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MINISTRY OF COMMUNICATIONS (MOC)  
NATIONAL TRANSPORT RESEARCH CENTRE (NTRC)  
SECTOR H-8/2

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**NTRC BUS TRAIN  
PASSENGER OPINION SURVEY**

NTRC.276

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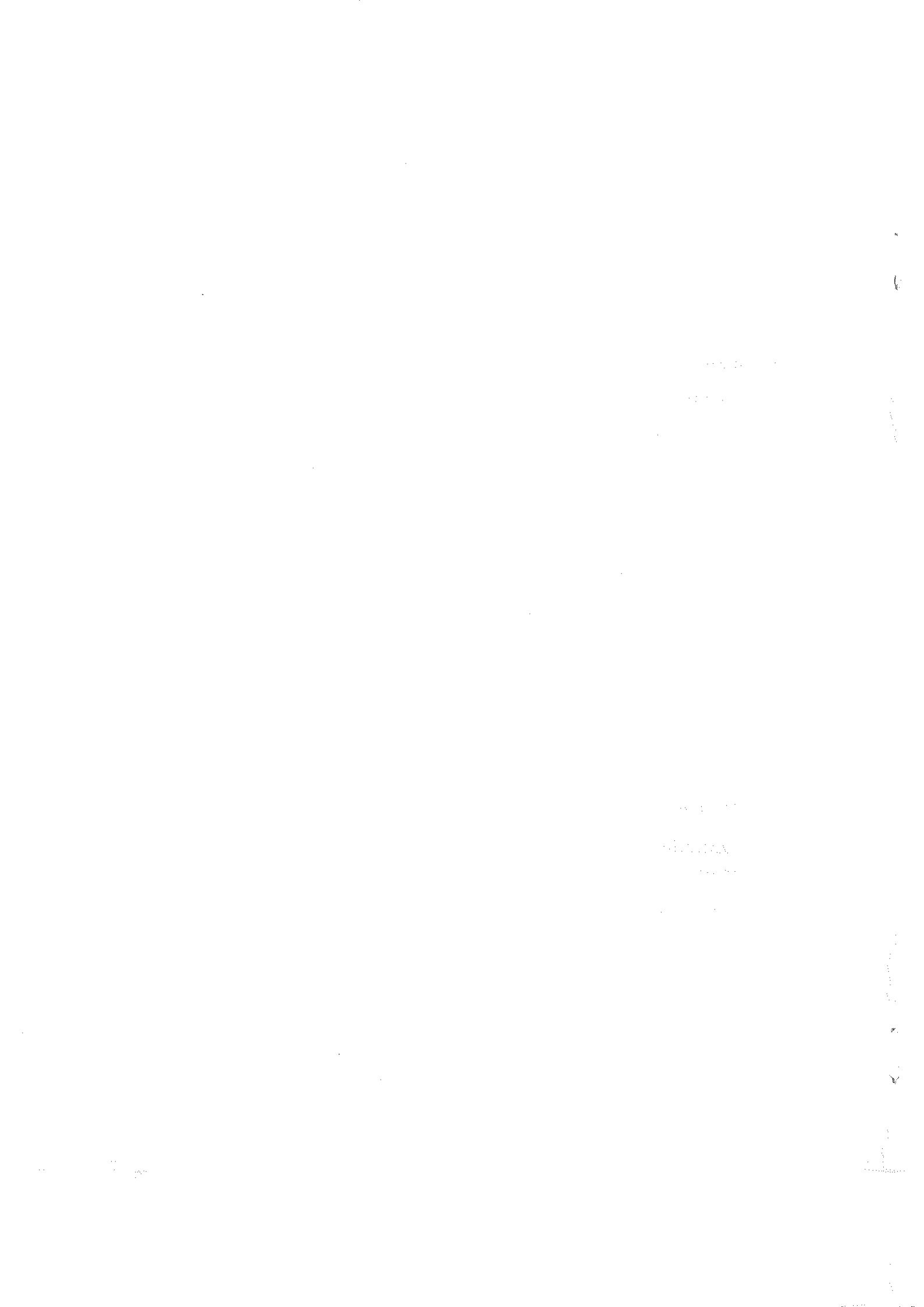
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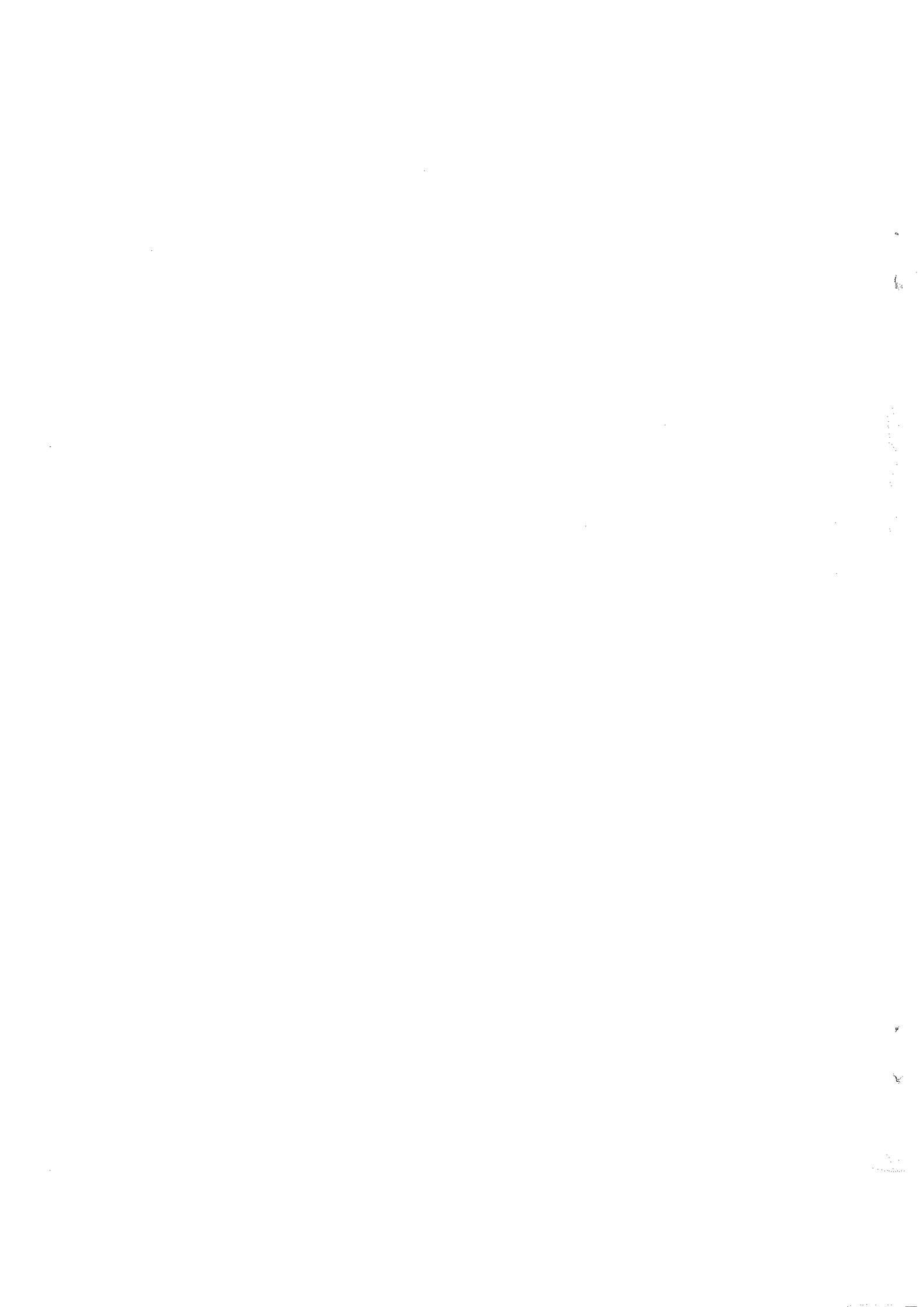
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## EXECUTIVE SUMMARY

