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Best Practices for Backing Fire Apparatus into the Station

Fire trucks are big, and getting bigger. The reasons are many and varied. A common factor is limited manpower. Some fire departments cannot staff multiple apparatus so they purchase rigs that can be used for multiple types of incidents. The result is larger apparatus, with larger blind spots. Larger blind spots create a greater hazard when backing. We have seen a significant rise among MEL / JIF members in the frequency of backing accidents that involve fire apparatus. Many of these are backing into the fire station. There are precautions you can take to prevent this type of incident at your station.

Larger trucks are not the only factor in accidents while backing into the fire station.

- Fire houses and bay doors have generally stayed the same size. While raising a doorway to accommodate a bigger truck is not uncommon, when was the last time a bay door was widened?
- In today's fuel-efficient world, many of the cars we drive have gotten smaller. It is not unusual for driver / operator candidates to never have driven anything larger than a compact car.
- New Jersey's traffic congestion continues to grow. And the drivers of all those cars are more distracted and insulated from the outside world (and us) than ever before.

While we can't fix the issue of traffic congestion, there are a number of things a fire department or fire district can do to mitigate the hazard of backing into the fire station. Let's discuss bay doors first. Since widening the doorway may not be an option, fire department leaders must take steps to assist the drivers to find and put the truck in the middle of the existing bay door opening.

1. Extend the painted lines on the apparatus floor onto the apron – This will allow the driver to align the truck on the line BEFORE reaching the doorway. With the rear tire on the line, the driver knows the vehicle will be centered in the doorway when backing into the bay.
2. Use a spotter every time – Probably no other practice has a bigger impact on safely backing large vehicles than the use of a spotter. Even though a department's drivers are trained and experienced at using mirrors, large vehicles have large blind spots in which conditions can change. Department leaders and drivers who espouse a strong safety culture should insist on spotters whenever backing fire apparatus.

Spotters and drivers must work together. While the apparatus is stopped on the apron before entering the bay, spotters should check the passenger side for obstructions, such as an open cabinet. They should then position themselves on the driver's side and slightly behind the apparatus. Spotters must stay visible in the driver's mirrors, and drivers must immediately stop if they lose sight of the spotter. Spotters should make it a habit to check the clearance at the top of the doorway. Accidents have occurred when the door was not fully opened as the truck entered the doorway, or if the ladder or other equipment was not properly stowed.

Communication between driver and spotter is critical. Standard and distinctive hand signals should be used by the spotters. Page 4 of this Bulletin provides samples of hand signals that may be used. Select the set of hand signals that best suits your department and make them part of your written policies.

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Consider two spotters when available. However only the spotter on the driver-side should give hand signals to the driver. Additional spotters should relay information to the driver through the driver-side spotter or by voice. Drivers should focus on directions from one person.

Extending the painted lines onto the apron and having a spotter allow the driver to keep his attention focused on his / her driver side mirrors. The driver should be able to see his rear wheel on the line and the spotter in his driver side mirrors. Quick checks to the passenger-side mirror and back-up camera monitor (if provided) can verify clear conditions, but by primarily watching one location (driver's side mirror) the driver can be confident s/he is clear to back.

To avoid backing to far (or not far enough), hash marks can be added to the lines on the floor to indicate the optimal position for the rear tire. This can also be seen by the operator in the driver's side mirror

3. Install better lighting inside the bay and on the apron – A common problem encountered in many fire departments is sun glare during certain times of day. This can make it difficult for drivers to see into the bays to visualize the spotter. Stations on poorly-lit streets may also consider additional lighting onto the apron so the driver can clearly see the lines and the spotter. When designing a lighting plan, consider all types of weather conditions and make sure the lights do not blind apparatus drivers and the motoring public.

Departments can also increase the conspicuity of the doorway by adding brightly colored door edging around the bay door opening. Yellow is the typical color for warnings.

4. Install bollards – As a mitigation measure, bollards can minimize damage to the fire station when all the above measures fail. Striking a bollard at low speed may decrease the damage to the truck and eliminate damage to the fire station. Increase the visibility of the bollards by painting them yellow, or other distinctive color.

