



1.4 EMERGENCY RESCUE OPERATIONS

INTRODUCTION



As Gas Free Engineering Personnel you need to know the correct procedures for safe and effective Emergency Rescue Operations.

ENABLING OBJECTIVES



- ⌘ Describe the procedures and safety equipment used for emergency rescue operations in accordance with NSTM 074 Vol 3

OVERVIEW

- **Rescue Requirements**

- **Rescue Command & Control Personnel**

- **Rescue Support Personnel**

- **Rescue Teams**

- **Rescue Equipment**

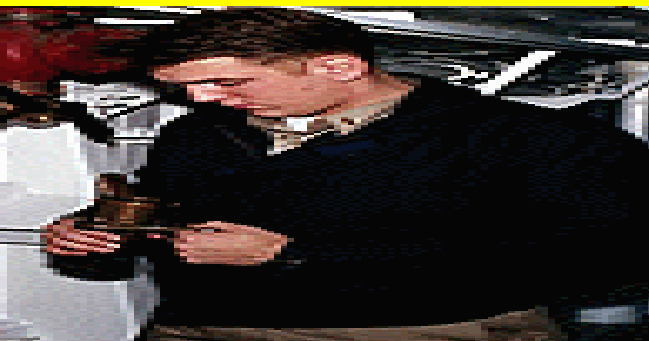
- **Rescue Procedures**

- **Rescue Training**



When Do Emergency Rescue Procedures Apply?

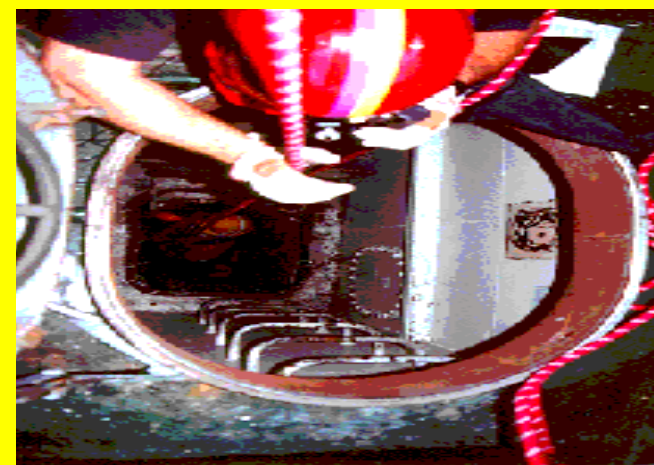
- **Rescue of Personnel from a Confined Space**
- **Emergency Operations or Repair Work Approved by CO in an IDLH Space**



GFE / GFEA

- **Directs Rescue at Access IAW Rescue Plan**
- **Focal Point of Comms, Instructions, Info, Equip, Personnel**

EMERGENCY RESCUE TEAMS



Primary Rescue Team

- One Investigator & One Rescuer
- Initial Contact, Assessment & Safe Removal
- Inv. has Comms

Secondary Rescue Team

- GFE Determines Number (2+1 min.)
- Don Respiratory Protection & Standby to Assist Primary Rescue Team

Attendants

- One Per Rescuer
- Help to Don Gear
- Tend Safety Lines & Chain Fall
- Tend SAR/SCBA Air Hoses
- Comms w/ Space

EMERGENCY RESCUE SUPPORT



MAA

- Assist GFE / GFEEA in Personnel Management
- Crowd Control at Space Entry



DOC

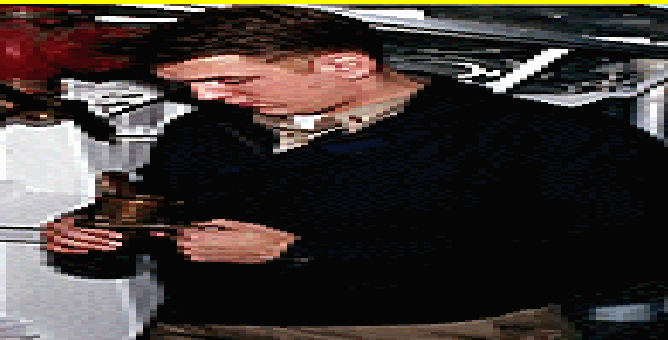
- Advise GFE / GFEEA on Victim Medical Aid
- Treat Patient Removed from Space



Electrician

- Check, Energize or Isolate Circuits as Directed by GFE / GFEEA

EMERGENCY RESCUE COMMAND & CONTROL



OOD



GFE / GFEA



**DC Central
Phone Talker**

- Track Status of Rescue Operation

- Provide Additional Assistance as Directed by GFE / GFEA

- Directs Rescue at Access IAW Rescue Plan

- Focal Point of Comms, Instructions, Info, Equip, Personnel

- Comms between GFE and OOD

- Direct Personnel & Equip to Scene as GFE Requests

Equipment

Lets talk about equipment needed for these rescues



Equipment

**CAUTION: EQUIPMENT CARRIED
INTO THE SPACE MUST BE TETHERED
TO PERSONNEL TO PREVENT LOSS OF
OR DAMAGE TO EQUIPMENT**



•5 SCBAs: 2 PAsPs (+RASPs)
55 minutes of air per PAsP (1 Bottle)

•4 Safety Harnesses, Safety Lines

• 2 Radios or 3 S.P. headsets w/salt & pepper reel on scene.

