



# **7.14 EMERGENCY RESCUE PROCEDURES**

# **ENABLING OBJECTIVES:**

**DESCRIBE the requirements for a confined space rescue.**

**DESCRIBE the manning requirements when conducting a confined space or IDLH rescue.**

**DESCRIBE the Emergency Rescue training requirements.**

## **REFERENCES:**

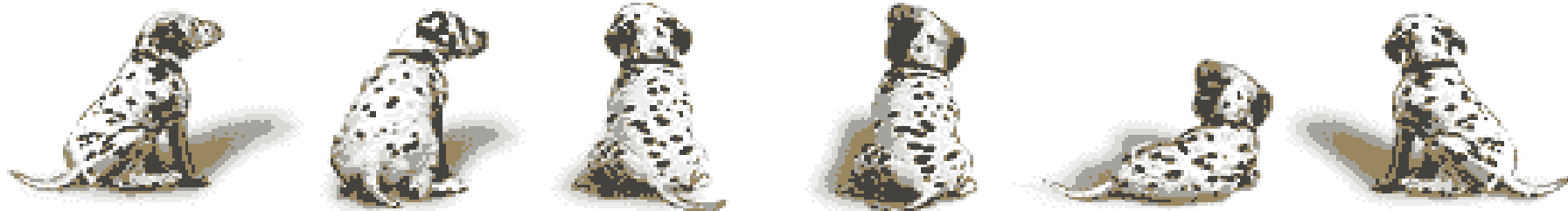
**NSTM 074 V3 R4 Section 25 & Appendix C-28**



# **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**

# 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**

# EMERGENCY RESCUE SUPPORT



## MAA

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

## DOC

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

## Electrician

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

# EMERGENCY RESCUE TEAMS



## Primary Rescue Team

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

## Secondary Rescue Team

- **GFE Determines Number**
- **Don Respiratory Protection & Standby to Assist Primary Rescue Team**

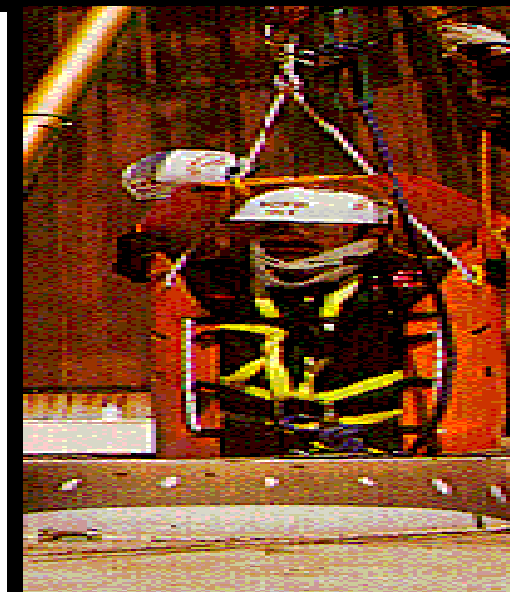
## Attendants

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

# REQUIRED EMERGENCY RESCUE EQUIPMENT



- 5 SCBA's: 2 PASP (5 RASP)  
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
- Hoist or Chain Fall
- Detection Equipment
- Explosion-Proof Flashlights, Drop Lights, or Chemlites Lights
- Additional PPE as required.



# The CON-SPACE Kit



Description	Justification and Approval Number	Part Number
Navy SAE Gas Free Communication System	99-006	0105-01-001

ITEM	QTY	DESCRIPTION
A	1	CSE1100 Communication Module
B	1	Single Sided Headset
C	1	Cable Splitter
D	2	Face Mask Comm Sets w/Speaker
E	2	Speaker Harnesses
F	2	75' Cable With Cable Strain Relief
G	1	10' Operator Extension Cable
H	1	50' Cable
I	1	CSE2130 Talk Box
J	2	Spinal Cable Wrap
K	1	CSE1000 System Hard Case

This system configuration is referenced in US Navy Justification and Approval # 99-006

Note: The mask is not included with the system.

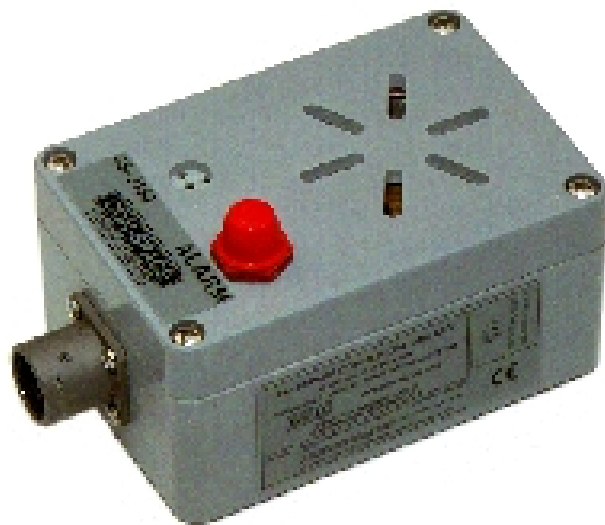


# CSI-1100 Communications Module Basic Operation

- The CSI-1100 Communications Module is powered by 4 Alkaline 'AA' Batteries. To maintain our high Intrinsic Safe Standard only \* Energizer or \*Duracell Batteries should be used.



