



GENERAL ORDER

GENERAL ORDER 330.13

High Angle and Technical Rope Rescue Incidents

EMERGENCY SERVICES BUREAU

Issue Date: 03/05/2014

Revision Date: N/A

1 APPLICABILITY

2 All Personnel

3 POLICY

4 The Howard County Department of Fire and Rescue Services (Department) shall set forth guidelines that
5 assist the incident commander in assessing the hazard, identifying the level of operational capability, and
6 establishing operational criteria when responding to high angle and technical rope rescue incidents. The
7 achievement of these objectives will help prevent and reduce the severity of accidents, injuries, and
8 exposures to both Department personnel and the citizens served by the organization. The well-being of
9 members or citizens shall not be risked for any activity that is not essential to the immediate protection
10 of life. No Department member shall conduct, or participate in, an activity for which he/she is not trained
11 and/or properly equipped to handle.

12 DEFINITIONS

- 13 ➤ **High Angle** – refers to an environment which the load is supported by a lowering or hauling
14 system with a belay. This angle is often referred to as an angle between sixty five degrees and
15 ninety degrees off the horizontal plane.
- 16 ➤ **Low Angle** – an environment which the load is predominantly supported by the rescuers, and not
17 the rope system, however a rope system may be deployed to further protect rescuer's (extreme
18 weather conditions, rain or ice) this angle is often referred to as an angle less than forty degrees
19 off the horizontal plane.
- 20 ➤ **Rope Rescue** – any rescue attempt that requires rope related equipment to safely gain access to,
21 and remove victim(s) from hazardous areas or sites with limited access.
- 22 ➤ **Steep Angle** – an environment which the load is balanced by the rescuers and the rope system, a
23 lowering / hauling system may be required with a belay. This angle is often referred to as an angle
24 between forty degrees and sixty five degrees off the horizontal plane.
- 25 ➤ **Incident Commander (IC)** - is the individual responsible and accountable for managing the entire
26 incident. There is one incident commander for an incident at any given time.
- 27 ➤ **Incident Safety Officer (ISO)** - is responsible for overall incident safety throughout the rescue
28 operation, pursuant to Department policy, Incident Command System. This individual shall report
29 directly to the Incident Commander. The individual assigned as ISO by the IC shall meet the
30 requirements of NFPA 1521, Standards for Fire Department Safety Officer.



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- 31 ➤ **Technical Safety Officer (TSO)** - a position assigned by the Incident Commander, is responsible for
32 the safe conduct of all operations in the technical rescue group of the Incident Command System.
33 This individual shall be a Special Operations team member or an individual who possesses
34 knowledge, training, and experience pertinent to the type of technical rescue being conducted.
35 The Technical Safety Officer shall report directly to the Incident Safety Officer.
- 36 ➤ **Awareness Level** – per NFPA 1670, this level of Technical Rope Rescue training requires
37 Department personnel to size-up existing and potential conditions; identify resources necessary to
38 conduct safe and effective operations; implement site control and scene management; recognize
39 general hazards associated with the incident and procedures necessary to mitigate these hazards;
40 and determine whether the emergency scene is a rescue or body recovery incident.
- 41 ➤ **Operations Level** – per NFPA 1670, this level of Technical Rope Rescue training requires
42 Department personnel to perform all the techniques of the awareness level, plus safely construct
43 a rope based mechanical advantage system and a belay system so that personnel can safely
44 access and evacuate a victim from a low angle and steep angle environment.
- 45 ➤ **Technician Level** – per NFPA 1670, this level of Technical Rope Rescue training requires
46 Department personnel to perform all the techniques of the operations level, plus develop and
47 implement a plan employing rope rescue techniques in the high angle environment; at a higher
48 level of risk to personnel.
- 49 ➤ **Specialist Level** – per NFPA 1670, this is an individual who has technical expertise and practical
50 knowledge with high angle rescue and rope access scenarios. This person may augment on-scene
51 activities by providing essential information in their specialized field.

PROCEDURES

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53 Each response to a High Angle and Technical Rope Rescue Incident shall be evaluated upon arrival by the
54 Incident Commander to assess the risk to Department personnel.
55

56 The well-being of personnel and/or citizens shall not be risked for any activity that is not essential to the
57 immediate protection of life.
58

59 The priority for rescue/safety shall be:

- 60 • Yourself;
- 61 • Other responders;
- 62 • The victim(s).