Almost without exception urban transport is characterized by rapid growth in demand, which has overwhelmed transport capacity. Road congestion is widespread, public transport is overloaded and due to lack of maintenance, roads are often in a poor state of repair. The ability to cope with these conditions has been strictly limited due to lack of resources and low earnings. Revenues from fare box of public service bus operations hardly compensate for the total operating cost.

There has been rapid increase in pace of urbanization coupled with high natural growth rates in past years. This increase in urban population has in turn resulted in massive increase in the demand for transport. Other factors adding significantly to level of demand are the spread of urban areas leading to longer and more motorized trips, increased commercial and industrial activity and a greater propensity to travel where incomes have risen. Because of these factors, demand for public transport in particular, has grown even faster than the population. In addition, in almost all cities the growth in demand has outstripped the growth in budget revenues. This has had a serious impact on public sector services, which generally rely on subsidies. Rarely can subsidies be increased sufficiently to cope with the increasing costs of existing services, let alone expanded operations. As a result, public sector services have deteriorated to point of extinction over the years. On the other hand, while private sector services generally have been better able to cope, their expansion has been inhibited by a lack of access to funding and often by under regulation along with many other menaces.

Keeping in view the above stated perspective National Transport Research Center (NTRC) developed an indigenous system, which could provide transport facilities at least cost and contribute towards catering for the ever-increasing demand for public transport. One of the avenues explored was to try and recycle the old and worn-out buses. Thus the idea of bus train was born. The bus train was developed with the help of Trailer Development Corporation of Pakistan.

The train operated in Karachi from 7-10-1989 to 31-10-1990 along Shakra-e-Faisal Between Empress Market and Quaidabad. Later it was shifted to Rawalpindi Islamabad where Punjab Road Transport Corporation (PRTC) operated it between Koh-e-Noor Mills Rawalpindi to Pakistan Secretariat Islamabad from 01-01-1991 to 13-10-1993. However, its operation was halted due to damage done to it by Striking students of Barani Agricultural University. In 2001 it was used by SAF Games secretariat to create mass awareness about SAF Games.

On 07-03-2006 the bus train was provided to Islamabad Traffic Police for 3 days to facilitate general public during the public transport strike. Latter on its provision was extended to facilitate lower income commuters and raise road safety mass awareness.

The report in hand aims at assessing the opinion of commuters regarding bus train services in Rawalpindi and Islamabad being operated by Islamabad Traffic Police.

It was found out that the bus train was operating with a flat fare rate of Rs. 5, which is less than the minimum fare of other competing modes. Even

at this low fare the bus has been able to achieve the break even. This is mainly because of high patronage. The total capacity of 1+2 system is 237 (seating +standing combined). And it has been estimated that it has that many number of passengers at least to some distance during its trip. The high patronage on the one hand shows the popularity of bus train and on the other hand it also shows the shortfall in supply of existing public transport.

In terms of time of journey, it is quite competitive with other public service modes. This competitiveness mainly develops because of its reliability and less waiting time as compared to other modes for which waiting time along with higher cost out-weighs the advantage of their high-speed operations. That is why the survey shows that 94% of the commuters considered it better than other PSVs.

The outer appearance of bus train is not very good for which a free of cost solution would be to let its outer surface be used for advertising purposes by the commercial enterprises.

## 1. INTRODUCTION

The NTRC Bus Train is a long articulated vehicle making use of the old Karachi Transport Corporation (KTC) buses transformed as passive trailer units and hauled by a 220 HP Prime Mover of the type used by the National Logistic Cell (NLC), to operate at a maximum speed of 50 - 55 Kms per hour. It comprises 4 units - a Bus Towing Unit and 3 Trailer Units with a seating capacity of about 125 and standing capacity of a little more than two times the seating capacity. It has an overall length of about 37.2 meters (122 feet). The Bus Train can operate on the main corridors where sufficiently adequate road infrastructure facilities in terms of road geometries are available.