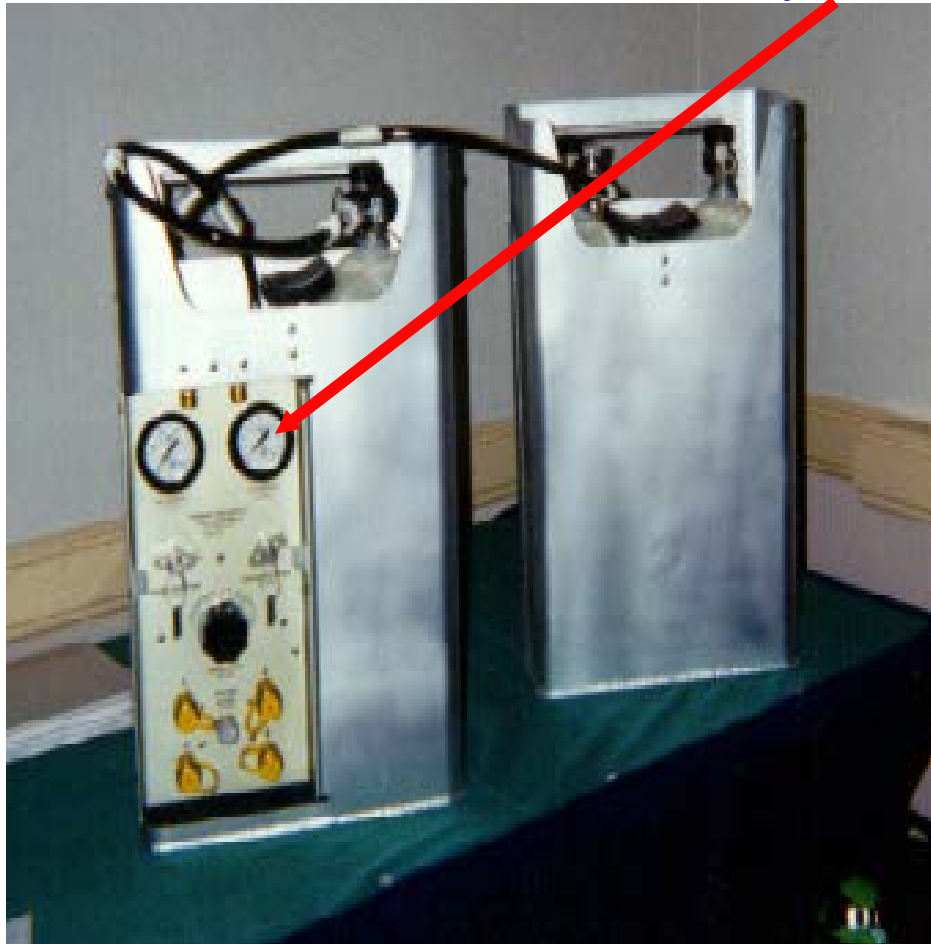
# Talk Box



- The Talk Box Accessory is best used in Low Noise Environments where the entrants do not require respiratory protection. It is a Speaker and Microphone that can be placed inside the confined space for easy monitoring of entrants.

