This had not been mentioned in the observation of the Engineer-in-Charge in March 1976 *vide* para 1.30 above).
- (iv) Heavy corrosion was noticed on the piles due to aggressive nature of soil and climatic conditions of Calcutta. This resulted in jamming of clutches of majority of the piles leading to multifold resistance to pulling.
- (v) Lateral flattening of piles had occurred due to earth pressure.
- (vi) There were indications of soil displacements resulting in setting up of deformations on piles. Extraction of the piles may cause settlement of foundations of buildings and also affect deep sewers.
- (vii) The use of indigenous sheet piles (8mm thick) instead of imported sheet piles (22mm thick) also necessitated the non-extraction of sheet piles as indigenous sheet piles were liable to deformation and this would cause soil displacement endangering the safety of adjoining structure.
- (viii) Sample studies regarding straightness of the piles exposed on the trench side conducted during December 1976 on six piles selected at random showed that the piles had been deformed and their extraction would not only have been difficult but would have caused displacement of soil endangering safety of adjoining structures and deep sewers.

1.33. In brief, the Chief Engineer now held that extraction and reuse of sheet piles was impracticable, even though in March 1976, the Engineer-in-Charge had observed that the method of extraction adopted by the contractor, though slow, was practical and safe.

1.34. The proposal was agreed to by the General Manager in April 1977 and accordingly all the sheet piles driven in the entire Contract Section 2 had been left in position, buried in the ground. The actual quantity of sheet piles that will ultimately be left buried

1185 LS—2.

has not yet (November 1979) been assessed by the Administration. It is estimated that approximately 1078 MT of sheet piles costing about Rs. 23.72 lakhs would be thus left buried in the ground. Consequently, firm 'A' would not be required to perform the operations of extraction of driven sheet piles and also second driving i.e. reuse of sheet piles. It altogether vitiated the comparative evaluation of tenders based on the accepted condition for extraction and reuse of sheet piles.

1.35. The consequences flowing from the non-extraction of sheet piles are:

- (i) The Railway Administration had envisaged (June—September 1973) that "if the portion to be done by sheet piling is deleted from the scope of the tender, the *inter se* position of the tenderers would change very substantially". In this connection also see paras 1.8(i) and 1.16 above.
- (ii) The rate structure of the sheet piling work in the original contract was such that the contractor derived undue benefit on the abandonment of extraction of sheet piles. In this connection see para 1.48 below.

1.36. Regarding the justification for the adoption of the technique of extraction of sheet piles and its subsequent abandonment, the following points are worth mentioning:

- (a) The Project Report of MRTS was prepared in October 1971 by a team consisting of top ranking Engineers of the Railway and the Soviet Consultants. According to the Project Report fairly comprehensive investigation was carried out to determine the subsoil conditions in Calcutta City and while determining the construction methods proposed in the Report the soil conditions had been taken into account. The Project Report also stated that detailed calculations had been made at each bore hole location in respect of the stability of the underground cut under different methods of construction and also to determine the penetration of the support walls of the cuts below the bottom of the excavations. Based on these calculations and after taking into account the proximity of building etc. adoption of cut and cover method with sheet piles had been recommended for this particular stretch.

The Project Report (October 1971) further stated that imported heavy duty sheet piles would be required and that indigenous sheet piles would not be adequate. The Railway Administration reconsidered the suitability of Z piles (indigenous piles) well before the award of the contract and categorically recommended to the Ministry of Railways (Railway Board) in September 1973 that "further checking indicates that indigenously manufactured material may be made to suit our requirement for work under Contract Section 2 taking into consideration that for steel sheet piling the only section that is manufactured in India by M/s. Indian Iron and Steel Company will be slightly overstressed but such over-stressing will be within permissible limit for temporary structures". It further added that "for the section proposed to be tackled by sheet piles the Z section sheet piles rolled by M/s. Indian Iron and Steel Company will serve our purpose" and that it would need about 1000MT of the same assuming it would be possible to reuse these piles at least once (i.e. 2 uses).

As regards the sewer and drainage conduits along the alignment of the Metro line the Project Report stated that "the sewers as existing are comparatively small in size and situated in shallow depths". This had helped in locating the subway boxes at comparatively shallow depth.

Thus the aspects of soil conditions, proximity of buildings, sewerage and other services (based on specific studies had been taken due note of by the Project Report team while coming to its conclusions about use of sheet pile methodology and the extractibility and reuse of sheet piles. But the Chief Engineer's proposal of March 1977 "to leave the sheet piles in position" without extraction did not indicate how the Project authorities had gone wrong in their earlier conclusions; nor did they adduce any additional data regarding soil conditions etc., which could materially affect the conclusions drawn by the Project authorities. The only new point raised was about the corroded, twisted condition of 5 sheet piles extracted by the contractor. Even the sample studies conducted on 6 out of more than 1,600 piles *vide* para 1.32 (viii) above were restricted to merely the examination of the straightness of the piles. No study on feasibility or otherwise of extraction by actual extraction was conducted.

- (b) It may also be mentioned that the Railway Administration sent a large number of Engineers to various foreign countries for studies on Metro Railway Systems. No

study team had recorded that the Engineering practices in the countries visited, in the matter of use of sheet piles, their extraction and reuse were different from those indicated in the Project Report for adoption in the project.

- (c) The Engineer-in-Charge had reported in March 1976 that the contractor had to try several types of extraction methods and had finally adopted a method which was safe and practicable though very slow. In September 1976, while considering the question of payment for sheet piles left at the site in this section, elements 1/1 to 1/4, it was held that the condition of the extracted sheet piles "is 'A' class except for certain top portion which was damaged through extraction." Under the terms of the contract extracted sheet piles classified as class 'A' were capable of being readily reused for subsequent similar construction. In March 1977, while abandoning the extraction of sheet it was recorded that pile tops were getting torn and distorted during extraction. The basis on which the 'A' class piles were found to be unusable is not known.

1.37. It may also be mentioned that:

- (i) In the context of likely non-availability of imported piles the Ministry of Railways (Railway Board) at the time of consideration of tender had suggested (September 1973) the desirability of taking recourse to diaphragm wall technique but the Railway Administration assured them that "further checking indicates that indigenously manufactured material may be made to suit the requirement of work"; even though the only section manufactured indigenously would be slightly overstressed, such overstressing would be within the permissible limit and it would be possible to reuse these piles.
- (ii) The second team (December 1971) of Soviet Consultants advised that "there was, however, the danger of soil loss, at the time of withdrawal of sheet piles. Because of the difficulty in compacting re-fill satisfactorily in the immediate vicinity of sheet piles, there would be tendency for the soil to come off from the re-fill side when piles were removed. This might lead to ground loss and settlement of buildings. Therefore, effective measures have to be taken to prevent soil loss while withdrawing the piles. There was also the void (volume equivalent to the volume

of sheet piles) left behind when sheet piles were withdrawn. This also would contribute to some settlement. Therefore, in cases, where sheet piles were driven close to structures and damages to structures were anticipated, it would be wise to leave the sheet piles buried in the ground." The subsequent Soviet team also advised (June 1974) the "driving of sheet piles close to buildings is fraught with some danger. In USSR the practice is generally to leave the sheet piles buried."

- (iii) Notwithstanding the qualified remarks of the Soviet Consultants about the risk involved in extraction of sheet piles, the practice obtaining in USSR of leaving the sheet piles buried instead of extracting them, the information available in technical literature that in the case of deep excavations the sheet piles cannot be recovered due to deformations, absence of any studies by the Railway Administration regarding the feasibility of extraction of the sheet piles under the Calcutta soil conditions and with reference to location of the properties and utilities, the Railway Administration decided on extraction of sheet piles initially. It may be noted that the advice of the Soviet Consultants of June 1974 on this point was available within 3 months after the contract was concluded (March 1974).

(b) Reasonableness of rate for first driving of sheet piles.

1.38. The Ministry of Railways (Railway Board) had issued (1963) instructions that in the matter of evaluation and consideration of tender documents particular care should be taken to ensure that the rates quoted for individual items are realistic and are not abnormal and unreasonable in respect of any item of work.

1.39. In this tender the Railway Administration had maintained all along that it should be decided on the over-all value and not on itemised rates. The Ministry of Railways (Railway Board) was of the view that the rates quoted by the firm could not be considered as rational and that Tender Committee should have gone into the analysis of all the rates offered to arrive at their reasonableness. In reply, the Tender Committee reiterated their view that it would not be practicable to establish the reasonableness of each itemised rate in the first few contracts to be awarded by the Railway and that decision might be taken on the basis of reasonableness of the overall value of the tenders.

1.40. The reasonableness or otherwise of the rate for an item of work assumes profound significance where the tender is decided on overall value but at post contract stage material modifications are made in the scope of the work and the engineering technique involving loss of valuable steel and affecting an important item of work in the contract.

1.41. In the context, of high rate for first driving operation and low rate for second driving operation of firm 'A', the Railway Administration did not review and examine the reasonableness of the rate for first operation when it decided to leave the sheet piles buried underground, thereby dispensing with the extraction of sheet piles and their reuse. This was a material change in the terms and conditions of tender/contract resulting in undue financial advantage to the firm.

1.42. The Railway Administration stated (October 1979):

- (i) The rates for the first and second operations being already provided in the contract, the question of examining the reasonableness of the rates during execution of contract could not be legitimately raised, nor did any occasion arise for negotiation outside the contract which itself envisaged retention of the piles underground in certain circumstances.
- (ii) Payment at contractual rates for work done cannot constitute financial advantages.

1.43. It may be mentioned that the rates contracted for sheet piling work were for three operations, viz. first driving, extraction and redriving of the extracted piles. With the decision to leave the piles buried underground, the second and third operations viz. extraction and reuse of the piles were dispensed with. This constitute a material change in the scope of the work, which warranted an examination of the reasonableness of the rates which were "joint rates".

1.44. The following facts establish that undue financial advantage was derived by the firm from this change in the terms and conditions of the contract:

- (i) During negotiations in November—December 1973, firm 'A' clarified that the rate for the first driving was so quoted as to ensure that the net payments available to it 'on account' bills after deduction of the cost of sheet piles

to be supplied by the Railway were sufficient to cover at least a portion of the running expenses. A lower rate had been quoted for the second driving taking into consideration that it might be possible to get substantial reimbursement of the value for the sheet piles returned after second extraction which would compensate for the lower rate quoted for the second driving.

- (ii) Again in December 1973 itself, the Ministry of Railways (Railway Board) had observed while considering the tender that the rates offered by firm 'A' for various items of sheet piling work were not rational, since very high rates (Rs. 1400—1500 per MT) had been quoted (after negotiation) for the first operation while the rates for the same work for the second driving were very low (viz. Rs. 600—700 per MT). The Ministry of Railways (Railway Board) had also expressed that perhaps the intention of the firm was to recover the entire cost of material at the first available opportunity. (See para 1.12 also)
- (iii) Again, it is relevant to mention that in March 1977, i.e. 3 years after the award of the contract for section 2 the Railway Administration awarded a contract for similar work of sheet pile driving under section 4-A to another firm with free supply of material by the Railways. At this time, reuse of the sheet piles was not envisaged. For single pile driving operation the rate allowed was only Rs. 1000 per MT as compared to Rs. 1400—1500 per MT allowed 3 years earlier to firm 'A'.

1.45. The table below indicates in juxtaposition the rates originally quoted and negotiated for the first and second driving operations:—

Operation	Quoted rate for 100% recovery	Cost of sheet piles included in Col. (2)	Negotiated rate for 50% recovery	Cost of sheet piles included in Col. (4)
(Rs. per M.T.) ¹				
(1)	(2)	(3)	(4)	(5)
First driving	2450—2650	2200	1400—1500	1100
Second driving	250—400	Nil	600—700	Nil

Note : Recovery of the cost of sheet piles was to be made at the rate of Rs. 2200 (100 per cent recovery) Rs. 1100 (50 per cent recovery) per MT.

1.46. There is no difference in the work involved in driving sheet piles whether in the first or in the second (reuse) operations. The substantial difference in the rates for the first and the second driving operations is accounted for by the contractor recovering the cost of the piles in the first driving operation itself. It is significant that, after negotiations, when the recovery of the cost of the sheet piles in the first operation was limited to 50 per cent instead of 100 per cent as originally envisaged the rate for the reuse operation was substantially stepped up.

1.47. The facts given above, (vi) the observation of the Ministry of Railways (Railway Board), the analysis of the rates furnished by the contracting firm itself, the rate allowed 3 years later for similar work in a nearby site in the same project and the substantial difference between the rates for the first and second driving operations, would establish conclusively that the first driving operation rate allowed to the firm was inclusive of the recoverable cost of sheet piles.

1.48. According to the calculations made by Audit after allowing for labour charges for driving and for depreciation of the sheet piles, the extra amount paid to the firm by way of the cost of sheet piles works out to Rs. 580 per MT and total of Rs. 7.45 lakhs for first driving of 1285 MT of sheet piles.

1.49. The Ministry of Railways (Railway Board) stated (December 1979) that in their opinion no undue concession in the rates had been allowed to the contractor and that rates eventually given were comparatively reasonable.

1.50. Consequent on the decision to leave the sheet piles buried, the Railway Administration had to issue additional 285 MT of new sheet piles to be driven at the first driving rate over and above 1000 MT originally contemplated, involving an extra expenditure of Rs. 6.27 lakhs (cost of sheet piles).

V. Other financial benefits given to the firm

(a) Reimbursement of the cost of material

1.51. At the request of the firm the Railway Administration reimbursed (December 1978) Rs. 5.85 lakhs on account of the cost of strutting and waling material issued to the firm. This reimbursement was made to the firm prematurely, although the material had not been dismantled and returned to the Railway, on the grounds that had the work been completed as per original schedule (March 1977) the reimbursement as per contract condition would have been

made; any further delay would result in hardship to the contractor. Reimbursement of this amount had been made on the strength of an indemnity bond, although legal adviser advised to obtain a bank guarantee to safeguard the interest of the Railways. This reimbursement was contrary to the provisions of the contract, as the material issued to the contractor is yet to be returned. This extra contractual benefit to the firm has been estimated as Rs. 1.40 lakhs (@ 12 per cent interest for the period January 1979 to December 1980 i.e. the expected date of completion of work).

(b) Payment for extra item

1.52. The schedule of items for work to the tender contemplated driving of sheet piles upto a depth of 20 metres from ground level. The tender documents neither indicated the lengths in which the sheet piles would be supplied nor provided as a separate item of work for splicing (joining) of sheet piles to make them of the desired length. The contract stipulated only the rates for driving sheet piles.

1.53. The Railway Administration procured and issued sheet piles to the firm in lengths ranging from 5.5 metres to 13.5 metres. During execution the firm raised (February 1975) a dispute stating that its rates for driving of sheet piles were not inclusive of the cost of splicing, for which it should be paid for separately. In October 1975 the dispute was referred to Joint Arbitrators appointed by the General Manager of the Railway. The arbitrators gave an award in December 1975 in favour of paying the firm for splicing as a non-scheduled item of work.

1.54. The firm claimed in December 1975 a rate of Rs. 899.88 per splice (joint). The Railway Administration in March 1976 worked out a rate of Rs. 553.81 per splice, which was considered reasonable on the basis of a work study conducted by the Engineer-in-Charge. The rate was approved by the General Manager in April 1976. The firm had been paid Rs. 8.97 lakhs till March 1979 for splicing of 1,620 joints. However, in the tender subsequently invited for Contract Section 4-A by the Railway Administration splicing was mentioned as a separate item of work and the rate obtained in December 1976 for splicing was only Rs. 180 per joint exclusive of the cost of steel plates to be supplied free by the Railway Administration. Taking into account the cost of material required per joint, the comparable rate for Contract Section 4-A works out to Rs. 214.41 as against Rs. 553.81 per splice paid to firm 'A' for Contract Section 2 by the Railway Administration. Out of the Rs. 553.81, direct cost

alone amounts to Rs. 239.05 as against all inclusive rate of Rs. 214.41 obtained in Contract Section 4-A nine months later. The extra benefit thus derived by firm 'A' on this account works out of Rs. 5.50 lakhs.

1.55. The Railway Administration stated (October 1979):

- (i) The rate worked out for Contract Section 2 for splicing thinner indigenous sheet piles cannot be compared with the rate allowed for splicing thicker imported piles for Contract Section 4-A; thinner the piles, more elaborate the care required for splicing.
- (ii) A minor item in a major contract need not necessarily indicate a workable rate structure by itself.

1.56. The Ministry of Railways (Railway Board) stated (December 1979) that the rate for splicing allowed in this case was a non-scheduled item and as such could not fairly be compared with the rate obtained in a tender in an adjoining section for splicing imported sheet piles. Besides, the volume of work involved in splicing in the latter section was comparatively small.

VI. Change in Methodology

1.57. In 1973, while considering the tenders received for Contract Section 2, the Ministry of Railways (Railway Board) enquired about the advisability of taking recourse to the diaphragm wall method of construction. In reply, the Railway Administration mentioned that there were not many firms which could tackle the diaphragm wall type of construction and that the "condition of work in this particular section is such that this is best suitable for trying out the sheet pile method". Further as mentioned in para 13.36(a) above, the Project Report taking into account the soil conditions, proximity of buildings and sewer lines had proposed adoption of sheet pile methodology for this section. Accordingly as per the contract with firm 'A' a stretch of about 440 metres (i.e. a total of 880 metres for up and down side together) was to be constructed by sheet pile method.

1.58. Upto October 1977 the firm had driven sheet piles for a total length of 647 metres consuming 1285.82 MT of indigenous sheet piles in single use only. On 23rd November 1977 the Deputy Chief Engineer proposed that the remaining length of Contract Section 2 where sheet piling had not been done should be constructed with diaphragm walls. The following reasons were indicated therefor.

- (i) The sheet piles left pockets sometimes as they could not be driven to full depths.
- (ii) *There was a tendency of clutches opening out and even otherwise the cut off provided was far from being water proof.*
- (iii) This situation was further aggravated in this particular section by the existence of a sewer line nearby. The soil around the sewer was mostly surcharged with water due to water seepage through the opening in the sheet piles endangering the cut.
- (iv) There were cases of soil loss and considerable surface settlements resulting in collapse of running sewers and some private structures.
- (v) The diaphragm wall would overcome all these disadvantages and provide safe working conditions and protection to adjoining buildings.

The Chief Engineer considered the change in methodology essential for safety considerations of adjoining structures and the neighbourhood and also to ensure a safe working condition.

1.59. All the above factors had been duly investigated and taken into account in the Project Report, while recommending the methodology to be adopted for construction in various lengths. Again, the shortcoming of the sheet pile technique was discovered after 73.5 per cent of the sheet piling had been done.

1.60. On 21st November 1977 firm 'A' intimated the Railway Administration that it had been verbally intimated by the Administration that it proposed to have the balance portion done by diaphragm wall method and in that event it would not prefer any claim for reduction in the quantity of work. Firm 'C', who had been awarded (November 1976) work in the adjoining Contract Section 3-4 agreed (November 1977) to do this diaphragm wall work in the Contract Section 2 as part of its Contract for Section 3-A. The financial implication of this proposal was worked out (November 1977) by the Railway Administration as involving additional expenditure of Rs. 8.96 lakhs as between the sheet pile technique and the diaphragm wall technique of construction.

1.61. In January 1978 the Financial Adviser & Chief Accounts Officer and the Chief Engineer were of the opinion that limited tenders for the work should be invited from "only two firms readily

available in the field at Calcutta." These were firms 'C' and 'D'. It was considered that there were no other firms readily in a position to tackle this urgent work to be completed before the monsoon. The proposal was approved by the General Manager in January, 1978.

1.62. Limited tenders were invited from the two firms 'C' and 'D' in January 1978. Only firm 'C' quoted and the work was awarded in March 1978 at a cost of Rs. 25 lakhs on single tender basis. The date of completion was stipulated as six months from the date of award of contract (i.e. by 17th September, 1978). The period of completion was extended to 31st March, 1979 without penalty. The contractor did not complete the work within the extended period and asked for further extension upto 15 June, 1979. The extra expenditure incurred by the Railway Administration by change of methodology is assessed by Audit at Rs. 19.21 lakhs as against Rs. 8.96 lakhs assessed by the Railway Administration in November 1977.