The full Train (1+3 system) requires one driver and 4 conductors for its operation. Depending on the need, it can be converted as a 1+1 or a 1+2 system. For ensuring safety, specific driver training is considered necessary for the driver operating the Train. The Train cannot be reversed and therefore extreme care is required in its operation. Being a prototype unit, specialized maintenance equipment/facilities and trained manpower is required for its maintenance. Spare parts have to be specifically fabricated in many cases.

## 2. OPERATIONAL EXPERIENCE IN KARACHI

The Train was inducted into service through the Karachi Transport Corporation (KTC) with effect from 7.10.1989 and operated safely in the bus lane along Shahrah-e-Faisal between Empress Market and Quaid-a-abad upto 31.10.1990. The total journey time over the route length of about 22 kms including 18 Bus Stops was about 50 minutes. Subsidy,

though less as compared to the KTC Bus System, is required.

3. **OPERATIONAL EXPERIENCE IN RAWALPINDI/ISLAMABAD**

Having operated as a Demonstration Project in Karachi for about one year, the Train was shifted to Rawalpindi/Islamabad for its operations by the Punjab Road Transport Corporation (PRTC) between Koh-e-Noor Mills Rawalpindi *and* Pakistan Secretariat, Islamabad on a route length of about 29 Kms with 23 bus stops. The Train was operated in Rawalpindi/Islamabad with effect from 1st January, 1991 and used mainly as a peak hour vehicle.

The operation of NTRC Bus Train was suspended on 13th January 1993 as a result of major damage caused to it by the striking students of Barani Agriculture University. The Bus Train remained off road at PRTC Chur Depot. As a result of winding up of PRTC in 1997, the Bus Train was shifted to NTRC in January, 1997. Subsidy, though less as compared to the PRTC bus System, is required.

4. **USE OF NTRC BUS TRAIN BY SAF GAMES SECRETARIAT**

NTRC Bus Train was provided to the SAF Games Secretariat at their request in the year 2001. The Bus Train was renovated and used by them for creating mass awareness about the SAF Games. It remained with them for more than two years. The Bus Train was returned to NTRC in July, 2003.

## 5. CURRENT USES OF NTRC BUS TRAIN

At the request of Islamabad Traffic Police (ITP), NTRC Bus Train was provided to them for 3 days on 7.3.2006 on the terms & conditions given at Annexure 1 to facilitate the general public because public transporters were observing strikes. Latter on the Islamabad Traffic Police requested to retain the Bus Train for a further period of 2 months. During this period Islamabad Traffic Police carried out the overhauling of Bus Train and started its trial operation on various routes. At present, the Bus Train is being operated from Pak Secretariat to G-11/3 and from Khanna Pull Islamabad Highway to Pak Secretariat by the Islamabad Traffic Police. Another objective of the operation of bus train is to launch public awareness campaign regarding Road Safety. Therefore, the Bus Train was handed over to Islamabad Traffic Police for a further period of 6 months on the terms & conditions at Annexure 2.

In order to investigate into the public opinion, the turn over of commuters and the success of Bus Train operation in Islamabad the current survey was designed. It also aimed at assessing the viability of current operation.

## 6. ALIGNMENT AND POINT TO POINT DISTANCES OF BUS TRAIN ROUTES

### 6.1 Route 1: Secretariat to G-11

The cumulative distances are as follow:

<u>Name of stop</u>	<u>Cumulative Distance (km)</u>
1. Pak Secretariat	0.0
2. Poly Clinic	2.2

3. PIA Office	2.9
4. Lal Quarters	3.5
5. P.I.M.S	5.7
6. Labor Camp	7.9
7. Karachi Company	13.9

## **6.2 Route 2: Pak Secretariat to Khanna Pull Islamabad Highway**

The cumulative distances are as follow:

<u>Name of stop</u>	<u>Cumulative Distance (km)</u>
1. Pak Secretariat	0.0
2. Jinnah Super	5.2
3. Faisal Mosque	6.2
4. P.I.M.S	10.0
5. Zero Point	11.7
6. I-8 Stop highway	14.5
7. Faizabad	16.5
8. Dhoke Kala Khan	17.5
9. Kurri Road	19.2
10. Khanna Pull Highway	20.7

## **7. SURVEY METHODOLOGY**

The design for the survey is as follows:

- Population: All passengers of NTRC Bus Train
- The sample size: 100
- Sample type: stratified random sampling (25 females, 75 males)
- The survey was conducted on 08-05-07 to 09-05-07 Tuesday and Wednesday, which are the mid days of the week.
- The sample was divided into two parts; half of the respondents were approached in the morning and the other half in the afternoon. The

afternoon survey was conducted on route from Pak. Secretariat to G-11/3 whereas the morning survey was conducted on the route from Khanna Pull to Pak Secretariat to get the true representation of population. (Currently the said train is operating on two routes namely: from Pak Secretariat to G-11/3 making complete round trip and from Khanna Pull to Pak Secretariat via Faisal Mosque by the Islamabad Traffic Police. It makes one trip each to pak secretariat from above stated origins during morning and a trip from Pak. Secretariat to G-11/3 during evening peaks.)

- Staff required: 10 Nos.
- a questionnaire comprising of 16 questions was designed for the survey. The questionnaire is placed at annex III.
- To ensure the accurate and reliable data collection, a 2-hour training session was conducted for the staff carrying out the survey.
- A Pilot Survey comprising of 20 respondents opinion was carried out prior to actual survey to reinforce the training and identify the discrepancies in the questionnaire. On the basis of this field experience a slight modification was made in the questionnaire. All this helped to ensure quality of survey.