Next, let's discuss the driver. Now that our stations are prepared, let's make sure drivers are equally prepared to safely operate large vehicles. Three factors will largely influence the safety of backing apparatus into the station.

1. Driver selection – Fire departments and fire districts have an obligation to ensure driver candidates are carefully screened and meet strict qualifications. We recommend three years of experience as a firefighter and one year as a firefighter in your community before a member should begin driver training. Formal driver training at local fire academy should be required.

Motor vehicle records (MVR) should be checked. Again, fire departments and district have an obligation to know their drivers have acceptable driving records. Agencies should establish an acceptable MVR criteria and include it in their written policies. The Safety Director's Office publishes an annual bulletin with a model policy and directions on how to obtain MVRs. Fire departments may not use the local police department to conduct MVR checks.

2. Driver training – Emphasize the backing of fire apparatus in the agency's training process. After intersections, backing is the second most hazardous operation of driving fire vehicles. It should be recognized as an essential skill and given the appropriate emphasis in your training program. Knowledge and repetition are key components in building competency. Include approaching and backing into the fire station under multiple conditions (direction of travel, times of day, traffic and weather conditions, etc.) in skills that must be demonstrated. Don't forget to train spotters.

3. Driver evaluations – Apparatus drivers arguably have the largest impact on firefighter safety. Establish a training and evaluation process that includes a list of required knowledge and skills, ample supervised practice time under various conditions, and demonstrated proficiencies. Do not forget routine tasks, such as backing into the fire station in the department’s training and evaluation program.

Periodic driver re-evaluations should include both formal re-qualification testing and critiques by fire officers who rode the front passenger-side seat, often referred to as the ‘Officer’s Seat’. Fire agencies may periodically require drivers to demonstrate proficiencies on a course that reflects the challenges of driving and positioning apparatus in their district.

Periodic driver evaluations may also include medical screenings for eyesight, hearing, and physical ability to handle the demands of driving large vehicles in tight spaces under severe time constraints.

Immediate feedback to the driver after a response is just as important as formal training. Be specific when providing feedback. Telling a driver, “nice job” does not adequately describe what was observed and what the driver did right. It is more effective to say, “I noticed how quickly you were able to get the rear tire on the line”, or similar observation. Officers should also be reminded that positive reinforcement is more effective in promoting desirable behaviors than negative reinforcement is in changing undesirable behaviors.

4. Written policies - Lastly, fire departments and districts should have strong written policies to guide the actions of drivers, line officers, and training officers. Some items to consider when writing or reviewing SOP / SOGs include:

- Who has ultimate responsibility to ensure a spotter is in place before backing the vehicle? The driver? The officer or senior firefighter? The firefighters on the vehicle?
- Include pictures of the department’s standard hand signals for spotters in the policy.
- Maintenance issues – who is responsible for periodically inspecting lines, lights, and other devices?
- If an accident occurs, who will investigate the circumstances and write the report? In what timeframe will this be done? Every investigation should conclude with two items:
 - A letter in the driver’s file stating the accident was investigated, the findings, and the action plan that resulted. Even if the driver was found to be not at fault, such a letter sends a strong message that all accidents are evaluated with the goal of learning something that can improve the organization.
 - An action plan designed to improve the driver and the department. Action plans should answer the question, “Who will do what by when?”

Two points are true. 1) Fire departments back their vehicles into their stations hundreds of times a year, and 2) there is a significant history of trucks striking doors and buildings when backing. Even minor incidents can cost thousands of dollars in repairs to apparatus and building, and can sideline a critical fire department asset for weeks or months. Strong leadership can minimize damage to fire department equipment and operations from this hazard. Safety first in all we do. Even the routine.

We would like to thank the Bordentown Township Fire District #2, the Pleasantville Fire Department, and the Wildwood Fire Department for assisting with pictures for this Bulletin.



It is safe to proceed backwards



Stop the vehicle



Move vehicle to the right



Move vehicle to the left



Go slow. You're close to an obstruction.