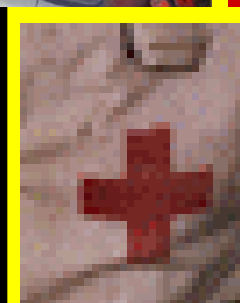
• First Aid Kit & Stretcher

• Chain Fall

• Detection Equipment

• Explosion-Proof Flashlights, Drop Lights, or Chem Lights

• Additional PPE as required



Entry procedures

Now how do we enter the space to rescue our shipmates?



Discovery, Reporting, and Initial Response

- Specify in Toxic Gas Bill; distinguish Rescue situations from spills without rescue.
- Provide for word passed, notification of CO, rescue assignments with specific responsibilities.

GFE's EMERGENCY RESCUE BRIEF

(For CO-Approved IDLH Work follow IDLH Checklist 074 App. C-28)

> Brief Rescue & Entry Personnel, Doc, MAA, Electrician, CDO, EDO, (ENG, Fire Marshall, DCC, OOD, Dept Head)

Respirators type: SAR/SCBA? # of Spare RASPs?

Obstacles/ hazards to anticipate.

Detection Equipment type? Additional PPE?

Comms /backup comms procedures- phones/radios, tending lines

Rescue air for victim (SCBA)

PRIOR TO ENTRY

- Attendants assist rescuers' dress-out (including harnesses and tending lines)
- Post Primary Rescue Team at Entry & Don Gear in Standby
- Test Comms and gear (incl gas analyzer, Draeger, flashlight,..)



DURING ENTRY

- Attendants Monitor Air Supply and Manage Hose Lines
- Remain Vigilant for Signs of Distress
 - PASS Alarm
 - No Movement
 - Hard Pulls on Line



Rescue procedures

Lets do some rescuing !!!



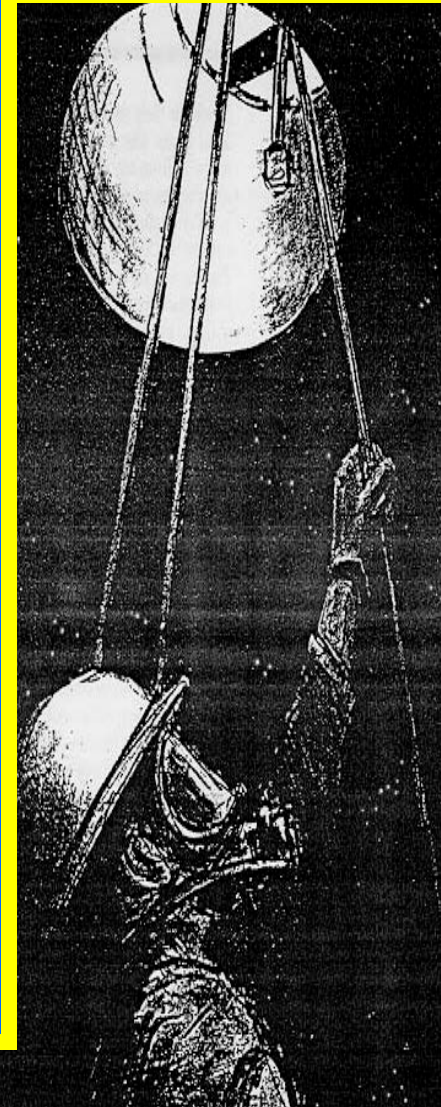
RESCUE PROCEDURES

RESCUERS ENTER ONLY WHEN ORDERED BY GFE!!



PRIMARY RESCUE TEAM:

- Don Respirators, Activate air, ensuring positive flow
- Connect Safety Harness & Lines
- Locate Victim, Assess Situation, Identify Hazards & Report
- Isolate source leak/spill.
- Make Requests: Electrical Isolation, Stretcher, Hoist



RESCUE PROCEDURES

!!! RESCUERS SHALL ENTER ONLY WHEN ORDERED BY GFE / GFEA !!!