63 All operations at the scene of a High Angle and Technical Rope Rescue Incident shall be performed in a
64 safe manner consistent with the identified level of operational capability. No Department member shall
65 conduct, or participate in, an activity for which he/she is not trained, certified and/or properly equipped
66 to handle.
67

68 When conducting a training exercise, body recovery, evidence search, incident involving animals, or other
69 operations not essential to the immediate protection of life, the incident commander shall utilize the
70 same procedures employed during an actual rescue operation but at a level of urgency commensurate
71 with the risk/benefit analysis.



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73 All Department career personnel shall be trained to the Operations level of Rope Rescue. This will be
74 accomplished by providing career personnel with the current Maryland Fire and Rescue Institute Rescue
75 Technician – Site operations (or equivalent) course.

- 76 • Training for volunteer personnel may be requested through the Howard County Volunteer
77 Training Board.

78

79 Only Technician and Specialist trained and certified level personnel shall be allowed to participate in high
80 angle/high risk situations.

81

82 All personnel must be properly attired with the appropriate level of personal protective equipment. At a
83 minimum; a Department approved Class III harness, rescue or firefighting helmet, eye protection, work
84 gloves, and steel toed/shank work boots.

85

86 It is the intent of this policy to follow recommendations contained within;

- 87 • NFPA 1670, Standard on Operations for Technical Rescue Incidents
- 88 • Department General Order 300.02, Accountability
- 89 • Department General Order 300.04, Mayday
- 90 • Department General Order 300.07, Incident Command System
- 91 • Department General Order 300.11, Rapid Intervention Crew
- 92 • Department General Order 330.04, Technical Rescue Incidents

93

94 **GUIDELINES FOR INITIAL ACTIONS**

95 The first arriving officer shall establish command pursuant to Department General Order 300.07, Incident
96 Command System.

97

98 The Incident Commander shall attempt to identify, locate and secure a witness as soon as possible; this
99 will help in identifying the problem and locating the victim(s).

100

101 The Incident Commander, or designee, should access maps, pictometry, and all other available
102 information, and have the witness sketch a map, as needed.

103

104 Conduct on scene assessment, to include;

- 105 • Securing the scene, establish safety and exclusion zones, and announce the appropriate level of
106 personal protective equipment for operation.
- 107 • Determine access points/establish points of entry and accountability.
- 108 • Determine location and number of victims.
- 109 • Determine activities of victim(s) prior to incident.
- 110 • Determine mechanism of entrapment or nature of emergency.
- 111 • Assess time of day (project lighting needs) and environmental factors (weather).

112

113 The Incident Commander shall assess the risk to Department personnel and communicate the scene size-
114 up and hot zone to response personnel.



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- If the Incident Commander determines that the incident is beyond the capabilities of Department personnel currently on the scene, he/she shall immediately request Howard Communications to dispatch the Special Operations team to the scene. Upon arrival, the Special Operations team will assist with the rescue operations as directed by the Incident Commander.

Prohibit entry of untrained personnel (and citizens) into the warm and hot zones. All observers, citizens, media representatives, and unprotected responders are to be kept far enough away from the incident as to not interfere with the ever expanding operation or responding units.

Recognize and identify hazards specific to a high angle/technical rope rescue incidents. Hazards can include, but are not limited to, the following:

- Falls from significant heights;
- Slips and trips;
- Adverse environmental conditions.

Locate/Access the victim. Command may need to deploy a reconnaissance group or hasty team to the point last seen or last known point of the victim(s) to attempt to determine their exact location and nature of injuries. When at all possible, the recon group should be staffed and equipped to provide patient care at the Advanced Life Support level. The following considerations will be taken into account;

- If the site or terrain is greater than 60 degrees inclination, command should consider waiting until Special Operations arrives with the proper trained personnel and equipment to reach the victim.
- At times, the use of a helicopter is the most reasonable method of reaching the victim. Helicopter operations are considered extremely risky. The Incident Commander shall consult with the helicopter flight crew to determine the risk/benefit of an air operation. The Incident Commander and helicopter agency shall mutually agree that a helicopter will be used for a rescue operation or a reconnaissance mission. The helicopter pilot makes the final determination regarding how the helicopter will be used during the operations.

After evaluating the information received during the scene assessment and developing an effective incident action plan, review the resources on location and en route to determine if any additional resources are needed.

SCENE SAFETY

The Incident Commander shall assign an Incident Safety Officer for the duration of the incident. The Incident Safety Officer responsibilities shall be pursuant to Department General Order 330.04; Technical Rescue Incidents, Guidelines for Scene Safety at Technical Rescue Incidents.

- The Incident Safety Officer shall be responsible for identifying hazards and mitigating them if at all possible. Typical rope rescue hazards include, but are not limited to, slips, trips, falls, and adverse environmental conditions, etc. Information regarding hazards that cannot be mitigated shall be communicated to the Incident Commander and to all personnel operating at the scene.
- All personnel working within 10 feet of any edge (hot zone) shall be properly dressed and connected to a travel restrict system to prevent the member from falling.