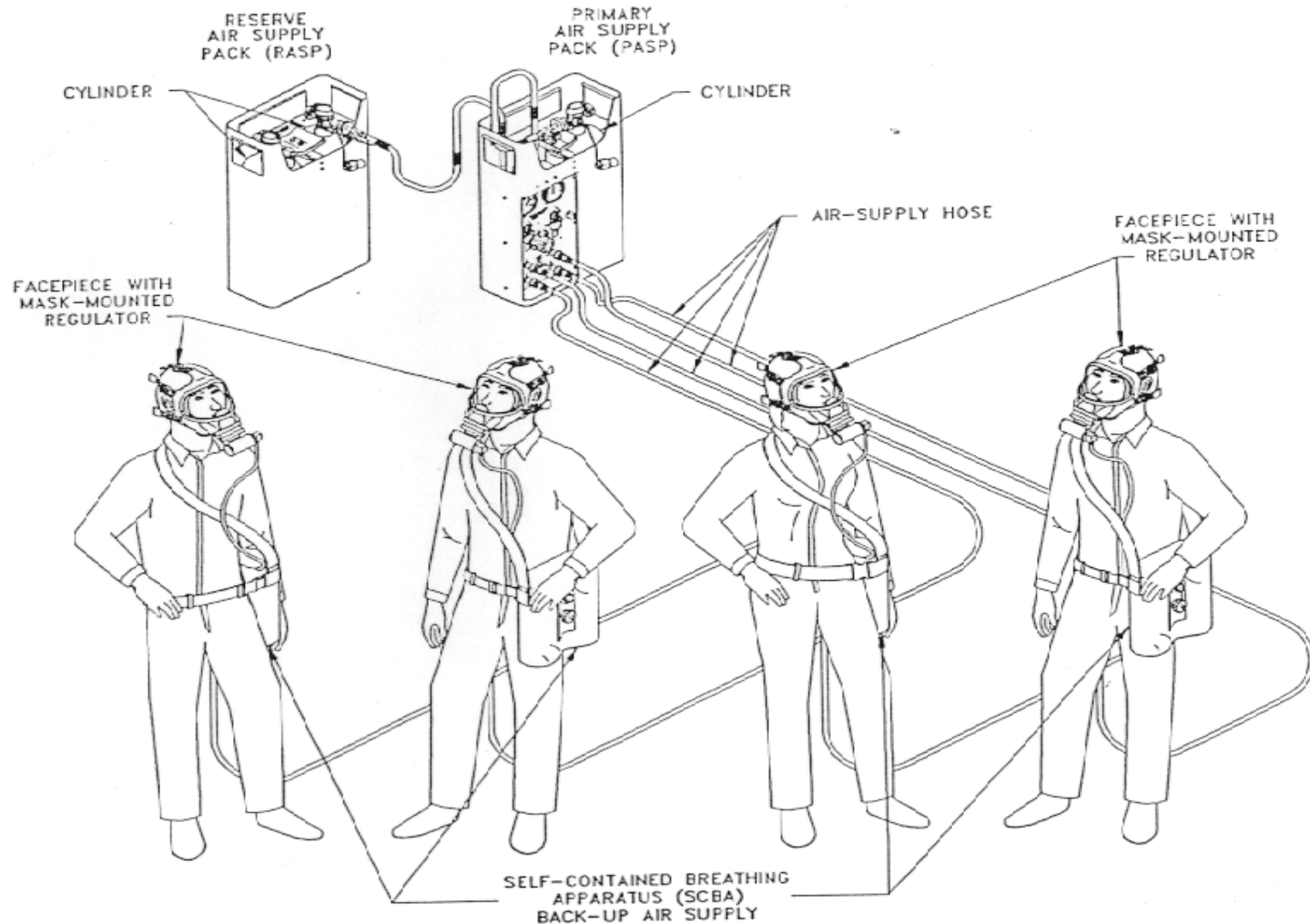
PASP = 55 min RASP = 110min SCBA =15 min

Control Panel Assembly (CPA) 60-80 PSI



SUPPLIED AIR RESPIRATOR WITH SCBA  
(SAR WITH SCBA)

# SUPPLIED AIR RESPIRATOR WITH SCBA





# INSURV SAFETY CONCERNS

## SAR/SCBA for GFE



### ISSUE:

- SAR/SCBA equipment is not being maintained IAW PMS.
- Bottles are not hydrostatic tested (every 3yrs).
- Gages are not tested/calibrated.
- Bottles are low in pressure.

### POC/REF:

- *INSURV POC*: LCDR HANSON, (757) 462-7881 EXT 3094
- *SYSTEM POC*: Mark Black, ISEA, (805) 234-4452)



