TOLEDO FIRE & RESCUE DEPARTMENT

C-110 ELEVATOR RESCUE

Emergency Manual

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Purpose

To standardize the procedures and techniques used by TFRD personnel to remove individuals trapped in stuck/stalled elevators. Performing these techniques requires specialized training and tools which is exclusive to Heavy Rescues and Trucks. Training which includes comprehensive understanding of elevator anatomy is required to ensure the safety of both TFRD personnel and victims while minimizing property damage. Elevator technicians are deemed the best solution for these incidents, and if responding, it is recommended to wait for their arrival when considering secondary procedures.

Definition:

Elevator rescues are categorized as incidents in which occupants can be safely removed through car doors, either through non-invasive techniques, or full lock out/tag out with elevator keys. This procedure does **not address rescues made through top hatch or landings beyond 3'**, which is an advanced technical rescue performed by TFRD Technical Rescue Teams, or a certified tech lowering/raising car. When the elevator car is beyond 3' above or below landing, do not attempt to open the car door. Our best resource will be an elevator technician, request one early in the incident.

Elevator technicians are ***preferred*** to mitigate these incidents, and true immediate medical emergencies for trapped civilians are ***rare***. However, circumstances in which there is no contract with the dwelling, therefore no response of an elevator technician or extenuating circumstances such as a legitimate medical event may require immediate intervention. This procedure, although not all encompassing, will provide a framework that properly trained personnel can use to remove occupants from a stuck/stalled elevator. Occupants in a stalled car are relatively safe, the actions taken must guarantee the same result.

Types of Elevators: There are (3) main types of elevators; traction which commonly serve more than 5 floors, hydraulic which typically serve 5 floors or less, and a relatively new technology called machine-

room-less (MRL) which can serve 2-20 floors. There are variations of each, dissimilarities between manufacturers, and modifications/upgrades made over time. Identification of key components is imperative, if this cannot be accomplished, cease rescue operations. Proper preplanning will contribute to a successful incident.

Dispatch and arrival on scene:

The incident shall be assigned to a dedicated radio channel so that responding personnel have a channel clear of all unrelated radio traffic. Call taker should inquire what elevator is involved if multiple banks, last known floor if not indicated in car, medical complaint or injury, and if elevator contractor has been dispatched with ETA. Upon arrival the officer should make contact with occupant of the elevator and determine if it is emergent or non-emergent. They should verify above information/status, inform occupant that measures are being taken to initiate rescue. Rescuers should also acquire elevator and maintenance keys from the Knox box if present.

Initial procedure (Non-Invasive):

1. If elevator has phase 1 recall at lobby area near elevator banks, use the operator key and switch to "On" position. This should recall all elevators to the lobby, and many times will result in release of trapped occupant. If so, once complete, reset, then place in "Off" position. If this does not return elevator to the lobby proceed to step 2.

2. One member gains access to elevator equipment room, 2nd member remains at location of stalled elevator, and 3rd at lobby. Elevator equipment rooms for hydraulic are typically located adjacent to elevator bank lowest floor, traction will be located in penthouse machine room, and MRL can vary but typically within close proximity and labeled.

1. Identify Main Power disconnect for elevator, and cycle power off for 30 seconds, then restore. It is important to ensure that 120 VAC for elevator car lights is not deenergized as this supplies power to interior lights of car.
2. The hard reset may take several minutes to restore function, if after 5 minutes the car does not return to lobby, proceed to secondary procedure, lockout/tagout.

Secondary procedure (Lockout/Tag Out):

If circumstances exist that warrant continued efforts to release trapped occupants beyond non-invasive techniques it is imperative that **proper lockout/tagout** is performed before any activity involving manipulation of doors and equipment begins. When more than (1) elevator is present, it can be difficult to identify affected unit. When in doubt, clear unaffected elevators and isolate accordingly. Using lockout/tagout provides a higher degree of safety when working on elevators, but does not eliminate risks to members or occupants. Instruct occupant to remain seated at back of elevator car if possible.

