DART Water Rescue Skills Testing

Objectives:

Compliance with NFPA 1006 Team Qualifications
Test Effectiveness of Team Training and Resource Documents
Assess and Document Personnel Capabilities

Method:

Testing involves both written and manipulative skills demonstrated in a defined manner. Tests correspond with the water rescue section of NFPA 1006. Grading is against a predetermined set of criteria. Skills demonstrated during testing reflect operational guidelines from DART Water Rescue information sheets. For the water rescue technician, there are 14 separate tests:

5.1 Site Survey for Hazards
5.2 Selection of PPE
5.3 Swim a Water Course
5.4 Define Search Parameters
5.5 Develop an Action Plan for a Shore-Based Rescue of a Single Water-Bound Victim
5.6 Deploy a Water Rescue Rope to a Water-Bound Victim – Throwbag
5.7 Deploy a Water Rescue Rope to a Water-Bound Victim – Coiled
5.8 Deploy Watercraft
5.9 Negotiate a Designated Water Course in a Watercraft
5.10 As a Member of a Team, Use a Parbuckling Technique to Extricate an Incapacitated Water-Bound Victim from the Water to a Watercraft
5.11 Extract an Incapacitated Water-Bound Victim From the Water to the Shore As a Member of a Team
5.12 Perform a Swimming Surface Water Rescue
5.13 Direct a Team in the Operation of a Highline System as a Member of a Team
5.14 Define Applications for Helicopter Aquatic Rescue Operations Within the Area of Responsibility for the AHJ (Agency Having Jurisdiction)

Team Qualifications 5.1, 5.2, 5.4 and 5.5 use a potential response within the Moffett Field response area. For the potential response, a map will show features that could occur within the area for the given event. Examples of cases that can be used include:

Victim Swept Away by Flooding in Steven's Creek
Overdue Hikers and Levee Breach Near Moffett Field
Overturned Boat in Guadalupe Slough
Lost Hunter in Salt Ponds

For the chosen event, each water rescue technician will complete as individual topics base on given conditions:

5.1 Site Survey for Existing Water Hazards
5.2 Selection of PPE
5.4 Define Search Parameters

Team qualification 5.5 will use the results of 5.1, 5.2 and 5.4. The water technician will develop an action plan for a shore-based rescue of a single water bound victim. The location of the victim will be at a predetermined location on the incident map. Available equipment and personnel will be the current equipment and personnel on the water rescue team at the time of the test.

5.1 Site Survey of Hazard

All Reference Information Available

Tasks Required – Use ICS 201, 202, 203, 204 To Complete

1. Size Up Scene – Record on Incident Map (Notations As Applicable)
   a. Identify and Label Hazards
   b. Identify and Label Ingress / Egress Routes

2. Conduct Risk – Benefit Analysis
   a. Evaluate Risk Based on Hazard Assessment
   b. Evaluate Benefits of Response (Urgency, What Get Out of It)
      Live Victim vs Body Recovery
      What Happens If Do Nothing

3. Complete ICS 202 Weather Forecast Information (As Applicable)
   a. Weather Forecast (Temperature, Wind, Sunrise / Set, …)
   b. Conditions Forecast (Tide Plan, Currents, …)

4. Complete ICS 202 General Safety Message

Grading – Must Pass Each Point

1a Known Hazards Clearly Labeled on Incident Map
   All Life Threatening Hazards Identified
   Most (>75%) of Possible Injury Hazards Identified
1b Ingress / Egress Routes Workable and Not in Hazard Area
1b Boat Put-in and Take-out Points Identified
2a Risk Level of Each Hazard Identified
2b Benefits – Considered and Justified
3 Critical Weather Information Accurate for Activities on ICS 202
4 General Safety Message on ICS 202 Relevant to Conditions

5.2 Selection of PPE

All Reference Information Available

Tasks Required:

1. Complete Written Test on Selection of PPE
   a. Floatation (Buoyancy)
   b. Insulation From Cold Water Exposure
   c. Physical Hazard Protection (i.e. blunt trauma, cuts, tears, …)
   d. Visibility
   e. Garment Form, Fit and Mobility
   f. Limited Chemical and Biological Protection (BBP)
   g. "Low Profile Helmets
   h. Protection from Heat and Cold Stress

2. Complete Written Test on Personal Escape Techniques and Equipment

3. Complete Written Test on Distress Signals

Grading – Pass with > 80% on Each Written Test (1, 2 and 3)

1. 20 Question Test
   # Questions Per Section:
   a (3) b (2) c(3) d(2) e(3) f(3) g(2) h(2)
2. 5 Questions Test
3. 5 Questions Test