# **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 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 RASP?**

**Obstacles/ hazards to anticipate.**

**Detection Equipment type? Additional PPE?**

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

**Rescue air for victim (SCBA / Medical O2 Bottle)**

# PRIOR TO ENTRY

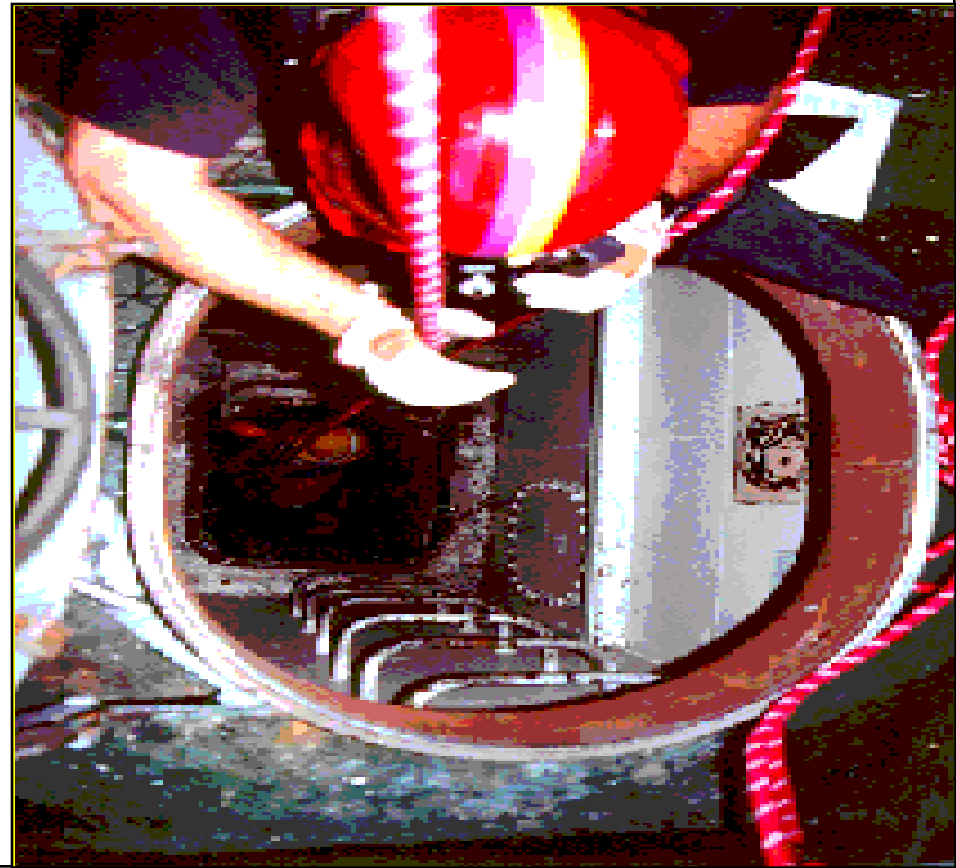
- Attendants assist rescuers' dress-out (including harnesses and tending lines)
- Post Primary Rescue Team at Entry & Don Gear in Standby
- Test Comms and gear (incl gas analyzer, Draeger, flashlight,..)





# DURING ENTRY

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



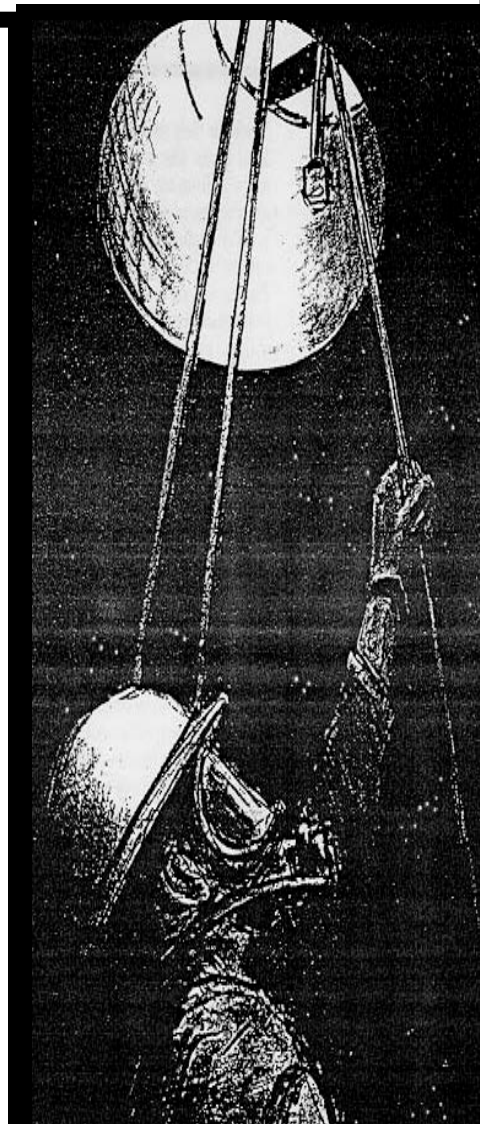
# RESCUE PROCEDURES

**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 DAVIT DESCRIPTION

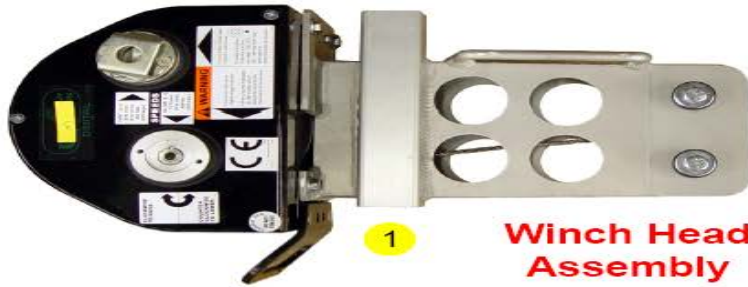


The UCL Safety Systems Rescue Davit is a modular system of components designed to meet a wide range of confined space, work positioning and rescue requirements. The Rescue Davit's unique design allows unrestricted movement while removing the attendant operator away from a potential fall hazard. This lightweight, aluminum product features an anodized finish with zinc plated steel hardware for corrosion resistance.

