

Rescue Technician – Basic & Confined Space Technician

Session 4





Suffolk County Fire Academy

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Session Overview


- **Session 4**
 - **Helicopter Operations**
 - **Incident Command System (ICS)**
 - **Operational Consideration**
 - **Psychological Affects of Rescue**
 - **Ladder Rescue Systems**
 - **Hands-on Stations.**



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Session Objectives

- **Understand how to safely operate around helicopters**
- **Define the components of the Incident Command System (ICS)**
- **Recognize the importance of size-up and risk benefit analysis during technical rescue incidents**
- **Identify the components of ladder rescue systems**
- **Use ladder rescue systems to construct a high point.**



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Helicopter Operations



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Helicopter Operations Basics



- Ground Support Operations Relating To Helicopters
- Establishing, Securing, Controlling Landing Zones
- Remember, This Is For Informational Purposes Only.




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Mission Type



- Medivac
- Rescue (Water)
- Firefighting
- Transport Personnel.

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Choose Landing Zone


- Proximity
- Elements
 - Surrounding area
 - Radius (1/4 mile)
- Approach / Departure Path
- Wind Speed and Direction
- Touch-down Area
 - Size (obstacles)
 - Ground surface.

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Touch-down Area

- Day
 - Use flares, marker panels, cones, etc.
- Night
 - Use flares, chemical light sticks, battery powered flashing lights, etc.
 - Secure from being blown around
 - Vehicle headlights
 - Use 2 pointing toward the wind and away from approaching helicopter
 - Do not point lights at aircraft
 - Leave red emergency lights on.




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Touch-down Area

- Secure Loose Debris
 - Personal items or clothing
 - PPE
- Nearby Activity

Minimum Landing Zone Area
100' x 100'




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Landing Zone Report

- **Includes:**
 - **GPS position, if available**
 - **LZ in relation to terrain**
 - **Major landmarks**
 - **Distance to nearest town**
 - **LZ conditions.**




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Safety Considerations

- **Don't Walk Under or Around Slow Turning Rotor Blades**
- **Approach Only With Permission From The Pilot**
- **Crouch Down When Near Main Rotor**
- **No Smoking Within 100' of Aircraft.**

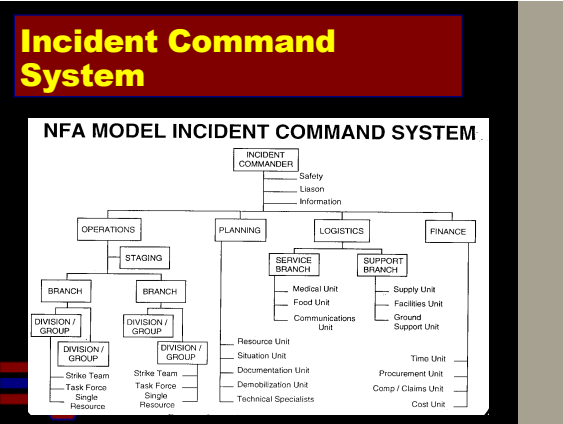



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Incident Command System (ICS)




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- ### Rescue ICS
- **Common Terminology**
 - **Integrated Communications**
 - **Unified Command**
 - **Manageable Span of Control**
 - **Consolidated Plan of Action**
 - **Pre-designated Incident Facilities**
 - **Modular Organization**
 - **Comprehensive Resource Management.**
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- ### Technical Rescue Incidents
- **Preparation**
 - **Initial Response**
 - **Assessment and Planning**
 - **Incident Action Plan (IAP)**
 - **Gaining Access**
 - **Disentanglement**
 - **Victim Package and Removal**
 - **Incident Termination.**
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ICS = Scalable




Initial Response

```

    graph TD
      IC[Incident Commander] --> OTRO[Ops/TRO (Safety)]
      OTRO --> ML[Main Line]
      OTRO --> B[Belay]
      OTRO --> E[Edgeman]
      OTRO --> H[Haulers]
      OTRO --> M[Medic]
      OTRO --> A[Attendant]
  
```

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ICS = Scalable



Full Command Structure

```

    graph TD
      IC[Incident Commander] --> S[Safety]
      IC --> PIO[PIO]
      IC --> L[Liaison]
      IC --> O[Operations]
      O --> TRO[TRO]
      O --> EMS[EMS Ops]
      TRO --> ML[Main Line]
      TRO --> BL[Belay Line]
      TRO --> ST[Staging]
      TRO --> E[Edge]
      TRO --> H[Haulers]
      EMS --> ATT[Attendant]
      EMS --> MED[Medic]
  
```

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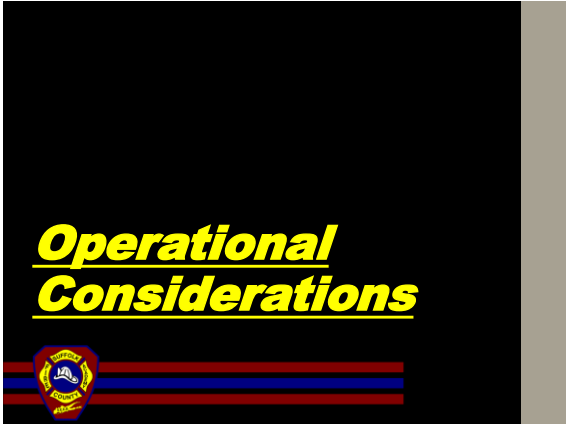
ICS = Scalable