5.3 Swim a Water Course

Tasks Required

1. Yearly – Swim Test in Pool
   a. Swim 500 yards continuously using crawl, breaststroke and sidestroke. This equates to 20 lengths in the Moffett pool.
      100 yards (4 lengths) – crawl
      100 yards (4 lengths) – breaststroke
      100 yards (4 lengths) – sidestroke
      200 yards (8 lengths) – combo of previous strokes

   b. Tread water for 2 minutes using legs only. May cross arms across chest or hold arms out of water.

   c. Tread water for 15 minutes. 2 minutes completed during task b. above.

   d. Submerge to minimum depth of 7 feet, retrieve a 10 lb object and return to surface.

   e. Don life jacket in deep water.

   f. Pull person ½ the length of the pool. Rescuer wears life jacket, victim doesn't. (Also Appears in 5.12 Perform a Swimming Surface Water Rescue)

2. Three Year – Proficiency Demonstration of Swim in Rapids
   Completion of Swiftwater I Course
   Or Demonstration During Team Rafting Trip

3. Complete Written Test for Offensive and Defensive Swimming Techniques

Grading – Must Pass Each Point

1. Demonstration of All Parts of Yearly Swim Test in Pool
2. Demonstration of Swim in Rapids (In Safe Area) Every 3 Years
3. 80% Grade on Written Task (5 Question Test)

5.4 Define Search Parameters

All Reference Information Available

Tasks Required – Use Incident Map and ICS 201-206 To Complete

1. Complete Incident Map (Notations As Applicable)
   a. Identify and Label Search Perimeter
   b. Identify and Label Control of Perimeter
   c. Identify and Label Probability of Areas (POA) for Search

2. Complete Assignments on ICS 201-206
   a. Assign Interview Capability and Questions for Interview
   b. Assign Search Positions and Tactics (Based on Probability)
      Passive – Attraction, Perimeter Control,…
      Active – Hasty Team, Grid Search,…

3. Complete Search Information
   a. Victim Profile
   b. Information Given to Searchers
   c. Method of Reporting Information From Searchers

Grading – Must Pass Each Point

1a Perimeter Identified
1b. Search Perimeter Controllable With Given Resources
1a Search Boundaries Identifiable and Reasonable Probability of Area
2a Clear and Reasonable Interview Tactics Given
2b Tasking of Personnel Clearly Given and Within Capabilities
3a Reasonable Victim Profile Created and Related to POA
3b Search Information Complete and Consistent With Rest of Search
3c Clear, Effective and Reasonable Reporting Method

5.5 Develop an Action Plan for a Shore-Based Rescue of a Single Water-Bound Victim

All Reference Information Available

Task Required – Use ICS 201-206 To Complete

1. Develop Action Plan
   a. Determine Objectives for Action Plan
   b. Determine Rescue Personnel Assignments
   c. Apply Safety, Communications, and Operational Protocols
   d. Specify PPE for Actions Determined

2. Complete Written Test on Water Rescue Protocol and Guidelines

Grading – Must Pass Each Point

1a Objectives Appropriate for Scenario Given
1b Available People and Equipment Can Accomplish Objectives
1c,d Assignments Given Within Acceptable Risk Level (Yellow Max)

2 Written Test – Pass With 80% (5 Questions)

5.6 Deploy a Water Rescue Rope to a Water-Bound Victim – Throwbag

No Reference Information Available

For Moving Victim: Simulated Conditions on Ground
Given Current Speed and Direction
Given Bank Location and Location of Hazards
Given Egress Location for Victim

Tasks Required – Use Three 70' Throwbags To Complete
1 Throw Rope to Stationary Target Placed 40' Distance (2 Throws)
2 Throw Rope to Victim (Walking Speed) 40' Distance
Victim Grasps Line and Applies Tension for Conditions
Rescuer Braces and Safely Secures Line

Grading:
1 Stationary Target
Line Falls < 3' of Stationary Target (Both Throws)
Time Limit of 40 Seconds

2 Moving Victim – Victim Safely Swung to Shore
When Victim Applies Tension, Rescuer Braced and Ready
Line Safely Secured to Rescuer
Simulated Current Moves Victim to Safely to Shore
Take-out Location at Egress Location

5.7 Deploy a Water Rescue Rope to a Water-Bound Victim – Coiled

No Reference Information Available
Stationary Target

Tasks Required – Use One Coiled 70’ Throwbags To Complete

1 Throw Rope to Stationary Target Place 40’ Distance (2 Throws)

Grading:

