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LACMTA'S EFFORTS TO AUGMENT ITS BUS FLEET

## INTRODUCTION

The LACMTA has entered into an agreement (Consent Decree) with the Bus Riders Union (BRU) and the Federal Court to improve its bus service. The principal measurand is the load factor, i.e. the ratio of standees to those seated. The BRU contends that violations of the maximum load factor occur on all or most of the lines and, thus, LACMTA is in violation of the Consent Decree. BRU further contends that the LACMTA's bus fleet is too small for the ridership demand. As a result, BRU insists that LACMTA put more buses in service. The LACMTA, according to BRU, refuses to address this issue.

This report documents the efforts made by the LACMTA to augment and improve its bus fleet.

## AIR QUALITY CHALLENGES TO LACMTA'S BUS FLEET OPERATIONS

The air quality in the Los Angeles County is managed by the South Coast Air Quality Management District (SCAQMD) and the vehicular emission levels are regulated by the California Air Resources Board (CARB). The regulations imposed by these two agencies are, uncontestedly, the toughest in the US and probably in the world. Looking forward, by 2007 all the buses purchased by LACMTA will have to have NO<sub>x</sub> emissions reduced by **20 times** and PM emissions reduced by **5 times**, respectively, compared with the 2000 standards. As of the end of the year 2002 the technology to meet these standards does not exist. Also, starting in the year 2010, 15% of all new bus purchases must be Zero Emission Buses (ZEBs). Again, the technology to meet this requirement does not exist.

## CNG MARKET DEVELOPMENT

To meet earlier air quality challenges the LACMTA's Board of Directors decided, in October 1993, that from that date forward all the bus purchases will be limited to alternate fuel buses. Since the

market for alternate fuel buses was, practically, non-existent, LACMTA had to expand great efforts to interest the bus manufacturers in developing buses that met its requirements. To put all this in the right perspective by the year 2000, out of an active US fleet of 75, 000+ transit buses only approximately 3,000 were CNG fuelled and half of them were operated by LACMTA. Today, LACMTA has by the largest CNG fleet in the world.

Not only has LACMTA purchased and operates the largest CNG bus fleet in the world, but has done it so that three (3) manufacturers, namely Neoplan USA, New Flyer, and

NABI have become steady suppliers. Three (3) other North American bus manufacturers (Gillig, Orion, and Nova) offer, now, CNG transit buses.

## TRAFFIC CONGESTION CHALLENGES TO LACMTA'S BUS FLEET OPERATIONS

The Texas Transportation Institute 2002 Urban Mobility Report identifies Los Angeles County as the most congested area in the US (as it did for the last 19 years) with every person in the County spending almost **two (2) working weeks stopped in the traffic**. The LACMTA's buses operate in the traffic (unlike the other two modes it operates, subway and Light Rail) and is subject to its vagaries. The average LACMTA bus moves only 37% of the time is in-service on the streets with the other 63% being stopped in traffic, at traffic lights and at the passenger stations. Again, to put it in the right perspective out of a fleet of 2100+ buses, less than 800 are moving at any given time.

In order to meet the ridership demand on its busiest lines (that also exhibit the heaviest traffic), LACMTA has increased the number of buses serving those lines. As a result of those increases, the headways (the scheduled time between buses when arriving at the passenger stations) on these lines are down to 1.5 to 3 minutes. Such short headways create their own gridlock, are very difficult to manage and create delays for the cross traffic.

## DEVELOPING A MARKET FOR LARGE CAPACITY, CNG BUSES

By the year 2000 it became evident that just adding 40 ft. buses will not improve the bus service and reduce the crowding. LACMTA needed larger capacity buses 45' and/or 60' artic that provide 45 and 55 seats, respectively. For reference the 40' buses provide 40 seats. The problem was that there was not a single manufacturer in the North America that produced either 45' or 60' artic CNG buses. The problem was exacerbated by the fact that, at the time, the total US market for 45' and 60' artic was approximately 100 and 300, respectively, all of them Diesel fuelled. Consequently, there was not any business rationale for the manufacturers to develop CNG buses only for the LACMTA.

At the direction of its Board to stimulate demand, LACMTA issued an RFP in the spring of 2001 for 45' and 60' artic CNG buses. No manufacturer proposed 60' artic and only two proposed 45' CNG buses. In December 2001 LACMTA issued an order for 30+70 45' buses with delivery in 2003.

Since no American manufacturer was willing to risk developing a 60' artic CNG bus, LACMTA turned to European manufacturers. Several bus manufacturers (Mercedes, MAN, Volvo, Scania, Van Hool, and Irisbus) have 60' artic CNG developed for the European market. Historically, the European bus manufacturers were unwilling to bring their products to the US due the expense to meet the US standards, Buy America legislation, and the size of US transit bus market (approximately 3,500 buses per year compared with sales of between 10,000 and 20,000 buses per year for each of those

manufacturers). In 2002, LACMTA engaged in an aggressive program to attract and incentivize European manufacturers to respond to its needs. Although Van Hool, Scania, and Volvo showed some interest, only Irisbus committed to respond to an RFP issued by the LACMTA in June 2002 for 200+200+200 60 ft. artic CNG buses. However, their participation was enough to stimulate three US manufacturers to participate in order to protect their market share. The proposals are due on 23 October, 2002 with an award date of January 2003 and with deliveries scheduled for 2005.

## LOOKING AT THE FUTURE

In order to meet the 2007 air quality regulations, LACMTA has issued a second RFP at the same time for 72+100+72 60' artic CNG Hybrid buses. The award and delivery schedule are the same. In addition, looking at 2010 regulations, LACMTA is engaged in a \$7 million bus technology evaluation program.

## RIDERSHIP DEMAND CHALLENGES TO LACMTA'S BUS FLEET

While operating 2100+ buses during the peak hours, morning and evening, at times before, between and after peak hours the ridership demand is met easily with approximately 1200 buses. Adding more buses during peak demand, only to park them for the rest of the day will create such an inefficient system that will threaten the financial stability of the agency and its ability to obtain Federal capital funds to those buses to start with.

## CONCLUSIONS

Despite claims to the contrary by the BRU, LACMTA has been engaged, for the last nine (9) years, in an aggressive, successful program to augment and improve its bus fleet while meeting the peculiar challenges posed by operating in the Los Angeles County. Today LACMTA has a fleet of 2100+ buses with an average age of 6 years that include 1600+ CNG fuelled buses (the average age of those buses is less than 6 years). It has on order, or is within 3 months of ordering, up to 944 high capacity CNG buses. Without increasing the total fleet by a single bus (thus not worsening the traffic congestion), LACMTA will increase its capacity to an extent equal to adding **329 40' new buses**.

In conclusion, LACMTA has made outstanding efforts to augment and improve its bus fleet. Because of the particular challenges posed by operating in Los Angeles County, the full, positive, impact of these efforts is still a few years away.