Sample Confined Space Command Structure


```

    graph TD
      IC[INCIDENT COMMANDER] --> S[Safety]
      IC --> L[Liaison]
      IC --> I[Information]
      IC --> O[OPERATIONS]
      IC --> P[PLANNING]
      IC --> LOG[LOGISTICS]
      IC --> FIN[FINANCE]
      O --> STAG[STAGING]
      O --> RT[Rescue Team]
      O --> HAZM[Haz-Mst]
      O --> EMS[EMS]
      P --> SCR[Scribe]
      P --> TS[Technical Specialists]
      LOG --> MU[Medical Unit (For Team)]
      LOG --> CU[Communications Unit]
      RT --> RES[Rescue]
      HAZM --> HAZM[Hazard Management]
      EMS --> TRI[Triage]
      EMS --> FH[Field Hospital]
      EMS --> TRN[Transportation]
      RES --> HAZM[HAZM]
      RES --> MA[Hoisting (MA Systems)]
      RES --> SUP[Support]
  
```

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Operational Considerations



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Risk Benefit Analysis

- What Is Our Goal?
- What Are Our Capabilities?
- Can We Be Successful?

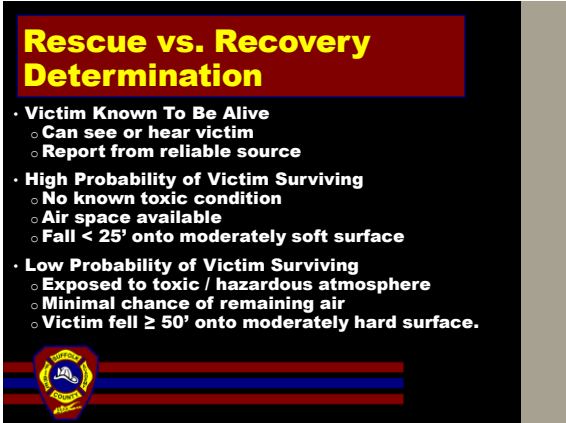
RESCUE vs. RECOVERY

HEAD vs. HEART DECISION MAKING

“RISK A LOT TO SAVE A LOT...”




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Rescue vs. Recovery Determination


- **Victim Known To Be Alive**
 - Can see or hear victim
 - Report from reliable source
- **High Probability of Victim Surviving**
 - No known toxic condition
 - Air space available
 - Fall < 25' onto moderately soft surface
- **Low Probability of Victim Surviving**
 - Exposed to toxic / hazardous atmosphere
 - Minimal chance of remaining air
 - Victim fell ≥ 50' onto moderately hard surface.



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**Determination of Hazards
(Low Angle Rope Rescue)**

- **General Hazards Present Might Include:**
 - **Unsafe ground or footing**
 - **Inadequate anchors**
 - **Improper equipment / training**
 - **Potential of falling objects**
 - **Potential of equipment damage / failure due to work environment.**




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Risk vs. Benefit


- **Danger To Rescuers**
- **Number of Victims**
- **Survivability of Victims**
- **Department Capabilities**
- **Anything Overlooked?**



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Risk vs. Benefit

- Largest Risk?
 - Death of rescuer
- 60% of Deaths Are Would Be Rescuers (2 Out of 3)
- Many of These Incidents Involve Multiple Deaths
- Our Goal Is To Save **LIFE**
- We Do Not Trade Rescuers Lives For Victims Lives.




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Successful Rescue

- Saving The Victim's Life
- Safe Removal of The Victim
- Safest Possible Circumstances For Our Rescuers

Our Job Is Not Safe, But It Is Also Not Reckless.




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Recovery

- Removal of A Body
- Legally Pronounced Dead
- Obvious Death Due To Trauma
- Extended Exposure To Toxic/Hazardous Atmosphere.


We Do Not Risk Rescuers Lives To Recover A Body. Operation Becomes Slow and Methodical.



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Recovery Considerations

- Legal and Practical Issues
- Lack of Oxygen
- Victim Is Not Visible (Engulfment)
- Exposure To Toxic/Hazardous Atmosphere (≥ 15 Minutes)
- Command Decision (But Not Necessarily The Incident Commander).



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Psychological Affects of Rescue




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Critical Incident

- Profound Emotional Reaction
- Unexpected, Unfair, Illogical, Senseless
- Responder Perceives Little Control or Effect On Outcome
- Outcome Is Negative


We Can Do Everything Correct and Still Not Be Successful.



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High Stress Incidents

- Death of A Colleague
- Mass Casualty
- Infant or Small Child
- Senseless Incident
- Nothing Worked
- Extended Rescue Attempt
- Violent Incident
- Responder Knows Victim
- Natural Disaster
- Death of Person In Responders Care
- Dangerous Situation
- Disturbing Sights, Sounds, or Smells.



