

Ex-Post Monitoring for Completed ODA Loan Projects

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Project Name: Indonesia "Rehabilitation of Diesel Railcars Project (Phase 1), Diesel Railcar Rehabilitation Project (Phase 2)"
(L/A No. IP-339, IP-470)

Loan Outline

Loan Amount/Disbursement Amount:	Total:	5,931 million yen/5,448 million yen
	Phase 1	4,819 million yen/4,477 million yen
	Phase 2	1,112 million yen/971 million yen
Loan Agreement:	Phase 1	July 1988
	Phase 2	December 1996
Loan Completion:	Phase 1	February 1999
	Phase 2	March 1999
Ex-Post Evaluation:		FY2000
Executing Agency:		Ministry of Transportation, Directorate General of Land Communication (DGLC)

Project Objective

By repairing diesel railcars and supplying parts for their maintenance, this project aims to reinforce rail transport capacity in the Jabotabek region and between other major cities, and thereby contribute to increase passenger revenues and railcar safety and comfort.

Consultant: Japan Railway Technical Service (JARTS) (Japan)

Contractor: Sumitomo Corporation (Japan), PT. Humpus Trading (Indonesia)

Overview of Results

Item	At time of Ex-post Evaluation	At time of Ex-post Monitoring
Effectiveness & Impact Effectiveness	(1) Operating status of rehabilitated railcars (operating rate) Through the project, necessary parts were provided and JICA dispatched experts to guide rehabilitation of 64 railcars (96 railcars were planned, but 32 railcars were removed from the project, and the scope was actually changed to 64 railcars). The status is as follows:	<div style="border: 2px solid black; padding: 5px; margin-bottom: 10px;"> Inadequate maintenance is a major cause of the deteriorating situation; only about 60% of the rehabilitated railcars (32 railcars) are operating. Passenger numbers are also falling, and one can say that the effectiveness has become lower compared to the time of ex-post evaluation. </div> (1) Operating status of rehabilitated railcars 1. Operating status (as of July 2006) The operating rate of rehabilitated railcars has fallen to about 62.7%. The falling operating rate due to poor maintenance is becoming a problem, with some railcars planned for disposal and nine railcars used as passenger cars with their broken engines, etc.

- Before project implementation: At the start of 1990, there were nearly 150 railcars. About 1/3 of these were operating.

- After project implementation: At time of ex-post evaluation (year 2000), there were at total 111 railcars. Of these, over 90 railcars were always able to operate, and over 85 railcars were actually operating.

(2) Improvement of transport capacity (passenger transport volume)

(a) 40 out of the 64 railcars were reallocated in 1998, calculating with 24 railcars that had already been reallocated by the previous year.

(b) The trend in railroad passenger numbers is as follows. The rehabilitated railcars are mostly utilized to provide passenger transport service in non-electrified sections of city outskirts. This is categorized as “Outskirts of other cities” in the table below. Passenger numbers were increasing until the time of ex-post evaluation. The project is seen to be contributing to improvement of passenger transport capacity.

<Trend in Railroad Passenger Numbers>

	1995	1996	1997	1998	1999
Jabotabek and outskirts	85.4 -	100.6 17.9%	105.1 4.4%	107.9 2.7%	117.7 9.1%
Outskirts of other cities	24.7 -	23.5 -5.0%	23.8 1.2%	28.9 21.3%	30.9 7.1%
Intercity rail (wide area)	31.2 -	30.1 -3.4%	30.7 2.0%	32.8 6.9%	38.7 17.8%
Total passengers	141.3 -	154.2 9.2%	159.6 3.5%	169.6 6.3%	187.3 10.4%

* Upper is annual passenger numbers (unit: million people), lower is growth over the previous year.

Table 1. Rehabilitated Railcar Operating Status (July 2006)

	Number of railcars	Categorized by operating status	
		SO	SGO
Operating normally	32	SO	SGO
Used as passenger car (without engine)	9		
Under periodic inspection	7		SGO
Overhaul	6		SGO
Undergoing rehabilitation again	6		SGO
Planned for disposal	4		
Total	64	SO 32	SGO 51
Operating rate (SO/SGO)	62.7%		

Source: Indonesian Railway LLC (PT. KAI below)

Note: SO = Number of railcars actually being operated

SGO = Number of railcars that can be operated

(2) Improvement of transport capacity (passenger transport volume)

Numbers of passengers transported by rehabilitated railcars continue to decline as shown in 1. below, “Outskirts of other cities.” Numbers have returned to the level before the project was implemented.