SECONDARY RESCUE TEAM:

- Don Respirators, Safety Harness & Lines
- Enter if Directed by GFE/GFEA
- Post Another Standby Rescuer
- Assist Primary Team as Required



ATTEND TO VICTIMS

- **Supply Air Options :**
 - **SCBA**
 - **Medical O2 Bottle & Air Mask**
- **First Aid: Broken Bones, Bleeding?**
- **Report Injuries & Advise Transport**



Rescue procedures

⌘ Attending to victims:

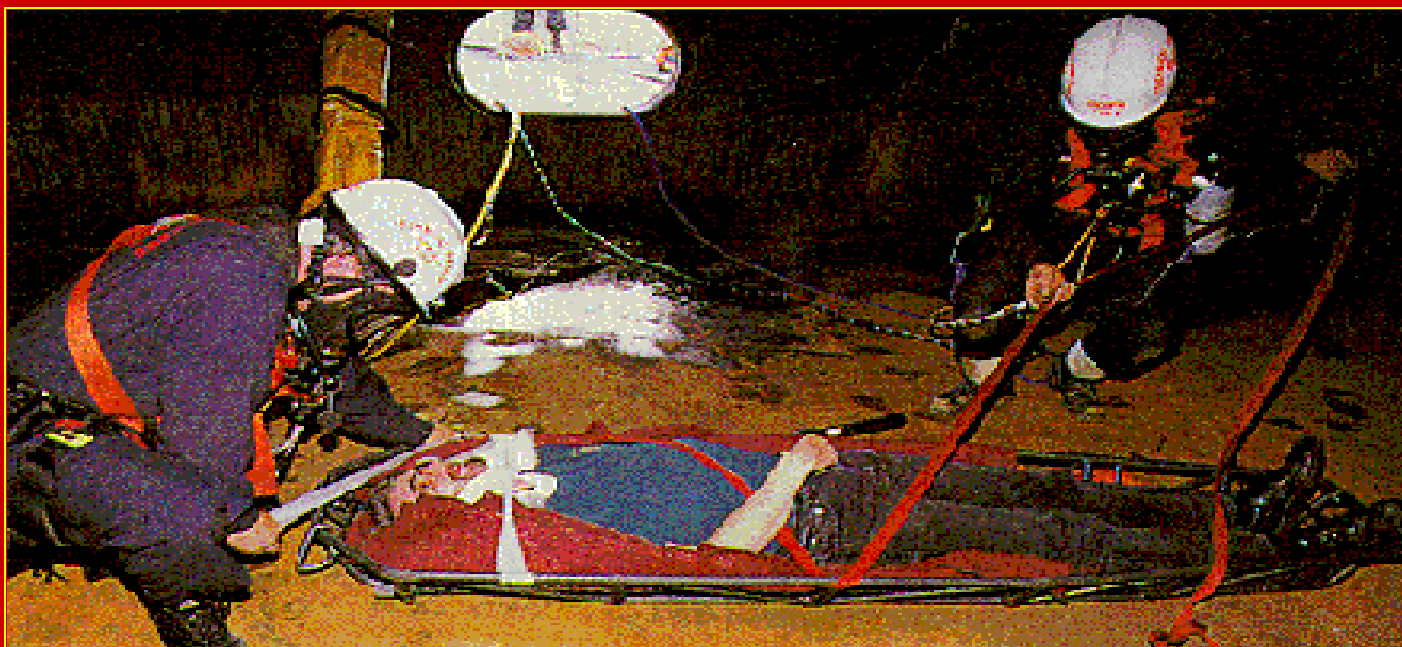
WARNING: IF THE SAR/SCBA IS USED ON THE VICTIM, THE BACKUP SCBA CARRY POUCH SHALL NOT BE PLACED ON THE VICTIM. IF THE VICTIM IS DRAGGED OR CARRIED, THE POUCH SHALL BE CARRIED BY ONE OF THE RESCUERS. IF THE VICTIM IS TRANSPORTED ON A STRETCHER, THE CARRY POUCH SHALL BE SECURED TO THE STRETCHER AT KNEE LEVEL AFTER THE VICTIM HAS BEEN SECURED TO THE STRETCHER.

Rescue procedures

- ⌘ As an investigator you have to determine numerous things while rescuing victims:
 - ☑ Estimated time victim has been in space without air.
 - ☑ The nature and severity of the victim's injuries
 - ☑ The time required to transport the victim

Rescue procedures

- ⌘ The victim should be transported out of the space by the quickest means.