Hydraulic elevators are the only type that can be lowered, and no attempt should be made to lower traction elevators or MRL. No elevator rescue attempt should be made if the distance of the car is ***beyond 3'*** above or below the landing.

- The *following procedures* apply to traditional cable traction and hydraulic elevators only:

Traction elevators:

1. Identify Main Power disconnect for elevator, close disconnect, observe brake latch, use appropriate lockout/tagout device, secure lock and remove key. If disconnect cannot be properly locked out, then member should remain at disconnect. Electrical lockout/tagout completed shall be announced on radio.

2. Using the appropriate elevator hoist way key, locate upper key hole in the elevator hoist way door, rotate the key until the lift rod is raised and door can be manually opened fully, place chocks to keep door open. ***Ensure car is static*** (see note below). Once hoist way door is open, and car is within 3’ of landing, proceed to step 3, if beyond 3’ do not attempt rescue.

3. Locate door operator and manipulate clutch, or rotate the sheave clockwise which will release car door a couple inches. The car door should open manually the rest of the distance.

4. Occupant should now be able to exit. Care should be taken extricating the occupant if the car is ***within*** 3’ above or below the landing. Use combination ladder or step stool as required, and consider barricading the opening between the car and the landing to prevent falls or injury.

5. Close both doors and ensure secured. If present, advise staff that TFRD is instructing that the specific elevator should remain out of service, remove locks and leave de-energized. Place scene tape over lobby hoist way door if possible.

Note: Traction elevators can experience brake failure, and will ascend due to counterweights. This can also occur when power is deenergized suddenly, therefore a ***simultaneous*** through the door rescue and lock out/tag out should ***never*** be attempted. Always lock out/tagout first, then verify car is static, before attempting to open car door.

Hydraulic elevators:

1. Identify Main Power disconnect for elevator, drop power and use appropriate lockout/tagout device, secure lock and remove key. If disconnect cannot be properly locked out, then member should remain at disconnect. The disconnect is normally located in same area as hydraulic tank unit. Electrical Lockout/tagout completed shall be announced on radio.

2. Identify hydraulic tank unit and emergency manual lowering valve.

3. Inform occupant that elevator will be lowering and to remain seated in back of car.

4. Operate manual lowering valve and maintain position until car arrives at lobby, or lowest level. This can be noted by the sound generated near hoist way door. Isolate ball valve on hydraulic outlet line, and lockout/tagout with appropriate device and lock. Mechanical lockout/tagout completed shall be announced on radio.

5. Using the appropriate elevator hoist way key, locate upper key hole in the elevator hoist way door, rotate the key until the lift rod is raised and door can be manually opened fully, then place chocks to keep door open. Once hoist way door is open, car should be near or at landing, proceed to step 6, if beyond 3’ do not attempt rescue.

6. Locate door operator and manipulate clutch, or rotate the sheave clockwise which will release car door a couple inches. The car door should open manually the rest of the distance.

7. Occupant should now be able to exit. Care should be taken extricating the occupant if the car is within

3’ above or below the landing. Use combination ladder or step stool as required, and consider barricading the opening between the car and the landing to prevent falls or injury.

8. Close both doors and ensure secured. If present, advise the staff that TFRD is instructing that the specific elevator should remain out of service, remove locks and leave electrically de-energized and ensure ball valve remains closed. Place scene tape over lobby hoist way door if possible.

Additional Considerations:

1. The member heading to the machinery room be on the lookout for any clues or indicators of a potential problem that would either inhibit standard rescue techniques or affect the safety and stability of the elevator car to a point where the incident needs to be upgraded to a technical rescue response. (severely leaking hydraulic line, puddle of fluid, cable damage or separation, brake failure, the car on safety, etc.)

2. It should also be made clear that TFRD does not request elevator mechanics, but the location should have a service contract on file. Otherwise, we could not only request the wrong company for the particular building, but also incur the service fee if the company called by TFRD/RCOG is not the company with a contract for that particular building.

See Also:
