

**A Report of the
Prospect Heights Volunteer Fire Company #1 of Ewing Township**

The Need For Replacement of the 1986 LTI 100' Aerial Apparatus



As prepared by:

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Chief**

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The Prospect Heights Fire Company had included in the 2005 and then again in 2006, a capital budget request to the Township Of Ewing for a Tower Ladder replacement vehicle for the current 1986 Duplex/ Ladder Towers Inc. This piece of apparatus has been in service for the past twenty years. It is our hope that this line item will be included in the 2006-2007 budget.

At this point in time, the Township administration has requested that the Fire Company provide a written justification for this replacement vehicle purchase. The following information is provided to show the need for this apparatus and, more importantly, the need to purchase this vehicle in the next budget cycle so that the purchase is not deferred any longer.

Background

The Prospect Heights Fire Company determined a need for an aerial apparatus back in 1967 since the Township of Ewing did not have a ladder truck in any of the three fire companies. Dependence was on City of Trenton for a ladder company to respond into Ewing Township. The company purchased the first ladder truck for Ewing Township back in 1967 and that vehicle was made by Seagrave Fire Apparatus of Clintonville, Wisconsin. This unit was a gasoline driven, open cab model truck equipped with a 100 foot mid mounted steel ladder. This truck served as the only ladder in Ewing Township until 1975 when the West Trenton Fire Company purchased a 75 foot Tower Ladder to help meet the growing needs of this Township.

The 1967 ladder truck served well until 1981 when the gasoline motor developed problems with the cylinder heads and was in need of major overhaul. The Fire Company, in a cost saving mode, then had installed a rebuilt Detroit Diesel motor which extended the life of the apparatus since it was not time yet to replace this truck.

In 1985 the Township of Ewing authorized the Fire Company to purchase a new apparatus to replace the current 1967 aerial ladder. The truck committee began the task of accessing the current needs of the Township and to seek out interested dealers who had aerial apparatus on the market at that time. After a long and careful search process the Fire Company developed specifications around a 100 foot Tower Ladder truck which had a basket on the end of the aerial device.

Some of the deciding factors for choosing this style of truck were the need to properly protect the Park Place Senior Apartments located on Parkside Avenue and the 100 foot model will reach the entire building. In addition there are other tall buildings located in this Township that the 100 foot model could work around more efficiently. The need for an aerial truck is not focusing on just height. A 100 foot Tower Ladder provides the needed horizontal reach as well as a safe work platform for the firefighters. We

continue to have concerns for the lightweight style of construction that has been the current style of building for new construction as well as renovations.

1986 Duplex/ LTI 100' Tower Ladder

The current Tower Ladder was purchased in 1985 and delivered to the Township in 1986. After extensive training and practice for drivers and basket operators, the 1986 model truck was placed into full service and the 1967 Ladder was removed from service and sold to a truck dealer in Maine.

This unit has been well maintained and has been kept in very good running condition. All necessary repairs have been made to the truck when they were needed and there are no current outstanding repair issues. In addition, our company has always had all of the required testing of the aerial device performed as per all current federal and state standards completed at the proper intervals.

With our current box alarm response plan for structure fires in Ewing Township, we have observed an increase in the number of calls that this truck is required to respond. They calls have been steadily increasing for the past four years.

Since July 2005 when the Township had asked to put off this purchase, the 1986 unit has needed several large repairs. They have included: an alternator replacement, two rear tires, a complete four rear brake replacement job and the replacement of two long hydraulic lines that are located in the aerial boom section. These repairs were in addition to the normal routine maintenance of this apparatus.

Reasons for the Purchase of a New Replacement Tower Ladder

1. Safety Factors

Safety is positively the number one reason for the replacement of the 1986 unit. There have been significant safety improvements over the past fifteen years that newer apparatus will have that will protect the health and lives of the firefighters operating and responding on the apparatus. They include:

- a fully enclosed cab which can seat more members then our current unit
- crash tested cabs
- sirens and air horns mounted in locations to protect the hearing of firefighters
- anti-lock braking systems
- slip resistant step surfaces
- climate control
- better step and cab lighting

In addition, the fire pump is now required to have slow close valves on all intakes and discharges larger than 2 ½", all discharges larger than 2 ½" must be located away from the pump panel for operator safety, and automatic pressure governors are standard.

Newer apparatus are now easier to operate, especially with reduced staffing levels. Modern aerials have:

- short-jacking capabilities
- automatic leveling and locking systems
- remote controlled monitors
- multiplexed electrical control systems with safety interlocks
- other time and labor saving devices including: electronic pump governors, electrical load managers, and hot shift PTO driven generators

Ride and handling are more than just for comfort as they also reflect maneuverability, drivability and safety. Today apparatus have a much better turning radius which equals tighter turning circles, better suspension systems, and some offer front independent suspensions that improve vehicle ride, handling and stability. Several manufacturers offer rear air suspension which provides a lower center of gravity, reduces the vibration and road shock transmitted to the crew, equipment and body. The anti-lock braking systems allow for better stopping distances, preventing skids, and helps the driver maintain better steering control during sudden evasive maneuvers in slippery road conditions.