- Depending on your application needs, you will attach the Winch Head assembly to one of two additional Rescue Davit components: the Pole Hoist or the Three-legged Counterweighted Base. The Pole Hoist assembly connects to a single overhead anchor point to become a convenient raising/lowering device. The Counterweighted Base is ideal for applications involving floor-manholes or over-edge rescue situations. The Base can be secured with the weight of two attendant workers standing on the leg extensions for additional anchorage.
- The Rescue Davit System has a working load of 450 lbs (204 kgs) with a minimum 4:1 Design Factor.



**Digital Series Winch Components**



**1 Winch Head Assembly**



**2 Manual Crank Handle**



**3 Overload Protection Clutch**

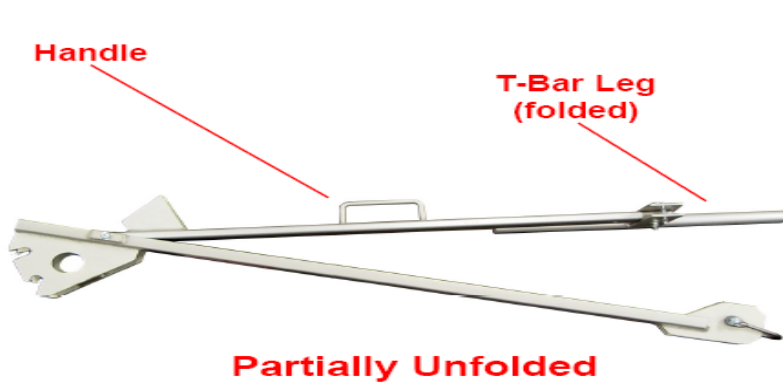
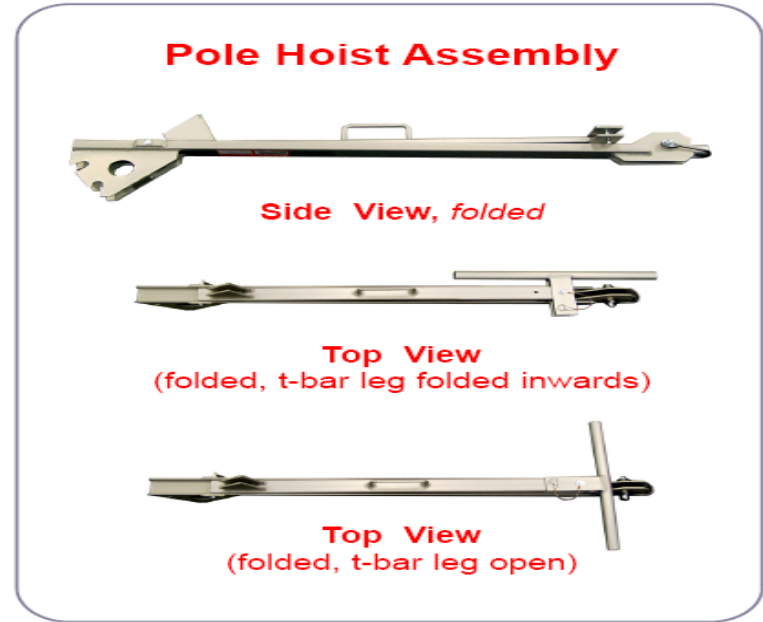
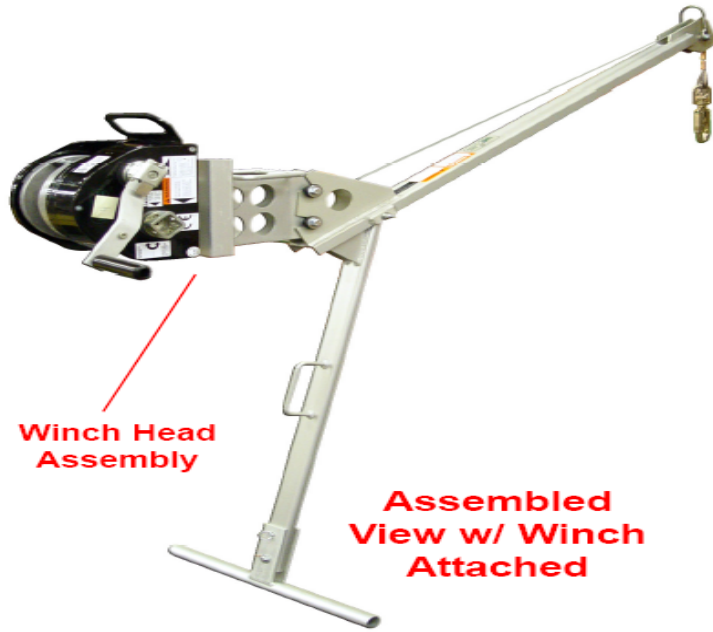


