
S.O.P. #: TACTICAL OPERATIONS MANUAL #05

SUBJECT : ELEVATOR RESCUE PROCEDURES

DIVISION: EMERGENCY OPERATIONS

Objective: To provide fire/rescue personnel with sufficient information to safely and effectively handle most typical situations involving stalled passenger elevators. There may be times when these procedures will be ineffective due to the many different types of passenger elevators. Attempt to gain entry on a trial-error basis may not only result in needless damage to elevator equipment, but in injury to the passengers or fire/rescue personnel.

Section 1: Elevator Terminology

- A. The following definitions have been included to give a better understanding of passenger elevator rescue procedures.
1. Buffer - A device designed to stop a descending car or counterweight beyond its normal limit of travel by storing or by absorbing and dissipating the kinetic energy of the car or counterweight.
 2. Bumper - A device, other than an oil or spring buffer, designed to stop a descending car or counterweight beyond its normal limit of travel by absorbing the impact.
 3. Car, Elevator - The load-carrying unit including its platform, car frame, enclosure and car door or gate.
 4. Car Platform - The structure which forms the floor of the car and which directly supports the load.
 5. Door or Gate, Car or Hoistway - The movable portion of the car or hoistway entrance which closes the opening providing access to the car or to the landing.
 6. Elevator - A hoisting and lowering mechanism equipped with a car or platform which moves in guides in a substantially vertical direction, and which serves two or more floors of a building or structure.
 7. Emergency Stop Switch - A device located in the car, when manually operated, causes the electric power to be removed from the driving machine motor and brake of an electric elevator or from the electrically operated valves and/or pump motor of a hydraulic elevator.
 8. Entrance, Elevator - The protective assembly which closes the hoistway enclosure openings normally used for loading and unloading.
 9. Types of Doors
 - a. Horizontal Slide Type - An entrance in which the panel(s) or door(s) slide horizontally.
 - b. Swing Type - An entrance in which the panel(s) or door(s) swings around vertical hinges.
 - c. Vertical Slide Type - An entrance in which the panel(s) or door(s) slides vertically.

10. Hoistway, Elevator - A shaftway for the travel of one or more elevators. It includes the pit and terminates at the underside of the overhead machinery space floor or grating, or at the underside of the roof where the hoistway does not penetrate the roof.
11. Blind Hoistway - The portion of a hoistway which passes floors or other landings at which no normal landing entrances are provided.
12. Types of Hoistways
 - a. Multiple Hoistway - A hoistway for more than one elevator.
 - b. Single Hoistway - A hoistway for a single elevator.
13. Landing, Elevator - That portion of a floor, balcony, or platform used to receive and discharge passengers or freight.
14. Pit, Elevator - That portion of a hoistway extending from the threshold level of the lowest landing door to the floor at the bottom of the hoistway.
15. Poling Procedures
 - a. Poling Across - A procedure using a narrow shaft pole or similar tool to trip and open a hoistway door from entranceway of an adjacent elevator car.
 - b. Poling Down - A procedure using a narrow shaft pole or similar tool to trip and open a hoistway door from landing directly above it.

Section 2: Safety Precautions

- A. The following basic precautions shall be adhered to during elevator rescue emergencies.
 1. Never enter hoistway of stalled car without first cutting off main power to car.
 2. A cut off tag should be carried which can be used when main power to a car is cut off. In the absence of such a tag or paper, station a crew member with a portable radio next to the main cut-off to prevent premature restoring of power to car.
 3. Always station a person at each landing without a car when hoistway door is being opened or is already in an opened position.
 4. Whenever hoistway door has been forced open, assign a person to remain at opening until properly secured or relieved by qualified personnel.
 5. When manually closing hoistway doors, be certain they are completely closed and locked.
 6. Before forcing open a hoistway door be sure main power to car has been turned off. Failure to do so may result in door becoming energized with electricity upon being forced open.
 7. Before forcing open a hoistway door by striking with a sledgehammer, be sure main power to car has been cut off. Although door is free to swing at bottom, tip of door is still completely closed and electrically intact. The car could still run if no other electric safety devices have been opened.