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157 A Technical Safety Officer shall be assigned to assist the Incident Safety Officer whenever technical
158 resources are being utilized (i.e., the rescue operations are beyond awareness level techniques), this shall
159 be pursuant to Department General Order 330.04; Technical Rescue Incidents.

160 **GUIDELINES – OPERATIONS LEVEL TRAINED PERSONNEL**

161 The Incident Commander shall decide whether to operate in the rescue or body recovery mode, based on
162 the information available, conditions and hazards present.

- 163 • If the Incident Commander determines that the incident will be a rescue, then operations must be
164 initiated as soon as possible with the proper equipment and qualified, trained personnel.

165
166 All rescue operations are to be conducted in a low risk to high risk order. The risk/benefit of each
167 operation shall be considered by the Incident Commander, along with the Incident Safety Officer and/or
168 the Technical Safety Officer, prior to implementation.

169
170 If the Incident Commander determines that the incident will be a body recovery, then operations are to
171 proceed in a manner that presents limited risk to Department personnel.

173 **GUIDELINES – TECHNICIAN LEVEL TRAINED PERSONNEL**

174 When the rescue operation is of high risk or the Incident Commander is unsure of the resources available
175 on the scene, the Incident Commander shall have Communications dispatch the Special Operations team
176 to the scene.

177
178 Only technician and specialist level trained and certified Department personnel shall be allowed to
179 attempt a high angle rescue operation.

180
181 Once all of the appropriate/applicable tasks listed on the Special Operations High Angle and Technical
182 Rope Rescue Tactical Operation Guide have been completed and the personnel of the operation have
183 been briefed, a rescue may commence.

184
185 Once rescuer(s) are at victim(s) side, technicians shall assess the medical condition and provide the
186 highest care possible.

187
188 The Incident Commander shall establish a rehab area to provide the rescuers with medical assessment,
189 nutrition, and hydration during an extended rescue operation.

191 **GUIDELINES – POST RESCUE OPERATIONS**

192 As soon as the victim is brought to safety, a re-assessment shall be completed by Advanced Life Support
193 personnel.

194
195 Personnel involved in rescue operations shall proceed to the rehab area for medical assessment,
196 nutrition, hydration, and/or environmental temperature control.

197
198 Upon conclusion of personnel rehab, the following shall be accomplished:

- 199 • Conduct an equipment check;



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- 200 • Decontaminate personnel and equipment as needed;
- 201 • Inventory and inspect all equipment for damage;
- 202 • Document rope and equipment use as required;
- 203 • Secure the scene as needed;
- 204 • Consider debriefing, after action reporting, and post incident critique.

205

206 **HIGH ANGLE/TECHNICAL ROPE RESCUE TRAINING AND DOCUMENTATION**

207 Special Operations team personnel shall be expected to perform at the technician level and shall be
208 trained and certified accordingly.

209

210 Annual performance evaluations (re-certifications) for High Angle and Technical Rope Rescue Technicians
211 shall be conducted on all Special Operations personnel and equipment, pursuant to the guidelines of
212 NFPA 1670, Standard on Operations and Training for Technical Rescue Incidents.

213

214 Master documentation for all initial training, certifications and annual re-certification shall be maintained
215 by the Bureau of Education and Training.

216

217 Documentation regarding training and certification for each member shall be available for inspection by
218 that member and his/her authorized representatives.

219

220 **REFERENCES**

- 221 • Department General Order 300.02, Accountability
- 222 • Department General Order 300.04, Mayday
- 223 • Department General Order 300.07, Incident Command System
- 224 • Department General Order 300.11, Rapid Intervention Crew (RIC)
- 225 • Department General Order 330.04, Technical Rescue Incidents
- 226 • National Fire Protection Agency (NFPA) 1670, Standard on Operations for Technical Rescue
227 Incidents

228 **SUMMARY OF DOCUMENT CHANGES**

229 New Order, 08/30/2013

230 **FORMS/ATTACHMENTS**

- 231 • Howard County Special Operations Tech Rescue Rope Tactical Operations Guides (TOG)

232

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APPROVED

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A handwritten signature in black ink that reads "John S. Butler".