**4 Hilti UH 240-A Heavy Duty Cordless 3 AMP Hammer Drill**



**Assembled View**

**Pole Hoist Parts & Components**



## Rescue Base Parts & Components



**Assembled Configuration #1**  
Left hand operation



**Assembled Configuration #2**  
Right hand operation

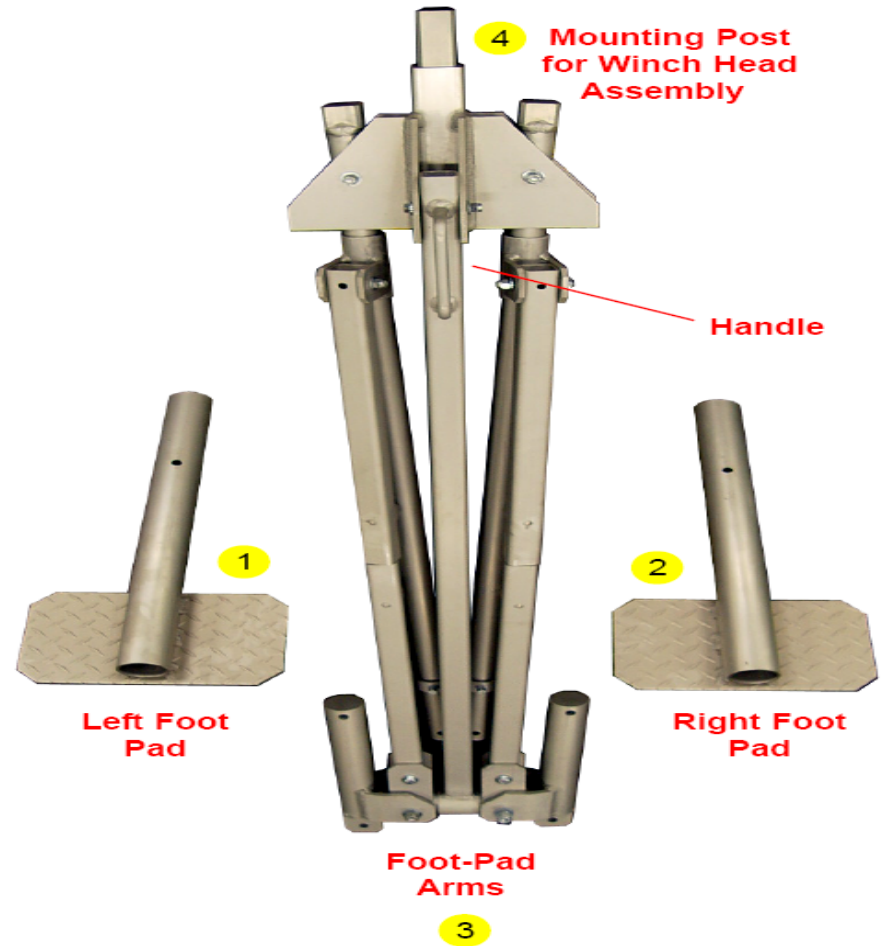


**Assembled Configuration #3**  
Winch head reversed,  
right hand operation

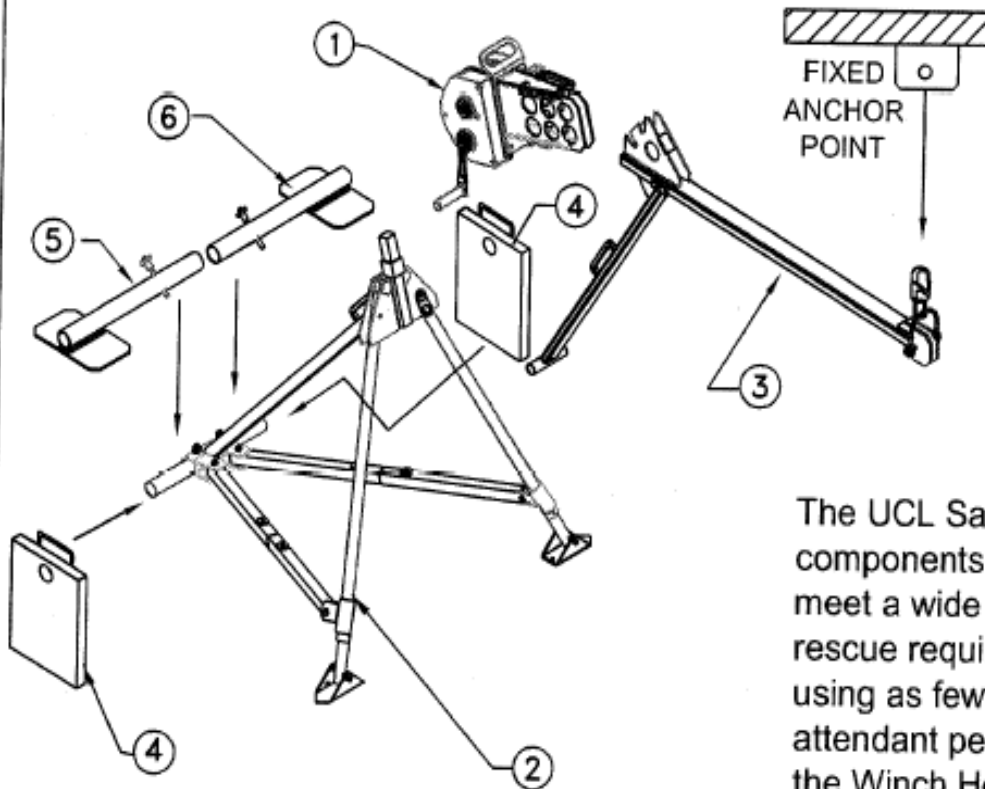


**Assembled Configuration #4**  
Winch head reversed,  
left hand operation

### Rescue Base Top View (Folded for storage)







Item	Part no.	Description
1	18013	WINCH HEAD ASSEMBLY
2	18090	COUNTER WEIGHTED DAVIT BASE
3	18151	POLE HOIST
4	19382	COUNTER WEIGHT PLATE
5&6	19390 19392	OPTIONAL LHS/RHS LEG EXTENSION

### DESCRIPTION

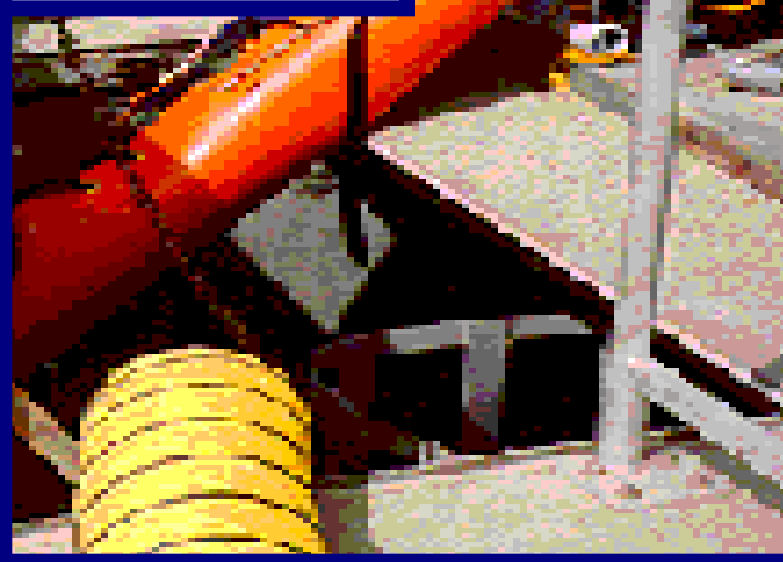