1.63. This change over from sheet pile method to diaphragm wall work in January, 1978 constituted a 'material modification' in terms of paras 1009 and 1010 of Indian Railway Code for the Engineering Department, requiring prior approval of the Ministry of Railways (Railway Board). This was not obtained. A report of the change in methodology of construction was made in April, 1978, i.e. 3 months later, to the Ministry of Railways (Railway Board).

1.64. The Railway Administration stated (October 1979):

- (i) the reasons for deciding on the change in construction method were due to the incidents that took place during actual execution of sheet piling, which could not have been visualised fully at the Project Report stage by sample studies forming the basis for preparation of the report,
- (ii) the Project Report envisaged use of heavy duty imported sheet piles which would have given better protection against soil loss and leakage and in that case some of the failures could not have probably taken place, and
- (iii) the field engineers had to take steps to meet a situation arising during execution by adopting a different methodology.

VII. To sum up

- (i) The abandonment of the extraction of sheet piles and allowing escalation in the post-contract stage vitiated

the comparative evaluation of the tenders; the tender of firm 'A' turned out to be higher by Rs. 18.92 lakhs (cf. para 1.16 above).

(ii) The technique of extraction of sheet piles had been adopted after careful investigation of the soil condition etc., and in the face of the advice of the Soviet experts and the practice obtaining in the USSR and the available technical opinion (cf. para 1.37 above).

(iii) The rates of payment for sheet pile driving were inclusive of the cost of sheet piles and were based on the assumption that the sheet piles would be extracted and re-used. However, when the extraction of sheet piles was abandoned, the rate structure for driving of sheet piles was not reviewed and revised, thereby giving the contractor undue financial benefit amounting to Rs. 7.45 lakhs (cf. para 1.49 above).

(iv) Extra contractual concession in the form of escalation was allowed in favour of the contractor. The amount payable by way of escalation is still (December 1979) to be determined.

Financial accommodation to the extent of Rs. 10 lakhs was given to the contractor (cf. para 1.23 above) even before the amount payable by way of escalation had been determined.

(v) The extra expenditure to the project on the sheet piles originally intended to be used after extraction and now left buried, is Rs. 23.72 lakhs (cf. para 1.34 above).

(vi) The sheet pile method of construction was abandoned in favour of diaphragm wall method, resulting in an extra expenditure of Rs. 19.21 lakhs (cf. para 1.62 above).

The concessions given to the contractor are summarised below:

	(Rs. in lakhs)
(i) Escalation payment including financial accommodation of Rs. 10 lakhs.	15.00
(ii) Extra benefit given to the contractor in the rate for first driving of the piles.	7.45
(iii) Payment for splicing sheet piles at high rate	5.50
(iv) Premature refund of the cost of steel material	1.40,
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	29.35
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1.65 The extra expenditure incurred by the project as a result of changes in the technique of construction are:

(a) the cost of sheet piles not extracted and left buried	Rs. 23.72 lakhs
(b) extra expenditure incurred on the diaphragm wall method as against sheet pile method	Rs. 19.21 lakhs
	<hr/>
Total	Rs. 42.93 lakhs
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1.66 Another instance of concession shown to the same firm in this contract is dealt in para 14—"Payment for dewatering" in this report.

[Paragraph 13 of the Report of the Comptroller and Auditor General of India for the year 1978-79—Union Government (Railways)]

Metro Railway Calcutta

1.67. Giving the historical background of the Metro Railway Project in Calcutta, the Member Engineering stated during evidence:

"The Metropolitan Transport project started in July 1969. Ministry of Railways sanctioned the survey of project in August 1969. Project Report was submitted in October 1971. In between we had collaboration with the Soviet Union; the first team of consultants from Soviet Union visited from November 70 to January, 1971. Discussions were held with them. Field surveys were conducted and project report was sent in October, 1971. The Project was sanctioned on 1st of June, 1972. Originally when the project report was submitted it was to cost Rs. 140 crore and it was based on 1970 prices. Construction estimate was doubled in 1974. We called for some tenders for certain sections. This estimate was 249.54 crores. That was in 1974. There were Bangladesh War and higher prices and so on. General increase in price index was there. Based on that the cost became Rs. 250 crores. There was a small interregnum in October 1974 when work on the project was slightly suspended. Go-ahead was given in April 1975. For 6 months to 1 year there was interregnum. Funds were allotted depending upon funds available. 85 crores have been spent till today on the project. This Project cost will be about Rs. 526 crores on 1980-81 level of prices.

There are 2 phases No. 1 Tollygunge—Esplanade. Phase 2 is Chittaranjan Avenue—Dum Dum. Phase 1 is about 50 per cent and it is to be completed by 1984-85. This is the target. Physical and financial targets have been worked out. 1984-85 is target date for Phase 1. 1987-88 is for the entire completion of project."

1.68 The Committee were informed that the original project report envisaged that the whole project should be completed by 1978. However there had been delay and according to the Member Engineering one of the main reasons for the delay in completing this project was the lack of funds. The Member Engineering further explained.

"For one year there was a lull. We were asked to hold the project in abeyance in 1974 and in the middle of 1975 only we were asked to go ahead with the project. Then with whatever money was allotted, we had to readjust the target. Secondly, we had the collaboration with the U. S. S. R. We had to get the tunnel shields from them and that also had come only some time back. After the protocol was signed in 1974, the supply of tunnel shields started coming in. They had supplied the tunnel shields and we have started the tunnelling work now."

1.69 The Committee asked whether the Railway Board expected to complete the project within the time schedule now determined and within the estimated cost of Rs. 526 crores. To this the Member Engineering replied:

"This cost is based on 80-81 prices level. We have got terms of escalation depending upon the wage rise, etc. If the wage rises, a certain percentage of increase takes place. Similarly, if the cost of cement and steel goes up, to that extent there may be an increase because we go on acquiring the materials as and when we get them as we do not stockpile these materials. To some extent there may be an increase in the cost. To what extent it will go precisely, we are unable to say at this point of time."

1.70 The Committee have been informed that upto date progress on the project upto 28-2-1981 was 27.5 per cent. The target for completion as per Project Report was by 1978. As per Railway Minister's speech in Parliament while presenting the Railway

Budget for 1981-82, the first phase of the work i.e. Esplanade Tollyganj Section, was targetted to be completed before the Sixth Plan period is over i.e. by 31-3-1985. As per explanatory Memorandum to the Railway Budget for 1981-82, the date of opening for the whole line has been set as 31-3-1987.

1.71. From the information made available to the Committee it is seen that between 1972-73 and 1980-81, the total projected requirements of funds worked out to Rs. 140.30 crores. Against these projections, the total amount allotted and actually spent was Rs. 88.42 crores. Out of the total amount spent till 28-2-1981, Rs. 87.90 crores have been spent on Phase I (Dum Dum-Shyambazar & Esplanade-Tollyganj) and only Rs. 52 lakhs have been spent on works in Sections comprising Phase II from Shyambazar to Esplanade.

1.72. According to the Railway Board the main reasons contributing to the delay in the execution of the project were as follows:—

- (i) Delays in land and property acquisition due to injunction on possession, court cases and urban Land Ceiling Act.
- (ii) Inadequate budget allotment in relation to capacity since 1976-77.
- (iii) Detection of uncharted utilities during execution requiring revised planning, resulting in stoppage of work & frequent interruptions in the work of utility diversions done by other agencies.
- (iv) Shortage of steel structurals from main producers from time to time.
- (v) On a considerable stretch on the 'cut and cover' work on road, requirements of the police and State Govt. for adequate passage ways for vehicular traffic constituted a constraint on physical execution of works resulting in frequent delays.
- (vi) Chronic and erratic electrical load sheddings in Calcutta for the last three years resulting in idling of contractor's machineries.
- (vii) Ban on commitments imposed in 1974-75.

- (viii) Law and order situation resulting in lockouts, strikes, thefts, contractor's labour unrest, intimidation from local rowdies in spite of police cooperation.

1.72A. During the visit of a Study Group of the Public Accounts Committee to Metro Railway Project, Calcutta in January, 1981, the General Manager of Metro Railway had informed the Group that one of the reasons for delay in the completion of the project was shortage of raw materials particularly steel. Steel was also required to be imported as matching steel was not available in the country. Another reason for delay was delay in acquisition of land for the project.

Administrative Set-up

1.73. The Chairman, Railway Board stated in evidence that since the commencement of the work on Metro Railway five General Managers had been appointed for the project. In this context the Committee enquired how far was it justifiable from administrative point of view to change the General Managers so frequently particularly in view of the fact that several officers had to be sent abroad for training, because of their lack of experience. The Chairman, Railway Board stated:

"Technically, the entire team continues because very few changes at the lower levels are made. Only on superannuation we have changed the General Manager, because we have to keep a level of seniority and we cannot appoint a junior man. We cannot fill the post like that. The General Manager is on the administrative side. This situation we have not only in the Metro but in the other Railways also. The main thing is the basic structure managed the total infrastructure that is available. Similarly, in Metro, there has been no undue disturbance just because the General Manager is changed. When one General Manager superannuates we have to appoint the next senior man and we can not ignore their claims. We have to provide for this because the basic infrastructure remains and in Metro also it remains."

1.74. In reply to a question whether it was not possible to appoint an Engineer who was qualified for the job and who had yet to serve for quite a long time as the General Manager of Metro Railway, the Chairman, Railway Board stated:

"There is no dearth of engineers, Sir. The question is even for shorter duration, I will have to appoint the senior man. It is not a question of the lower level man not

being available. The question is that the senior man cannot be superseded just because he is going to retire."

1.75. The Committee desired to know whether it was not administratively possible to appoint General Managers or Chief Engineers from the beginning of a project till the entire project was completed. To this the Chairman, Railway Board replied:

"Well, it is not possible in the structure that we have in the Railways. On the Railways and in Government undertakings this may not be desirable from some other points of view, that is technically also, that we just cannot tamper with the basic principle that we follow for promotions and appointments and I think that limitation is there, quite apart from merits."

He added:

"The posts of General Managers are limited in number. Therefore, we have to distribute all the posts among the senior most suitable officers. In the top organisations the basic principle is that when a man has one year to go he can be promoted. That is the condition laid down by the Appointment Committee of the Cabinet. So, if a man has one year to go, we cannot deny him the General Managership just for the sake of continuity. But the total structure does maintain the continuity."

1.76. The Committee wanted to know whether all the 5 General Managers who had a tenure in the Metro Railway retired from the same position or had served some other Department after leaving the Metro Railway and before retirement. The Chairman, Railway Board stated:

"All without exception have retired from the Metro Railway. It is a question of superannuation. We have no option but to retire him and appoint a successor Mr. Chakravarty had four years to go and he was kept there for all the four years. He was not sent to any other construction project."

1.77. The Committee enquired about the general criteria laid down for the appointment of General Managers in the Railways. In a note, the Railway Board have stated:

"The appointment of General Managers of Zonal Railways is made with the approval of the Appointments Committee of the Cabinet. While considering incumbents from:

amongst the senior eligible officers from various Railway disciplines, their *inter-se* seniority, record of service and performance, administrative ability, experience in management and planning, time available for the incumbent until superannuation, and qualities of leadership are taken into account. The Railways being a multi-disciplinary organisation, a reasonable parity among major disciplines is also borne in mind.

For the posts of General Managers of Construction Projects and of Production Units, Officers generally from Engineering disciplines are considered on the basis of the record of their service and performance, qualities of leadership and management, aptitude and experience required for such posts."

1.78. The statement below gives details regarding the General Managers and Chief Engineers who have worked on Metro Railway, Calcutta together with the period of posting of each incumbent and the reasons for the transfers:

(A) No. of GMs who have worked on Metro Railway, the period of their posting and the reasons of their transfer.

Sl. No	Names	Period of working		Reasons of leaving Project
		From	To	
1.	Shri S.S. Mukherjee	28-8-72	30-6-74	Retired
2.	Shri T.R. Vacha	1-7-74	27-9-74	He was Addl. Member (W) Rly. Board/DLI and was looking after the duties of GM/Metro Railway till posting of a General Manager.
3.	Shri P.K. Ganguli	28-9-74	31-10-75	Retired.
4.	Shri A.K. Chakravarti	1-11-75	31-8-79	Do.
5.	Shri A. Sukumaran	12-9-79	31-10-80	Do.
6.	Shri P. V. Narayanswami	1-11-80		Continuing
N.B. : Before 28-8-72, there was CAO(R). The names of CAO(R) are as follows :				
1.	Shri S.S. Goel	24-7-69	23-6-71	Transferred to Bombay as CAO(R)/ Metropolitan Transport Project (Railways), Bombay.
2.	Shri J.N. Roy	24-6-71 16-8-71	9-7-71 27-8-72	Posted as CPE on assumption of the charge by GM on 28-8-1972 and finally retired on 29-2-76 on SCPT.

B. No. of Chief Engineers who have worked on Metro Railway, the period of their posting and the reasons for their transfer

Sl. No.	Names	Period of working		Reasons for transfer
		From	To	
1.	Shri J.N. Roy	3-12-69	23-6-71	Posted as CAO (R) Metro-politan Transport Project (Railways), Calcutta vice Sri S.S. Goel transferred to Bombay.
2.	Shri H.D. Bhaumik	10-11-72	19-7-75	Transferred to Eastern Railway.
3.	Shri B.K. Mitra	23-7-73	20-4-76	Retired voluntarily from 20-4-76 (AN).
4.	Shri K.N. Dasgupta	1-5-76		Continuing.
5.	Shri G.N. Phadke	10-3-80		Continuing.

Technical know-how

1.79. In regard to the technical know-how available in the country for the Metro Railway Project, the Chairman, Railway Board stated in evidence:

"This is the first ever underground Railway Project undertaken in India in one of our major cities. Calcutta was the first city where we decided to go in for an underground Railway System like this. The know-how for a project like this, was absolutely zero. We had to depend upon outside agencies. Techniques and ideas of construction differ from country to country. We had to start from Zero knowledge and we had to acquire and develop knowledge. This project has been badly delayed. It was conceived in 1969."

1.80. The Committee pointed out that since the construction of underground railway was the first project of its kind to be undertaken in the country and the Railways had zero experience in this line, why global tenders were not invited for the construction work, The Member Engineering stated:

"We thought we could do it."

1.81. On being pointed out that the cost of the project would not have perhaps gone up to that extent if global tenders had been invited, the Member Engineering stated:

“This has happened due to reasons which are more financial than anything else. The escalation came and the financial resources were not available.”

1.82. The Committee desired to know whether the question regarding calling of global tenders was considered. To this the Railway Board have replied:

- (i) The Board authorised the Project to commence the execution of work and to send proposals on tenders that may be called for Civil Engineering works for approval of the Board.
- (ii) Moreover a reference to Para 15 Chapter 20 of the Project Report which reads as follows may be relevant in this connection as reproduced below:

“**Civil Engineering Construction firms:**—During the last two decades many major construction works have been carried out in this country and there are quite a few reliable and resourceful construction firms in this country for doing very major civil engineering construction works. But none of them possess experience in the construction of the underground structures of a rapid transit system or have the specialised equipments required for this work. These construction firms, either singly or as combines in the form of consortiums, will be able to form strong units for doing this work. Discussions have been held with them when they showed interest in this work, and according to the capacity as indicated by them, it appears that there will be no difficulty in getting the work done by the Indian Construction firms within the time schedule set forth. To make up for the shortfall in their experience, it will, however, be necessary for them to obtain some specialists from other countries and retain them during the progress of the work.

- (iif) Moreover, Global tenders would have involved huge drain on scarce foreign exchange resources of the country, which the country could ill afford. Valuable experience

derived by doing the actual work on one's own and developing indigenous know-how would all have been lost by resorting to Global Tenders."

1.83. The Committee desired to be furnished with details of the qualification and work experience of the various tenderers including the Public Sector Undertaking that participated in the tender for Contract Section 2. The Railway Board have in a note, stated:

"While dealing with the tenders in 1973, the Tender Committee went into the capacity (qualification) aspect of all the tenderers. Their remarks as extracted from the Tender Committee Minutes dated 8-6-1973 are reproduced below (4.30, 4.36).

Out of the eight tenders received for Section 2 on 21-3-1973, M/s. Forward Engineering Syndicate's tender was the lowest of all. Therefore the tender Committee, consisting of three Heads of Departments had after going into full details of the capacity aspect of the firm recommended their tender only after satisfying themselves on this point.

The extracts of the Tender Committee Minutes dated 8-6-1973 are appended below:—

"4.30.....So far as experience is concerned subway construction for MRTS would be the first of its kind in this country and none of the tenderers has got the experience of subway construction for MRTS, but similar nature of work with strutted deep excavation and extensive dewatering has been carried out by some of these contractors in the construction of harbours, docks, dams, bridges, river bank protection, sea defence etc. The work involved in subway MRTS construction being of similar nature should, therefore, be capable of being tackled by firms having experience in the various fields mentioned above. There is however one difference. The MRTS work has to be done through densely populated city areas which will call for a lot more ingenuity than what is required in open and sparsely populated areas. As no Indian firm with experience of MRTS construction in a city is available and it has not been considered necessary to invite any global tender, the choice has necessary to be made from amongst firms who have

tendered for this work in spite of the scepticism inherent in having to entrust the very first work of its kind to a firm which does not have any direct experience of MRTS subway work.

"4.36 M/s Forward Engineering Syndicate.

Although not of the same standing as Hindustan Construction Co. this firm seems to possess good experience of strutted construction work with deep excavation and dewatering and their performance is well reported upon. Their equipments and resources also seem to be fairly adequate."

Evaluation of tenders and award of contract

1.84. It is seen that the Metro Railway Administration invited open tenders for construction of sub-way structures to form sub-way tunnels for carrying Railway lines in Contract Section 2 between Dum Dum and Belgachia Stations at an estimated cost of Rs. 175 lakhs. Out of the seven firms which quoted against the tenders the offers of firm 'A' (M/s Forward Engineering Syndicate Calcutta) and firm 'B' (M/s National Project Construction Corporation, Delhi)—a public sector undertaking—were found in order. The Tender Committee evaluated these two offers as under:

	(Rs. in lakhs)
(i) Firm 'A'	265.19
(ii) Firm 'B' with their own conditions	274.80
(iii) Firm 'B' with Railway conditions and special conditions	279.23

The offer of firm 'A', which was the lowest in terms of value was accepted as this was considered "reasonable taking the tender as a whole." The difference between the offers of firm 'A', which was accepted, and firm 'B' which could not be accepted was only Rs. 9.61 lakhs i.e. less than 4 per cent more than the accepted offer of Rs. 265.19 lakhs. In this context the Committee enquired whether there was no provision for giving preference to public undertakings in the matter of award of works contracts. The Member-Engineering stated in evidence:

"For works the preference has not been extended. For stores, we can give a price preference of 10 per cent to public sector undertakings."

1.85. The Financial Commissioner for Railways added:—

“The original orders for price preference for the public undertakings covered only the stores contracts. When a clarification was sought at that time whether the same preference was to be given in respect of works contracts also, the BPE took the view that this would not apply to them. After some time, the price preference clause was withdrawn, but it has again been reintroduced in 1977 or 1978. As it stands, it applies to procurement of materials only, but the spirit of that could be applied to contracts also. However, it has not been formally clarified as yet.”

1.86. Subsequently in a note furnished at the instance of the Committee, the Railway Board have stated:

“No such price preference was prevailing for “works” tenders during 1973, in favour of Government Enterprises.

The Railway Ministry, as per Memorandum of Bureau of Public Enterprises, Ministry of Finance circulated to all Ministries, have very recently reconsidered this issue and have intimated to General Managers of all the Railways with the concurrence of the Finance Directorate, *vide* their letter No. 77/WI/CT/30 dated 3-4-81, that the contents of their earlier letter No. 80/RS(G)779/63 dated 5-12-80 which were applicable for ‘purchases’ would be equally applicable to ‘works’ contracts also. Accordingly, price reference for Government Enterprises has now become applicable in cases of ‘works’ contract also.”

1.87. Referring to the award of contract in Contract Section 2, the Committee pointed out that the estimated value of work was originally shown as Rs. 175 lakhs in the tender documents (Nov. 1972) whereas the value of the accepted tender (March, 1974) was Rs. 259.92 lakhs. The Committee wanted to know the reasons for this wide variations and also enquired how was the value shown in tender documents estimated. In a note, the Railway Board have stated:

“The estimated value of the tender was based on rough calculations done during the Abstract Estimate stage. As the Abstract Estimate was based on 1970 cost level and no detailed estimate had been prepared, the figure was only indicative and not firm. There being no precedent for rates as the work was being done for the first time in

India, the rate structure was hypothetical. It was known at the time of inviting the tender that there had been a rise in cost since 1970 calling for a re-working of the estimated value but it was considered advisable to indicate a lower figure in the tender to see the market reaction. Detailed estimate was not prepared and got sanctioned before award of work as it was not possible to do so in absence of reliable rates, there being no precedent for such a work in this country."