240

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Deputy Chief John S. Butler
Operations Command



Technical Rope Rescue Operations Checklist



**Howard County
Fire & Rescue**
Special Operations
410-313-7692

Technical Rope Checklist

Incident # _____

Incident Information:

Date:

Time:

Incident Commander:

Location:

Weather Update:

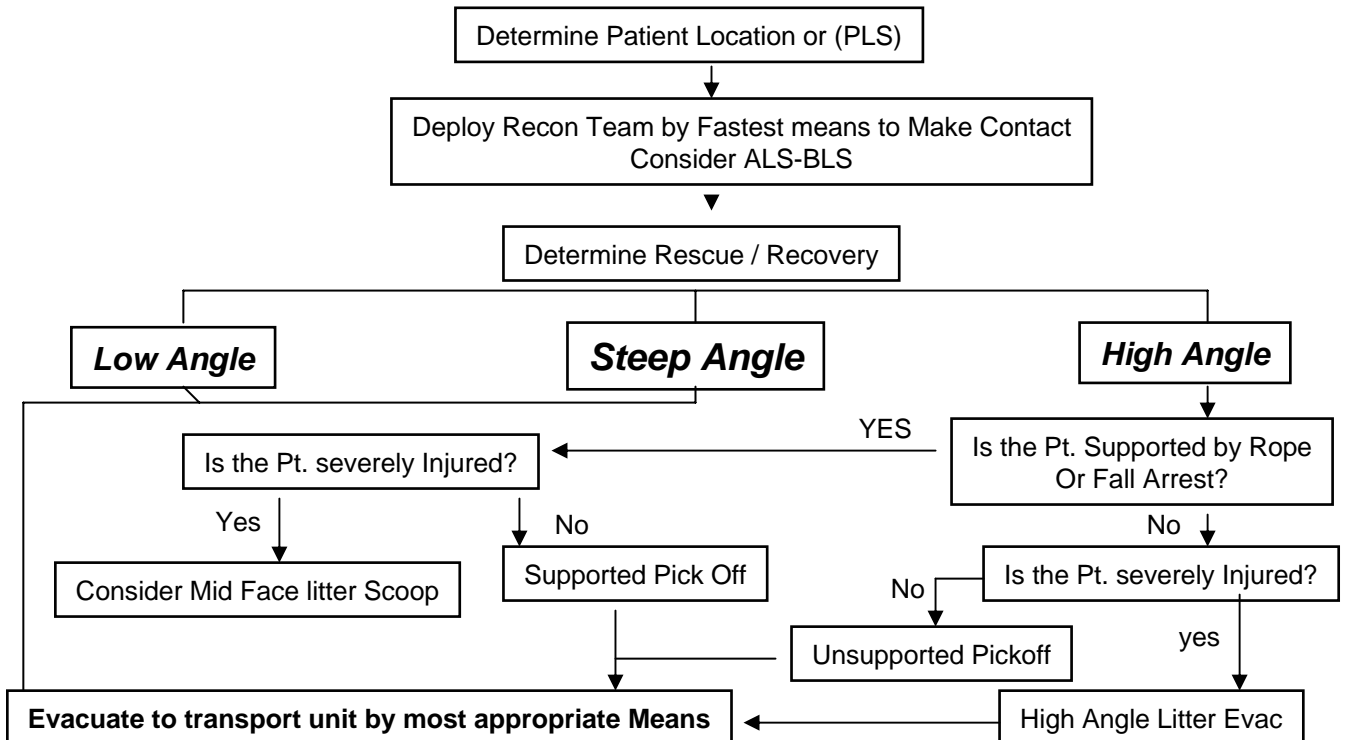
Rescue / Operations:

Rope Team:

Extrication Team:

EMS Team:

Operation Considerations:



Rope Rescue Operations Checklist

Commands for Lower

	Yes	No	Comments
Stand by to pre – tension system			
Check with TSO for system safety Check			
Attendant 's Ready?			
Edge man ready?			
Lowering line, take up slack and load ____ bars (Based on size of Load)			
Pre –tension system			
System Safety Check !			
Attendant ready for lower ?			
Edge Ready ?			
Belay Ready?			
Break Man Ready ?			
Down Slow !			
Whistle Commands:			

Rope Rescue Operations Check list

System Drawing:

Commands For Raise:

	Yes	No	Comments
Safety is everything Ok?			
Attendant or Bearers Ready ?			
Edge Control ready ?			
On Belay ?			
Haul Team Ready ?			
Pre-Tension the System <i>Reset M/A if needed</i>			
System Safety Check			
Attendant Ready for Raise ?			

Rope Rescue Operations Check List

Phase IV : Termination

	Yes	No	Comments
Conduct a PAR			
Rehab and check for injuries			
Removal Of Equipment			
Consider the need for C.I.S.M.			
Establish documentation for all Lost and damaged equipment			

Site Drawing :

Utilize the box below to sketch the scene