1. Rail Passenger Numbers

	2000	2001	2002	2003	2004
Jabotabek and outskirts	118.4 0.59%	121.5 2.62%	117.4 -3.37%	102 -13.12%	100.6 -1.37%
Outskirts of other cities	32.1 3.9%	25.4 -20.9%	23 -9.4%	26.2 13.9%	25.1 -4.2%
Intercity rail (wide area)	41 5.9%	40 -2.4%	35.5 -11.3%	25 -29.6%	24.3 -2.8%
Total passengers	191.6 2.3%	186.8 -2.5%	175.9 -5.8%	153.3 -12.8%	149.9 -2.2%

* Upper is annual passenger numbers (unit: million people), lower is growth over the previous year.

Source: PT. KAI

2. Number of diesel railcars operating (July 2006)

* From PT. KAI data

Large reasons for the decrease in passenger numbers appear to be: (a) Reduced number of operating railcars and trains due to poor maintenance, (b) Fewer operating trains due to the switch to a new type (electric type) of diesel railcars, so that the transport capacity has decreased temporarily. In view of the high demand of railway transportation in the urban metropolitan area and political view of air pollution policy against automobiles, the Ministry of Transportation is placing its future efforts on diesel electric railcars, which are lower with maintenance costs, planning to allocate 143 railcars by 2010. Still, the numbers of diesel railcars currently operating are as follows. The number of routes and trains operating has fallen by about 50%, compared to the year 2000 (16 routes, 114 trains running/day).

July 2006	Number of routes	Number of trains running per day
No. 1 Regional Division, Jakarta	-	-
No. 2 Regional Division, Bandung	2	19
No. 5 Regional Division, Semarang	2	9
No. 6 Regional Division, Yogyakarta	1	10
No. 8 Regional Division, Surabaya	2	18
Total	7	56

Source: PT. KAI

Impact

(1) Increase in passenger revenues
Improvement in passenger transport capacity is also reflected in increased revenues. (rehabilitated railcars are being utilized for passenger service in "Outskirts of other cities," as mentioned above for railroad passenger numbers)

	1995	1996	1997	1998	1999
Jabotabek and outskirts	25.9	37.2	43.3	47.0	54.1
	-	43.8%	16.4%	8.6%	14.9%
Outskirts of other cities	10.4	11.7	13.1	17.3	19.8
	-	12.6%	12.1%	32.0%	14.6%
Intercity rail (wide area)	306.2	382.9	442.6	607.3	823.1
	-	25.0%	15.6%	37.2%	35.5%
Total passengers	342.4	431.8	499.0	671.6	896.9
	-	26.1%	15.6%	34.6%	33.6%

(1) Increase in passenger revenues
Passenger numbers are in a downward trend, but due to effects of price rises, passenger revenues are increasing. However, growth is slowing in recent years, which appears due to:

(a) Reduced railcar operating rate, (b) Development of competing means of transport. In particular, the 2003 deregulation of the airline industry resulted in more short-distance air routes. This is seen to be connected to limited growth in passenger revenues for wide area intercity railroads.

	2000	2001	2002	2003	2004
Jabotabek and outskirts	68.7	91.7	118.9	156.4	169.1
	27.0%	33.5%	29.7%	31.5%	8.1%
Outskirts of other	26.7	28	31.5	71.1	75
	34.8%	4.9%	12.5%	125.7%	5.5%

* Upper is annual passenger revenues (unit: billion rupiah), lower is growth over the previous year
 * From PT. KAI data

cities					
Intercity rail (wide area)	981.8 14.7%	1,068.4 8.8%	1,251 17.1%	1,213.5 -3.0%	1,213.8 0.02%
Total passengers	1,077.2 15.8%	1,188.1 10.3%	1,401.5 18.0%	1,440.9 2.8%	1,457.9 1.2%

* Upper = annual passenger revenues (unit: billion rupiah), lower = growth over the previous year
 Source: PT. KAI

(2) Other
 The rehabilitation performed resulted in increased railcar safety, comfort, and convenience, including decreased travel time.