1.88. Asked how far was it justified to proceed on the implementation of a project of such magnitude merely on the basis of rough calculations, the Railway Board stated:

"The Metro Railway construction in Calcutta is the first project of its kind in our country. There being no precedence for a project of this nature or magnitude, no definite guidelines for rates were available especially when the work involved deep braced cuts, alterations to underground service lines and dewatering.

Therefore, based upon the Abstract Estimate which, in turn, had approximate rates for works provided for, tenders were called. Subsequently, it was revealed that the actual rates for works were in excess of what had been provided for in the Abstract Estimate thus, necessitating revision of the estimate, which are subsequently being done.

In this connection, Tender Committee's minutes anticipating this increase in cost due to rates being approximate, is reproduced below:—

"2.00 Estimated value of the Tender

2.10. The estimated value of the tender was shown as Rs. 175 lakhs. This was based on the rough calculations done during the Abstract Estimate stage. As no detailed estimate has been prepared this figure was only indicative and not firm. The Abstract Estimate was based on 1970 cost level. It was known at the time of inviting the tender that there had been a rise in costs since 1970 calling for a re-working of the estimated value but it was considered advisable to indicate a lower figure in the tender to see the market reaction. It is always difficult in a dynamic situation where values are continually changing to set up standards. Taking all

factors into account as of today the estimated value of the tender based on the design finalised would be in the neighbourhood of Rs. 262.0 lakhs."

1.89. As stated by the Railway Board detailed estimate could not be prepared in the absence of any precedent for such a work in the country. The Committee asked:

- (i) Did not the lack of it give distorted data for comparison with tendered rates for works; and
- (ii) Did not non-existence of detailed estimate vitiate control over expenditure on the work?

In a note the Railway Board have replied to these points as follows:—

- “(i) No. Irrespective of the datum, when open tenders are invited for a spelled out work and competitive quotations are received from several tenderers and if the lowest is far above the datum, it can only be concluded that datum has to be revised, the datum having been fixed without a precedent. The Tender Committee while considering the tenders had observed in para 5 of their recommendations. Since as many as six offers have been received which are fairly close, the rates may be considered competitive. The range of value of these six tenderers is also close to the revised estimated value.
- (ii) No. In a work having no precedent it is felt that a detailed estimate made before the work cannot help exercise control over the expenditure, as many situations may develop and have to be tackled during actual execution. However, the common experience on major projects is that even detailed estimates are revised periodically and updated. Similar action to revise the estimates for metro works is also being taken.”

1.90. The Audit Para states that the contract in Contract Section 2 may eventually cost more than Rs. 332 lakhs. The Committee desired to know whether the Administration has made any assessment as to the likely cost of this work when completed and what were the reasons for this large increase in cost with reference to the accepted contract value. In a note, the Railway have stated:

"Audit Para says that the work eventually may cost over Rs. 332 lakhs. The assessment made by the Administration by way of a detailed estimate recently made indicates that cost of work in this section (Ch. 1.118 to Ch. 2.040) will be Rs. 333 lakhs approx. As works are still in progress correct picture will emerge only after the works are completed. Main reasons for increase are:—

- (i) General Escalation due to abnormal rises in cost of labour and materials.
- (ii) Cost of sheet piles ordered to be left buried without extraction and reuse from technical and site consideration, will merge into the cost of work.
- (iii) Differential cost of about 240 metres of Diaphragm wall done from technical and other considerations in lieu of sheet piles, will merge in the cost of work.
- (iv) Certain essential non-schedule items arising during course of work, the cost of which will become cost of work."

Escalation Payment

1.91. The Contract for sub-way structure works between Dum Dum and Belgachia Stations (Contract Section 2) was executed with firm A (M/s Forward Engineering Syndicate, Calcutta) in March, 1974. The executed contract stipulated completion of entire work within 36 months i.e. by 5th March, 1977. However, the work from km. 1.118 to km. 1.452 (Phase I) was to be given priority and completed in 18 months i.e. by 5th September, 1975. According to the Audit Paragraph the time was to be the essence of the contract. The contract was a firm price contract and no escalation was permissible.

1.92. In September 1975 when the progress on the work was 18 per cent the firm wrote to the Railway Administration asking for increase in rates stating *inter alia* that the prices had increased by more than 40 per cent since the award of the contract and it was a mistake on its part to have quoted firm rates for such a costly venture. During November 1976—April 1978 the firm pressed its claim for enhancement of rates through several petitions/memoranda addressed to the Railway Administration, Ministry of Railways (Railway Board) and the Railway Minister mainly on ground of abnormal and unprecedented price increase. The Railway Administration initially had held (April/September 1976) that since the

contract was a 'firm price' one, the firm's claim was extra contractual and, therefore, the Railway Administration had no contractual obligation to grant any enhancement in the accepted rates. It further held that the increasing trend of price indices was clearly discernible even at the tender stage and as the firm did not quote any escalation clause in the tender, nor did it insist for its introduction at the stage of negotiations, its rates must have included sufficient cushion to cover market fluctuations. However, as the firm had been repeatedly representing to the Ministry of Railways (Railway Board), a Committee of Heads of Departments of the Railway Administration examined the whole question and recommended (May, 1978) grant of price escalation subject to a ceiling limit of 15 per cent of the net value of the contract "to meet the ends of justice", although the firm's claim for escalation was not contractually tenable.

1.93. The Committee desired to know whether the Railway Board had authorised the Committee of Heads of Departments to go into the question of grant of escalation to this firm and if not where was the need for further examination of the claim, when earlier the Administration had satisfied themselves about the in-built cushion in the rates of the firm. In a note, the Railway Board stated:

"Yes. The Board had asked for comments of the Metro Railway on receipt of the representation from the firm wherein the contractor had sought an interview with the Minister. The firm's claim for escalation was subsequently justified by HODs Committee."

1.94. In another note on the subject, the Railway Board have explained:

"The contractor's representation to the Minister of Railways was received by the Administration because the same was marked "Through General Manager." General Manager saw this representation on the file on 21-4-78 and, by an order in writing, constituted the committee of the Heads of Departments. It is true, his action to constitute this committee was a few days in advance of the receipt of the communication of the Railway Board asking for comments on the firm's representation.

The notings of Director, Metropolitan Transport, Railway Board in the office file No. 73|MTP|CNL|C|5 at SN|67 (copy of representation of firm addressed to the Minister) reveal:

that on 20th April, 1978, Director, Metropolitan Transport wanted the remarks of the Metro Railway Administration to be called early on the Contractor's request for escalation, as interview with the Railway Minister was sought by Contractor in the first week of May.

It could reasonably be presumed that considering the urgency, the Contractor having sought an interview with Minister during 1st week of May'78, a telephonic communication in this respect between the Director, Metropolitan Transport and the General Manager on 20-4-78 or 21-4-78 may have prompted the General Manager to constitute the Committee on 21-4-78. However no record is available regarding telephonic conversation.

The Administration always held that the rates quoted by the firm had an in-built cushion, the extent of which could not however, be assessed. Therefore, the escalation was allowed after expiry of original period of contract i.e. after 5-3-77.

Thus there has been no shift in the Administration's stand."

1.95. The Report given by the Committee of Heads of Departments *inter alia* points out that:

"It is nobody's contention that the contract with M/s Forward Engineering Syndicate for Section 2 works was not a fixed price contract. Around the time this work was awarded, the policy of the Project Administration was only to enter into fixed price contracts. The contractors, therefore, were expected to quote in a manner which adequately covered their interest against anticipated variations in price levels affecting their costs."

1.96. The Audit Para brings out that ultimately the Railway Board approved the payment towards escalation in April, 1979. The Committee were given to understand that in Contract Section I, which was also a firm price contract, the contractor's request for escalation after award of the contract was summarily rejected by the Administration. Asked why differential treatment was given in Contract Section 2, and what were the unusual features meriting such a treatment, the Railway Board stated:

"Both in Sections 1 and 2, the request for escalation was rejected by the Administration, being firm-price contracts.

The question of differential treatment therefore does not arise. While in the case of Section 1, the contractor ultimately resorted to arbitration in 1977, for section 2, the contractor went on persisting for his claims to the Ministry. The case for section 2 was, finally decided on merit at Ministry's level in 1978."

1.97. The Railway Board have, in a note furnished to the Committee, *inter alia* stated:

"Therefore, in order to prevent the contractor from abandoning the work (in which case the MTP would have lost time and money in fixing up an alternative agency etc.) he had to be dealt with fairly; the Railway could ill-afford cessation of the work at stage, as it would have delayed prototype trials and resulted in continued inconvenience to public Railways were therefore left with no alternative but to agree to a fair settlement with the contractor. For this purpose there was no need for examining the rate structure of the items of work in the Ministry of Railways (Railway Board). The fair amount of escalation agreed to cannot, in the circumstances explained, be termed as added compensation to the contractor."

1.98. Referring to the above reason given by the Railway Board for accepting the contractor's claim for escalation, the Committee asked whether it was usual practice of the Railways to accept escalation claim in a firm price contract on such grounds and if not, why was a special dispensation made in this case. In a note, the Railway Board have stated:

"Abandonment of the work was only one of the many reasons for granting escalation to the Contractor beyond the original date of completion. It was neither the sole reason nor enunciated as a policy for such dispensation.

Normally, a tenderer is expected to allow adequate cushion in his rates to take care of the probable escalations during the period of contract. As such, it was presumed that the Contractor must have taken care of the escalation anticipated by him during the period of contract, based on the annual average growth rate in the wholesale and consumer price indices experienced during 1970—73 i.e. for a fair period immediately preceding the submission of the tender.

In this particular case, the currency of the contract had also been extended for unusually longer periods for reasons beyond the control of the contractor. It was thus felt that provision for escalation, for unusually longer extended periods, when abnormal rate increases had taken place, could not have been in-built in the rates quoted for the tender or settled during negotiations in November, 1973. Therefore, it was not considered unreasonable to agree to the Contractor's request for escalation.

There were other special considerations detailed below warranting a decision in favour of the Contractor's prayer:—

- (1) The section involved was selected for prototype trials and was to be made ready for trials on strict time schedule.
- (2) If re-tendering was resorted to, the quotation would have been much higher.
- (3) Excavated trenches could not be left open during the pendency of the re-tendering process and consideration of the tenders endangering public safety and conveniences."

1.99. Giving reasons for the escalation allowed to the contractor, the Railway Board have, in a note stated:

"Escalation was allowed because of abnormal price hikes, and in the interest of the work. It is not a normal practice to allow escalation in firm price contracts for works executed beyond the stipulated date of completion. Each case is considered on its own merits. In this case, however, extensions were for no default on the part of the contractor and there had been *abnormal* price increases due to global oil price hike, which could not have been anticipated by any contractor at the time of tendering, to provide a sufficient cushion therefor in these rates. The abnormal price increases had shaken the very basis of firm price contract which presupposes only normal variations in prices and not the abnormal. Most of the subsequent Metro Railway contracts were with price escalation clauses incorporated in the contract document."

1.100. The Committee pointed out that the firm did not propose any escalation clause either at the tender stage or at the negotiation stage. Fixed rates valid upto completion of the work which

was targetted for 36 months i.e. March, 1977 were contracted. The firm then having secured the contract, asked for escalation in rates, when the progress of work was only 18 per cent and that too after 18 months. The Committee therefore desired to know: (a) Does it not indicate that the firm had quoted firm prices only to secure the contract? (b) How could escalation be considered justified within a period of 18 months of the contract period when even a normal period of 36 months targetted completion period was not over? In a note, the Railway Board have stated:

- “(a) When the tenders were invited on fixed prices basis one should expect the tenderers to submit tenders only on fixed price basis and no motives can be attached for not asking for an escalation clause. Therefore all inferences founded on this basis are invalid.

At the negotiations stage the firm ‘A’ wanted to introduce the escalation clause but was not agreed to by the Tender Committee.

- (b) Escalation allowed to firm ‘A’ is for the period beyond 5th March, 1977, the original date of completion, when work was about 50 per cent complete. It has not been considered for the first 36 months of the contract (5th March, 1974 to 5th March 1977).”

1.101. According to the Audit Paragraph the Railway Board authorised payment of Rs. 10 lakhs on an *ad hoc* basis, as requested by the contractor, to be adjusted against the extra contractual amount that might be found due to him by way of escalation. This *ad hoc* payment was authorised without a specific finding that an amount not less than Rs. 10 lakhs had become due as escalation for reasons beyond the contractor's control. The *ad hoc* payment was made in April, 1979. The Committee were informed that ‘no exercise had been made till April, 1980 in order to assess the exact amount due by way of escalation’ to the contractor.

1.102. The Committee enquired how before authorising the *ad hoc* payment of Rs. 10 lakhs, did the Ministry of Railways (Railway Board) satisfy itself that an amount of not less than Rs. 10 lakhs had become due as escalation for reasons beyond the contractor's control and at what level was the decision taken. In reply, the Railway Board have stated in a note:

- “It was seen that escalation of about Rs. 8.62 lakhs had already occurred for the period 6th March, 1977 to 18th September, 1978 (i.e. Rs. $0.74 + 4.82 + 3.06 = 8.62$). It

was roughly estimated that at least another Rs. 1½ lakhs would accumulate by April, 1979, for the further work done between 18th September, 1978 to April 1979 on pro-rata basis. The Board's decision for granting the *ad hoc* payment of Rs. 10 lakhs in April, 1979 was based on this broad assessment. It is to be noted that by clinching a settlement with the contractor for "reduced ceiling" viz. from 15 per cent of the contract value to 20 per cent of net value of outstanding work as on 5th March, 1977 etc. a claim of very high magnitude could be settled at a reasonable reduced level once and for all. The Board, therefore, did not consider it unreasonable to agree to an *ad hoc* payment of a round figure of Rs. 10 lakhs demanded by him through his letter. The minor shortfall of a few thousands rupees (even if any) from Rs. 10 lakhs as on the day of payment of *ad hoc* amount on 12th April, 1979 has hardly any significance since with this *ad hoc* payment, the contractor was able to pull on with the work without abandoning it. Detailed calculations now made indicate "that Rs. 9,71,786 were due on 1st April, 1979 and Rs. 10,35,144 were due on 1st May, 1979 as escalation. The *ad hoc* payment was made on 12th April, 1979.

Decision to pay escalation was duly approved by the competent authority which in this case was the Hon'ble Railway Minister."

1.103. In regard to the method of calculating the escalation payment due to the contractor, the Railway Board have, in a note, stated:

"These observations approved by FA and CAO clearly bring out in the end, that it was agreed by finance that the method of calculating escalation by applying ceiling limit at each stage as pointed out in the earlier part, may not be the correct way of calculating escalation, and the ceiling limit will have to be applied on the total escalation amount due on completion of the work.

Moreover, payment of escalation of Rs. 10 lakhs was an *ad hoc* payment made for giving immediate relief to the contractor who was hard pressed because of escalation, and was like a package deal."

1.104. In another note, the Railway Board have stated:

"Ministry of Railways submit that the *ad hoc* payment of Rs. 10 lakhs made against the escalation granted, on 12th April, 1979, cannot be termed as financial accommodation. It may be appreciated that the *ad hoc* payment was based on very rough calculations, based on figures furnished by the Project Administration and in fact, compare favourably with the actuals for the period in question."

1.105. One of the conditions laid down for authorising escalation payment to the contractor was that no payment was to be made for the work done upto original date of completion *viz.* 5th March, 1977 and that the payment was for the work done after the original date of completion and only for the period necessitated entirely by reasons beyond the contractor's control. The Committee enquired how was it ensured that the said amount was for reason entirely beyond the control of the contractor and how was it held that the entire work done beyond 5th March, 1977 (original date of completion) was for reasons beyond the contractor's control. In a note, the Railway Board stated:

"The extensions beyond 5th March, 1977, the original date of completion, were for no default on the part of the contractor."

Thus, it has been held that delay for entire work done beyond 5th March, 1977 was for reasons beyond the contractor's control."

1.106. The Committee asked on what basis did the Railway Administration assess the total amount of escalation as Rs. 15 lakhs. The Railway Board have explained:

"Amount of Rs. 15 lakhs was assessed on the basis of 20 per cent ceiling limit. Works anticipated to be done beyond 5th March, 1977 were assessed as Rs. 115 lakhs approx. The cost of Railway materials was assumed as 45 per cent of 115 lakhs *i.e.* Rs. 51 lakhs approx. Limit of 20 per cent on (115—51) *i.e.* 64 lakhs worked out to Rs. 12.8 lakhs. To allow for errors in the above assumptions, this figure was rounded to Rs. 15 lakhs as a limit on escalation."

1.107. The firm approached the Railway Administration from time to time for seeking extension for completion of the work on

several grounds. The Committee asked, having once agreed to the execution of the work within the stipulated period, why was not the Contractor held responsible for any delays thereafter. To this, the Railway Board have replied:

"Although having agreed to do the work within a stipulated period, the contractor was not able to complete the work by that period due to several reasons. As these several reasons were not due to any default on the part of the contractor, the contractor could not be held responsible for the delays and extensions had to be granted to him without penalty as per provisions of the contract. This equally applies to all extensions from time to time."

1.108. The Committee enquired about the present position of the work and also desired to know whether the progress of work done by the contractor was considered satisfactory. The Railway Board have stated:

"The work is about 95 per cent completed. The progress of the work having regard to the site conditions and constraints was satisfactory. However, from March, 1981 the contractors have developed some internal difficulties."

Sheet Piling

1.109. The Member, Engineering stated during evidence that before the detailed project report had been prepared, the Soviet experts were consulted about the soil conditions. He added:

"The soil conditions were investigated in detail by Cementations before the DPR was prepared. No differences in the soil characteristics have been observed from what were envisaged in the investigations."

1.110. During the visit of a Study Group of the Committee to the site of the project, the Study Group was informed that some structural changes had to be made on the ground that the soil conditions were not appropriate. Asked to explain the changes made, the Member, Engineering deposed:

"Our consultants had told us that the sheet piling method could be adopted. For that we had to use thick and strong piles which we had to import. There was some delay in getting them imported and it was decided by

the METRO administration that sheet piles produced in India might be tried. These are thin and less strong; 50 kg. per metre, as compared to Russian sheet piles 100 kg. per metre, very strong and stiffer. It was thought that if it would be possible to use the indigenous sheet piles, it would be cheaper and the availability would be immediate. Necessary calculations were made to assess this possibility. In 1973-74 it was decided that we would go for Indian sheet piles. It would, it was thought, be advantageous and would reduce the cost of work."

1.111. In reply to a question whether the expectations about the indigenous piles had been fulfilled, the Member, Engineering stated:

"No. When we drove those piles, they were getting more distorted than what we had anticipated. They were getting deformed. Secondly, when we tried to extract them, it disturbed the surfaces on either side as well as the foundations of the buildings. We have got sewer and water pipe lines etc. running there. If we disturb these piles, the entire soil get disturbed. We, therefore, decided to leave them behind instead of removing them."

1.112. The Committee pointed out that Soviet expert had recommended a specific type of sheet piles keeping in view the soil conditions but a decision was taken to change over to another type of sheet pile. Asked whether this change over was brought to the notice of the Soviet experts, the Member, Engineering replied in the negative. He further stated:

"When the change was there, they were not consulted."

1.113. Asked whether the change over had been brought to the notice of the Railway Board, the Chairman, Railway Board stated:

"It was brought to the notice of the Railway Board and sanction was accorded for getting the work started. I would like to submit one point. With all the experience of the engineers, the sheet piles were approved. After that the sheet piles had to be left behind, whether they were imported or indigenous. To that extent indigenous would have been better if we have spent less money. We have used our own resources rather than imported sheet piles which we have left behind. Later on, even Soviet experts said that, even in their own country, they have to

leave the sheets behind. The technical point of view is that whether it was imported sheet or indigenous sheet, it would have to be left behind. In fact, the stress would have been greater with the imported sheet which was bigger and, therefore, pulling it out would have left a bigger gap and to that extent, soil disturbance to all the structure in connection with the joining of the tunnel would have been more intense. If we pulled it out, there would have been large-scale disturbance and there would have been much more compensation to be paid for the sewer system and for that reason probably this was done."