## 8. FINDINGS OF THE SURVEY

The findings of the survey based on data analysis are as listed below:

### 8.1 PASSENGER CHARACTERISTICS

- In a sample of 100 respondents, 66% were aged 40 or below; with 33% respondents being of the age group 20-30 (Table 1 Annex IV)



- 88% of the respondents were employees; either government or civilian. (Table 2 Annex IV).
- Mean monthly income of the sample passengers is Rs.6840/-. However 69% of the respondents had monthly income less than or equal to 8000 per month with 22% share of below 4000 income group. However the modal income group is 4000-8000 (Table 3 Annex IV).
- 85% of the sample passengers had no transport of their own while 10% owned bicycle or motorcycle. (Table 4 Annex IV)
- 93% of the respondents reported the purpose of journey as to/from work. This is probably because of the timing of the operation of bus train. (Table 5 Annex IV)
- 82% of the respondents were regular users of the bus train out of which 55% were daily users while others used it whenever available. (Table 6 Annex IV)

## 8.2 OPERATIONAL CHARACTERISTICS OF BUS TRAIN AS PERCIEVED BY USERS

- Mean Journey time through bus train is 45 minutes while mean journey time through other modes for the same trip is 47 minutes. The latter has higher value because of more waiting time and unreliability. Afternoon journey time for bus train has been reported as shorter than other PSV's and vice versa for morning. (Mean journey time for morning is 49 minutes and 43.3 minutes for bus train and other vehicles respectively whereas it is 40 minutes and 45 minutes respectively for afternoon trips). (Table 7 Annex IV)

- Cost per trip through bus train is Rs, 5 for with zero standard deviation (bus train has flat fare of Rs. 5) whereas for other modes it ranges from Rs. 6 to Rs. 30 with a mean of Rs. 11. (Table 8 Annex IV)
- 75% of respondents think that en-route stop time for bus train is reasonable whereas only 7 % consider it to be too long. . (Table 9 Annex IV)
- 94% of the respondents assess bus train as better than other modes in overall terms. (Table 10 Annex IV)
- 88% respondents considered bus train as safer than other modes available to them for commuting. (Table 11 Annex IV)
- All respondents stressed the continuation of operation of bus train and its extension to other routes as well if the government resources permit.
- The punctuality of the bus train was specially appreciated by the commuters. However, the respondents of Islamabad highway route requested to shift the starting time from 8.30 A.M to 7:45 A.M.
- Most reported problem in the bus train was ventilation. The bus train has fixed glass windows and with full to capacity operation there is virtually no air inside the bus.
- Some of the passengers also demanded that there should be curtains on the windows to safeguard the travelers against the weather effects.

- Need of handles to support the standing passengers was also pointed out.
- Shabby outlook of the bus train has also been pointed out by the commuters as an area that needs attention of the concerned.

The bus train has been able to attain high patronage from the masses. It has a total seating capacity of 79 (21+29+29) and standing capacity of 158 (Double the seating capacity) and it operates with full capacity utilized. The high patronage is predominantly due to low fare (Rs.5/-). Moreover, it also reveals the current shortfall in supply of public transport.

### 8.3 COMPARATIVE FARE STRUCTURE OF BUS TRAIN AND OTHER PSVS

The bus train is operating at a flat fare of Rs. 5/-. The minimum fare of other PSVs is Rs. 6.

Comparative fares of bus train and other PSVs are as tabulated below:

#### **COMPARATIVE FARES OF BUS TRAIN AND OTHER PSVs**

<b>Bus Train Fare (Rs)</b>	<b>PSV (Wagon)</b>	
	<b>Distance (Km)</b>	<b>Fare (Rs)</b>
Flat fare of Rs. 5 for entire length of route	0-4	6
	4-8	8
	8-14	10
	14-22	12
	Above 22	14

Source: ITA office Islamabad

The fare structure of other PSVs is attached at annex v

## 9. FINANCIAL ANALYSIS FOR BUS TRAIN OPERATION

### 9.1 REVENUE

Number of trips per day	= 3
Total capacity of bus train (seating + standing)	= 237
Average number of passengers carried per trip	= 200
Total passengers carried per day	= 600
Total revenue per day @ Rs. 5 per passenger	= Rs. 3000/-
<b><u>Monthly revenue</u></b>	<b>= <u>Rs. 90,000/-</u></b>

### 9.2 COSTS

Average mileage per day (3 trips)	= 90 Km appx.
Diesel consumption/day @ 1.8 Km/Liter	= 50 Liters
Diesel cost per day @ Rs. 38/- per liter	= Rs. 1900/-
<b><u>Monthly Diesel Cost</u></b>	<b>= <u>Rs. 57000/-</u></b>
<b><u>Oil Change Cost (once in a month) Qty 22 L</u></b>	<b>= <u>Rs. 5500/-</u></b>
Driver's monthly wages (As Reported by driver)	= Rs. 7500/-
No. of conductors	= 3
Conductor's monthly wages @4500/ person	= Rs. 13500/-
<b><u>Total Staff expenditure per month</u></b>	<b>= <u>Rs. 21000/-</u></b>
<b><u>Total Monthly Cost Excluding Cost on Repairs</u></b>	<b>= <u>Rs. 83,500</u></b>

## 10. CONCLUSIONS AND RECOMMENDATIONS

- The average surplus of Rs. 6500/- per month can be considered to go for minor repairs and thus the bus train can be considered to operate at break even.
- Bus train is providing a cheap and affordable mean of commuting to the urban lower middle-income group at sound reliability and should therefore be continued.

- The role of bus train can be further enhanced to utilize it for launching an effective campaign to raise mass road safety awareness.
- Bus Ventilation is very poor presently, which is causing a lot of suffering to the commuters. The problem needs to be addressed as early as possible.
- Similarly some minute passenger facilitation issues like curtains, handles for standing passengers, and timing of operation need to be addressed.
- The outlook of the bus train is not so appealing. However it can be improved by using the outer surface for advertising. This will provide a solution with even generation of revenue. However, the contents of the advertisement must be ensured to be consistent with our cultural values.

