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WATER RESCUE EMERGENCIES:
SETTING THE SCENE

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Why Prepare?

Simple Rescue?
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Forces of Water on a Vehicle

WATER RESCUE

- Water rescues are more than a normal call, they are technical rescues
- Require specialized personnel, training and equipment
- Dynamic Incidents
- No single method of accomplishment
  • Plan A, B, C, D……

LEARNING OBJECTIVES

- Pre planning a water rescue incident
- Enroute actions while responding
  - Initial Scene Size-up
  - Communications
  - Allocation of Resources

Pre-Planning

- Training
- Know the local area, flood tendencies
- PPE Readiness
- Proper Tools & Equipment
- Swift/Flood Water Gear Bags

LEARNING OBJECTIVES

- 4 Phases of the Rescue
- Risk/Benefit Analysis
- Organization of Rescue & Rescuers
- Possible Points of Detection
  - Hazards

Weather Terminology

Flood Watch – Severe Weather Possible
Flood Warning – Severe Weather occurring or likely to occur
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Enroute Actions
- Utilize MDC/Google Maps
- Picture of scene prior to flooding

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Initial Scene Size-Up
- Account for factors affecting rescue
  - Weather
  - Victim Information (Witness Interviews)
    - Number of Victims
    - Condition and Last Known Point of Victim(s)
  - Capabilities of Rescue Personnel on Scene
  - Water Conditions & Current Speed
    - Current Water Level, Is it getting better or worse?
    - Highest Probability of Points of Detection
  - Additional Resources Available (training level)

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Initial Scene Size-Up
- Initial questioning should be done by the IC as soon as feasible
- Interview witnesses separately
- Witnesses should be re-interviewed after short break
- Questions to ask...
  Vital statistics
  Clothing
  Shoes
  Swimming ability
  Physical and mental health

Witness Interviews
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Initial Scene Size-Up

Witness Interviews
- Interview witnesses
- Stand in same location where victim was last scene
- Use landmarks to mark victims

Establish Working Area into Zones
- HOT Zone
- WARM Zone
- Cold Zone

COMMUNICATIONS

RIVER ORIENTATION
- UPSTREAM
- RIVER RIGHT
- RIVER LEFT
- DOWNSTREAM

NIGHT OPERATIONS
- Radios
  - TAC Channels
  - Radio Patch (mutual/automatic aid)
- Clear, Plain Text Communications (ICS)
- Whistles (vital communications for rescuers)
  - 1 Blast = Stop or Attention
  - 2 Blasts = Attention, Move or Move Boat Upstream
  - 3 Blasts = Attention, Move or Move Boat Downstream
  - 4 Blasts = Emergency or Rescue
- Use Chem Stick Lights
  - GREEN = Squad 1
  - BLUE = Squad 2
  - ORANGE = Swift Water Technicians
  - RED = Emergency, Need Help
- Flashlights

COMMUNICATIONS
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Allocation of Resources

- Assign personnel according to incident needs
- Consider use of Drones to assist with Hasty Search

FIGURING CURRENT VELOCITY

A method to estimate water speed in a specific area is to throw an easily visible object into the water and record the time it takes it to travel 100 ft.

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<th>Current [ft/sec]</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
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<td>6.8</td>
<td>11.4</td>
<td>13.4</td>
<td>15.2</td>
<td>7.1</td>
<td>3.6</td>
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- Constrictions in channels will also increase water speed
- The volume of water cannot be altered, so if the channel is constricted, either the water depth or speed (or both) will increase.
- Occurs in Natural River Channels
  - Where there are mid-stream rocks
- Occurs in Flood Situations
  - Where there are structures and/or cars in streets

FOUR PHASES OF THE RESCUE

L.A.S.T. Principle
- Locate
- Access
- Stabilize
  - Victim
  - Scene
- Transport

RISK/BENEFIT ANALYSIS

- RESCUE PERSONNEL CONSIDERATIONS
  - Training
  - Practice
  - Experience
  - Equipment
  - Judgement
- IS RESPONSE BEING DRIVEN BY SENSE OF URGENCY
  - Make Decisions With Head Not Heart
  - High Pressure From Bystanders and/or Family Members of Victim(s)

IC SAFETY
- UP STREAM SPOTTER
- VICTIM
- RESCUER
- DOWN STREAM SAFETY
- ROPE BAG
- DOWN STREAM SAFETY
- INFLATED FIRE HOSE
- BACKUP
- RESCUE SET-UP

ORGANIZATION OF RESCUE & RESCUERS
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**ORGANIZATION OF RESCUE & RESCUERS**
- Ensure rescuers know vital statistics of victim(s)
- Identify most likely points of detection(s)
  - Point Last Seen
  - Undercut Rocks
  - Strainers
  - Debris Pile
  - Low Head Dam
  - Inside Curve of Current
- Identify downstream boundary
- Organize rapid hasty search

**15 Absolutes**
1. Keep it simple
2. Always be proactive
3. Rescue priorities
4. Always wear PFD
5. Use right equipment
6. Do NOT use fire helmet
7. Use upstream spotters
8. Use downstream safety

**POSSIBLE POINTS OF DETECTION**
- Undercut Rocks
- Strainers

**Strainer Avoidance & Dangers**
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POSSIBLE POINTS OF DETECTION

DERRIS PILE

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POSSIBLE POINTS OF DETECTION

LOW HEAD DAM

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POSSIBLE POINTS OF DETECTION

INSIDE CURVE OF CURRENT

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POSSIBLE POINTS OF DETECTION

BRIDGE ABUTMENTS

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POSSIBLE POINTS OF DETECTION

FENCE

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HAZARDS

- ELECTRICITY
  - Possible down power lines due to storms
  - Power lines are now only few feet above water

- NATURAL GAS
  - Leaking Gas
  - May Smell Mercaptan
  - Look for Bubbles Rising Through Water

- HAZARDOUS MATERIALS
  - Physical, Biological and Chemical Hazards
  - Consider Decon

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HAZARDS

Power Lines
HAZARDS
ROAD SWEPT AWAY
TIN HORN

HAZMAT

HAZARDS
MANHOLE COVERS

RESCUE PRIORITIES
1. TEACH
2. REACH
3. THROW
4. ROW
5. GO
6. HELO

RESCUE PRIORITIES
TEACH
All victims must be informed at some point in the rescue (whether teachable or not)

Some victims may be in situations they can get out of with instruction

Safety of victim must be confirmed

Victim cognition must be intact

RESCUE PRIORITIES
REACH
Extending an Object From the Shore to a Person in the Water
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RESCUE PRIORITIES

THROW

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Throw Bags

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RESCUE PRIORITIES

ROW

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Stranded Victim Rescue

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RESCUE PRIORITIES

GO

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Stranded Victim Rescue
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RESCUE PRIORITIES

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HELO

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INCIDENT COMMAND CHECKLIST

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Water Emergencies
Section 8

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Water Emergencies
1. Race
2. Toss
3. Throw
4. Use Enter
5. Help