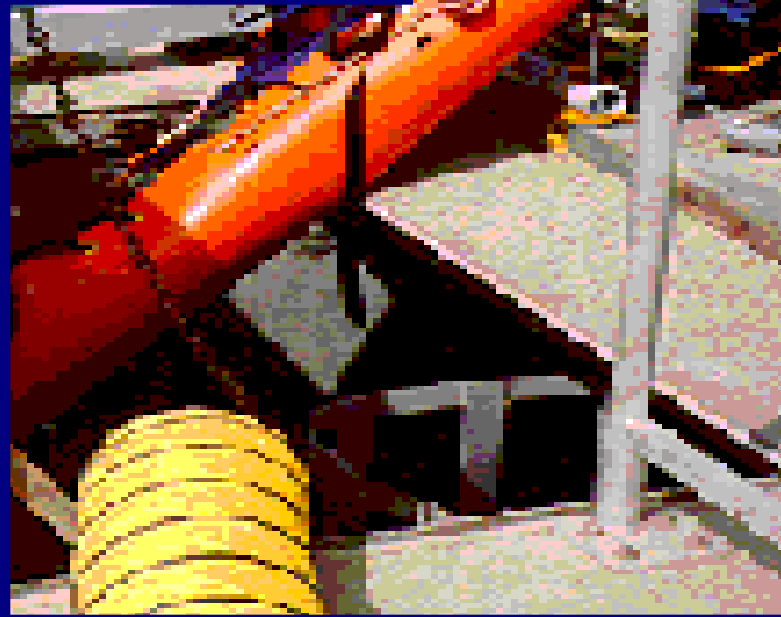


VICTIM TRANSPORT

Quickest Safe Means: Drag or FF's Carry

Warning: Do Not Pull Out by Safety Line

**If Injured: Stretcher w/ Hoist -or-
Harness w/ Y-bridle Hoist Line on
Shoulder Straps**



Rescue procedures



⌘ The selection should be based on the following:

Rescue procedures

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☑ Time required

Rescue procedures

⌘ The selection should be based on the following:

- ☑ Time required
- ☑ Victim(s) injuries

Rescue procedures

- ⌘ The selection should be based on the following:
 - ☑ Time required
 - ☑ Victim(s) injuries
 - ☑ Capability to continuously supply air to the victim from respiratory equipment being used.

Rescue procedures

⌘ Use hoisting equipment as needed





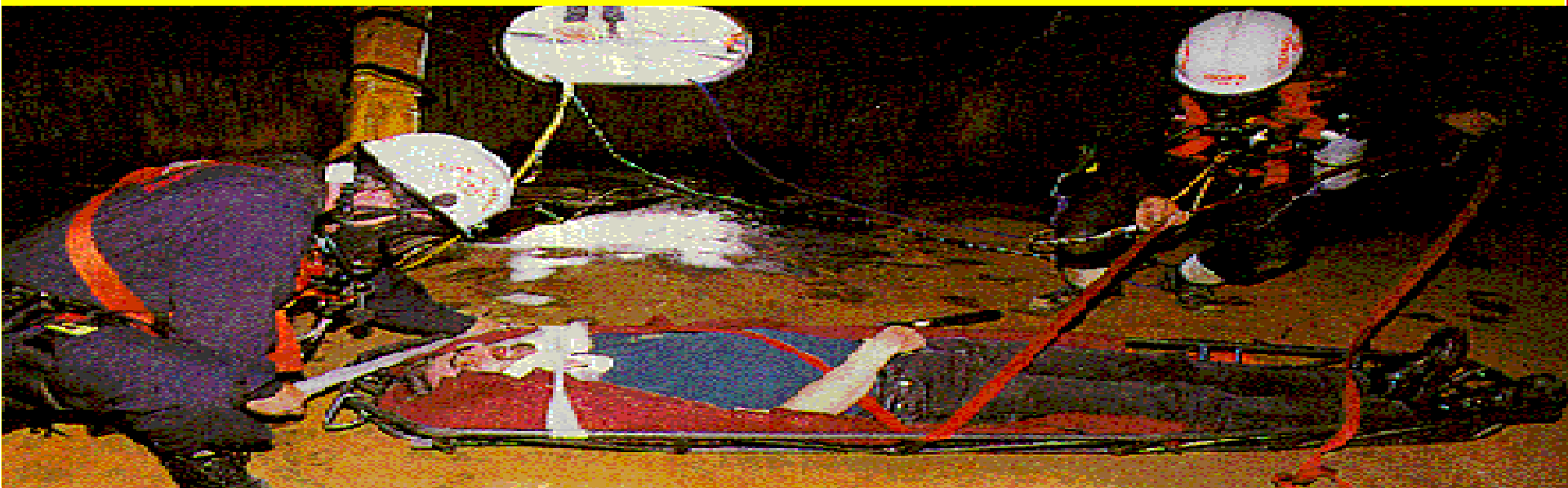
REVIEW AND SUMMARY

Question # 1: When May Rescuers Enter a Confined Space?

When GFE / GFEEA Orders Entry

Question # 2: Who is on the Primary Rescue Team?

One Investigator, One Rescuer





THE END