Government of Pakistan  
Ministry of Communications  
National Transport Research Centre (NTRC)  
Sector H-8/2

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No. NTRC-15(18)/90

Islamabad the 7<sup>th</sup> March, 2006MEMORANDUM OF UNDERSTANDING

NATIONAL TRANSPORT RESEARCH CENTRE (NTRC)  
AND  
ISLAMABAD TRAFFIC POLICE (ITP) AUTHORITY

NTRC Bus Train is required to facilitate the general public / commuters in Islamabad during the period when Public Transport is observing strike. The train will be handed over to Islamabad Traffic Police Authorities subject to the following conditions.

a. Islamabad Traffic Police (ITP)

1. Islamabad Traffic Police would take over the NTRC Bus Train in "As is where is" condition.
2. The Islamabad Traffic Police will meet operational expenditures and will carryout necessary repairs / maintenance if required to make it fully operational.
3. The Islamabad Traffic Police would use the Bus Train for transportation of commuters during the strike of public transport.

4. The Islamabad Traffic Police would return the Train to NTRC in operational condition as soon as the strike of public transport is over.
5. The Islamabad Traffic Police will not claim any repair and maintenance charges incurred on the train to make it operational and its use for the transportation of commuters.
6. The Islamabad Traffic Police will provide an escort vehicle and security staff in the bus train for its safe operation.

**b. National Transport Research Centre (NTRC)**

1. NTRC would provide the Bus Train in "As is where is" condition (with inventory of all items.
2. NTRC would not claim any charges from Islamabad Traffic police for using the NTRC Bus Train for transportation of commuters during strike of public transport.

(SULTAN AZAM TEMURI) PSP  
Senior Superintendent of Police,  
Traffic, Islamabad

(MUMTAZ HUSSAIN MALIK)  
Assistant Chief

**Inventory of Additional Items Fitted/Installed in Bus Train by  
Islamabad Traffic Police (ITP) Authority**

<b>S. No.</b>	<b>Nomenclature</b>	<b>Make/Model</b>	<b>Qty</b>
1.	AC (Complete Set)	MARS	4
2.	Engine	Locus 35 HP	1
3.	Generator AC Synchronous		1
4.	Main Switch Engine Generator	Sony	1
5.	Voltage Meter (Complete)	Sony	1
6.	Flasher Light	-	8
7.	Emergency Revolving Light	-	2
8.	Flasher Unit	Sony	1
9.	Inter Comm	Commax	4
10.	Amplifier, Mosfet Power	PCH 2235 SX	1
11.	Amplifier Mike	Joseph	1
12.	CD Cassettee Player with radio	Nissan Digital synthesized receiver	1
13.	Speakers	Diatone	8
14.	Roof light	Saeed Co	24
15.	Amplifier Switch	-	-
16.	Horn and Relay	-	1
17.	Power Plug	-	4
18.	Blinkers	-	-
19.	Side Mirrors	-	4
20.	Side Counter	-	16
21.	Moveable Windows	-	16
22.	Window Shocks	-	32
23.	Locker Window	-	48
24.	All Tire New	Glory HR 106 8.25.20 Nylon 110-00-20.V.Lug-90	27
25.	Wheel Brace	-	2
26.	Rod, Wheel Brace	-	1
27.	Spare Wheel	-	2
28.	Battery	-	2
29.	Brake Pipe	-	4
30.	Oil Filter	-	1
31.	Diesel Filter	-	3
32.	Brake Washer	-	4
33.	Water Pump	-	1
34.	Skids Wooden	-	6
35.	Table	-	2
36.	Chairs	-	4
37.	Mat Mud	-	10
38.	Hook Pin	-	1



39.	Hook Rod	-	1
40.	Wheel Cup	-	16

**HANDED OVER**

(Mumtaz Hussain Malik)  
 Assistant Chief  
 Tel: 9250294

**TAKEN OVER**

(SULTAN AZAM TEMURI) PSP  
 Senior Superintendent of Police,  
 Traffic, Islamabad

**IN PRESENCE**

Government of Pakistan  
Ministry of Communications  
National Transport Research Centre (NTRC)  
Sector H-8/2  
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No. NTRC-15(18)/90

Islamabad the 13<sup>th</sup> July, 2006

**MEMORANDUM OF UNDERSTANDING (MOU)**

**NATIONAL TRANSPORT RESEARCH CENTRE (NTRC)  
AND  
ISLAMABAD TRAFFIC POLICE (ITP)**

The NTRC Bus Train is a low cost mass transit facility developed as a Pilot Demonstration Project, to facilitate the commuter traffic. The Train handed over earlier to Islamabad Traffic Police in March, 2006 as per the MOU dated 07.03.2006 shall remain with them till 31<sup>st</sup> December, 2006 under the following terms and conditions:-

**a. Islamabad Traffic Police (ITP)**

1. The Islamabad Traffic Police has taken over the NTRC Bus Train in "As is where is" condition from NTRC.
2. The Islamabad Traffic Police will meet all the operation and maintenance expenses on the Bus Train and will carryout necessary repairs / maintenance, if required, to make it fully operational.
3. The Islamabad Traffic Police may use the Bus Train for transportation of commuters as per the laid down government rules and procedures.
4. The Islamabad Traffic Police shall maintain complete accounts.
5. The Islamabad Traffic Police will not claim any repair, operation and maintenance expenses incurred on the Train.

6. The Islamabad Traffic Police will provide an escort vehicle and security staff in the Bus Train for its safe operation.
7. The Islamabad Traffic Police would return the Train to NTRC in operational condition on 1<sup>st</sup> January 2007.

**b. National Transport Research Centre (NTRC)**

1. NTRC would provide the Bus Train in "As is where is" condition (with inventory of all items).
2. NTRC would not claim any charges from Islamabad Traffic police for using the NTRC Bus Train for transportation of commuters and for creating awareness about traffic safety rules.
3. This Memorandum will be effective from the date of its signing.

Islamabad Traffic Police

National Transport Research Centre (NTRC)

**NTRC BUS TRAIN  
PASSENGER OPINION SURVEY – RAWALPINDI / ISLAMABAD – 2007**

Location: .....  Morning  Afternoon  Time Date: .....