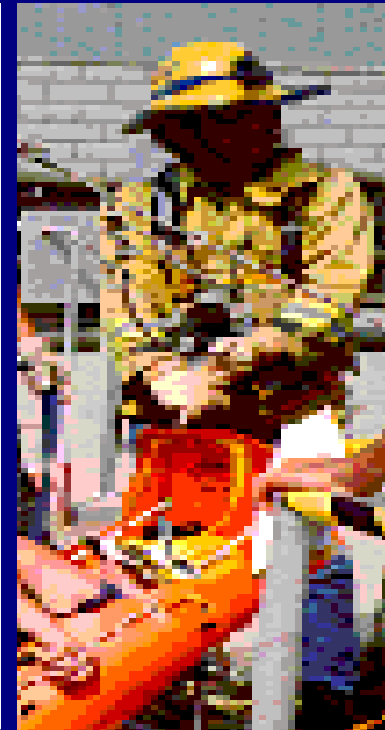
The UCL Safety Systems Rescue Davit is a modular system of components designed to be configured in a variety of ways to meet a wide range of confined space, work positioning, and rescue requirements. The Counterweighted Base may be secured using as few as 6 special weight plates, or with the weight of attendant personal using the optional Leg Extensions. By clipping the Winch Head unit into the Pole Hoist attachment, a single overhead anchor point supports a convenient raising/lowering device. Unique design allows unrestricted movement while removing the attendant operator away from a potential fall hazard. This lightweight aluminum product is anodize finished, with zinc plated steel hardware for corrosion resistance.