(2) Other
 1) Increased convenience
 The reduced travel time and cost of diesel railcars is being sustained.
 Example: Comparison of required time and fares for sections where diesel railcars operate

(Unit: fare = rupiah)

Sample section	Surabaya - Sidoarjo (35km)		Padalarang - Cicalengka (42km)	
	Bus	Railroad	Bus	Railroad
Time	2 hours	1 hour	About 1.75 hours	About 50 minutes
Fare	9,000	5,000	8,448	2,979

Source: Questionnaire survey of passengers
 * 1 dollar = about 9,000 rupiah (about 115 yen).
 * The Surabaya Kota – Jombang route which operated at the time of ex-post evaluation is not currently operating.
 In passenger interviews (50 people), about 58% gave price as the major reason (advantage) for using diesel railcars, 29% said reduced travel time.

2) Increase in safety and comfort
 An increase in safety from doors closing while moving was mentioned by the ex-post evaluation, and this is not thought to have changed since before the project implementation. Open doors are mostly due to issues like crowded conditions and humidity, not due to breakdown in railcars. Doors were open in almost all diesel railcars that were actually traveled in on-site, and in other railcars observed. Similar comments were derived from questionnaire surveys of PT. KAI and passengers, so it appears that increased safety through closing of doors is not being attempted.

Sustainability

The quality of regular maintenance, insufficient capacity to perform heavy repairs, and lack of spare parts due to poor financial situation are accelerating the deterioration of railcars. This is creating concerns about sustainability and the operation and maintenance situation.

(1) Technical capacity

The Railcar Section is the organization that performs maintenance. It performs maintenance by combining inspections at 1, 2, 3, 6, and 12-month intervals, depending on each railcar's status. Required numbers of staff, technical level, and supply of materials and equipment are not problems, but it is difficult for the Railcar Section to handle the 12-month inspection, so that is done by the railcar repair yard under the direct management of PT. KAI.

(2) Structural Organization

PT. KAI (Indonesian Railway Corporation) was corporatized (privatized) in 1999 with 100% of its stock held by the government, from its previous form as Perum KA (Indonesian Railway Public Corporation). Each department of PT. KAI is the organization handling maintenance, with actual work such as regular inspections done by the Railway Section.

(3) Financial status

A relatively stable budget has been secured for operation and maintenance of the project's railcars, and no particular concerns have arisen regarding the financial aspect. The following table shows the PT. KAI profit and loss situation. Before privatization, profitability would have worsened without subsidies, and it would have recorded losses. However, after privatization, subsidies from the government fell below 60% of those the previous year, but an operating profit was recorded. This is seen to be mostly a result of reduced

(1) Technical capacity

There is no change in the maintenance structure managed by the Railcar Section since the time of the ex-post evaluation. A training center which was established in Bandung and Yogyakarta is training staff. Vocational high school graduates comprise 98% of staff. Technical training is provided designed to raise technical levels, with training provided after joining the company, and by type of job. Maintenance work on diesel railcars is not new technology, and there are not large problems with basic knowledge or training details. However, the level of actual maintenance work is low (refer to (4) Operation and maintenance situation, below).

The number of staff in each region is as follows. According to PT. KAI, there are no large changes in structure and staff numbers since the ex-post evaluation, so no particular problems are seen regarding scale.

Table Number of Railcar Section Staff, by Region

Area	Staff
No. 1 Regional Division, Jakarta	50
No. 2 Regional Division, Bandung	60
No. 5 Regional Division, Semarang	55
No. 6 Regional Division, Yogyakarta (Solo)	30
No. 8 Regional Division, Surabaya	70
Railcar repair yard (Yogyakarta)	600

Source: PT. KAI

(2) Structural organization

There are no particular changes. The Railcar Section of PT. KAI performs railcar maintenance. But as described below in (4) describing operation and maintenance, due to insufficient capacity in the repair yard, heavy repairs and second rehabilitation is handled by being contracted out to PT. INKA (Indonesian Railway Industry). (* PT. INKA is a railcar manufacturing company, established with full government ownership in 1981)

(3) Financial status

Operating revenues are increasing, but an operating loss is recorded almost every year. The unprofitable economy class comprises about 80% of passenger numbers. Business class (16% of all passenger numbers) generates about 80% of profit, and the structure applies this profit towards costs of economy class. The exact operation and maintenance budget amount is unclear. But according to PT. KAI, it cannot perform sufficient maintenance with the current budget and government subsidy, while economy class fares are regulated (low).As the budget

general and administrative expenses through streamlining of the business.