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Critical Incident Stress Occurs When The Emergency Responders' Coping Abilities Are Overwhelmed By The Incident.



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Stress Reaction Factors



- Involvement In The Incident
- State of The Emergency Responder.

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CIS Reactions (On Scene)


- Physical Symptoms**
 - o Muscle tremors
 - o Profuse sweating
 - o Doesn't look right
- Cognitive Symptoms**
 - o Difficulty making decisions
 - o Short term memory problems
 - o Poor Concentration
 - o Tunnel vision
- Emotional Symptoms**
 - o Frustration
 - o Self-doubt
 - o Irritability
 - o Anger and resentment.



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CIS Reactions (Post Incident)


- Physical Symptoms**
 - o Difficulty falling/staying asleep
 - o Early morning wakening
 - o Waking up in cold sweat
 - o Restless sleep
 - o Fatigue
 - o Nightmares, repetitive, unpleasant dreams
- Cognitive Symptoms**
 - o Concentration problems
 - o Short term memory issues
- Emotional Symptoms**
 - o Difficulty making decisions
 - o Poor attention span
 - o Flashbacks
 - o Sadness
 - o Irritability
 - o Anger
 - o Guilt
 - o Grief
 - o "If only...".



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CIS Reactions (On Scene)


- Behavioral Consequences**
 - o Withdrawal
 - o Increase in interpersonal conflicts
 - o Loss of interest in job
 - o Loss of interest in home life
 - o Increase use of alcohol, tobacco, or other drugs
- Job change**
- Increased accidents/illness**
- Decreased sexual drive**
- Change in eating habits.**



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Managing CIS


- Take Care of Physical Needs
- Build Your Confidence
- Organize
- Relaxation, Visualization, Meditation.



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Managing CIS (Post Incident)

- Take Care of Physical Needs
- Exercise
- Don't Increase Use of Alcohol, Tobacco, or Drugs
- Watch For Sign of CIS and Know They Are Normal
- Talk To Other People Who Care About You
- Talk To Your Colleagues
- Use Relaxation Techniques
- Consult A Mental Health Professional If Symptoms Become Overwhelming.



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Ladder Rescue Systems



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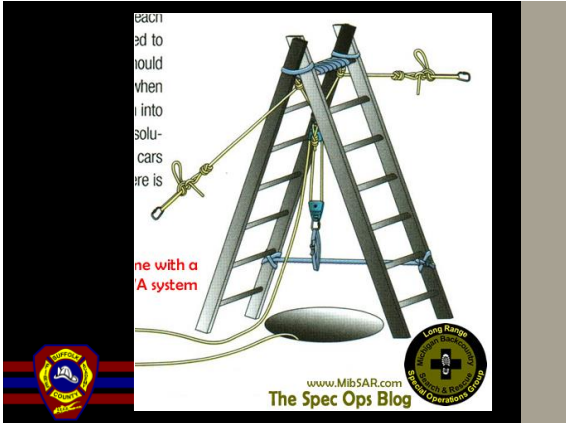
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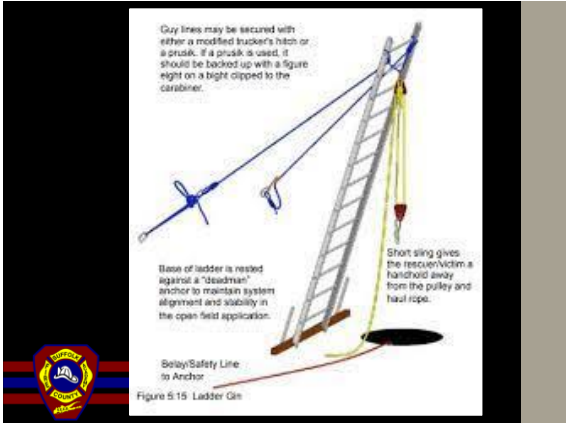
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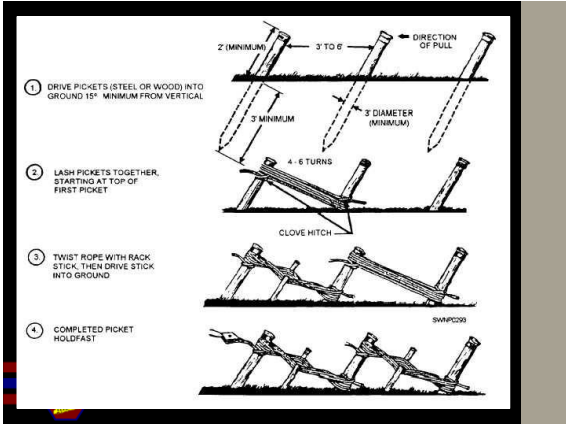
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Using A Tower Ladder As A High Point

- If accessible, makes a great high point.
- Do not attach to landing pads (if equipped)
- Attachment points should be predetermined (orange line in photo)
- Watch for pinch-points
- Safety line should still run over the edge
- Most are rated up to 1000 lbs.



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Questions?



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