1.114. The Committee asked whether at the time of switch over to indigenous piles, the relative advantage of diaphragm wall had also been considered. The Member, Engineering stated:

"At the time of switch-over, the idea was that it could be extracted and taken out. So, the long-term durability in every case was supposed to be the same. Once you take it out, the long-term durability aspect would be the same in either imported or indigenous schemes. Sheet piling was suggested in certain areas. Diaphragm wall technique was proposed in close spaces. In slightly more open areas, sheet-piling has been indicated. As far as the indigenous piles are concerned, if we could take out, then they would be as good as the imported ones. As regards the diaphragm wall technology, the Soviet experts said that they had no knowledge of it."

1.115. On the question of the relative cost of driving of imported piles and the indigenous piles, the Member, Engineering, stated in evidence:

"We had called for tenders for sheet piles. The imported piles were of 22 mm. When the tenders were received and negotiations were conducted, it was made clear to the tenderers that they may have to use both types of sheet piles, including the indigenous ones. On that they had quoted an extra price of about 3 per cent for the use of imported piles. We took all these into consideration, and also the price."

1.116. When asked if the cost involved in driving a 22 mm thick pile and on 8 mm. thick pile would be the same, he replied:

"Cost will be slightly different. It is on the basis of per tonne. We had, so far used the indigenous piles. For

one metre driving, he will get twice the amount. I would say that the rates were not comparable."

1.117. In reply to a question whether with the change in the type of sheet piles to be used, the rates had been re-negotiated with the tenderers, the Chairman, Railway Board stated:

"Yes, Sir. That is why we asked the tenderers. During the negotiations one firm quoted the same rate for both and another firm quoted lesser in which the sheet piles were imported ones."

The Member Engineering added:

"We negotiated and decided on merit."

Non-extraction of Sheet Piles

1.118. It is seen from the Audit paragraph that the Metro Railway Administration had worked out the quantities of sheet piles work as under:

	(Quantity in MT)	
	Indigenous Piles	Imported Piles
(i) Initial driving of sheet piles (1st use)	1595	1000
(ii) Re-driving of once used sheet piles (2nd use)	1435	600
(iii) Extraction of sheet piles [driven and re-driven <i>vide</i> (i) and (ii) above].	3030	1600

1.119. The rates quoted by firm 'A' (M/s. Forward Engineering Syndicate) for sheet piling in March, 1973 (at the tender stage on 100 per cent cost recovery basis for material issued) and in November, 1973 (at the negotiation stage on 50 per cent cost recovery basis for material issued) were as under:

	(Rs./MT)	
	On the basis of 100% cost recovery	On the basis of 50% cost recovery as finally accepted
(i) Driving of sheet piles (1st use)	2450—2650	1400—1500
(ii) Extraction of sheet piles	100—175	400—500
(iii) Driving of sheet piles (2nd use)	250—400	600—700 ¹

1.120. From the above it is to be seen that sheet piling involved 3 operations viz. first driving, extraction and redriving of the extracted piles and the rates contracted for all the three items of sheet piles work were joint rates. The Audit paragraph states that after examining the contractor's repeated submissions regarding non-feasibility of extraction of sheet piles, the Chief Engineer of the Metro Railway in March, 1977 proposed that "the sheet piles already driven be left in position." The proposal was agreed to by the General Manager in April, 1977 and accordingly all the sheet piles driven in the entire contract section 2 were left in position, buried in the ground. Consequently, the firm was not required to perform the operations of extraction of driven sheet piles and also second driving i.e. re-use of sheet piles.

1.121. The Project Report of the Calcutta Mass Transit Study envisaged extraction of the sheet piles and re-using them. The relevant extract from the project Report in this connection are as under:

"The designs carried out with sheet piles have shown that Indian Standard Piling section ISPS 1021 Z to I.S.S. 2314-1963 manufactured by IISCO, which are the only sheet piles manufactured in the country at present will not be adequate. Heavy duty sheet piles of Larssen Type 5 or 6 to B.S.S. or sections of same strength will be required. Therefore, the sheet piles may have to be imported. No difficulty is anticipated in withdrawing these piles and re-use them in subsequent works. But keeping in view the depth to which the sheet piles will have to be driven and the corrosive nature of the Calcutta soil it appears that more than two uses may not be possible."

1.122. Since the Russian Experts had been associated with the Calcutta Metro Railway Project, the Committee desired to be furnished with a note on the use and re-use of sheet piles as advised by the Russian experts. In this connection, the Railway Board have in a note, stated:

"There is no reference in this connection to the opinion of Russian Experts in the Project Report.

Minute of discussions held with the first Team of Soviet Consultants who visited from 13-11-70 to 15-1-71 are also silent on this aspect.

The decision to extract and re-use the heavy duty imported Sheet Piles of Larssen Type was thus that of Project

Report framers based on their own judgement. Project Report framers had ruled out the use of Indigenous Piles. Hence their judgement was with reference to Imported Sheet Piles only.

Later opinion of second Soviet Team of Consultants who visited India from 10-11-71 to 15-1-72 was that Sheet Piles could be used 4 to 5 times generally and even if expenditure was incurred in their strengthening the same could be got back because of their repeated use. They had however opined that "In cases where sheet piles were driven close to structures and damage to structures were anticipated, it would be wise to leave the sheet piles buried in ground. But there was nothing mentioned about extraction.

In 1974, during the visit of High Powered Soviet Delegation led by a Deputy Minister, from 6-6-74 to 24-6-74, the Leader Mr. Denischenko stated that in USSR sheet piles are not extracted. This delegation was to assess the actual requirements of Metro Railway's needs.

In 1976 during the visit of Soviet Experts from 19-7-76 to 1-10-76, the Leader of the Experts Mr. Ianchevasky, gave opinion that they had no positive experience in extraction of sheet piles. Technically, it is not possible to extract sheet piles with available means as the clutches get jammed resulting in excessive friction. Economically it will not be worthwhile because sheet piles get distorted during extraction which makes their re-use impossible."

1.123. It is to be seen from the above that there was difference in opinions expressed by the Soviet experts in regard to extraction of sheet piles. The Committee enquired, as to why in view of the difference in opinions the matter was not investigated in detail by the Metro Railway Administration in consultation with the Railway officers who had been deputed to different foreign countries from time to time for studying the methodology of underground railway construction or by conducting driving and extraction operations of sheet piles at site in Calcutta itself on trial basis, associating Indian experts in the field, RDSO etc. so that definite conclusions could be had in the matter. In a note, the Railway Board have stated:

"The officers deputed to foreign countries had not commented anything on the aspect of extraction & re-use of sheet piles. It was clear that they had no opportunity of

seeing it and even if by chance they had it, it could be only for the use of imported LARSEN heavy duty piles, and not for the use of Indigenous Z Section sheet piles which were much weaker. Reference to those officers would therefore not have been useful.

Conducting driving and extraction operations at Calcutta without allowing prolonged time span between driving and extraction, and without subjecting the piles to one side full earth pressure and other wide point loads at strut levels, would have led to erroneous results.

Actual trying out of the method for certain length of the section could only have been a worthwhile trial of sheet piles methodology which was in fact done in Section 2, by doing the work itself. Thus the whole work in Section 2 proved an experiment—a TRIAL.

The General Manager in his letter No. MRTS|W-15|II|Pt.III dated 5-9-73 to DMT, Rly. Board had stated:

“The condition of work in this particular section is such that this is best suitable for trying out the sheet pile method. This will give us valuable experience as to the advisability of this method being adopted elsewhere and what changes if any are required to be incorporated.”

Thus, section 2 work itself was a trial of sheet pile methodology. The conclusions reached as a result of this trial and actual field experience, were given in the concluding para of letter No. MRTS|W-15|130|Hq|Pt II|1418 dt. from the General Manager to Director, Civil Engineering, Railway Board as follows:

“In the circumstances I would stress the point that sheet piles cannot and should not be extracted in construction for a Metro”.

In the circumstances associating Indian experts in the field, RDSO etc. who would not have any experience of using sheet piling methodology in Metro Rly. Works in Calcutta, was not called for. Definite conclusions were spelt out by General Manager himself as above as a result of actual field experience.”

1.124. One of the reasons for recommending (March 1977) non-extraction of the driven sheet piles was the use of indigenous sheet

piles which were of thinner gauge and liable to deformation as compared to imported sheet piles of Larsen type. The Committee asked this being so, how the Railway Administration had earlier recommended (September 1973) the use of indigenous sheet piles to Railway Board, saying that indigenous sheet piles could be made to suit requirements of the Metro works. The Railway Board stated:

"In September, 1973, when use of indigenous sheet piles was recommended, it was already known that the project framers had ruled out their use, but the availability of imported sheet piles was uncertain at the time of finalisation of this contract.

Under the circumstances, a decision was taken for making use of indigenous piles on two counts—

- (a) The indigenous piles would be slightly overstressed, but within prescribed limit for their temporary structures; and
- (b) the indigenous piles will lend themselves for a trial in this Section 2.

Moreover, the concept of design for braced cuts itself is a developing technology. Therefore, the theoretical assumptions may not hold good in actual practice. As a matter of fact, subsequent events proved that Indian piles were not the answer for the type of work involved. However, since the only alternative left was construction of diaphragm wall, the experiment proved itself to be a gain in value experience."

1.125. The Audit Paragraph states that while recommending extension of the contract without any penalty upto 20th October, 1976, the Engineer-in-Charge had recorded that the method of extraction adopted by the firm was safe and practicable, although it was very slow. The Committee enquired whether the administration had satisfied itself at the time of awarding the contract as to the capability of this firm for extracting the driven sheet piles safely and quickly. In a note, the Railway Board stated:

"Method of extraction adopted was for short, unspliced 5 piles driven by the side of E. Rly bank for its protection near elements 1/1 to 1-4. These were not similar to the piles driven for Braced Cut for cut and cover construction on Belgachia Road, which were long and spliced. The extension granted due to slow method of extraction was for a negli-

gible portion of phase-I work (hand railings etc.) which could not be done before extraction and had no effect on the overall date of completion stipulated for whole contract viz. 5-3-77. Tender Committee in their proceedings dated 8 June, 1973, under which initially the recommendations was made for acceptance of M/s. FFS's offer had stated as follows:

"They are well reported upon as to their capacity..... Their equipment and resources also seemed to be fairly adequate."

1.126. The Committee enquired when the Engineer-in-Charge of the section had certified in March 1976 that the firm had devised a safe and practical method of extraction, why was the same not tried out. The Railway Board stated:

"Views of the Engineer-in-Charge were not applicable at all to the piles driven on Belgachia Road, which were long and spliced. These were driven near structures and underground utilities had remained there for longer duration and rusted, had deformed and indicated jamming of clutches etc. There was also the latest advice of Soviet Consultant available. In view of all these and from safety angle of underground utilities and adjacent structures, trying the method was not called for."

1.127. The Soviet Consultants had advised in December 1971 that where piles were driven close to structures, it would be advisable to leave the sheet piles buried. The Committee asked why was this advice ignored, while stipulating extraction of sheet piles in the tenders invited in November 1972, and while awarding the contract accordingly in March, 1974. In a note, the Railway Board have stated:

"It is not correct to say that this advice was ignored. In fact to provide for this advice, a clause was incorporated in the tender vide clause 2.15 Annex. 3 of the tender, which *inter-alia* stated as follows:—

"...where considered absolutely necessary and unavoidable by the Engineer on technical or other site considerations, the latter may authorise, the contractor in writing to leave the piles buried in the ground, subject to such adjustments in payment to Contractors as mutually agreed upon in respect of residual value of such buried sheet piles.

The project, however, considered it unnecessary to implement this advice of the consultants by a wholesale modification of the sheet piling work in so far as the extraction item was concerned."

1.128. In another note on the subject, the Railway Board stated:

"The sanctioned Project Report had mentioned about extraction and re-use of sheet piles based on the judgement of the project report framers.

The Soviet Consultants' advice *inter alia*, in December 1971, was "In cases where piles were driven close to structures and damages to structures were anticipated, it would be wise to leave the sheet piles buried in ground." In the case in question, the piles used were, indigenous ones. Experience was lacking both in respect of imported piles and indigenous piles as regards the technology of sheet pile walling. Since the whole work was being done for the first time and there was no experience available in this country, it was considered prudent, in accepting the Soviet advice, to add a safety clause to the effect that the burial of sheet piles may be authorised by engineers on technical or other site considerations.

It however so happened that practically all the piles driven had to be left buried. It is now realised, based upon the experience gained, that incorporation of clause for extraction was not technically a sound proposition. In a subsequent tender pertaining to Section 4A where imported Larsen type piles were proposed to be used, item for extraction was not provided."

1.129. The Audit para brings out that the subsequent advice of Soviet consultants that in USSR the practice was to leave the short piles buried, came within three months after the contract was awarded in March 1974. The earlier advice was also qualified. The Committee enquired whether it was not inconsistent on the part of the Administration to continue to hold the view till March 1977 that extraction of sheet piles was feasible. In reply the Railway Board have stated:

"It would have been incorrect to immediately alter the conditions of contract just within 3 months of its award, when not even one pile was driven and actual experience was lacking. Conclusions were reached after checking the conditions of deep driven spliced piles, which became possible when the excavation was completed and inner

faces of piles were exposed, around 1977. It was only then that the decision was taken not to extract the piles and leave them buried."

1.130. It is seen that the decision to leave the sheet piles buried was taken in April 1977, after 73.5 per cent of sheet piles had been driven. Asked whether this did not show that the Administration delayed action unnecessarily and that too or too long resulting in financial gain to the Contractor, the Railway Board stated:

"Unless the actual field experience about the behaviour of piles was known, which was possible only when excavation after strutting etc. was done for full depths, inner faces of piles were exposed, and the condition of piles regarding verticality, deformation, clutch alignments rusting, jamming of clutches etc. was physically studied and checked (which was possible only around 1977) any decision to leave the piles buried would have only been premature.

As the contractor was to get back the appropriate cost of piles on ordering to leave them buried, time taken for giving such orders involves a financial loss to the contractor and not a financial gain, as he did not get back the locked up money earlier."

1.131. While the Project Report envisaged the use of heavy duty imported sheet piles, the Railway Administration had asserted [*vide* para 1.36(a)] that indigenous sheet piles would serve the purpose. The Committee enquired if it could be concluded that this assertion of the Administration at the tender stage was ill-founded. In reply, the Railway Board stated in a note:

"The Administration considered the use of Indigenous piles, though ruled out by the Project report, on background of likely non-availability of imported piles in time. Even if the particular para quoted in the question could be taken as an assertion, it was a guarded one in that a potential doubt about eventual success of the use of indigenous piles was expressed as per sentence which reads as follows:

The condition of work in this particular section is such that this is best suitable for trying out the sheet piles method.

This will give us the valuable experience as to the advisability of this method being adopted elsewhere and what changes if any are required to be incorporated."

In fact these apprehensions came true when there were incidents of declutching sewer bursts, subsidence etc. in 1977 as a result of which the methodology itself was changed.

In fact had the project report recommendations been implemented, in absence of Imported piles, the alternative method was to use Diaphragm Walls, which method should have been adopted for the whole length (880M). By taking a deliberate calculated risk to use indigenous piles, out of 880M, 240M only was finally changed to diaphragm walls. Thus actually the action of the Administration has saved the nation an amount of

$$\frac{(880-240)}{240} \times 8.96 = \text{Rs. 23.89 lakhs.}''$$

1.132. It is noted that the Administration did have a potential doubt about eventual success of the use of indigenous piles. In the circumstances, the Committee enquired why did the Administration not go into the pros and cons of the use of indigenous sheet piles including possible eventuality of the sheet piles having to be left buried, and the resultant extra expenditure on that account. The Railway Board have stated:

"The pros and cons of utilisation of indigenous sheet piles were considered by the administration with special bias on the technical feasibility rather than on economic viability. Moreover, the administration had informed that Section 2 was best suited for *trying out* the sheet pile methodology with the use of indigenous piles and not the costlier imported sheet piles as was recommended in the project report.

If the trial was a success, the sheet pile walling with indigenous piles inclusive of the cost of the buried piles after first and only use would have been cheaper in comparison with the only alternative left, viz. the construction of diaphragm wall. The saving would be to the tune of Rs. 23.89 lakhs for the portion done by the indigenous sheet piles. If the experiment had proved a total success, as the administration had anticipated, then the saving would have been much more because, then the cost of the materials embedded would have been recovered by way of salvage.

1.133. The Committee desired to know whether the Administration have since assessed the actual quantity of sheet piles that will be ultimately left buried in the ground. The Railway Board stated:

The piles were driven jutting above Road by 1 M or so. Top portions have to be cut upto certain levels below Road depending on site conditions. Whatever remains will only be buried. Actual quantity can be assessed correctly only when works are completed. No imported piles have been used in this Section. All are indigenous piles."

1.134. Subsequently the Committee have been informed:

"The Administration has now assessed the approximate quantity of sheet piles that will be left buried. The quantity is 1223 M.T. The value of the same at Rs. 1980/- per MT (the rate paid to the contractor) works out to Rs. 24,21,540/-. The exact quantity and amount can be known only when final bill is passed."

1.135 The Committee enquired whether the total quantity of sheet piles left buried had been actually verified physically, if so, when and by whom. In reply the Railway Board have stated:

"All piles driven have been measured after driving. All cut portions will be measured after cutting. Difference will be the buried portions. Measurements are taken by the Assistant Engineers. Elaborate records exist for such measurements."

Reasonableness of rate for first driving of sheet piles.

1.136 The statement below indicates the rates quoted by Firm 'A' and Firm 'B' for bulk items of work like earthwork, RCC work etc.:

Item No. of Tender schedule	Description of work	Unit	(Rs. MT)	
			Rate quoted by	
			M/s FES (Firm 'A')	M/s NPCC (Firm 'B')
			(Rs.)	
1.	Earthwork in sloping excavation	10 M ³	210	50
2.	Earthwork in strutted excavation	10 M ³	103	100
12.	Timber lagging	M ³	180	95
20.	M—100 concrete	M ³	250	210
21.	M—200 concrete	M ³	464	290
22.	Architectural works	M ³	40	15
23.	Reinforcements	M.T.	2400	2100

The rate structure for piling work, which emerged after negotiations with the two firms was as under :

With Imported Piles	Firm 'A' (with 50% initial cost recovery)	Firm 'B' (with 50% initial cost recovery)
1st driving	1400—1500	2880—3264
Extraction	400—500	384—624
2nd driving	600—700	624—1152

With Indigenous piles	Firm 'A' (with 50% initial cost recovery).	Firm 'B' (with 50% initial cost recovery)
1st driving	1400—1500	2970—3366
Extraction	400—500	396—643.5
2nd driving	600—700	643.5—1188

1.137. From the figures given in the above paragraph it is seen that so far as piling works were concerned, the rate structure of firm 'A' was lower than that of firm 'B'—the next higher tenderer. However, firm 'A' (M/s. Forward Engineering Syndicate) rates for bulk items of work like earthwork in excavation, RCC work etc. were much higher than the rates quoted by Firm 'B' (M/s. National Projects Construction Corporation). But the quantities of sheet piling work, as included in the tender, were of such magnitude that if the quantities of extraction and re-use of sheet piles were excluded from the tender valuation, the offer of firm 'B' (M/s. NPCC) as per Railway conditions became lower than that of firm 'A' (M/s. FES).

1.138. The Committee enquired when it was known that deletion of sheet pile work would substantially change the *inter se* position of the tenderers, why did the Administration not examine thoroughly the feasibility or otherwise of doing this work and the reasonableness of the rates therefor. The Railway Board have stated:

"The Tender Committee did not consider the issue of the deletion of the items regarding extraction and re-use of sheet piles and hence there was no occasion for such an examination."

* 1.139. The table below indicates justaposition the rates originally

quoted and negotiated for the first and second driving operations by firm 'A':

Operation	Quoted rate for 100% recovery	Cost of sheet piles included in col. 2	Negotiated rate for 50% recovery	Cost of sheet piles included in Col. (4)
1	2	3	4	5
First driving	2450—2650	2200	1400—1500	1100
Second driving	250—400	Nil	600—700	Nil

[Note : Recovery of the cost of sheet piles is to be made at the rate of Rs. 2200 (100 per cent recovery)/ Rs. 1100 (50 percent recovery) per M.T.]