Name of Interviewer: .....

1 Respondent's Age (Years) A.  Upto 20 B.  20-30 C.  30-40 D.  40-50 E.  50+

2 Sex A.  Male B.  Female

3 Profession A.  Govt employee B.  Civilian employee C.  Business Man D.  Labourer E.  Student  
F.  Other (Specify) .....

4 Monthly income (Rs.) A.  Upto 4000 B.  4000-8000 C.  8000-12000 D.  12000 – 16000 E.  above 16000

5 Type of Transport Owned A.  Car B.  Motorcycle C.  Bicycle D.  None E.  Other

6 Your Journey Purpose A.  To Work B.  Shopping C.  Education D.  Recreation E.  Social Visit  
F.  Any Other (specify): .....

7 How often do you travel on this route? A.  Almost daily B.  Once in a week C.  Once in a while D.  First Time

8 How often do you use Bus train? A.  whenever available B.  Daily C.  Once in a week D.  Occasionally E.  First time

9 Time taken through bus train for the trip?  Hrs.

10 Time taken through PSVs other than bus train for the same trip?  Hrs.

11 Your opinion about safety in Bus Train as compared to other modes A.  Less Safe B.  About the same C.  More Safe

12 En-route stop time A.  Short B.  Reasonable C.  Long

13 Cost per trip through bus train ? Rs.

14 Cost per trip through PSV modes other than bus train ? Rs.

15 What is your overall assessment of Bus Train as compared to other Public transport modes. A.  Poor B.  Similar C.  Better

16 Your proposals and suggestions regarding Bus Train  
A.  There should be more Bus Trains on the Existing route.  
B.  There should be trains on more routes.  
C.  Any other (Specify).....

**Table 1****Distribution of Passengers by Age**

	Frequency	Percent	Cumulative Percent
upto 20	7	7	7
20-30	33	33	40
30-40	26	26	66
40-50	20	20	86
Above 50	14	14	100
<b>Total</b>	<b>100</b>	<b>100</b>	

**Table 2****Distribution of Passengers by Profession**

Profession	Frequency	Percent	Cumulative Percent
Govt. Employee	56	56	56
Civilian	32	32	88
Business	1	1	89
Labourer	5	5	94
Student	3	3	97
Anyother	3	3	100
<b>Total</b>	<b>100</b>	<b>100</b>	

**Table 3****Monthly Income**

	Frequency	Percent	Cumulative Percent
<b>upto 4000</b>	22	22	22
<b>4000-8000</b>	47	47	69
<b>8000-12000</b>	21	21	90
<b>12000-16000</b>	8	8	98
<b>above 16000</b>	2	2	100
<b>Total</b>	100	100	

**Table 4****Type of Transport Owned**

	Frequency	Percent	Cumulative Percent
<b>Car</b>	5	5	5
<b>Motor cycle</b>	8	8	13
<b>Bicycle</b>	2	2	15
<b>None</b>	85	85	100
<b>Total</b>	100	100	

**Table 5****Journey Purpose**

	Frequency	Percent	Cumulative Percent
To / From work	94	94	94
Education	2	2	96
Recreation	1	1	97
Social Visit	1	1	98
Any Other	2	2	100
<b>Total</b>	<b>100</b>	<b>100</b>	

**Table 6****Frequency of Bus Train Use**

	Frequency	Percent	Cumulative Percent
Whenever Available	27	27	27
Daily	55	55	82
Once in a Week	10	10	92
Occasionally	5	5	97
First Time	3	3	100
<b>Total</b>	<b>100</b>	<b>100</b>	

Table 7

Comparison of Journey times Through Bus Train Vs Other Modes

	Survey Time	Minimum	Maximum	Mean
Journey Time Through Bus Train(Min)		10	110	49
Journey Time Through other PSV (Min)	Morning	10	150	43.3
Journey Time Through Bus Train(Min)	Afternoon	8	75	40.4
Journey Time Through other PSV (Min)		5	90	45.5

Table 8

Comparison of Cost and Journey Time for Bus Train and Other PSV's

	N	Minimum	Maximum	Mean	Std. Deviation
Time Taken Through Bus Train(Min)	98	8	110	45.03	18.64
Time Taken Through other PSV (Min)	100	5	150	47.00	26.06
Trip Cost Through Bus Train	100	5	5	5.00	0.00
Trip Cost Through other PSVs	100	6	30	11.02	3.11



**Table 9****En-route Stop Time**

	Frequency	Percent	Cumulative Percent
Short	18	18	18
Reasonable	75	75	93
Long	7	7	100
Total	100	100	

**Table 10****Assessment of Bus Train versus Other PSVs**

	Frequency	Percent	Cumulative Percent
Poor	3	3	3
Similar	3	3	6
Better	94	94	100
Total	100	100	

**Table 5****Journey Purpose**

	Frequency	Percent	Cumulative Percent
<b>To / From work</b>	94	94	94
<b>Education</b>	2	2	96
<b>Recreation</b>	1	1	97
<b>Social Visit</b>	1	1	98
<b>Any Other</b>	2	2	100
<b>Total</b>	100	100	

**Table 6****Frequency of Bus Train Use**

	Frequency	Percent	Cumulative Percent
<b>Whenever Available</b>	27	27	27
<b>Daily</b>	55	55	82
<b>Once in a Week</b>	10	10	92
<b>Occasionally</b>	5	5	97
<b>First Time</b>	3	3	100
<b>Total</b>	100	100	

