



# NEWS

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## MTA, NORTHROP GRUMMAN AND THE FTA ROLL OUT FIRST PROTOTYPE OF THE TRANSIT BUS FOR THE 21<sup>ST</sup> CENTURY

After four years of research and development, MTA, Northrop Grumman Corporation and the Federal Transit Administration have unveiled the first prototype of the Advanced Technology Transit Bus (ATTB).

The lightweight, low-emission ATTB often has been referred to as the "Stealth Bus" because of its use of lightweight materials similar to those used in Northrop Grumman's famous B-2 Stealth Bomber.

"The design process was a collective effort, and included representatives from the FTA, the MTA and transit providers in 19 other major U.S. cities," said Larry Zarian, MTA Board Chairman. "Their spirit of cooperation has resulted in a technological milestone that will benefit greatly the MTA's 1.1 million daily bus riders. The ATTB is a means of transportation that's right for Los Angeles and right for the country."

This first prototype is outfitted with a hybrid propulsion system in which an engine fueled with Compressed Natural Gas (CNG) powers a generator. In turn, the generator delivers electricity to motors located at the ATTB's two rear wheels.

"The result is a more reliable and fuel efficient vehicle which produces lower emissions than a conventional CNG-powered bus, and ultimately will provide longer service to the MTA and other transit operators around the country," added Zarian.

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The ATTB electric drive system is designed to accommodate other alternative fuel technologies in future prototypes such as a fuel cell propulsion system which produces zero emissions.

The prototype weighs in at nearly 9,000 pounds less than a conventional CNG transit bus, with further weight reductions expected in future prototypes. This slim-downed construction improves fuel economy, reduces emissions and lessens wear and tear on highways, streets and service facilities.

The ATTB is both operator-friendly and passenger-friendly. It seats 43 passengers, has room for 29 standees, and also sports wide doors which ease passenger flow, thereby reducing "dwell time."

The ATTB meets Americans with Disabilities Act (ADA) standards. Its front-door ramp and low floor design provide easy accessibility for wheelchair-bound passengers. The front and rear door entrances are a comfortable 14 inches from ground level, and the ATTB's "kneeling" capability enables the operator to lower the access an additional 3 inches.

The ATTB includes a large number of cost-saving features including modular installation of the engine which allows a two-person maintenance crew to remove the engine for service or repair in only 15 minutes, far less than the several hours required to remove its conventional counterpart. The bus also rides on four tires instead of the customary two in front and four in the rear.

Three phases of extensive testing under real-life and simulated conditions are planned for the ATTB. In the next 13 months, the ATTB's performance and durability will be evaluated by Northrop Grumman through rigorous testing conducted at Failure Analysis Associates in Phoenix, Arizona, and at the Federal Test Center in Altoona, Pennsylvania.

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Northrop Grumman plans to conduct extensive road testing of the ATTB over several months on four local routes, eight hours per day, five days per week. The first is a Central Business District or urban route, a 20-minute-long surface street route which will include a variety of road conditions and grades, as well as numerous stops. A portion of the testing will be performed on several MTA routes including Line 16 which operates on W. 3<sup>rd</sup> Street in Los Angeles.

A second 20-minute route will combine urban and freeway driving. A third 15-minute route on the 105 Century Freeway will provide the ATTB with its only all-freeway test. The final test route is 90 minutes long and will present the ATTB with a large number of challenges. The bus will wind its way through the hills of Rancho Palos Verdes and San Pedro before making its way onto the 110 and 405 Freeways.

The next testing stop for the ATTB is the Failure Analysis Associates research facility in Phoenix, Arizona, where the ATTB will be tested inside an environmental chamber under extreme temperatures.

The prototype then moves on to the Federal Test Center in Altoona, Pennsylvania where, over a four-month period, it will undergo an Accelerated Life Test. This includes a combination of 250,000 miles of driving and 750,000 miles of operation under simulated driving conditions.

Total cost of the ATTB project through the prototype phase is \$51 million. Eighty percent of the funds are being provided by the Federal Transit Administration. The other 20-percent are being provided by local sources, including Proposition A interest dollars and in-kind contributions from the MTA.

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"As many people know, Northrop Grumman is not in the bus manufacturing business," said Kent Kresa, Northrop Grumman President and CEO. Kresa pointed out that the goal of the company's participation in the ATTB program was to explore potential application of aerospace technologies to ground participation.

"Our goal now, in addition to managing the prototype evaluation phase of the program through its completion, is to work with a manufacturer with the high-volume production capacity to produce these advanced transit vehicles in quantity, and to assist in the successful transition of this technology for the benefit of our country's transportation system," added Kresa.

Local subcontractors supplying the ATTB's major subsystems and components include Ray Products Inc., of Ontario, California (rooftop cover), and Santa Barbara Dual Spectrum (fire suppression system). Among the other subcontractors is Detroit Diesel Corporation, manufacturer of the CNG engine used in this first prototype.

A second prototype is expected to be completed in early Spring of 1997. Four more are scheduled to be built by the end of 1997, with testing to be conducted in cities across the United States.

"The ATTB will reduce pollutants significantly, and the MTA expects it to become the new standard transit bus for the 21<sup>st</sup> Century" said MTA CEO Joseph E. Drew. "The ATTB is a crowning achievement of a partnership between government and a defense industry giant, a partnership that we believe will pay big dividends for transportation and the environment for many years to come."

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