1 Line Falls < 3’ of Stationary Target (Both Throws)
Time Limit of 40 Seconds

5.8 Deploy Watercraft

All Reference Information Available

Tasks Required – Demonstrate Capability to Launch and Recovery Boats

1. Equipment Check on RIB as per Checksheet
2. Identify Launch Points (From Fuel Dock and Marina)
3. Launch RIB – Direct Prep and Launch, Tie to Dock, Start Motor
4. Launch FIRBY – Direct Prep and Launch, Tie to Dock, Start Motor
5. Recover RIB – Direct Loading on Trailer, Secure for Transport
6. Recover FIRBY – Direct Removal from Water and Packaging

Grading – Must Pass Each Point, No Equipment Damage During Testing

1. All Equipment Checked on RIB
2. Launch Locations at Fuel Dock and Redwood City Marina Identified
3. RIB Safely Launched, Tied to Dock, Motor Running
4. FIRBY Safely Launched, Tied to Dock, Motor Running
5. RIB Safely Loaded on Trailer Secured for Transport
6. FIRBY Safely Loaded and Secured for Transport

   Note: For Wet FIRBY - Roll and Placed In Back of Pickup

5.9 Negotiate a Designated Water Course In a Watercraft

All Reference Information Available

Tasks Required – Use Boat Launched, Tied to Dock and Engine Running

1. RIB – Navigate From Redwood City Marina to NASA Fuel Dock
   - May Run Reverse Course (Fuel Dock to Marina) Instead
   - May Test 2 Boats / Drivers at Once (Take Turns Leading)
   - May Select Preprogrammed GPS and Compass Courses
2. RIB – Row From Fuel Dock, Across Slough, Return to Fuel Dock
3. RIB – Swiftwater Maneuvering
   - Peel Turn, J Turn and Swiftwater Victim Pickup
4. FIRBY – Demonstrate Abilities As Part of a Team
   - May Occur in Pool
   - Broach and Right Boat
   - Cast and Recover Personnel From Watercraft
5. FIRBY – 1 and 2 Person Rapid Extraction From Water
6. RIB or FIRBY – Tow Boat of Equal Size (Side by Side Tow)

Grading – Must Pass Each Point

1. Course Successfully and Safely Completed
   - Communication Capability Maintained Between Boats
   - All Laws Observed During Transit
2. Each Person Shows Ability to Control Boat and Direct Rowers
3. Each Person Conducts Simulated Victim Rescue
   - Victim Is Training Dummy, 1 Deckhand With Driver
   - From Rest Pointing Downstream – Peel Turn to Upstream
   - Pass Victim, Conduct Port J Turn to Go Downstream
   - Pass Victim, Conduct Starboard J Turn to Go Upstream
   - Conduct Swiftwater Pickup of Victim on Port Side
   - All Operations Successfully and Safely Conducted
4. Broaching and Righting Boat Successfully and Safely Completed
   - Each Person Shows Ability to Right Boat
   - Each Person Shows Ability to Climb Into Boat Unaided
5. 1 and 2 Person Rapid Extraction Safely Completed
6. Safe and Successful Demonstration of Side By Side Tow

5.10 As a Member of a Team, Use a Parbuckling Technique to Extricate an Incapacitated Water Bound Victim From the Water to a Watercraft

No Reference Information Available

Tasks Required – Use Parbuckling Technique to Extract Victim From Water
- May Use Adult Water Training Dummy To Accomplish (Fill With Water)
- May Demonstrate in Swimming Pool
- May Use FIRBY or RIB to Demonstrate
- Accomplish As Part of a Two Person Team

Grading – Must Pass Each Point
- Safe and Successful Demonstration of Parbuckling Technique

5.11 Extract an Incapacitated Water-Bound Victim From the Water to the Shore as a Member of a Team

All Reference Information Available

Tasks Required – Team of 2-3 Extract Adult Water Training Dummy From Pool
Training Dummy Initially Filled With Water and Floating Face Down
1 Rescuer Protects Cervical Spine and Rolls Dummy onto Back
2 Other Rescuer(s) Package Training Dummy on Miller Board
3 Victim Removed From Pool

Same Tasks Repeated for Sea, Air, Land Stokes

Grading – Must Pass Each Point for Miller Board and Sea, Air, Land Stokes
1 Positive Buoyancy for Victim and the Rescuer Is Maintained
1 Victim's Airway Is Maintained (Mouth Does Not Go Below Water)
1 Victim's Cervical Spine Is Maintained in Alignment
2 Victim Safely and Successfully Packaged
3 Victim Safely and Successfully Removed From Water to Pool Edge