**Table 11****Safety in Bus Train versus other PSVs**

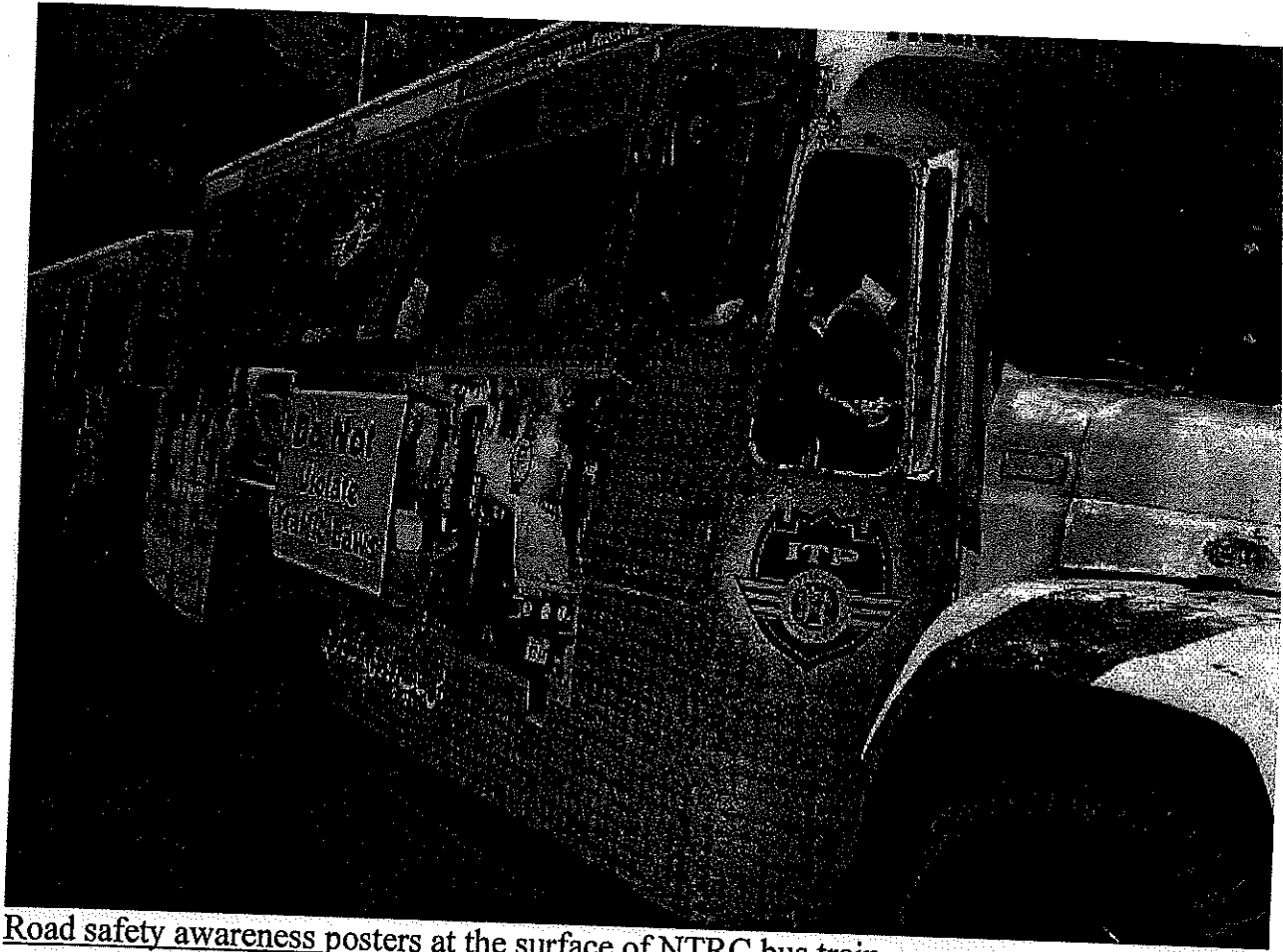
	Frequency	Percent	Cumulative Percent
About the Same	12	12	12
More Safe	88	88	100
Total	100	100	

**Table 12****Monthly Income**

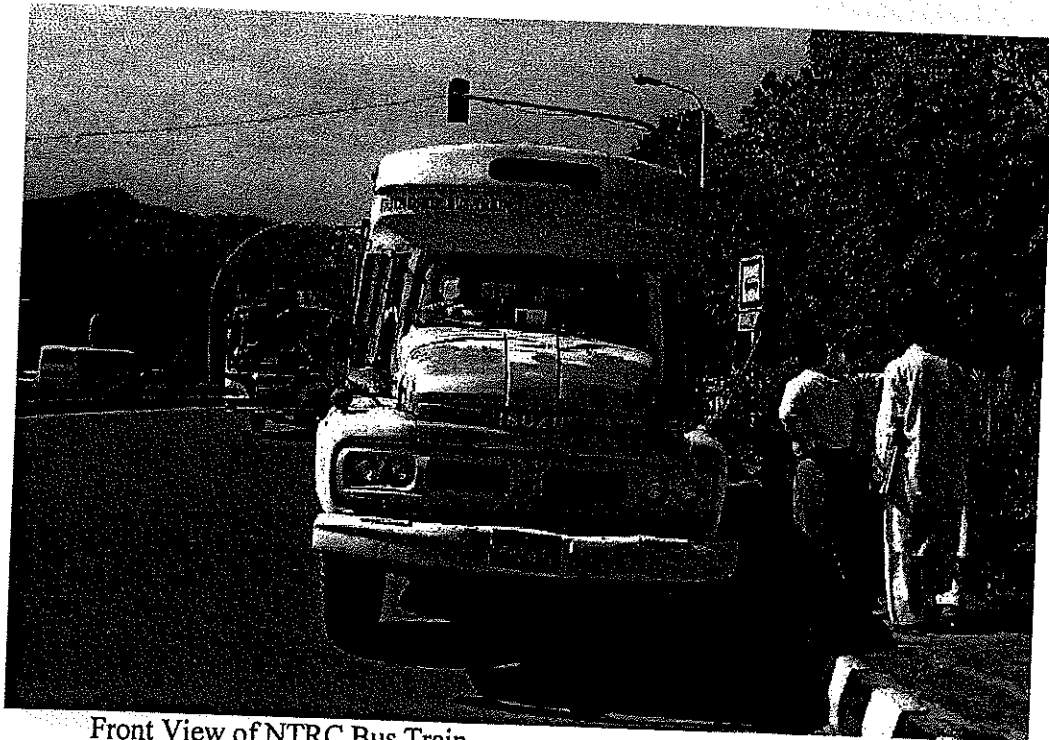
	Frequency	x	fx
0-4000	22	2000	44000
4000-8000	47	6000	282000
8000-12000	21	10000	210000
12000-16000	8	14000	112000
16000-20000	2	18000	36000
total	100		684000