8. When forcing open a hoistway door with a sledgehammer, swing bottom of door only a few inches away from track so as to reduce chances of door falling on top of car or down open hoistway.
9. If it is suspected that car stalled due to a power failure to building, cut off main power to car before attempting to remove passengers. If power is suddenly restored, car will start to run again.
10. Never enter a hoistway in order to effect routine removal of passengers unless properly trained and experienced to do so.
11. Always station a person at landing if car platform is a considerable distance above landing sill. This is necessary so as to prevent passengers from losing balance and falling down hoistway through opening created by positions of car.
12. When poling down, the crew member performing this task should lie on landing floor with head and arms extending into hoistway only. This position will afford him/her good balance.
13. The poling member must be secured by a rope around the waist with the running end of the rope secured to an anchor point or other Fire Department member.
14. Never attempt to run cars from controller in machinery room.
15. Remove loose fitting clothing when working in close proximity to pulleys or other machinery with moving parts.
16. Utilize more than one electric safety device to ensure that stalled car will not run during removal operations.
17. Remove all unnecessary civilians from the working area. Limit the number of fire department personnel to no more than 8 (eight).

Section 3: Hoistway Door Keys and Key-Holes (Common Types)

A. Location of Key-Holes

1. Single car hoistway
 - a. every landing
2. Two car hoistway
 - a. two lowest landings
 - b. or upper landing

B. Types of Keys

1. Half moon (large and small)
2. Tee
3. Flip over or drip-pin
4. Hook

C. Probable location of particular key in building.

1. Mounted on wall at lobby landing or other lower landing with key hole (usually not found at this location for security reasons).
2. Resident Manager's Office.
3. Building Engineer's key ring or office.
4. Secretarial Service (desk).
5. Knox Box.
6. Emergency Command Center.

Section 4: Elevator Incidents

A. There are two types of elevator incidents:

1. Routine (stalled car - passenger inconvenience only).
2. Emergency (stalled car with endangered, seriously injured or ill passengers).

B. Routine incident duties of fire/rescue personnel.

1. To assign a responsible person to notify elevator company.
2. To determine location of stalled car.
 - a. Check hall floor indicator.
 - b. Check with people at scene who have knowledge of situation.
 - c. Open hoistway door that is provided with key-hole and check up and/or down hoistway.
 - d. Go to elevator machinery room and check position of rotating breaker arm.
3. To establish and maintain continuous communication with passengers.
4. To reassure passengers.
5. To evaluate the situation so as to determine a safe course of action.
6. To employ appropriate operational procedure(s) for safe removal of passengers.

C. Recommended equipment to be taken into building by fire/rescue personnel for routine incidents.

1. Elevator car keys.
2. Hoistway door keys.

3. Portable radio.
 4. Handlight(s).
 5. Elevator tool, broom handle (or other slender pole).
 6. Kernmantle rescue rope and devices.
 7. Coil of 1/2" nylon utility rope.
 8. Haligan tool and butt axe.
- D. Recommended procedures for routine entry into elevator car with car at landing and when hoistway door is provided with a key hole.
1. Procedure (A)

Instruct passenger of car to push floor selector button(s) and/or door open button (sometimes this is all that is necessary in order to open car and hoistway doors).
 2. Procedure (B)
 - a. Push on hoistway door in direction of door travel.
 - b. Open inner door in same manner.
 3. Procedure (C)
 - a. Use appropriate key to open hoistway door of stalled car.
 - b. Open inner door by pushing in direction of travel.
 4. Procedure (D)
 - a. Use appropriate key to open hoistway door of stalled car.
 - b. Instruct passengers to apply Emergency Stop Switch. Caution them about alarm bell.
 - c. Slide open inner door.
 5. Procedure (E)

Release Emergency Stop Switch, if applied, and follow Procedure (A).
- E. Car at landing without hoistway door key hole.
1. Procedure (A)

Instruct passenger of car to follow Procedure (A) in D. above; if to no avail, then instruct them to do the following:
 - a. Apply Emergency Stop Switch.