5.12 Perform a Swimming Surface Water Rescue

No Reference Information Available
Simulated Conditions in Swimming Pool

Tasks Required – No Floatation Aids for Victim, Rescuer Has PPE

1. Active Victim – Extend Floatation Aid and Swim Victim to Pool Side
   Floatation Aid May Include River Board, Lifeguard Tube, Lifejacket

2. Active Victim – Establish Control, Secure Victim, Tow to Pool Side
   - a Rescuer May Stay Out Victim's Range Till Calms Down
   - b Active Victim Will Test Rescuer Control
   - c Behavior of Panicked Person, Settles Down When Secure

3. Passive Victim – Secure Victim, Tow ½ Length of Pool
   Passive Victim Will Be Dead Weight – No Hinder or Help Rescuer.
   (Also Appears in 5.3 Swim a Water Course)

Grading – Must Pass Each Point

1. Tow Active Victim on Floatation
   Floatation Aid Not Attached to Rescuer (Rescuer Holds in Hand)
   Victim Can Safely and Successfully Float on Aid

2. Swim With Active Victim
   - a Talk to Victim – Calm Them Down Out of Grabbing Range
   - b Rescuer Has Control and Secures Victim
     - Approaches From Behind Victim
     - Secures Under Arms and Around Shoulders of Victim
     - Snug Grip on Victim (Maintains Control of Victim)
   - C Swim With Victim to Pool Side (After Calming Victim)
     - Maintain Control of Victim (Non Struggling Victim)
     - Keep Secure Grip and Swim With Victim to Pool Edge
     - Victim's Airway Stays Above Water Level

3. Swim Passive Victim
   - Approach From Behind Victim
   - Secure Victim Under Arms and Around Shoulders
   - Rescuer Transfers to Side Grip On Victim
   - Rescuer Swims With Victim to End of Pool
   - Victim Airway Maintained Above Water Surface

5.13 Direct a Team in the Operation of a Highline System as a Member of a Team

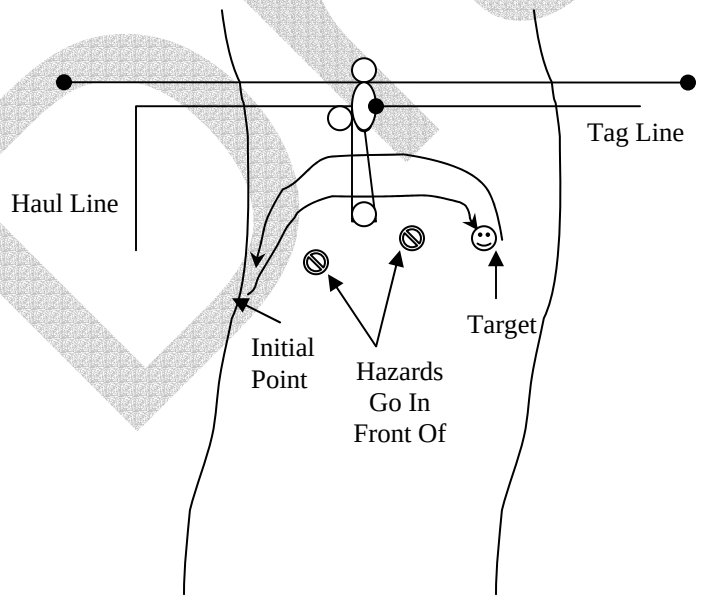
All Reference Information Available
Simulated Conditions on Ground, Highline System Already Established
Existing Personnel Are the Available Team – Minimum of 3 Others Available

Tasks Required – Direct Operations Using System Drawn Below

1 Give Personnel Assignments and Operational Tasking
2 Communicate Movement of Load to Personnel
3 Movement Stopped Over Target Location
4 Move Load From Initial Point To Target and Back to Initial Point

Grading – Must Pass Each Point

1 Personnel Assignments Made, Tasks Are Clearly Communicated
2 Operational Commands Are Distinctly Communicated to Personnel
3 Load Is Held in Place When Needed
4 Load Successfully and Safely Moved
Movement of Load is Controlled
Potential Problems Are Readily Identified, Communicated and Managed



5.14 Define Applications for Helicopter Aquatic Rescue Operations Within the Area of Responsibility for the AHJ

All Reference Information Available

Due to Lack of Helicopter Experience or Availability of Helicopter Service Identified for Use With the DART Water Rescue Team, There Will Be No Testing or Personnel Qualification Related to This Topic For the Near Future