It is to be seen that although there is no difference in the work involved in driving sheet piles whether in the first or in the second (re-use) operation, the difference in the rates for the first and the second driving operations is substantial. According to audit, this is accounted for by the contractor recovering the cost of the piles in the first driving operation itself.

1.140. The Audit para states that the Railway Board in December, 1973 pointed out that the rates quoted by firm 'A' for various sheet piling work "were not rational as very high rates had been quoted for the first use and very low rates had been quoted for the same work for the second use". It had further observed that the intention of the firm appeared to recover the entire cost of steel at the first available opportunity. The Tender Committee was, therefore, asked to go into the analysis of all the rates offered by firm 'A' with a view to judge their reasonableness.

1.141. Firm 'A' had not given any analysis of the structure of its rates for sheet pile work. The Tender Committee could not, therefore, form any accurate judgement as to the reasonableness of the rates. The Committee asked why was the firm's offer recommended for acceptance and why did not the Administration give identical terms of cost recovery to a few more firms who quoted against the tender and asked them to quote revised rates to judge the reasonableness of firm 'A's' rates. The Railway Board have stated:

"Firm 'A' gave some generalised explanations for the various rates quoted by them during their specific discussions with the Tender Committee, held on 29th December, 1973, and 31st December, 1973. In these explanations, what the

firm disclosed (without compromising their business interest) was:—..

- (a) That only depreciation element has been reckoned in the quotations for the group of items and not full cost of materials.
- (b) In the quotations under 50 per cent cost recovery alternative, they have followed same principle as in the 100 per cent cost recovery alternative in so far as driving rate is concerned viz. to have some cash in hand from on account bills to cover a portion of running expenses.
- (c) In the quotation for second stage driving under 50 per cent cost recovery alternative, they have also kept the rate at a comparatively higher figure, as sufficient amount cannot be expected as reimbursement for returned sheet piles after adjustment of their costs.

The Tender Committee considered that the "broad reasoning" furnished by them to explain the *inter se* quotation of rates was not without some force although doubts about the internal inconsistency of their rate structure could not be altogether dispelled by these reasonings.

They were constrained, therefore, to reiterate their earlier view that establishing reasonableness of each itemised rates in the first few MTP contracts to be awarded was not a practicable preposition and decision, therefore, might have to be taken on the basis of the reasonableness of the "overall value" of the tenders. On the basis of this overall valuation, Firm 'A' was recommended by the "Tender Committee".

Administration had given identical conditions of cost recovery to the other next higher tenderer viz. Firm 'B' during negotiations, as were given to firm 'A'. Firm 'A's' rate structure was lower than that of firm 'B' the next higher tenderer, for piling works.

The question of giving identical terms of cost recovery and to ask them to quote revised rates to a few more firms, who quoted against the tender did not arise; their having not been considered suitable on technical and/or financial considerations except that one firm, where also it was not thought worthwhile to ask them to quote on the revised

term their rates quoted earlier being abnormally high, variation from the lowest offer being as high as 83 per cent.

1.142. It is to be seen that during negotiations the clarification furnished by the firm in November/December 1973 on the rate structure was indicative of the fact that its first driving rate was inclusive of a substantial portion of the cost of sheet piles. Deletion of second and third operations and refund of the cost of sheet piles already recovered automatically meant that the contractor was getting not only the remuneration for the services rendered, but also an extra benefit to the extent of the cost of sheet piles included in his rate. The Committee enquired whether this was not an undue benefit for the contractor. In reply the Railway Board stated:

"The point raised in the question was specifically gone into by Tender Committee in their Minutes dated 31 December, 1973 forwarded by GM under his D.O No. MRTS/W-15/11/Pt. IV dated 1st January, 1974 *vide item (2)*. The Committee made the comment that despite apprehension expressed about a high rate quoted for the first use of steel for temporary works, the net cash the contractor would get from the on account bills of the piling operations after recovery of the cost of steel could not possibly cover all his expenses as well as profits. They felt, therefore, that there would be incentive for the contractor to return sheet piles and get as much reimbursement as possible.

In regard to the deletion of the 2nd and 3rd operations *viz.* extraction and 2nd driving of sheet piles, it is to be appreciated that these deletions were forced by the circumstances along the stride of the contract as explained and could not have influenced the contractor's rating of these operations for the purpose of the tender, and therefore the question of any undue benefit having been given with reference to these rates should not arise at all.

It is, however to be mentioned that while reimbursing for the cost of steel left unextracted, only 90 per cent of the cost minus transport charges were allowed."

1.143. The Committee desired to know what was the basis for the Tender Committee's assertion that the net cash which the contractor would get from the on account bills of the piling opera-

tions after recovery of the cost of steel could not possibly cover all his expenses as well as his profits. The Railway Board have stated:

“Basis of this assertion was straightway apparent to the Tender Committee from the rates received, though it was not based on any detailed calculation.

Committee had known that in the firm ‘B’s alternative quotation with only 10 per cent initial cost recovery of piles, which had led to almost equalisation of first driving and second driving rates (due to locked up capital being negligible) the rates were Rs. 1300/- for first driving and Rs. 1275/- for second driving. As compared to these, the net cash which the contractor ‘A’ would get per ton, after first driving was Rs. 300/- only.

1400—1100 (50 per cent of 2220/MT=Rs. 300) tonne.”

It was clearly evident to the Tender Committee that this Rs. 300/- could not possibly cover all his expenses as well as his profits. The firm ‘B’ would have got Rs. 1080/- (i.e. 1300—10 per cent of 2200) for the first driving in the case of their own Alt. quotation of 10 per cent recovery and would have got Rs. 1780/- (i.e. 2880—50 per cent of 2200) in the case of 50 per cent recovery condition. This goes to prove that firm ‘A’s rate for first driving was actually much more advantageous to the Metro Railway, since they were virtually to be paid only Rs. 300/- (i.e. 1400—50 per cent of 2200) per tonne.

1.144. The rate for first driving was much higher than that for second driving. After it was decided not to extract the sheet piles driven once but leave them buried, there was no occasion for second driving. Consequently, all payments were made at the higher rate, applicable to first driving. The Committee asked whether this did not amount to accrual of undue benefit to the Contractor. The Railway Board have stated:

“It is agreed that the first driving rate is relatively higher than the second driving, but the first rate may have to include elements of interest, depreciation, losses etc. The decision for burial of the piles was purely a technical one. As a consequence of this decision, the second driving rate was not operated. In accordance with the terms of the contract, the payment made for first driving can only be made at contractual rate as provided for. Payment at a

contractual rate cannot be interpreted as accrual of an undue benefit."

1.145. According to the terms of the contract the cost of sheet piles was to be refunded to the contractor to the extent of 90 per cent if the sheet piles were returned in good condition ('A' class), and 75 per cent if these were slightly damaged or deformed, but could be put to subsequent use in a similar construction ('B' Class). No refund was to be allowed in respect of sheet piles not capable of being re-used. However, after the decision to leave the sheet piles buried, refunds were allowed in respect of all sheet piles left buried at the rate of 90 per cent. In reply to a question whether this did not result in undue benefit to the contractor, the Railway Board stated:

'For payment of cost of sheet piles to be left buried, classification 'A' or 'B' was not the criterion at all. Payment was to be made at mutually agreed rates. On ordering burial, contractor would have been within his rights to demand the full cost of materials. But however in view of the fact that even after extraction and return he could not have got more than 90 per cent of the cost, 90 per cent refund was mutually agreed to for buried portions. The top 1.5 metres or so were to be cut and taken away so as not to come in the way of road restoration work etc. Thus practically the contractor did get a lesser cost reimbursement than 90 per cent cost of piles used for driving. From this again transport charges were recovered for not having transported the piles back to Metro Railway's depots. This, in any case, did not result in undue benefit to the contractor.'

1.146. The tenders had been finalised on the assumption that the sheet piles could be used twice but in actual execution of the work the sheet piles were used only once. The Committee wanted to know what had been the impact of this change in condition on the total cost of the contract. The Railway Board stated:

"Instead of 1000 MT (Indigenous piles) Qty. as stipulated in the contract, to be driven at first use rate, 1286.465 MT is the anticipated Qty. driven at first use rate. Thus 286.465 MT is the likely excess driven at first use rates instead of second use rates and without extraction. Actual payment made upto 31st December, 1980 is for 1285.8279 MT."

1.147. The Committee desired to know if while deciding to leave the sheet piles buried, the Administration made any exercise to determine the financial benefit accruing to the contractor by allowing payment for first driving at a rate which included the cost of sheet piles and if not, why. In this connection the Railway Board stated:

"No. The decision to leave the sheet piles buried was a technical decision taken by the Engineer in terms of a specific provision in the Contract viz. Clause 2.15 of Annexure 3 of the original tender. So long as there was strict adherence to the laid down conditions of the contract, the Engineer was competent to order reimbursement to the Contractor under the stated clause, invoking which, he had ordered sheet piles to be left buried on technical grounds. The question of the administration making any separate exercise outside the provisions of the contract, to determine financial benefit accruing to the contractor, did not, therefore, arise at all."

1.148. It has been stated that the question of determining financial benefit to the contractor did not arise, as the decision to leave the sheet piles buried had been taken on technical considerations in terms of clause 2.15 of Annexure 3 of the tender. Even this clause provided for adjustment in payment to the contractor as mutually agreed upon in respect of residual value of buried sheet piles. This was not done. Moreover, this special clause was intended to cover only individual cases, and cannot be said to be applicable to the general decision to leave the sheet piles buried en-mass. The Committee asked if in these circumstances, this could not be constructed as a failure on the part of the Administration to determine the quantum of additional benefit accruing to the contractor. The Railway Board replied:

"It is not correct to say that terms mutually agreed upon were not evolve.

On receiving the order for leaving the piles buried the contractor sent a proposal vide his letter No. TRP/151(9)-315 dated 20th May, 1977 demanding 90 per cent payment for the buried piles. This was duly considered by the administration and processed for sanction before payment. Thus the terms became as mutually agreed. In fact, in effect, the contractor was paid less than 90 per cent reimbursement only, since the top 1.5 app. were ignored for reimbursement purposes.

The clause was to cover all cases coming under the purview of "where considered absolutely necessary and unavoidable by the engineer on technical or other site considerations" as mentioned in clause 2.15 of Annexure 3.

In this case, all piles driven except a few extracted, were adjudged by the engineer to be under the purview of this clause because of situations which manifested during progress of work and after detailed examination of the exposed piles.

The clause referred to is only one of the clauses in the contract and not designated as a special clause. The intention of the clause is to cover all cases where a technical decision is taken by the Chief Engineer to leave the sheet piles buried. The fact, in the present case, that such a decision had to be taken for the entire length of the section does not take away its complexion as a technical decision which had to be taken, in terms of that clause, in the interest of work. When a particular payment is contractually envisaged for a particular operation, the mere fact that a technical decision had been taken and was going to be applicable for a substantial portion of the works, may not automatically lead to a change of contractual payments. It is, therefore, held that no undue benefit can accrue to a contractor who works strictly within the framework of a contract and is paid in accordance with the contractual rates."

1.149. The Committee desired to know whether the Railway Board considered that the rates eventually allowed to the contractor were comparatively reasonable and if so why. The Railway Board have stated:

"The Railway Board considered that the rates were reasonable. This was pointed out to the Dy. Comptroller and Auditor General of India during discussions with him on 22nd December, 1979 and later confirmed in writing vide D.O. No. 79-B(C)-M/3 dated 15th January, 1980 of Director, Metropolitan Transport addressed to Joint Director (Rlys.), Office of the Comptroller and Auditor General of India. It was mentioned in this letter as follows:

"With regard to rate for initial driving for sheet piles, DMT explained that the payment actually made to contractor for the initial driving was not Rs. 1400 per tonne, but

Rs. 300 per tonne as 50 per cent of the cost of piles viz. Rs. 1100/- per tonne was recovered while making payment. About 2 years later while refunding the cost of sheet piles after it was decided not to extract them, 10 per cent of the full cost i.e. Rs. 220/- per tonne and the cost of transport of these piles back to the stores was deducted i.e. the payment finally made was Rs. 880/- per tonne minus cost of transport. The Audit agreed that this payment was contractually due to the contractor. DMT stated that as shown in Appendix 2 of the written reply to the provisional paragraph handed over to Audit, the payment made was reasonable in consideration of the working Capital which the contractor had to lock up and of wastage etc. Further more, Audit have quoted the rate quoted by firm 'B' for sheet piling with 10 per cent recovery of the cost of piles. This rate (Rs. 1300/- per tonne for first driving and Rs. 1275/- per tonne for second driving) showed that the rate finally paid to the contractor was reasonable."

1.150. According to the Audit Paragraph the concessions shown to the firm after award of contract had vitiated the comparative evaluations made earlier at the time of award of contract. The Committee enquired whether the financial implications were examined by the Administration at every stage of granting the respective concessions and if not, why the same was not done. In reply, the Railway Board have stated in a note:

"The reliefs (and not concessions) were considered on the merits of each case by the Project Administration when financial implications of each such relief were duly gone into.

Comparative evaluations of tenders are made necessarily at the stage of acceptance of tender only. They are not re-opened, as a matter of practice, at every stage of the administration of the awarded contract requiring dispensations that may or may not have financial implications. Even if such comparative evaluations are to be attempted purely for theoretical interest—because the contractual agency cannot change exactly identical circumstances requiring same dispensations would have to be necessarily taken as the reality in the administration of any other (presumptive) contract with an alternative tenderer."

1.151. In another note, the Railway Board have stated:

"The vitiation of the comparative evaluation is not accepted.

The comparison made is not on like-to-like basis for the following reasons:

- (i) The offer of the firm 'B' which has been compared was not valid with the use of indigenous piles with which the work was actually done.
- (ii) With the introduction of indigenous piles there is no certainty that the entire rate structure of Firm 'B' (i.e. each and every rate) would not have been raised particularly because their own revised quotations received at the time of negotiations indicated an upward revision by 4 per cent minus 1 per cent=3 per cent.
- (iii) The offer compared was with 10 per cent initial cost recovery condition for steel for temporary works—a condition which was at variance with the tender conditions.
- (iv) The offer of firm 'B' was based on escalation without any ceiling being spelt out therein. Therefore limiting it to Rs. 7 lakhs would be the theoretical. Escalation on this score could be much higher.
- (v) Rebate of 1 per cent as shown was not offered by firm 'B' for the offer compared.
- (vi) In such a comparison which is considered to be not valid, there is, therefore, no question of any vitiation.

Comparative evaluation of tenders are made necessarily at the stage of acceptance of tender only. They are not reopened, as a matter of practice, at every stage of the administration of the awarded contract requiring dispensations that may or may not have financial implications. Even if such comparative evaluations are to be attempted purely for theoretical interest—because the contractual agency cannot change—exactly identical circumstances requiring same dispensations would have to be necessarily taken as the reality in the administration of any other (presumptive) contract with the alternative tenderer."

Reimbursement of the cost of material

1.152. According to the Audit Paragraph, at the request of the firm the Railway Administration reimbursed Rs. 5.85 lakhs on ac-

account of the cost of struttings and walings material issued to the firm. This reimbursement was made to the firm prematurely, although the material had not been dismantled and returned to the Railway, on the grounds that had the work been completed as per original schedule the reimbursement as per contract condition would have been made, any further delay would result in hardship to the contractor. The Committee desired to know what were the provisions of the contract for re-imbursement of cost of material issued for temporary works and were not these provisions applicable during the extended period of the contract. The Railway Board have, in a note, stated:

"Provision as per contract for reimbursement of cost of materials issued for temporary works, was as per clause 14.3 of Annex. 2. 90 per cent or 75 per cent of the cost as per issue rates was reimbursable for 'A' or 'B' class materials on their transportation and return to the depot by the contractor. Provisions were applicable during the extended period of the contract."

1.153. The Committee asked whether there was any provision that in the event of extensions, the Contractor would be given reimbursements even before return of the materials. The Committee also asked whether the firm did specify any such condition in its tender and if not, why was this extra contractual financial accommodation given. In reply, the Railway have stated:

"No. This refund was warranted on merits, because the provision could not be held penal against the contractor, when the extensions were granted not due to any default on the part of the contractor, beyond 5-3-77 (the original overall period of completion). Reimbursement payment was made in December, 1978."

1.154. As to the specific 'merits' in consideration of which cost of steel materials was refunded even before the return of such materials by the contractor, the Railway Board have stated:—

"As per provision in the agreement, the work was scheduled to be completed by 5-3-77. But extensions were granted for reasons beyond Contractor's control which were also responsible for delay in salvaging struts, wales etc. If reimbursements had not been made in these circumstances simply on the plea that materials had not been returned, a rigid application of the clause would have worked as penalty for no fault of his own, and would have put the

contractor to severe hardship, thereby endangering the progress of work itself."

1.155. In another note, the Railway Board have stated:

"The cost of sheet piles which were ordered to be left buried in the ground on technical considerations, could no more be withheld by the Administration after such orders and hence had to be refunded. The refund of cost of steel struts, wales etc. appropriate to classification was a contractual provision, albeit on the condition of the return of the materials after the works are over. The works are contractually supposed to be over on the expiry of the period stipulated in the original contract. When subsequent extension to the contract period is granted, not on contractor's account, the return of these materials, which is possible only on completion of the works, also gets delayed in consequence. If refund (Reimbursement) were still to be made dependent on the return of materials, very much beyond the original contract horizon it would have amounted to imposing a penalty on the Contractor for no fault of his own. It was not the intention to operate this provision as a penal clause. It may further be stated that the Administration by this dispensation has only released the contractor's own money due for eventual release."

1.156. Asked whether the Contractor had since returned all the materials in good condition and if not, what was the value of the steel materials yet to be returned, the Railway Board have stated:

"As the works are yet to be completed, Contractor is still to release and return some of the materials for temporary works in good condition. Value of steel materials yet to be returned is Rs. 13.17 lakhs. Some materials for which cost reimbursements have been made, are still in re-use at the work site."

1.157. In another note on the subject of outstanding dues against the contractor on account of material issued, the Railway Board have stated:

"The oldest item relates to the year 1976; however, the total cost of the material lying with the contractor has since been brought down to Rs. 2.23 lakhs."

Payment for splicing sheet piles at high rate

1.158. The schedule of items for work to the tender contemplated driving of sheet piles upto a depth of 20 meters from ground level. According to the Audit Paragraph: the tender documents neither indicated the lengths in which the sheet piles would be supplied nor provided as a separate item of work for splicing (jointing) of sheet piles to make them of the desired length. The contract stipulated only the rates for driving sheet piles. The Committee have been informed that Indian piles were available in 5.5 M to 13.5 M lengths and imported piles were available in longer lengths of 16 M to 18 M.

1.159. The committee asked if sheet piles were not available in the specified lengths required by Metro Railway or driving upto a depth of 20 meters, why was it not clearly specified in the tender documents that the sheet piles would have to be spliced. In this connection the Railway Board have stated:

"The tender documents were primarily framed for imported piles which were longer and would not require splicing. This character of tenders was retained even at contract stage. Use of indigenous piles could be conveniently inserted in contract because the same rate—structure was offered by the contractor 'A' in case of both types of pile use. If imported piles were available and they were used the problem of splicing would not have arisen, and hence no stipulation was given in regard to splicing in the contract."

1.160. In another note on the subject, the Railway Board have stated:

"The length of Imported piles varied from 16 metres to 18 metres. This length was considered sufficient for the works requirement taking into account the depth of cut and the amount of penetration as per tender drawings and as actually revealed by the following figures:

<i>Details of piles driven</i>	<i>Quantity</i>
0—10 M depth	959.3221 M. T.
10—15 M depth	326.5018 M. T.
15—20 M depth	0.0000 M. T.
..	1285.8239 M. T.

The length of piles required is 1 metre in excess of depth to be driven. Thus there was no need for splicing of imported piles.

In the case of imported piles, since the lengths were sufficient, the question of splicing did not arise. The tender documents with the use of imported piles therefore, did not provide for splicing as an item.

In the case of indigenous pile, the length varied from 5.5 metres to 13.5 metres. The use of indigenous piles was optional. The fact that these piles would require splicing was also known. It was, however felt that the work involved in splicing could be the subject of a separate payment on the basis of a non-scheduled rate in the event of exercising option."