Profit/Loss Status (Unit: million rupiah)	Before← privatization		→After privatization
	1997	1998	1999
Operating revenues	726,359	937,976	725,189
Transport revenues:			
(1): passengers	498,981	671,560	562,874
(2): freight	200,573	217,453	162,315
Incidental revenues	23,425	40,413	n.a.
Other revenues	3,381	8,550	1,601
Government subsidy	31,500	31,500	18,375
Total revenues	757,859	969,476	745,165
Operating expenses	557,128	787,244	555,471
Gross operating profit	200,731	182,233	189,693
General and administrative expenses	235,847	246,161	187,526
Operating profit	-35,116	-63,928	2,168
Non-operating income	65,486	101,777	28,497
Ordinary income	30,370	37,848	30,665
Extraordinary income	-1,869	-8,712	446
Pretax profit	28,501	29,137	31,111
Tax allowance	0	8,732	3,532
After tax profit	28,501	20,404	27,579

(4) Operation and maintenance

The diesel railcars rehabilitated through the project implementation are generally well maintained currently (at time of ex-post evaluation). A maintenance plan is also formulated, and there are no problems with the operation and maintenance situation. There are no particular problems with any railcars, and they are operating well.

shortfall brings about undesirable effects such as lack of spare parts, improvement is required.

Table 2. Profit/Loss Status Unit: million rupiah

	2004	2005
Operating revenues	2,108,969	2,344,762
Transport revenues:		
(1): passengers	1,495,680	1,586,969
(2): freight	563,227	700,665
Incidental revenues	39,795	41,240
Other revenues	10,268	15,888
Government subsidy	163,968	270,000
Total revenues	2,272,937	2,614,762
Operating expenses	1,719,892	2,097,496
Gross operating profit	553,045	517,266
General and administrative expenses	559,954	564,757
Operating profit	-6,909	-47,491
Non-operating income	75,817	70,284
Ordinary income	68,908	22,793
Extraordinary income		
Pretax profit	68,908	22,793
Tax allowance	23,995	17,288
After tax profit	44,913	5,505

(4) Operation and maintenance

As shown by the current number of operating railcars, the rehabilitated railcars are progressively deteriorating due to the inadequate maintenance structure. The following three issues can be raised in particular: (a) Quality of regular maintenance, (b) Lack of spare parts, (c) Scale of the maintenance structure.

(a) On paper, periodic inspection and maintenance is performed almost according to the manual, but opinions were given which pointed out its low quality.

(b) Spare parts stocks are incomplete, especially for consumable parts such as engine filters and seals. Thus continued use without replacement has become normal. This promotes rapid deterioration and damage of power-producing parts

		<p>such as the engine. In addition to insufficient budgets, this is seen to be affected by weak sense of the importance of preventative maintenance</p> <p>(c) The repair yard which performs heavy repairs and overhauls can repair 12 railcars per year, but diesel railcars require overhauls once every two years. This is a capacity to process 24 railcars, which handles only about one-third of the rehabilitated railcars (24 out of a total 64 railcars). Thus the railcars operate without receiving sufficient maintenance, and damage has progressed in some railcars to the point where they require rehabilitation again. Still, the Ministry of Transportation made a financial expenditure to contract PT. INKA (Indonesian Railway Industry) to once again rehabilitate 12 railcars in 2006, and 8 railcars in 2006.</p>
<p>Lessons Learned, Recommendations, Information Resources and Monitoring Methods</p> <p>(1) Follow up on lessons learned and recommendations made in the ex-post evaluation report or in later evaluations</p> <p>(2) Proposals for securing sustainability, and instructions given at time of ex-post monitoring</p>	<p>(1)(2) Nothing in particular</p>	<div data-bbox="1285 501 2033 628" style="border: 2px solid black; padding: 5px;"> <p>The operation and maintenance structure has both quality and capacity problems. Thus it is necessary to strengthen the operation and maintenance structure, and to enable this, also work to improve the financial structure.</p> </div> <p>(1) Lessons learned None in particular</p> <p>(2) Recommendations</p> <p>(a) Insufficient quality and volume (scale) of the operation and maintenance structure are the primary causes of decreasing results from the rehabilitation project. The maintenance structure should be strengthened, especially reinforcement of the overhaul workshop and technical guidance for preventative inspection operations.</p> <p>(b) PT. KAI is forced to bear the cost burden of the unprofitable economy class, which is connected to issues such as insufficient spare parts. Operation of the sector with consideration for sustainability should be studied, such as introduction of suitable fares.</p>