2. Ewing Township Apparatus Program of 1980

Back in 1980 the three Ewing Township fire companies as the Township of Ewing agreed to an apparatus replacement plan to assist the fire companies in purchasing fire apparatus. The plans formulated back then were for Ewing Township to purchase the major pieces of apparatus including engines, ladders and rescue units and these trucks to be replaced on a twenty year cycle. This plan was followed faithfully by Ewing Township until 2001 at which point apparatus was put off and not purchased at the 20-year replacement intervals.

Although many area towns are replacing apparatus prior to twenty years, the Prospect Heights Volunteer Fire Company has stuck by the 1980 plan and requested apparatus to be replaced only at the twenty year mark. Our last pumper went over the twenty year mark by three years and now this ladder truck replacement appears to be headed in that direction as well since the process from start to finish can be well over two years before a new ladder truck can back into the engine bay on 9th Street. Our fire company currently still supports the twenty year replacement plan and believes that it is an appropriate replacement plans for the safety and effectiveness for the firefighters and for the fire protection and cost-effectiveness for the citizens of Ewing Township.

3. ISO Rating for the Township of Ewing

The Insurance Service Organization evaluates fire departments based on many points including the types of required fire equipment within a municipality and then assigns a rating. This rating is then used for insurance ratings which affect costs for businesses and homeowners when they purchase homeowners insurance. Our current rating is based on having two ladder trucks in the Township of Ewing.

4. Edcon Associates Inc. Report of March 5, 1991

In 1991 the Township of Ewing contracted with Edcon Associates Inc. to complete an apparatus study for the Ewing Township to determine the needed number of fire units and the deployment of those units. In this report it discussed the need for aerial apparatus in Ewing Township citing:

- The amount of buildings with truss construction
- The amount of multi-storied buildings
- Buildings with large open areas without adequate fire divisions
- Many buildings that have heavy heating and air conditioning equipment located on the roof.

This report also advised the Township to replace vehicles on a planned cycle basis to prevent replacing all the trucks at the same time. By spreading out the purchases it prevents the Township from budgeting all apparatus purchases at the same time. Since these purchases are expensive items it makes the most sense to do so in a planned and timely fashion. Included in the report was a fact that ladder apparatus should be replaced at the twenty year interval with the suggestion to then keep the unit on reserve status here in town for another five additional years.

5. July 1997 Report of the Ewing Township Fire Study Advisory Committee

In the final report of this committee, which was a group comprised of Ewing citizens and Ewing fire company representatives, it was reported that the current replacement schedule of apparatus was adequate and recommended that no changes be made. Specifically, this called for continuing the current twenty year replacement schedule and listed the purchase of a new Tower Ladder for Prospect Heights to be in 2006.

6. Purchase of 100' Unit vs. 75' Unit

The benefits of the 100 foot unit as compared to the 75 foot aerial apparatus include:

- The extra 25 feet of horizontal reach from the curb is a tremendous asset. Buildings are set back away from the street and apparatus can not get as close to the fire building
- The 100 foot unit provides 25 additional feet of height to reach higher on our larger buildings.

- The 100 foot model will reach the top of the Park Place Senior Citizens Apartment building should the need arise for a rescue where as a 75 foot unit will fall short.

7. Better Equipment Space

The older aerial units were designed to carry a limited amount of portable equipment. The newer models are designed to carry a larger equipment weight allowance on apparatus with larger compartments. The compartments are better designed to maximize the amount of portable equipment that can be carried on the truck. In addition, many items are stored on roll out trays which allow for a better working environment around the truck, speeding up deployment in a much safer manner. Many trucks now are equipped with roll up compartment doors which are out of the way when removing equipment and do not present any space restrictions when working in tight quarters.

8. Support Systems

New apparatus have capabilities for larger PTO driven generators which can provide higher power for lights and electrical equipment. They allow for larger light towers for better scene lighting. Communication on the fireground is paramount and new aerial trucks contain better communication systems for bucket operators including radio and intercom systems down to the base of the truck and to the fireground commander. Breathing air systems for bucket and pump operators that match our current style of equipment would be used.

9. Repair and Service Concerns

As the existing 1986 aerial truck gets older, sources of parts and service become harder to find. As the unit ages, it faces the need for major repairs or possibly major overhaul. Our 1986 apparatus is an example of this. In the past several months we were faced with several large repairs that we see when the truck reaches the end of its service life such as:

- brake replacement
- hydraulic lines needing replacement
- alternator being replaced

Some of these repairs were costly and certainly adds additional stress to our current limited operating budget.

The longer the Township keeps this apparatus in service, the lower the resale value which can be funds returned back to Ewing Township after the truck is sold.

Conclusion

The time has come to replace the Prospect Heights Volunteer Fire Company's 1986 LTI 100' ladder truck. As Ewing Township continues to grow and we see building renovation and new construction escalating, the continued need for an aerial truck is even more prudent than it was 22 years ago. This will allow the fire company to keep pace with safety, technology and newer firefighting methodologies as well as curtailing increasing maintenance and repair costs.

This report details why the Prospect Heights Fire Company recommends that our 1986 Tower Ladder be replaced and that this purchase be made in the Township of Ewing's next fiscal budget.

As always, we welcome questions and further dialog on this subject should there be a desire to do so from the Ewing Township Council and administration.