1.161. The Audit para states that during the execution of the work, the firm raised a dispute stating that its rates for driving sheet piles were not inclusive of the cost of splicing for which it should be paid separately. Subsequently when the matter was referred to arbitration, the Railway Administration had contended that:

"Since the length of piles was mentioned in I. S. I. Specification and the depth of cutting was mentioned in the tender, splicing was inherent in the item of work, and the rates quoted by the tenderer for piling with "Z" section indigenous piles was inclusive of splicing required."

1.162. According to the Audit Paragraph when the question regarding payment for the cost of splicing was referred to the Joint Arbitrators, the arbitrators gave an award in favour of paying the firm for splicing as a non-scheduled item of work. The firm claimed in December, 1975 a rate of Rs. 899.88 per joint. The Railway Administration however worked out a rate of Rs. 553.81 per joint, which was considered reasonable on the basis of a work study conducted by the Engineer-in-charge. Payment was made to the contractor on the basis of this rate. The Audit para also brings out that in the tender subsequently invited for Contract Section 4A, the rate for splicing obtained was only Rs. 170 per joint exclusive of the cost of steel plates to be supplied free by Railway Administration and taking into account the cost of material required per joint, the comparable rate for Contract Section 4A worked out to Rs. 214.41 as against Rs. 553.81 per joint paid to the firm for Contract Section 2.

1.163. The Committee enquired whether the Administration took any action to review the non-scheduled rate for this item in the light of the rate subsequently received for Contract Section 4—A. The Railway Board have stated:

“No Non-Scheduled rate for splicing of indigenous piles was based on actual work study as stipulated in the contract as per clause 15.2 of Annex. 2 which reads *inter-alia* as follows:

“....If the work is of an entirely different nature and its quantum is substantial the rates shall be based on the actual cost of construction arrived at on proper and scientific work study and enhanced by 10% to cover the contractors profit.”

The rate was framed accordingly based on analysis of various elements of work as carried out at site. The rate was sanctioned in April, 1976. Therefore there was no reason for reviewing this sanctioned rate arrived at as per Contract when a rate for splicing of piles was received in another section 4A later and that too for dissimilar piles (Larseen Imported type).”

1.164. As stated above the rate worked out by the Metro Railway Administration in March 1976 for splicing in Contract Section 2 was Rs. 553.81 per indigenous pile and that quoted by another firm nine months later (by which time the cost must have gone up in Contract Section 4A) was Rs. 214.41 per imported pile. The Committee asked whether the wide difference between the two rates did not call for a review of the rate allowed earlier for splicing in Contract.

Section 2. In a note Railway Board have stated:

“In accordance with the provision of the Contract, vide clause 15(2), Annexure II the procedure for finalisation of non-schedule rates was based on actual work study. This

was exactly what was done in this case. Moreover, the splicings under Contract—Section 2 and Section 4A were widely different as would be evident from the following factors:—

Item	Section 2	Section 4A
Type of piles	Indigenous	Imported
No. of plates for splicing	6	1
Weld run around splice plates	5·1 metres.	2 metres
Thickness of piles	8·5 mm	22·1 mm
Jigs	Necessary	not necessary
Covered shed for work	Necessary	not necessary
Rate	Non scheduled as per work study	Scheduled rate

Change in methodology

1.165. During the actual execution of the work, the Metro Administration changed over from the sheet piles methodology to the use of diaphragm walls when 73·5 per cent of sheet piling had already been done. According to Audit this constituted a material modification and involved an extra expenditure of Rs. 19·21 lakhs.

1.166. The Committee desired to know the reasons for this change in construction method and why these could not be visualised at the Project Report stage. In this context the Committee also asked whether the studies conducted by the Project Report Team were not thorough or exhaustive. The Railway Board have, in a note, stated:

“These were the incidents that took place during actual execution of works using Indigenous sheet piles which the Project Report had not favoured—in fact positively discouraged. Project Report team visualised use of Imported Piles or Diaphragm walls as alternative and had not visualised after effects of the use of thin indigenous piles. Studies conducted by the Project Report team were exhaustive. Since the Project Report did not dwell on the dangers in the use of the Indian sheet piles beyond

stating that its use itself was not feasible, whatever consequences that followed from the actual use of these piles as a result of the Projects decision, are not to be taken as indicative of inadequacy or lack of thoroughness of the Project Report."

1.167. The incidents that led to the change in methodology but which could not be visualised at Project Report stage were also brought to the Board's notice in General Manager, Metro Railway's letter No. MRTS/W-15/179/HQ/227 dated 20th April, 1978. Extracts from the letter are reproduced below:

"In the accepted tender, the above section was to be provided with sheet piles for the retaining the sides of cut. Indigenous ISPS 'Z' Section piles were decided to be used in this section since the import of Larseen piles had not materialised by then. It has been observed through experience that these indigenous piles cannot be sometimes driven to full depths. Moreover there is a tendency of clutches opening out and even otherwise the depth of penetration does not provide adequate cut off against heave and hydraulic pressure. This situation has been aggravated in this particular section by the existence of a sewer line passing parallel to the sheet pile line just outside it. The soil strata around the sewer lines are mostly surcharged with water because of leakages from the joints of the sewers and this water finds its way through the openings in the sheet piles and has been endangering the stability of the cut. As a matter of fact, the work of dewatering required for having a dry working space become difficult in such a condition. There were certain cases of serious experiences of soil loss and considerable surface settlements on this account in this section, resulting in collapse of running sewers and some private structures.

As a result of the events referred to above, the methodology of construction was examined afresh and it was considered that the provision of Diaphragm wall is essential for the balance work at the under mentioned stretches instead of sheet piles as originally contemplated, to achieve the safe working conditions in the cuts and also for safety consideration of road and adjoining neighbourhood and buildings."

1.168. It is seen that following the decision for a change over to the methodology of diaphragm wall, the Metro Administration considered the question of calling of tenders for the work. It was decided in January 1978 that limited tenders for the work should be invited from only two firms readily available in the filed at Calcutta.

1.169. One of the reasons given in support of inviting limited tenders from two firms for diaphragm wall was the urgency to complete the work before monsoon. The Committee enquired in what respects was there urgency and whether the work was actually completed before monsoon and if not, was the purpose of inviting limited tenders not defeated. In a note, the Railway Board have stated:

“The urgency was in consideration of the fact that the section was to be completed on priority for prototype trials. Barring a few locations where utilities could not be got diverted in time by the administration through other Agencies, other D/Wall works were completed by monsoon. In fact this enabled the firm ‘A’ to progress with box construction, works needed for prototype trials planned in 1980-81. Purpose of inviting limited tenders has thus been fulfilled.”

1.170. In a letter dated 20 April, 1978, the Metro Railway Administration gave the following justification for inviting only limited tenders for this work:

“(a) In view of the urgency of the work limited tenders were invited on 25-1-78 from the only two Agencies who were already working with MTP and who were considered capable enough to undertake this work immediately and simultaneously without any set-back to the other D/Wall works already entrusted to them. The position in regard to spare capacity of the other firms available on 25-1-78 as recorded at that time is brought out below for information of the Board which led to the decision of inviting the limited tenders from the only two firms mentioned above.

There are no other firms, readily in a position to tackle this work which is of urgent nature. For instance, M/s. HCC have been awarded a contract in Section 15/C only on 9-11-77 and they are yet to mobilise. The only other firm that can readily be relied upon so far technical ability is concerned, is M/s. Gammon India (or Nirman), but they

art yet to be tried in MTP(R). Besides it will be impossible for Gammon India (or Nirman) to mobilise equipment and start works within six months, while we want the works to be started immediately and finished before monsoon. M/s Chatterjee Polk are struggling hard in their own works of Section 11 and have no capacity to divert their resources towards Section 2 works and similar is the case with M/s. M. S. J. Engineers who are at present the sub-contractors of M/s. NBCC in Section 10."

"(b) Though M/s. Cementation Co., were invited to participate in response to the limited tender, they regretted their inability to participate and thus only M/s. Rodio Hazrat's tender was available for acceptance by MTP(R). Since the Tender Committee were satisfied on the reasonableness of the rates, their tender was accepted by the General Manager at an approximate contract value of Rs. 23 lakhs."

1.171. The Committee have been informed that firm 'C' (M/s. Rodio Hazrat) to whom the diaphragm wall work was ultimately awarded was holding a joint contract with M/s. Forward Engineering Syndicate, Calcutta in Contract Section 3A (i.e. diaphragm wall work done by firm 'C' and substructure works by firm 'A' (M/s. Forward Engineering Syndicate)).

1.172. The Committee enquired whether the sequence of events in this case (i.e. communication by Firm 'A' on 21-11-77, Dy. CE's proposal on 23-11-77 and Firm 'C's letter to the administration on 25-11-77 and Administration's decision of January 1978 to invite limited tenders only from two firms including Firm 'C') did not show that the decision to award the diaphragm/wall work for the balance portion in Contract Section 2 to firm 'C' was taken unusually quickly. In a note, the Railway Board have stated:

"Correspondence quoted were in November '77. Administration's decision to invite limited tenders was in Jan'78. There is no apparent unusual quickness. Quickness was essential as this section was to be completed for prototype trials."

1.173. Tenders for diaphragm wall works had also been invited in other Contract Sections before January 1978. The Committee desired to know how did the rates obtained in these Contract Sections compare with the rates quoted by Firm 'C' for Contract Section 2. The Railway Board have stated:

“Before Jan ’78, Tenders for D/Walls had been invited in Southern Sections, for Section 13A, 13B, 13C, 14A; 14B; 14C, 15A|I and 15A|II. These were finally accepted on 10-3-78. Rates quoted by firm ‘C’ for D/Wall Contract Section 2, work out slightly higher than the average rates for Southern Sections, but are same as in adjacent Section 3A reduced by proportionate mobilisation charges. Section 3A is in North and was awarded in 1976. It is to be noted that conditions of work in South and North are not identical so that a straight comparison of rates for the same operations may not be very meaningful.”

1.173A. The Convener of Working Group III of the Committee (Railways & P&T) alongwith another member of the Committee visited the construction sites of Metro Railway in Calcutta in July, 1981 to ascertain the reported damage caused to the buildings over-ground in the course of construction of the under-ground Metro Railway Project. A copy of note dated 11 August, 1981 containing impressions of the visit is at Appendix (I).

1.174. The Committee note that Calcutta's Metro Railway Project was sanctioned by the Railway Board at an estimated cost of Rs. 140.30 crores on 1st June, 1972 and the construction work was formally inaugurated by the Prime Minister on 29 December, 1972. According to the Original target, the project was to have been commissioned by 1978 as envisaged in the Project Report of 1971. Although more than three years have elapsed, the country's first underground railway is nowhere near completion. The Committee are distressed to find that uptodate progress on the project till 28 February, 1981 was only 27.5 per cent. The work is now proposed to be completed in two phases; the first phase that covers the distance from Dum Dum to Shyambazar and Tollyganj to Esplanade is expected to be completed before the Sixth Plan period is over i.e. by 31 March 1985. The second phase which will cover the completion of the track from Shyambazar to Esplanade and the opening of the whole line is expected to be completed by 31 March 1987. If the present progress of work is any indication, the Committee cannot but express their scepticism about the completion of the entire project even by March 1987 as is now envisaged.

1.175. Considering the importance of the project for the city of Calcutta and the disruptions and inconvenience for the people involved during the execution of such a project in a thickly populated area, the Committee cannot but reach the conclusion that there has been inordinate delay in progressing the project. Apart from other things the delay has also pushed up the cost of the project

several fold. The Committee were shocked to learn that the main reason for the delay in completing this project was lack of funds. The Committee fail to appreciate why after having taken a well considered decision to go in for such a vital project, adequate finances were not made available to the project authorities for completing the work in time. The Committee have no doubt that the allocation of funds for the project has been made in relatively small doses over the years. Between 1972-73 and 1980-81, the total projected requirements of funds worked out to Rs. 140.30 crores. Against these projections, the total amount allotted and actually spent was only Rs. 88.42 crores. That the amount actually spent bears only an insignificant proportion to the total estimated cost of the project is clear from the fact that against the estimated cost of Rs. 140.30 crores as envisaged in the Project Report, the project was now estimated to cost more than 526 crores in 1980-81 level of prices. Further escalation cannot be ruled out keeping in view the present trend of prices. This is a distressing state of affairs. The Committee desire that the matter may be revived at the highest level and at least now a time-bound schedule may be laid down for the completion of the project at the earliest. It should also be ensured that shortage of funds is not allowed to hamper the further progress of the project.

1.176. A disquieting feature that came to notice was that since the commencement of the work on Calcutta Metro Railway in 1972, as many as five General Managers had been appointed. From amongst the first four incumbents, who all retired on superannuation, two General Managers had short stints of about a year each while the third General Manager worked on the Metro Railway project for less than two years. Similarly as many as five Chief Engineers have been associated with project from time to time. The Committee fail to understand why senior persons who are on the verge of retirement are selected for such important positions. The Committee have taken note of the statement of the Chairman, Railway Board that in the context of the extant rules of promotion etc. on the Railways it was not possible to overlook a senior man in the interest of continuity. The Committee nevertheless feel that it should be administratively possible to appoint General Managers or Chief Engineers who can continue on the job for a longtime, preferably from the beginning of a project till the entire project is completed. Such practice will not only ensure continuity of administrative set-up but will also go a long way in imparting a sense of involvement and responsibility in the minds of the incumbents. Creation of excadre posts of General Managers especially

for such a project which is being executed by the Railways on agency basis, could also be considered. The matter may be examined in depth to lay down proper guidelines for the future.

1.177. In regard to the technical know-how available in the country for the execution of metro railway project, the Chairman, Railway Board admitted that the Railways had 'zero experience' in this line. Further, even though 49 officers were sent abroad to have first hand knowledge of the methods of construction of underground Railways, none of them was required to make special studies of basic subjects like tunnelling in Sub-soil conditions of Calcutta and sheet piling in particular. In the absence of such studies in the first instance, lots of difficulties had to be encountered; for example sheet piling had to be given up ultimately resulting in extra expenditure. The Committee are surprised to note that out of 49 officers sent abroad 16 officers were not directly concerned with the Metro Railway and 7 officers were transferred out of the Metro Railway and are at present not working in the project. This has resulted in gross wastage of public money and also wastage of the expertise gained by them and no benefit accrued to the project as a result of this visit. The Committee would like to express their strong dissatisfaction at this wrong selection of officers being sent abroad to have first hand knowledge of the methods of construction of underground railways.

1.177A. Surprisingly, the question of inviting global tenders for the construction work was not considered. The construction work in various Contract Sections was entrusted to the local construction firms who had no prior experience of this type of work. It is relevant to recall that while dealing with the tenders for Contract Section 2 in 1973, the Tender Committee had inter alia observed: "As no Indian firm with experience of MRTS construction in a city is available and it has not been considered necessary to invite any global tender, the choice has necessarily to be made from amongst firms who have tendered for this work in spite of the scepticism inherent in having to entrust the very first work of its kind to a firm which does not have any direct experience of MRTS subway work." Since the construction of underground railway was the first project of its kind to be undertaken in the country and the Railways had zero experience in this line and even though Russian collaboration had been sought in drawing up the project report, the question why global tenders were not invited for construction work calls for proper explanation.

1.178. The Committee are of the view that by inviting global tenders the Administration could have at least a better idea of the reasonableness and competitiveness of the rates quoted by various tenderers, particularly when there was no precedent for rates as the work was being done for the first time. It is interesting to note that for the contract Section 2, the estimated value of work was originally shown as Rs. 175 lakhs in the tender documents whereas the value of the accepted tender was Rs. 259.92 lakhs. This tender was accepted because it was the lowest offer. Otherwise the Railways had no means to consider the competitiveness and reasonableness of the rates quoted by the lowest tenderer. This is by no means a happy state of affairs. The Committee wish the Administration had been more circumspect and careful in preparing detailed estimate before accepting the tenders.

1.179. Another important point that struck the Committee was the absence of a provision in the works contracts for giving a price preference to public undertakings in the matter of award of such contracts. The Committee were informed that the original orders for price preference for the Public Undertakings covered only stores contracts and no price preference was prevailing for 'works' tenders during 1973 in favour of Government enterprises though as pointed out by the Financial Commissioner Railways during evidence 'the spirit of that (stores contracts) could be applied to (works) contracts also'. With effect from April, 1981 the Ministry of Railways are stated to have intimated the General Managers of the Railways that price preference for Government enterprises will henceforth be applicable in cases of "works" contracts also. The Committee desire that specific instructions on the subject should be issued by the Ministry of Finance (Bureau of Public Enterprises) and circulated to all Ministries and Departments for Compliance.

1.180. The Committee find that the Metro Railway Administration invited open tenders for construction of sub-way structures to form sub-way tunnels for carrying railway lines in Contract Section 2 between Dum Dum and Belgachia stations at an estimated cost of Rs 175 lakhs. Out of the seven firms which quoted against the tenders the offers of firm 'A' (M/s. Forward Engineering Syndicate, Calcutta) and firm 'B' (M/s. National Projects Construction Corporation Ltd.—a public sector undertaking) were found in order. The offer of firm 'A' which was lowest in terms of value was accepted as this was considered "reasonable taking the tender as a whole". The difference between the offers of firm 'A' which was accepted and firm 'B' which could not be accepted was only Rs. 9.61 lakhs i.e. about 4 per cent more than the accepted offer of Rs. 265.19 lakhs

of firm 'A'. If the price preference provision had been invoked and the contract had been awarded to the firm 'B'—the public sector undertaking—much of the extra expenditure and delay involved in dealing with firm 'A' could have perhaps been avoided. "Even otherwise, as the difference in the rates quoted by the firms 'A' and 'B' was insignificant and as the railway administration have powers to accept the higher offer in any deserving case, the railway administration could have accepted the offer of firm 'B' particularly when it was a public sector undertaking and had better accountability".

The Committee's scrutiny of the execution of works by firm 'A' in Contract Section 2 reveals several instances of undue concessions and favours shown to the contractor namely M/s. Forward Engineering Syndicate, Calcutta. These cases are discussed in the subsequent paragraphs.

1.181. It is seen that the contract entered into with M/s. Forward Engineering Syndicate, Calcutta in March, 1974 for sub-way structure works between Dum Dum and Belgachia Stations stipulated completion of the entire work within 36 months i.e. by 5th March, 1977. However, the work from Km. 1.118 to Km. 1.452 (Phase I) was to be given priority and completed in 18 months i.e. by 5th September, 1975. According to the Audit Paragraph the time was to be the essence of the contract, which was a firm price contract and no escalation was permissible. The Committee find that in September, 1975 when the progress on the work was only 18 per cent, the firm wrote to the Railway Administration asking for increase in rates stating inter alia that the prices had increased by more than 40 per cent since the award of the contract and it was a mistake on its part to have quoted firm rates for such a costly venture. The Railway Administration initially held that since the contract was a 'firm price' one, the firm's claim was extra contractual and therefore, the Railway Administration had no contractual obligation to grant any enhancement in the accepted rates. It further held that the increasing trend of price indices was clearly discernible even at the tender stage and as the firm did not quote any escalation clause in the tender, nor did it insist for its introduction at the stage of negotiations, its rates must have included sufficient cushion to cover market fluctuations. However, as the firm had been repeatedly representing to the Railway Board and the Minister of Railways it was ultimately recommended by the Railway Administration to grant a price escalation subject to a ceiling limit of 15 per cent of the net value of the contract "to meet

the ends of justice" although the firm's claim for escalation was not contractually tenable and the Railway Administration had initially rejected the firm's claim outright.

1.182. Not only the Railway Board agreed to the firm's claim for escalation, which had not been provided for in the contract, the Railway Board also authorised payment of Rs. 10 lakhs on an ad hoc basis, as requested by the firm, to be adusted against the extra contractual amount that might be found due to it by way of escalation. The Committee find that this ad hoc payment was authorised without a specific finding that an amount not less than Rs. 10 lakhs had become due as escalation for reasons beyond the contractor's control. The ad hoc payment was made in April, 1979 but no exercise had been made till April, 1980 to assess the exact amount due to the firm by way of escalation.