NOTE: Before applying Emergency Stop Switch, make certain passenger is aware of the following:

- 1) alarm bell will ring
 - 2) they understand the entire procedure
 - 3) if procedure does not work - release Emergency Stop Switch and await additional information
- b. Push on inner door in direction of door travel.
 - c. Locate rollers near top of hoistway door.
 - d. Reach up and trip roller closest to direction of door travel or top roller, whichever is the case.
 - e. Push hoistway door in direction of door travel.
2. Procedure (B)
 - a. If practical, use Poling Across procedure to release and open hoistway door of stalled car.
 - b. Instruct passenger of car to apply Emergency Stop Switch.
 - c. Open inner door.
 3. If Poling Across procedure cannot be used and there is a hoistway door key hole at upper landing of stalled car, then:
 - a. Take adjacent car to upper floor.
 - b. Use appropriate key to open hoistway door of stalled car.
 - c. Use Poling Down procedure.
 - d. Pole open hoistway door at landing of stalled car.
 - e. Open inner door.
- F. Car stalled between landings.
1. Open hoistway door at convenient landing.
 2. If car platform is not too far above landing, open inner door.
 3. Instruct passenger to apply Emergency Stop Switch before leaving car.
 4. Caution passenger(s) about opening between platform of car and landing created by position of car.
 5. Assist passenger(s) from car.

NOTE: If car platform is too far above landing for removal, go to next landing and check position of car. If platform is only a few inches below landing, remove passengers while following the above guidelines. If there is a considerable distance between platform and sill, DO NOT attempt to remove passengers. Wait until elevator company representative arrives.

G. Emergency incident, duties of fire/rescue personnel:

1. O.I.C. to implement Incident Command System and assign units as necessary.
2. To assign a responsible person to notify elevator company.
3. To determine location of stalled car.
 - a. Check hall floor indicator.
 - b. Check with people at scene who have knowledge of situation.
 - c. Open hoistway door that is provided with key-hole and check up and/or down hoistway.
 - d. Go to elevator machinery room and check position of rotating breaker arm.
4. To establish and maintain continuous communication with passengers.
5. To reassure passengers.
6. Evaluate situation to determine safe course of action.
7. Provide essential emergency first aid information to passengers if situation appears to be life threatening.
8. To employ appropriate emergency operational procedure(s) to safely remove passengers.

H. Recommended equipment to be taken into building by fire/rescue personnel for emergency incidents.

1. Elevator car keys
2. Hoistway door keys
3. Portable radio
4. Handlight(s)
5. Elevator tool, broom handle (or other slender pole)
6. Folding ladder
7. Sledgehammer
8. Block of wood
9. Flathead axe and haligan bar
10. Tool kit
11. Kernmantle rope, webbing and carabiners
12. Coil of 1/2" nylon utility rope

13. Porta-power with duck bills

I. Recommended procedures for emergency entry into elevator car.

1. Procedure (A) - via Emergency Escape Hatch.

- a. Cut off main power to car.
- b. Open hoistway door above stalled car.
- c. Remove emergency escape hatch.
- d. Enter car to check condition of passenger(s). Attempt to release both doors so injured or sick passenger(s) can be removed through normal entranceway. If unsuccessful, perform essential first-aid measures.
- e. Place folding ladder into emergency escape hatch.
- f. Station a crew member on top of the car to assist passenger(s) up the ladder.
- g. Station a crew member at the landing to assist passenger(s) off the ladder.
- h. Provide medical assistance for removal to hospital.
- i. Remove ladder.
- j. Close and lock hoistway door.

2. Procedure (B) forcible entry - using an axe, porta-power or haligan bar.

- a. Cut off main power to stalled car.
- b. Go to landing above position of stalled car.
- c. Insert blade of axe into upper corner of hoistway door - away from direction of door travel.
- d. Pry open door.
- e. Open door just enough to reach exposed roller(s) of hoistway door below.
- f. Use Poling Down procedure to release and open hoistway door.
- g. Open inner door.
- h. Remove passengers.

3. Procedure (C) forcible entry - using a sledgehammer.

- a. Cut off main power to car.
- b. Go to landing above stalled car.

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- c. Place block of wood at base of hoistway door (centered across width).
- d. Use sledgehammer to strike block so as to shear off guides on bottom of door.
- e. Swing bottom of door out just a few inches in order to reach exposed roller(s) below.
- f. Use Poling Down procedure to release and open hoistway door.
- g. Open inner door.
- h. Remove passengers.