



Evaluation of Public Transportation System

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ABSTRACT

Public Transport has a vital role in urban development. In most countries, public transport is losing its clientele with declining ridership. A drastic shift in travel pattern has occurred with affluence for vehicle ownership. This has created problems of congestion, accidents, parking and pollution in urban areas. Recent fuel crisis has made vehicle travel extremely costly. Today, most of cities experience congestion in densely developed commercial areas. One way of dealing with problem is to wear travelers away from use of personal vehicles to public transport by generating a modal shift. With need of the study aim and objective of present study are to evaluate existing Bus Transportation of Ahmedabad city which is managed by Ahmedabad Municipal Transport System & known as AMTS. Supplement objective of this study is evaluating existing system and make guidelines and guiding parameters for evaluation of bus transportation system. This aim and objective also need study of current city traffic and transportation scenario.

Keywords : Fleet and Vehicle Utilization, Fuel Efficiency, Accidents and Breakdown Details, Quality of Service.

INTRODUCTION

Public transport or mass transit involves movement of large number of commuters between relatively small numbers of locations. In urban areas, travel demand is for small number of trips between diverse locations. Public transport competes with other modes and will only be used if it can meet expectations of travelling public i.e. if it can deliver an attractive, accessible, reliable, responsive, passenger oriented, quick and affordable services minimizing overall inconvenience and time delays. Multiple mass transit options are available today due to technological advancements and engineering innovations. Selection of the best among them, which suits the growing mobility demands of the city, depends on their feasibility criteria, city characteristics and transit needs. In a large dimension the public transport in the form of bus is very crucial in serving city mobility needs with low cost. The relative advantage is that bus has greater Criss-crossing, and requires less investment. A well-designed public bus transport will alleviate the problems mentioned above to a greater extent. In a change environment they are easy to maintain and economical to run, save energy – fuel, make commuters travel in a comparative comfort and safety in short a hassle free cost effective system.

Roadways are the backbone of any country, acting as indicator for the economic development of the country. Such that, the transportation plays a very prominent role in developing countries like India. More the length of roadways, the prosperity is more of the nation. Every day as many as 140,000 people are injured on the world's roads. More than 3000 die and some 15,000 are disabling for life. Each of those people has a network of family, friends, neighbors, colleagues added expense of caring for disabled family members and families struggle with poverty when they lose a breadwinner or have added expense of caring for disabled family members.

OBJECTIVES

Following are the objectives:

1. Review organization and hierarchy structure of AMTS.

2. Analysis of AMTS using set guidelines.
3. Propose suggestion for better improvement of existing AMTS.

1. BUS STOPS AND SHELTERS

AMTS bus stops are generally in poor condition with only some providing passenger shelter and seating. It is found that, the bus stops are too near to one another. There is a need for weeding out some of the bus stops. Total nos. of bus stands and shelters are presented in table. The space beside many bus stops has been encroached upon and businesses nearby disrupt bus movement. The left lane is often used by autorickshaws, other vehicles or occupied by small stalls, forcing passenger to wait on the road.

TABLE 1 STATUS OF BUS STANDS AND SHELTERS

YEAR	BUS STANDS	SHELTERS
1990-91	1975	820
1991-92	1878	831
1992-93	1835	847
1993-94	1711	841
1994-95	1687	862
1995-96	1700	868
1996-97	1704	884
1997-98	1771	902
1998-99	1679	951
1999-00	2150	1043
2000-01	2001	1049
2001-02	1976	1083
2002-03	1778	1103
2003-04	1743	1115
2004-05	1845	1104
2005-06	2162	1105
2006-07	2370	1190
2007-08	2481	1275
2008-09	2481	1275
2009-10	2573	1207
2010-11	2573	1207
2011-12	2870	1193

2. FLEET AND VEHICLE UTILIZATION

In terms of fleet utilization as well as vehicle utilization, AMTS falls below other city transport undertakings in India. Over the years, efficiency defined in terms of these parameters has declined marginally. This is mainly attributable to the large proportion of overage fleet, inadequate infrastructure and growth in overall traffic in the city leading to low operative speeds. Fleet utilization and vehicle utilization for AMTS are presented in table.

TABLE 2 FLEET AND VEHICLE UTILIZATION

YEAR	FLEET UTILIZATION %	VEHICLE UTILIZATION(KMS)	
		GROSS	EFFECTIVE
1990-91	81.59	195	187.6
1991-92	82.26	195.3	187.9
1992-93	80.03	195.9	188.2
1993-94	80.21	203.8	196.6
1994-95	82.38	203.6	195.5
1995-96	84.46	208.4	199.9
1996-97	84.60	212.0	203.6
1997-98	81.34	213.0	204.5
1998-99	83.67	211.9	203.4
1999-00	83.28	215.8	207.0
2000-01	80.55	216.7	207.4
2001-02	72.5	206.19	197.42
2002-03	55.18	209.10	199.52
2003-04	61.61	208.28	199.03
2004-05	67.33	217.15	208.65
2005-06	79.56	225.84	215.66
2006-07	81.54	234.39	221.85
2007-08	82.47	237.79	224.02
2008-09	85.80	235.35	221.29
2009-10	77.73	231.95	220.9
2010-11	71.6	231.39	212.18
2011-12	68.11	214.75	199.25