1.183. Why this indulgence was shown to this firm alone is intriguing particularly in view of the fact that when the contractor in Contract Sections I and II which were also firm price contracts, requested for an escalation, their requests were summarily rejected by the Administration. One of the main reasons adduced by the Railway Board for agreeing to the firm's request for escalation was that "in order to prevent the contractor from abandoning the work, he had to be dealt with fairly; the Railway could ill afford cessation of the work at that stage, as it would have delayed prototype trials and resulted in continued inconvenience to public." Unfortunately, the work was still dragging on and had not been completed even after four years of the original date of completion. Further if the amount of escalation allowed to the firm is taken into consideration, the firm's offer became costlier vis-a-vis the public sector undertaking's offer which had been rejected having been considered costlier. The Committee get the impression that this firm had quoted firm and lower prices only to secure the contract and after having secured the contract used its influence to force the Railway Board to agree to an escalation which cost the exchequer in additional expenditure of Rs. 10 lakhs.

1.184. As stated earlier time was to be the essence of this particular contract as the work had to be completed within a scheduled time-frame to enable prototype trials being held in the section. The firm however approached the Railway Administration from time to time for seeking extensions for completion of the work which were readily agreed to. Instead of holding the contractor responsible for not completing the work within the stipulated period, the firm was

allowed to get away with extensions of time as also additional payments in the form of escalation. Liberal extensions of time allowed to the contractor led to escalation of costs which when claimed by the contracting firm was also liberally considered and paid. Looking to the circumstances as a whole, it is clear that the Railway Board did not take adequate steps to safeguard the public interest.

1.185. The Committee find that according to the tender conditions the sub-way structures were to be constructed inter alia by using sheet piles as support walling. This methodology had been conceived as per project report, which envisaged extraction of sheet piles and re-using them. Actually sheet pile work consisted of three different operations namely first driving, extraction and re-driving of extracted sheet piles and the rates contracted for sheet piling work were joint rates for all the three operations. It is seen that out of the seven firms which had quoted against the tender, the offer of M/s. Forward Engineering Syndicate, Calcutta was in accordance with the tender conditions stipulated by the Railway Administration and after negotiations the revised negotiated offer of this firm at a total value of Rs. 259.92 lakhs was accepted by the Railway Board in January, 1974. During the execution of the contract, the scope of work was so modified that certain items of work required to be performed by the contractor were dispensed with. However the rates settled with the contractor were neither modified nor renegotiated with the result that undue benefit accrued to him.

1.186. According to the Project Report prepared in 1971, no difficulty on the extraction of sheet piles and re-using them was anticipated. However at the time of inviting tenders in November, 1972 the technical advice available was against it. The Committee observe that the Soviet Consultants had stated during the discussions held in December 1971 that, in cases where sheet piles were driven close to structures and damages to structures were anticipated, it would be wise to leave the sheet piles buried in the ground as their extraction might lead to ground loss and settlement of buildings. Despite this expert advice and the information available in technical literature that in the case of deep excavations sheet piles cannot be recovered due to deformation, as also absence of any studies by the Railway Administration regarding the feasibility of extraction of sheet piles under the Calcutta soil conditions, the Railway Administration invited tenders in November 1972, stipulating extraction of driven sheet piles in Contract Section 2 which lay in one of the most crowded localities of Calcutta. Again, in

June 1974 another Soviet team stated that in USSR sheet piles were not extracted. Though the letter of acceptance had been issued to the contractor in March 1974 and the work of driving sheet piles had not started by June 1974 but the Administration took no action either to modify the scope of the contract by deleting the work of extraction of driven sheet piles and carrying out necessary changes in the conditions of the contract, or to re-negotiate the rates for this item of work keeping in view the earlier discussions about higher rates quoted by this firm for first driving of piles. Soon after the driving of the sheet piles the contractor started representing that the extraction of the sheet piles was not feasible. The Audit para brings out that after examining the contractor's repeated submissions regarding non-feasibility of extraction of sheet piles, the Chief Engineer of the Metro Railway proposed in March 1977 that the sheet piles already driven be left in position as the extraction and re-use of sheet piles was impracticable, even though in March, 1976, the Engineer-in-Charge had observed that the method of extraction adopted by the contractor, though slow, was practical and safe. The Committee fail to understand why in the face of overwhelming opinion against it, the Railway Administration decided to continue with extraction and re-use of sheet piles. That this was technically not a sound proposition has now been conceded by the Railway Board and the Committee find that in a subsequent tender, item for extraction of sheet piles was not provided for the same reason.

1.187. The decision regarding abandonment of the extraction of sheet piles had serious financial implications, which were unfortunately overlooked by the Railway Administration. The rates of payment for sheet pile driving were inclusive of the cost of sheet piles and were based on the assumption that the sheet piles would be extracted and re-used. However, when the extraction of sheet piles was abandoned, the rate structure for driving of sheet pile was not reviewed and revised, thereby giving the contractor undue financial benefit, which has been calculated by Audit to amount to Rs. 7.45 lakhs. Further this change in the scope of the work led to vitiation of the original tenders as it resulted in operating on the 1st driving rate for the whole work done by sheet piles. After the Administration decided to leave the sheet piles buried in the ground, the occasion for second driving for which a lower rate had been quoted by the contractor, did not arise but the payments for the entire sheet pile work were made at the higher rate applicable to first driving.

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1.188. Another serious flaw that came to notice was the defective method of evaluating the tender quotations in this case. It has been observed that so far as sheet piling works were concerned, the rate structure of Messrs. Forward Engineering Syndicate, Calcutta was lower than that of the next higher tenderer namely Messrs. National Project Construction Corporation. However this firm's rates for other bulk items of work such as earth work in excavation, RCC works etc., were much higher as compared to the other firm's rates. But the quantities of sheet piling work, as included in the tender, were of such magnitude that if the quantities of extraction and re-use of sheet piles were excluded from tender evaluation, the offer of Messrs. National Project Construction Corporation would have become lower than that of Messrs. Forward Engineering Syndicate. Again the rates quoted by Messrs. Forward Engineering Syndicate for first driving were significantly higher than the rates for the second driving although the nature of physical work involved in both the operations was the same. This obvious inconsistency in the rate structure of Messrs. Forward Engineering Syndicate was known to the Railway Board. In fact the Tender Committee had been asked to go into the analysis of all the rates offered by this firm with a view to judge their reasonableness. But as the firm declined to give any analysis of the structure of its rates for sheet pile work, the Tender Committee could not form any accurate judgment as to the reasonableness of the rates and therefore concluded that the decision might have to be taken on the basis of the reasonableness of the "overall value" of the tenders. The Committee cannot but express surprise at the manner in which the case was dealt with both by the Administration and the Railway Board.

1.189. According to the Audit para, the Railway Administration had maintained all along in this case that the tender had to be decided on the overall value and not on itemised rate basis. This decision of the Administration was not only contrary to the instructions issued by the Ministry of Railways in 1963 in regard to evaluation and consideration of tender documents but would appear to have been taken to accommodate this particular firm as the rate structure of the sheet piling work was such that the contractor derived undue benefit on the abandonment of extraction of sheet piles.

1.190. Another serious irregularity that came to notice was that amounts recovered from the firm towards the cost of material for temporary steel works were refunded to the firm prematurely, even before the entire material had been returned to the Railway Administration. This reimbursement was contrary to the provisions of the

contract and has resulted in unwarranted benefit to the contractor to the extent of Rs. 1.40 lakhs in the form of interest. As to the reasons why premature refund was allowed even before the contractor had returned the materials, the explanation given by the Railway Board is very interesting. The Board has stated that, as per the provision in the agreement, the work was scheduled to be completed by 5th March, 1977. But extensions were granted for reasons beyond contractor's control and if reimbursement had not been made in these circumstances simply on the plea that materials had not been returned, a rigid application of the clause would have worked as penalty for no fault of his own and would have put the contractor to severe hardship. The Committee fail to understand why the Railway Administration was so concerned to look after the interests of the contractor even at their own cost. Although the contractor has been paid back his money, he has yet to return some of the materials in good condition. Value of steel materials yet to be returned was estimated to be Rs. 13.17 lakhs. The Committee would like to know whether the materials in question have since been returned by the contractor and if not what steps have been taken to get them back or recover the cost in lieu thereof.

1.191. Yet another irregularity noticed in the execution of the work by the contractor was the extra payment made to him on account of splicing (joining) of sheet piles. It is noted that the contract stipulated only the rates for driving sheet piles. It neither indicated the lengths in which the sheet piles would be supplied nor provided a separate item of work for splicing (jointing) of sheet piles to make them of the desired lengths. During the execution of the work, the firm raised a dispute stating that its rates for driving sheet piles were not inclusive of the cost of splicing, for which it should be paid separately. Subsequently when the matter was referred to arbitration the Railway Administration had contended that splicing was inherent in this item of work and therefore the rates quoted by the firm for driving sheet piles were inclusive of splicing required. The Railway Administration's contention was not accepted by the Joint Arbitrators (who were Railway Officers), who gave an award in favour of paying the firm for splicing as a non-scheduled item of work. The Committee would like to know why this award was not challenged by the Railway Administration who had earlier held that splicing was inherent and hence included in the rate for driving sheet piles.

1.191A. For payment to the firm for this non-scheduled item of work, the Railway Administration worked out a rate of Rs. 553.81 per joint, which was considered reasonable on the basis of a work

study conducted by the Engineer-in-charge. This rate, at which the payment was made to the contractor, was however, much higher than the rate paid for similar nature of work in an adjoining Contract Section. It has been calculated by Audit that the extra benefit thus derived by the firm on this account works out to Rs. 5.50 lakhs. The Railway Administration's contention that the rates for splicing in Contract Section 2 and Contract Section 4A were not comparable is hardly tenable for the reason that the nature of the work involved was more or less the same. The only conclusion that can be drawn is that in this case also the rates, though stated to be based on actual work study, were so fixed that these resulted in undue benefit to the contractor.

1.192. Another point which only reinforces the suspicion that the Railway Administration had a soft corner for this particular firm, relates to the awarding of the contract for construction of diaphragm walls instead of sheet piling in the same Contract Section 2. The Committee find that on 21st November, 1977, when 73.5 per cent of sheet piling had already been done the firm M/s. Forward Engineering Syndicate wrote to the Railway Administration that it had been verbally intimated by the Administration that it proposed to have the balance portion done by diaphragm wall method and in that event the firm would not prefer any claim for reduction in the quantity of work. The financial implications of this proposal were worked out by the Administration in November 1977 and in January, 1978 the Chief Engineer decided that limited tenders for the work should be invited from only two firms readily available in the field at Calcutta. Against the limited tenders invited in January 1978 one firm, Messrs. Rodio Hazrat, who were holding a joint contract with Messrs. Forward Engineering Syndicate in Contract Section 3A, quoted and the work was awarded to this firm at a cost of Rs. 25 lakhs on single tender basis. When asked how the rates quoted by this firm for the work in Contract Section 2 compared with the rates for similar works in other Contract Sections, the Railway Board stated that the rates quoted by this firm worked out slightly higher than the average rates quoted for such works in other sections. The quickness with which the proposal for change in methodology was conceived and the actual work was awarded on single tender basis to a firm having relations with Messrs. Forward Engineering Syndicate gives rise to a suspicion about the bona fides of the deal.

1.193. From the foregoing paragraphs, it is clear that the changes in the scope of the work and the construction methodology as also the extra contractual payments sanctioned during the execution of the contract resulted in undue benefit accruing to the contractor.

Some of the decisions taken from time to time appear to be of dubious nature. The Committee deplore the indulgence shown to this particular firm all along. They urge that the whole matter may be placed before the Minister for Railways for early investigation by a high powered body independent of the Railway Board with a view to fixing responsibility and taking necessary action against those found guilty. The Committee would like to be apprised of the action taken in this behalf.

1.194. After reviewing the progress of the work in the Metro Railway Project, Calcutta, the Committee would like to make the following further recommendations:

- (i) In heavy investment-oriented projects like Metro Railway Project, where indigenous expertise is not available, global tenders should be called for as a matter of general policy so as to judge the competitiveness and reasonableness of the prices quoted by the tenderers;
- (ii) Where projects of such national importance are once sanctioned adequate funds should be provided in time and it must be ensured that the progress of such projects do not suffer for want of funds. The Committee would like that the progress of such projects should be watched by a monitoring cell in the concerned Ministry and corrective measures be taken in time to ensure that the project is completed within target date.
- (iii) A separate project appraisal report in respect of Metro Railway should be placed before Parliament every year. Such report should indicate clearly the physical and financial targets, progress made during the year and the reasons for delay, non-fulfilment of targets etc. This Report should be made available before the debate on demands for grants relating to the Ministry of Railways so that Parliament is kept fully apprised of the progress of the project.
- (iv) While awarding contracts for such major works it should be ensured that the parties to whom the contracts are awarded have the proven expertise and capacity to complete the work in time. Firm contracts for such works should be entered into and no deviation should be allowed thereafter.

- (v) For such critical projects, Government must ensure timely supply of essential inputs like steel and cement. The Ministries of Steel and Industry should earmark special quotas of steel and cement for the project after discussing the schedule of requirements with the Ministry of Railways. If matching steel is not available indigenously, necessary arrangements for the importation of the same should be made to ensure completion of work as per schedule.

1.195. It has been brought to the notice of the Committee by the Convener of the Working Group III (Railways and P&T) that extensive damage has been caused to the buildings on both sides of the road where tunnels for the Metro Railway are being dug. This has created an apprehension in the minds of the residents of the area. The Committee desire that the matter should receive the immediate attention of the Ministry of Railways (Railway Board) and necessary corrective measures in the matter be taken so as to allay the apprehension of the people of the area.

NEW DELHI;
August 24, 1981
Bhadra 2, 1903 (Saka)

SATISH AGARWAL,
Chairman,
Public Accounts Committee.

APPENDIX I

(See part 1.173A)

Copy of the letter dated 11-8-81 from Sri Sunil Maitra, M.P. addressed to Chairman PAC re: Metro Railway, Calcutta.

The Chairman,

Public Accounts Committee,

New Delhi

Dear Sir,

Re: Extensive damage caused to the buildings in connection with construction of Metro Railways in Calcutta.

You will please recall that a few days back I alongwith another Member of the Working Group of the P&T Railways undertook an inspection tour of the construction sites in Calcutta to see for ourselves and to ascertain the reported damage caused to the buildings overground in the course of construction of the underground Metro Railways Project.

In North Calcutta in the Belgachia area towards the western end of Belgachia Bridge currently a tunnel is being bored underground. Here the method used is shield tunneling. We have been told that the shield is the equipment which is propelled through the ground by means of hydraulic jacks. We are also told that for large railway tunnels this particular method is being used for the first time in this country. A portion of the underground tunnel by this method has already been constructed. But here there was no building overground. As soon as the tunnel underground reached a spot where overground buildings stood, the very first two buildings, which happened to be the quarters of the railway workers, were severely damaged. The floor of one of the quarters with asbestos roofing first subsided. Immediately thereafter the family living therein vacated the quarter out of panic. Within a short time thereafter the roof of the quarter collapsed. Similarly,

another adjoining building has been damaged, but the ceiling is still holding on. The engineers are trying to ascertain the reasons for such collapse of the building.

We are told that the underground tunnel would proceed in a westerly direction. On enquiry we are told that as and when the tunnel would move ahead the buildings overground with weak foundation or in a dilapidated condition might collapse. This undoubtedly is a serious thing. In South Calcutta in the Bhowanipur area where cut and cover method is being resorted to, extensive damage has been reported. Special mention must be made of the damage caused to Asutosh College and Chittaranjan Hospital buildings besides several other buildings on both sides of the road where cut and cover method is being applied. Of the damage that we inspected most serious are the ones that have taken place in the Asutosh College building. It seems, the foundation of the building has been damaged with the result that cracks and fissures have appeared in very many parts of the college building. Actually three colleges are run from the same building, one in the morning, the second in the noon and third one in the evening. Round about 6000 students study there from early in the morning till about 10 O'Clock in the night. When we inspected the building the college authorities were present. They expressed their apprehension that since the foundation of the building has been very badly damaged, anything may happen any day, which may assume the proportion of a disaster. The Chief Engineer of the Metro Railways and other high officials who accompanied us, however maintain that there was no ground for such an apprehension although one of the Metro Railways Engineers in the party accompanying us did admit after a lot of questioning that the foundation had tilted not beyond half an inch. What such admission means in practice is for the experts to ascertain and elaborate. To us, however, this particular statement together with the cracks and fissures in the building that we witness for ourselves is ominous indeed. As a matter of fact, since then I have received a letter from the Principal of Asutosh College together with a memo from the Executive Engineer, 24-Parganas, South Division, Construction Board Directorate of the Public Works Department of the Govt. of West Bengal, which states that "the College Building is heavily damaged due to foundation failure". This is a very serious situation. Both Shri Satish Prasad Singh and myself are of the opinion that the risk of running three colleges from the same building, where 6000 students prosecute their studies daily and which has been suffering from "foundation failure" is too great to be glossed over. I am, therefore, submitting this note for the attention of the entire Public

Accounts Committee. I am also enclosing the copy of letter addressed to me by the Principal, Asutosh College, for the perusal of the Committee. I would request you to please take this note into cognizance while dealing with the Report on the Metro Railways, which is scheduled to be finalised by the Committee in the sitting on the 13th August, 1981.

Yours faithfully,

Sd/-

SUNIL MAITRA

Convener

P. & T. and Railway Working Group.

APPENDIX II

SUMMARY OF RECOMMENDATIONS

S. No.	Para No.	Ministry concerned	Recommendation
1	1.174	Railway	<p>The Committee note that Calcutta's Metro Railway Project was sanctioned by the Railway Board at an estimated cost of Rs. 140.30 crores on 1st June, 1972 and the construction work was formally inaugurated by the Prime Minister on 29 December, 1972. According to the Original target, the project was to have been commissioned by 1978 as envisaged in the Project Report of 1971. Although more than three years have elapsed, the country's first underground railway is nowhere near completion. The Committee are distressed to find that up-to-date progress on the project till 28 February, 1981 was only 27.5 per cent. The work is now proposed to be completed in two phases; the first phase that covers the distance from Dum Dum to Shyambazar and Tollyganj to Esplanade is expected to be completed before the Sixth Plan period is over i.e. by 31 March 1985. The second phase which will cover the completion of the track from Shyambazar to Esplanade and the opening of the whole line is expected to be completed by 31 March 1987. If the present pro-</p>

gress of work is any indication, the Committee cannot but express their scepticism about the completion of the entire project even by March 1987 as is now envisaged.

Considering the importance of the project for the city of Calcutta and the disruptions and inconveniences for the people involved during the execution of such a project in a thickly populated area, the Committee cannot but reach the conclusion that there has been inordinate delay in progressing the project. Apart from other things the delay has also pushed up the cost of the project several fold. The Committee were shocked to learn that the main reason for the delay in completing this project was lack of funds. The Committee fail to appreciate why after having taken a well considered decision to go in for such a vital project, adequate finances were not made available to the project authorities for completing the work in time. The Committee have no doubt that the allocation of funds for the project has been made in relatively small doses over the years. Between 1972-73 and 1980-81, the total projected requirements of funds worked out to Rs. 140.30 crores. Against these projections, the total amount allotted and actually spent was only Rs. 88.42 crores. That the amount actually spent bears only an insignificant proportion to the total estimated cost of the project is clear from the fact that against the estimated cost of Rs. 140.30 crores as envisaged in the Project Report, the project

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was now estimated to cost more than Rs. 520 crores on 1980-81 level of prices. Further escalation cannot be ruled out keeping in view the present trend of prices. This is a distressing state of affairs. The Committee desire that the matter may be reviewed at the highest level and at least now a time-bound schedule may be laid down for the completion of the project at the earliest. It should also be ensured that shortage of funds is not allowed to hamper the further progress of the project.

A disquieting feature that came to notice was that since the commencement of the work on Calcutta Metro Railway in 1972, as many as five General Managers had been appointed. From amongst the first four incumbents, who all retired on superannuation, two General Managers had short stints of about a year each while the third General Manager worked on the Metro Railway project for less than two years. Similarly as many as five Chief Engineers have been associated with the project from time to time. The Committee fail to understand why senior persons who are on the verge of retirement are selected for such important positions. The Committee have taken note of the statement of the Chairman, Railway Board that in the context of the extant rules of promotion etc. on the Railways it was not possible to overlook a senior man in the interest of continuity. The Committee nevertheless feel that it should be administratively possible to appoint General Managers or Chief Engineers who can continue on the job for a long time, preferably from the beginning of a project till the entire project is completed. Such practice will not only ensure continuity

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of administrative set-up but will also go a long way in imparting a sense of involvement and responsibility in the minds of the incumbents. Creation of ex cadre posts of General Managers especially for such a project which is being executed by the Railways on agency basis, could also be considered. The matter may be examined in depth to lay down proper guidelines for the future.