Mean

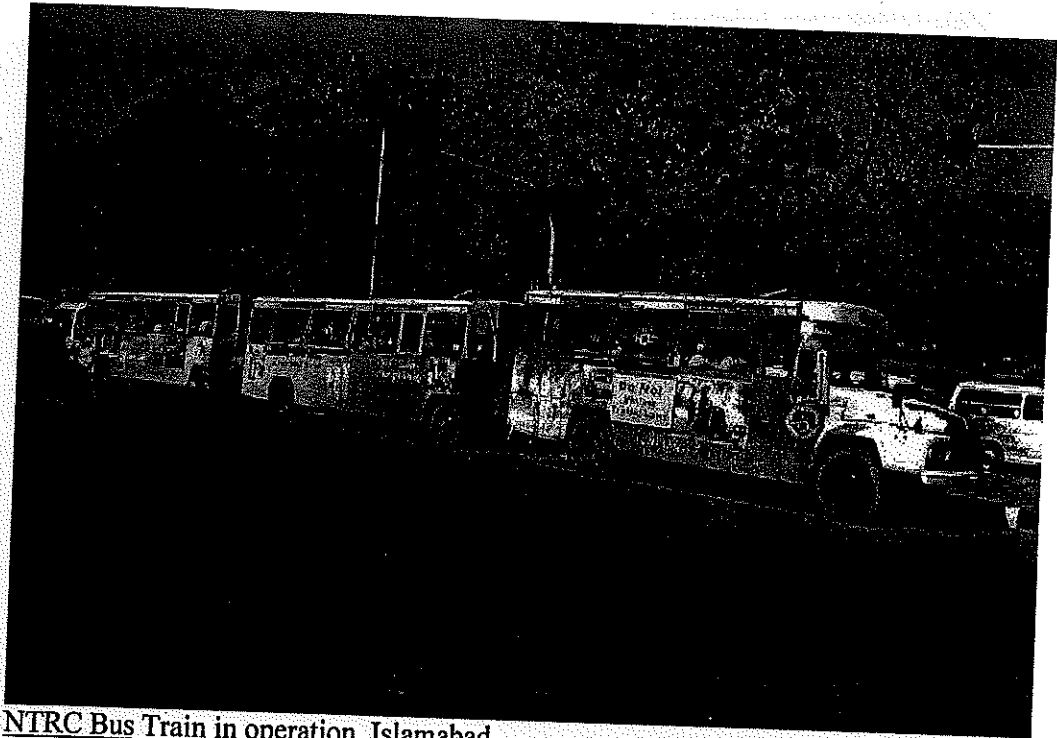
6840



Road safety awareness posters at the surface of NTRC bus train



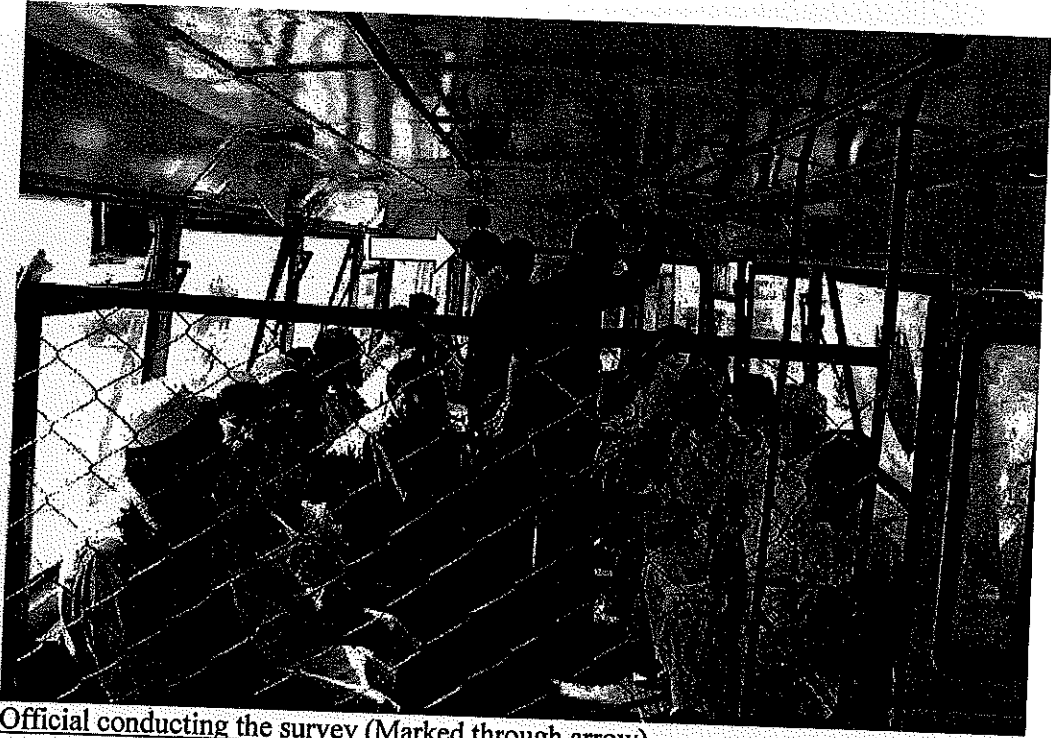
Front View of NTRC Bus Train



NTRC Bus Train in operation, Islamabad



Bus Train in operation along with other traffic



Official conducting the survey (Marked through arrow)



Passengers standing in the bus train