3. FUEL EFFICIENCY

In terms of fuel efficiency, tyre performance and safety record, AMTS has been rated one of the best in the country. The organization for its performance in these aspects has been awarded with national level trophies viz: road safety 1985-86 and 1986-87 tyre productivity 1986-87 and 1990-91 and fuel efficiency for the year 1989-90 and 1990-91. Fuel efficiency in terms of km per liters presented as below:

TABLE 3 FUEL EFFICIENCY

YEAR	FUEL EFFICIENCY (KMPL)
1990-91	3.97
1991-92	3.84
1992-93	3.89
1993-94	3.81
1994-95	3.73
1995-96	3.77
1996-97	3.65
1997-98	3.64
1998-99	3.67
1999-00	3.66
2000-01	3.70
2001-02	3.67
2002-03	3.65
2003-04	3.49
2004-05	3.47
2005-06	3.55

2006-07	3.47
2007-08	3.49
2008-09	3.47
2009-10	3.47
2010-11	3.47
2011-12	3.26

4. QUALITY OF SERVICES:

Quality of services deal with the percentage of trips cancelled, public complaints, considering schedule and actual kms, nos. of break downs and accidents percentage of trips and km. cancelled are presented in presented below. Overage fleet position leads to nos. of breakdowns while narrow street and road congestion leads to accidents. AMTS faced a considerable amount of average daily hour's loss due to the breakdowns.

TABLE 4 ACCIDENTS AND BREAKDOWNS DETAILS

YEAR	NOS OF ACCIDENT/YR	NOS. OF BREAKDOWN PER DOWN
1990-91	642	194198
1991-92	617	18620
1992-93	585	16994
1993-94	644	17784
1994-95	592	20069
1995-96	536	15247
1996-97	580	17819
1997-98	653	18872
1998-99	568	16498
1999-00	527	22997
2000-01	498	25003
2001-02	379	30066
2002-03	246	31233
2003-04	236	28913
2004-05	213	18806
2005-06	227	10754
2006-07	398	26391
2007-08	436	35666
2008-09	692	43023
2009-10	637	39515
2010-11	538	46226
2011-12	571	47399

CONCLUSION

After complete study and evaluating public transport for Ahmedabad city-(AMTS) this report conclude:-

- Immediately observations are that Ahmedabad is changed by a discrepant growth and an incompatible supply of available public transport facilities the eastern side, western side and the central core walled city area. An inefficient mix of sort typifies this, and long distance commuter service with an intense central area distribution of traffic patterns that further compound the problem.
- AMTS continues to be the dominant provider of public transport services within Ahmedabad urban area. For many year AMTS served areas within the AMC, however approximately 16% of AMTS routes extend beyond the AMC in an attempt to provide service to new growth area.
- AMTS is plagued with persistent problem of financial viability, lack of organizational authority and basic infrastructure constraints that have eroded its reliability to an extent. Where in spite of growing demand for travel it's passenger load factor decrease 71% (1960) to 53% (2001) and passenger per bus have decrease from 1,286 (1961) to 931 (2001).
- AMTS bus route lengths average about 17kms and range from 5 to 57km. about 55% of buses operate on the

routes with length of 10 to 20kms. With a running time of 30 to 90kms. This structure offers a good balance between advantages of short and long routes.

- Frequency of AMTS buses does not responded to the actual demand. Most of morning routes have a high frequency, when it least required. Then in the peak hour frequency is less then required. This results in a financial loss due to under utilization and poor services caused by overcrowding.
- Reliability of services improved from the 1980s to the early 1990s with fewer trips can celled but in the last five years the numbers of cancelled trips has increased from 6 to 8 %. Average daily breakdowns per 1lack kms. Increased from 3.07 (1961-62) to 4.37 (2000-01).
- Over 55% of AMTS buses are more then 8 years old are 7, 00,000kms old. (average service life of bus is 8years or 5, 00,000kms) this and general poor maintenance of buses is the main cause of can celled trips.
- Most AMTS buses provide 51 seats with 15-20 standees. With a truck chassis, a very high floor and a generally

rough ride these buses are not suitable for public transport. AMTS buses are painted in a variety of colors, style and advertisement, which does not project a positive image.

- More than half of the bus routes pass through or through at laldarwaja and 35% at kalupur. The laldarwaja terminal not located on main road while kalupur terminal have only one direction access. Bus connection to railway station and other modes are poor at major terminal intermediate public transport in from of taxis or autorickhaws easily available with almost same rate with AMTS fares.
- AMTS bus stop is generally in poor condition with only some providing shelter and seating. AMTS provide a tight average bus stop spacing of 410 meters, convenient for passengers but increasing road travel time.
- If a similar trend is allowed to continue, by falling to take any special actions to improve the position of AMTS, the viability of existing public transport system will be in question very soon.

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