In regard to the technical know-how available in the country for the execution of metro railway project, the Chairman, Railway Board admitted that the Railways had 'zero experience' in this line. Further, even though 49 officers were sent abroad to have first hand knowledge of the methods of construction of underground Railways, none of them was required to make special studies of basic subjects like tunnelling in sub-soil conditions of Calcutta and sheet piling in particular. In the absence of such studies in the first instance, lots of difficulties had to be encountered; for example sheet piling had to be given up ultimately resulting in extra expenditure. The Committee are surprised to note that out of 49 officers sent abroad 16 officers were not directly concerned with the Metro Railway and 7 officers were transferred out of the Metro Railway and are at present not working in the project. This has resulted in gross wastage of public money and also wastage of the expertise gained by them and no benefit accrued to the project as a result of this visit. The Committee would like to express

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their strong dissatisfaction at this wrong selection of officers being sent abroad to have first hand knowledge of the methods of construction of underground railways.

5 1.177A do Surprisingly, the question of inviting global tenders for the construction work was not considered. The construction work in various Contract Sections was entrusted to the local construction firms who had no prior experience of this type of work. It is relevant to recall that while dealing with the tenders for contract Section 2 in 1973, the Tender Committee had *inter alia* observed: "As no Indian firm with experience of MRTS construction in a city is available and it has not been considered necessary to invite any global tender, the choice has necessarily to be made from amongst firms who have tendered for this work inspite of the scepticism inherent in having to entrust the very first work of its kind to a firm which does not have any direct experience of MRTS Subway work." Since the construction of underground railway was the first project of its kind to be undertaken in the country and the Railways had zero experience in this line and even though Russian collaboration had been sought in drawing up the project report, the question why global tenders were not invited for construction work calls for proper explanation.

6 1.178 do The Committee are of the view that by inviting global tenders, the Administration could have at least a better idea of the reasonableness and competitiveness of the rates quoted by various tenderers, particularly when there was no precedent for rates as the

work was being done for the first time. It is interesting to note that for the contract Section 2, the estimated value of work was originally shown as Rs. 175 lakhs in the tender documents whereas the value of the accepted tender was Rs. 259.92 lakhs. This tender was accepted because it was the lowest offer. Otherwise the Railways had no means to consider the competitiveness and reasonableness of the rates quoted by the lowest tenderer. This is by no means a happy state of affairs. The Committee wish the Administration had been more circumspect and careful in preparing detailed estimate before accepting the tenders.

Another important point that struck the Committee was the absence of a provision in the works contracts for giving a price preference to public undertakings in the matter of award of such contracts. The Committee were informed that the original orders for price preference for the Public Undertakings covered only stores contracts and no price preference was prevailing for 'works' tenders during 1973 in favour of Government enterprises though as pointed out by the Financial Commissioner Railways during evidence 'the spirit of that (stores contracts) could be applied to (works) contracts also'. With effect from April, 1981 the Ministry of Railways are stated to have intimated the General Managers of the Railways that price preference for Government enterprises will henceforth be applicable in cases of "works" contracts also.

The Committee desire that specific instructions on the subject should be issued by the Ministry of Finance (Bureau of Public Enterprises) and circulated to all Ministries and Departments for compliance.

1.180. The Committee find that the Metro Railway Administration invited open tenders for construction of sub-way structures to form sub-way tunnels for carrying railway lines in Contract Section 2 between Dum Dum and Belgachia stations at an estimated cost of Rs. 175 lakhs. Out of the seven firms which quoted against the tenders the offers of firm 'A' (M/s. Forward Engineering Syndicate, Calcutta) and firm 'B' (M/s. National Projects Construction Corporation Ltd.—a public sector undertakings) were found in order. The offer of firm 'A' which was lowest in terms of value was accepted as this was considered "reasonable taking the tender as a whole". The difference between the offers of firm 'A' which was accepted and firm 'B' which could not be accepted was only Rs. 9.61 lakhs i.e. about 4 per cent more than the accepted offer of Rs. 65.19 lakhs of firm 'A'. If the price preference provision had been invoked and the contract had been awarded to the firm 'B'—the public sector undertaking—much of the extra expenditure and delay involved in dealing with firm 'A' could have perhaps been avoided. Even otherwise, as the difference in the rates quoted by the firms 'A' and 'B' was insignificant and as the railway administration have powers to accept the higher offer in any deserving case, the railway administration could have accepted the offer of firm 'B' particularly when it was a public sector undertaking and had better accountability.

The Committee's scrutiny of the execution of works by firm 'A' in Contract Section 2 reveals several instances of undue concessions and favours shown to the contractor namely M/s. Forward Engineering Syndicate, Calcutta. These cases are discussed in the subsequent paragraphs.

1.181. It is seen that the contract entered into with M/s. Forward Engineering Syndicate, Calcutta in March, 1974 for sub-way structure works between Dum Dum and Belgachia Stations stipulated completion of the entire work within 36 months i.e. by 5th March, 1977. However, the work from Km. 1.118 to Km. 1.452 (Phase I) was to be given priority and completed in 18 months i.e. by 5th September, 1975. According to the Audit Paragraph the time was to be the essence of the contract, which was a firm price contract and no escalation was permissible. The Committee find that in September, 1975 when the progress on the work was only 18 per cent, the firm wrote to the Railway Administration asking for increase in rates stating *inter alia* that the prices had increased by more than 40 per cent since the award of the contract and it was a mistake on its part to have quoted firm rates for such a costly venture. The Railway Administration initially held that since the contract was a 'firm price' one, the firm's claim was extra contractual and therefore, the Railway Administration had no contractual obligation to grant any enhancement in the accepted rates. It

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further held that the increasing trend of price indices was clearly discernible even at the tender stage and as the firm did not quote any escalation clause in the tender, nor did it insist for its introduction at the stage of negotiations, its rates must have included sufficient cushion to cover market fluctuations. However, as the firm had been repeatedly representing to the Railway Board and the Minister of Railways it was ultimately recommended by the Railway Administration to grant a price escalation subject to a ceiling limit of 15 per cent of the net value of the contract "to meet the ends of justice" although the firm's claim for escalation was not contractually tenable and the Railway Administration had initially rejected the firm's claim outright.

10. 1.182 do.

Not only the Railway Board agreed to the firm's claim for escalation, which had not been provided for in the contract, the Railway Board also authorised payment of Rs. 10 lakhs on an *ad hoc* basis, as requested by the firm, to be adjusted against the extra contractual amount that might be found due to it by way of escalation. The Committee find that this *ad hoc* payment was authorised without a specific finding that an amount not less than Rs. 10 lakhs had become due as escalation for reasons beyond the contractor's control. The *Ad hoc* payment was made in April, 1979 but no exercise had been made till April, 1980 to assess the exact amount due to the firm by way of escalation.

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Why this indulgence was shown to this firm alone is intriguing particularly in view of the fact that when the contractor in Con-

tract Sections I & II which were also firm price contracts, requested for an escalation, their requests were summarily rejected by the Railway Administration. One of the main reasons adduced by the Railway Board for agreeing to the firm's request for escalation was that "in order to prevent the contractor from abandoning the work, he had to be dealt with fairly; the Railway could ill afford cessation of the work at that stage, as it would have delayed prototype trials and resulted in continued inconvenience to public." Unfortunately, the work was still dragging on and had not been completed even after four years of the original date of completion. Further if the amount of escalation allowed to the firm is taken into consideration, the firm's offer became costlier *vis-a-vis* the public sector undertaking's offer which had been rejected having been considered costlier. The Committee get the impression that this firm had quoted firm and lower prices only to secure the contract and after having secured the contract arranged to get the Railway Board to agree to an escalation which cost the exchequer in additional expenditure of Rs. 10 lakhs.

12 1.184 Railways

As stated earlier time was to be the essence of this particular contract as the work had to be completed within a scheduled time-frame to enable prototype trials being held in the section. The firm however approached the Railway Administration from time to time for seeking extensions for completion of the work which were

readily agreed to. Instead of holding the contractor responsible for not completing the work within the stipulated period, the firm was allowed to get away with extensions of time as also additional payments in the form of escalation. Liberal extensions of time allowed to the contractor led to escalation of costs which when claimed by the contracting firm was also liberally considered and paid. Looking to the circumstances as a whole, it is clear that the Railway Board did not take adequate steps to safeguard the public interest.

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The Committee find that according to the tender conditions the sub-way structures were to be constructed *inter alia* by using sheet piles as support walling. This methodology had been conceived as per project report, which envisaged extraction of sheet piles and re-using them. Actually sheet pile work consisted of three different operations namely first driving, extraction and redriving of extracted sheet piles and the rates contracted for sheet piling work were joint rates for all the three operations. It is seen that out of the seven firms which had quoted against the tender, the offer of M/s. Forward Engineering Syndicate, Calcutta was in accordance with the tender conditions stipulated by the Railway Administration and after negotiations the revised negotiated offer of this firm at a total value of Rs. 259.92 lakhs was accepted by the Railway Board in January, 1974. During the execution of the contract, the scope of work was so modified that certain items of work required to be performed by the contractor were dis-

pensed with. However the rates settled with the contractor were neither modified nor renegotiated with the result that undue benefit accrued to him.

According to the Project Report prepared in 1971, no difficulty on the extraction of sheet piles and reusing them was anticipated. However at the time of inviting tenders in November, 1972 the technical advice available was against it. The Committee observe that the Soviet Consultants had stated during the discussions held in December 1971 that, in cases where sheet piles were driven close to structures and damages to structures were anticipated, it would be wise to leave the sheet piles buried in the ground as their extraction might lead to ground loss and settlement of buildings. Despite this expert advice and the information available in technical literature that in the case of deep excavations sheet piles cannot be recovered due to deformation, as also absence of any studies by the Railway Administration regarding the feasibility of extraction of sheet piles under the Calcutta soil conditions, the Railway Administration invited tenders in November 1972, stipulating extraction of driven sheet piles in Contract Section-2 which lay in one of the most crowded localities of Calcutta. Again, in June, 1974 another Soviet Team stated that in USSR sheet piles were not extracted. Though the letter of acceptance had been issued to the contractor in March, 1974 and the work of driving sheet piles had not started by June 1974 but the Administration took no

action either to modify the scope of the contract by deleting the work of extraction of driven sheet piles and carrying out necessary changes in the conditions of the contract or to re-negotiate the rates for this item of work keeping in view the earlier discussions about higher rates quoted by this firm for first driving of piles. Soon after the driving of the sheet piles the contractor started representing that the extraction of the sheet piles was not feasible. The Audit para brings out that after examining the contractor's repeated submissions regarding non-feasibility of extraction of sheet piles, the Chief Engineer of the Metro Railway proposed in March, 1977 that the sheet piles already driven be left in position as the extraction and reuse of sheet piles was impracticable, even though in March, 1976, the Engineer-in-Charge had observed that the method of extraction adopted by the contractor, though slow, was practical and safe. The Committee fail to understand why in the face of overwhelming opinion against it, the Railway Administration decided to continue with extraction and reuse of sheet piles. That this was technically not a sound proposition has now been conceded by the Railway Board and the Committee find that in a subsequent tender, item for extraction of sheet piles was not provided for the same reason.

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The decision regarding abandonment of the extraction of sheet piles had serious financial implications, which were unfortunately overlooked by the Railway Administration. The rates of payment for sheet pile driving were inclusive of the cost of sheet piles and were based on the assumption that the sheet piles would be ex-

tracted and reused. However, when the extraction of sheet piles was abandoned, the rate structure for driving of sheet pile was not reviewed and revised, thereby giving the contractor undue financial benefit, which has been calculated by Audit to amount to Rs. 7.45 lakhs. Further this change in the scope of the work led to vitiation of the original tenders as it resulted in operating on the 1st driving rate for the whole work done by sheet piles. After the Administration decided to leave the sheet piles buried in the ground, the occasion for second driving for which a lower rate had been quoted by the contractor, did not arise but the payments for the entire sheet pile work were made at the higher rate applicable to first driving.

Another serious flaw that came to notice was the defective method of evaluating the tender quotations in this case. It has been observed that so far as sheet piling works were concerned, the rate structure of M/s. Forward Engineering Syndicate, Calcutta was lower than that of the next higher tenderer namely M/s. National Project Construction Corporation. However this firm's rates for other bulk items of work such as earth work in excavation, RCC works etc. were much higher as compared to the other firm's rates. But the quantities of sheet piling work, as included in the tender, were of such magnitude that if the quantities of extraction and re-use of sheet piles were excluded from tender

evaluation, the offer of M/s. National Projection Construction Corporation would have become lower than that of M/s. Forward Engineering Syndicate. Again the rates quoted by M/s. Forward Engineering Syndicate for first driving were significantly higher than the rates for the second driving although the nature of physical work involved in both the operations was the same. This obvious inconsistency in the rate structure of M/s. Forward Engineering Syndicate was known to the Railway Board. In fact the Tender Committee had been asked to go into the analysis of all the rates offered by this firm with a view to judge their reasonableness. But as the firm declined to give any analysis of the structure of its rates for sheet pile work, the Tender Committee could not form any accurate judgement as to the reasonableness of the rates and therefore concluded that the decision might have to be taken on the basis of the reasonableness of the "overall value" of the tenders. The Committee cannot but express surprise at the manner in which the case was dealt with both by the Administration and the Railway Board.

According to the Audit para, the Railway Administration had maintained all along in this case that the tender had to be decided on the overall value and not on itemised rate basis. This decision of the Administration was not only contrary to the instructions issued by the Ministry of Railways in 1963 in regard to evaluation and consideration of tender documents but would appear to have been taken to accommodate this particular firm as the rate

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structure of the sheet piling work was such that the contractor derived undue benefit on the abandonment of extraction of sheet piles.

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Railways

Another serious irregularity that came to notice was that amounts recovered from the firm towards the cost of material for temporary steel works were refunded to the firm prematurely, even before the entire material had been returned to the Railway Administration. This reimbursement was contrary to the provisions of the contract and has resulted in unwarranted benefit to the contractor to the extent of Rs. 1.40 lakhs in the form of interest. As to the reasons why premature refund was allowed even before the contractor had returned the materials, the explanation given by the Railway Board is very interesting. The Board has stated that, as per the provision in the agreement, the work was scheduled to be completed by 5th March, 1977. But extensions were granted for reasons beyond contractor's control and if reimbursement had not been made in these circumstances simply on the plea that materials had not been returned, a rigid application of the clause would have worked as penalty for no fault of his own and would have put the contractor to severe hardship. The Committee fail to understand why the Railway Administration was so concerned to look after the interests of the contractor even at their own cost. Although the contractor has been paid back his

money, he has yet to return some of the materials in good condition. Value of steel materials yet to be returned was estimated to be Rs. 13.17 lakhs. The Committee would like to know whether the materials in question have since been returned by the contractor and if not what steps have been taken to get them back or recover the cost in lieu thereof.

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Yet another irregularity noticed in the execution of the work by the contractor was the extra payment made to him on account of splicing (jointing) of sheet piles. It is noted that the contract stipulated only the rates for driving sheet piles. It neither indicated the lengths in which the sheet piles would be supplied nor provided a separate item of work for splicing (jointing) of sheet piles to make them of the desired lengths. During the execution of the work, the firm raised a dispute stating that its rates for driving sheet piles were not inclusive of the cost of splicing, for which it should be paid separately. Subsequently when the matter was referred to arbitration the Railway Administration had contended that splicing was inherent in this item of work and therefore the rates quoted by the firm for driving sheet piles were inclusive of splicing required. The Railway Administration's contention was not accepted by the Joint Arbitrators (who were Railway Officers), who gave an award in favour of paying the firm for splicing as a non-scheduled item of work. The Committee would like to know why this award was not challenged by the Railway Administration who had earlier held that splicing was inherent and hence included in the rate for driving sheet piles."

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Railways

For payment to the firm for this non-scheduled item of work, the Railway Administration worked out a rate of Rs. 553.81 per joint, which was considered reasonable on the basis of a work study conducted by the Engineer-in-charge. This rate, at which the payment was made to the contractor, was however, much higher than the rate paid for similar nature of work in an adjoining Contract Section. It has been calculated by Audit that the extra benefit thus derived by the firm on this account works out to Rs. 5.50 lakhs. The Railway Administration's contention that the rates for splicing in Contract Section 2 and Contract Section 4A were not comparable is hardly tenable for the reason that the nature of the work involved was more or less the same. The only conclusion that can be drawn is that in this case also the rates, though stated to be based on actual work study, were so fixed that these resulted in undue benefit to the contractor.

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Another point which only reinforces the suspicion that the Railway Administration had a soft corner for this particular firm, relates to the awarding of the contract for construction of diaphragm wells instead of sheet piling in the same Contract Section 2. The Committee find that on 21st November, 1977, when 73.5 per cent of sheet piling had already been done the firm M/s. Forward Engineering Syndicate wrote to the Railway Administration that it had been

verbally intimated by the Administration that it proposed to have the balance portion done by diaphragm wall method and in that event the firm would not prefer any claim for reduction in the quantity of work. The financial implications of this proposal were worked out by the Administration in November 1977 and in January, 1978 the Chief Engineer decided that limited tenders for the work should be invited from only two firms readily available in the field at Calcutta. Against the limited tenders invited in January 1978 one firm, M/s. Rodio Hazrat, who were holding a joint contract with M/s. Forward Engineering Syndicate in Contract Section 3A, quoted and the work was awarded to this firm at a cost of Rs. 25 lakhs on single tender basis. When asked how the rates quoted by this firm for the work in Contract Section 2 compared with the rates for similar works in other Contract Sections, the Railway Board stated that the rates quoted by this firm worked out slightly higher than the average rates quoted for such works in other sections. The quickness with which the proposal for change in methodology was conceived and the actual work was awarded on single tender basis to a firm having relations with M/s Forward Engineering Syndicate gives rise to a suspicion about the bona fides of the deal.

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From the foregoing paragraphs, it is clear that the changes in the scope of the work and the construction methodology as also the extra contractual payments sanctioned during the execution of the contract resulted in undue benefit accruing to the contractor. Some of the decisions taken from time to time appear to be of dubious

nature. The Committee deplore the indulgence shown to this particular firm all along. They urge that the whole matter may be placed before the Minister for Railways or early investigation by a high powered levelly independent of the Railway Board with a view to fixing responsibility and taking necessary action against those found guilty. The Committee would like to be apprised of the action taken in this behalf.

Railways

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After reviewing the progress of the work in the Metro Railway Project, Calcutta, the Committee would like to make the following further recommendations:

(i) In heavy investment—oriented projects like Metro Railway Project, where indigenous expertise is not available, global tenders should be called for as a matter of general policy so as to judge the competitiveness and reasonableness of the prices quoted by the tenderers;

(ii) Where projects of such national importance are once sanctioned adequate funds should be provided in time and it must be ensured that the progress of such projects do not suffer for want of funds. The Committee would like that the progress of such projects should be watched by a monitoring cell in the concerned Ministry and corrective

measures be taken in time to ensure that the project is completed within target date;

(iii) A separate project appraisal report in respect of Metro Railway should be placed before Parliament every year. Such report should indicate clearly the physical and financial targets, progress made during the year and the reasons for delay, non-fulfilment of targets etc. This Report should be made available before the debate on demands for grants relating to the Ministry of Railway so that Parliament is kept fully apprised of the progress of the project;

(iv) While awarding contracts for such major works it should be ensured that the parties to whom the contracts are awarded have the proven expertise and capacity to complete the work in time. Firm contracts for such works should be entered into and no deviation should be allowed thereafter;

(v) For such critical projects, Government must ensure timely supply of essential inputs like steel and cement. The Ministries of Steel and Industry should earmark special quotas of steel and cement for the project after discussing the schedule of requirements with the Ministry of Railways. If matching steel is not available indigenously, necessary arrangements for the importation of the same

should be made to ensure completion of work as per schedule.

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Railways

It has been brought to the notice of the Committee by the Con-
vener of the Working Group III (Railways & P&T) that extensive
damage has been caused to the buildings on both sides of the road
where tunnels for the Metro Railway are being dug. This has
created an apprehension in the minds of the residents of the area.
The Committee desire that the matter should receive the immediate
attention of the Ministry of Railways (Railway Board) and necessary
corrective measures in the matter be taken so as to allay the ap-
prehension of the people of the area.