# VICTIM TRANSPORT

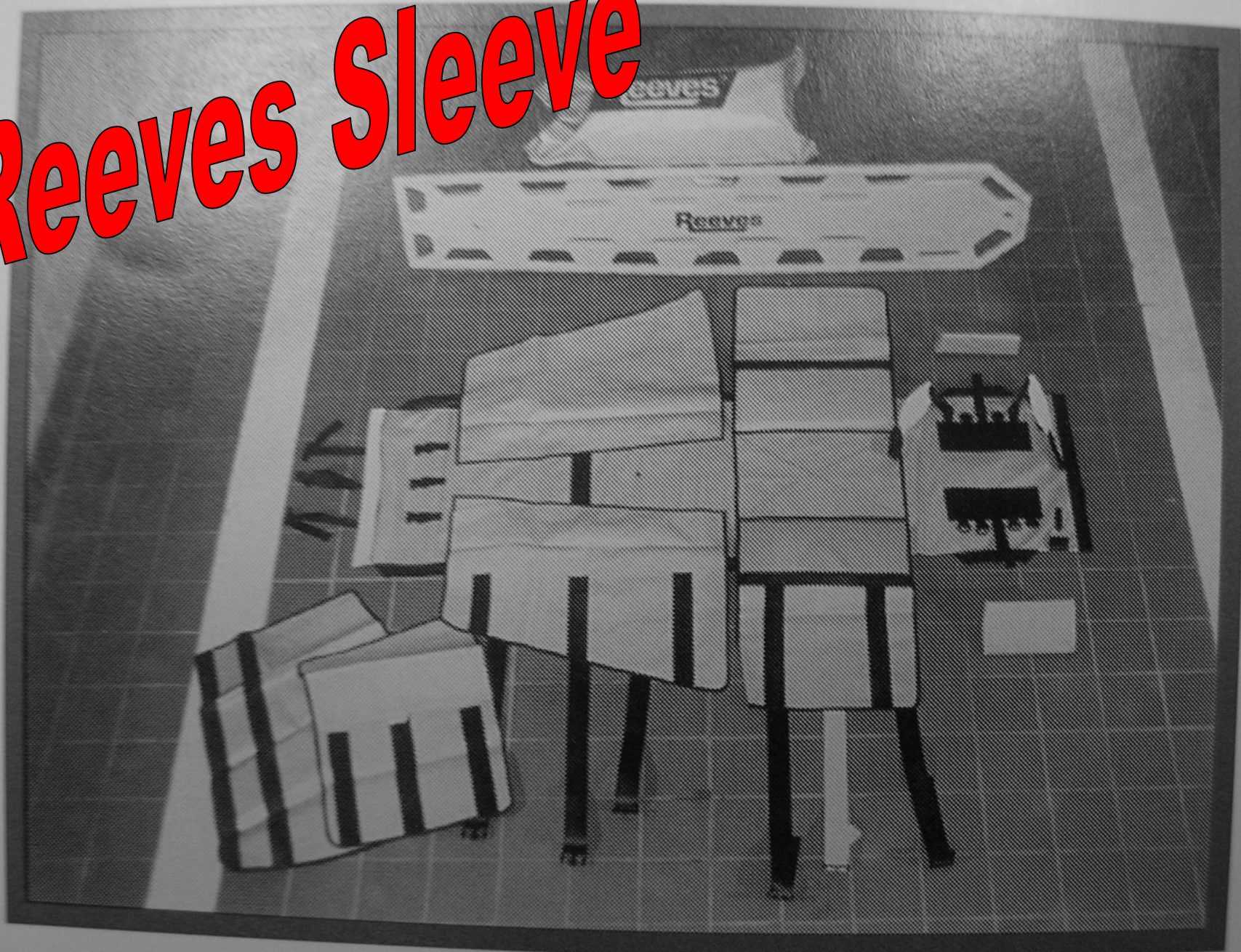
**Quickest Safe Means: Drag or FF Carry**

**Warning: Do Not Pull Out by Safety Line**

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



# Reeves Sleeve



# Reeves Sleeve



# Reeves Sleeve



# Reeves Sleeve



# Reeves Sleeve



# RESCUE TRAINING

**GFE is Responsible for  
Supervising, Planning &  
Training Confined Space  
Rescue**

**Rescue Training / Drill Every  
6 Months**

**IAW 074 V3 pg 74-60**

- > Specific Responsibilities of  
Each Person**
- > Proper Use & Maintenance  
of Equipment**





# NEW EQUIPMENT BEING EVALUATED



Both attach to the present SAR/SCBA air lines and will allow greater mobility in the space



SCOTT Ska-Pac and MSA PremAire. Both with 10 minute escape bottles. Either could end up replacing the present MSA PremAire CADET 15M respirator (SCBA) used with our SAR



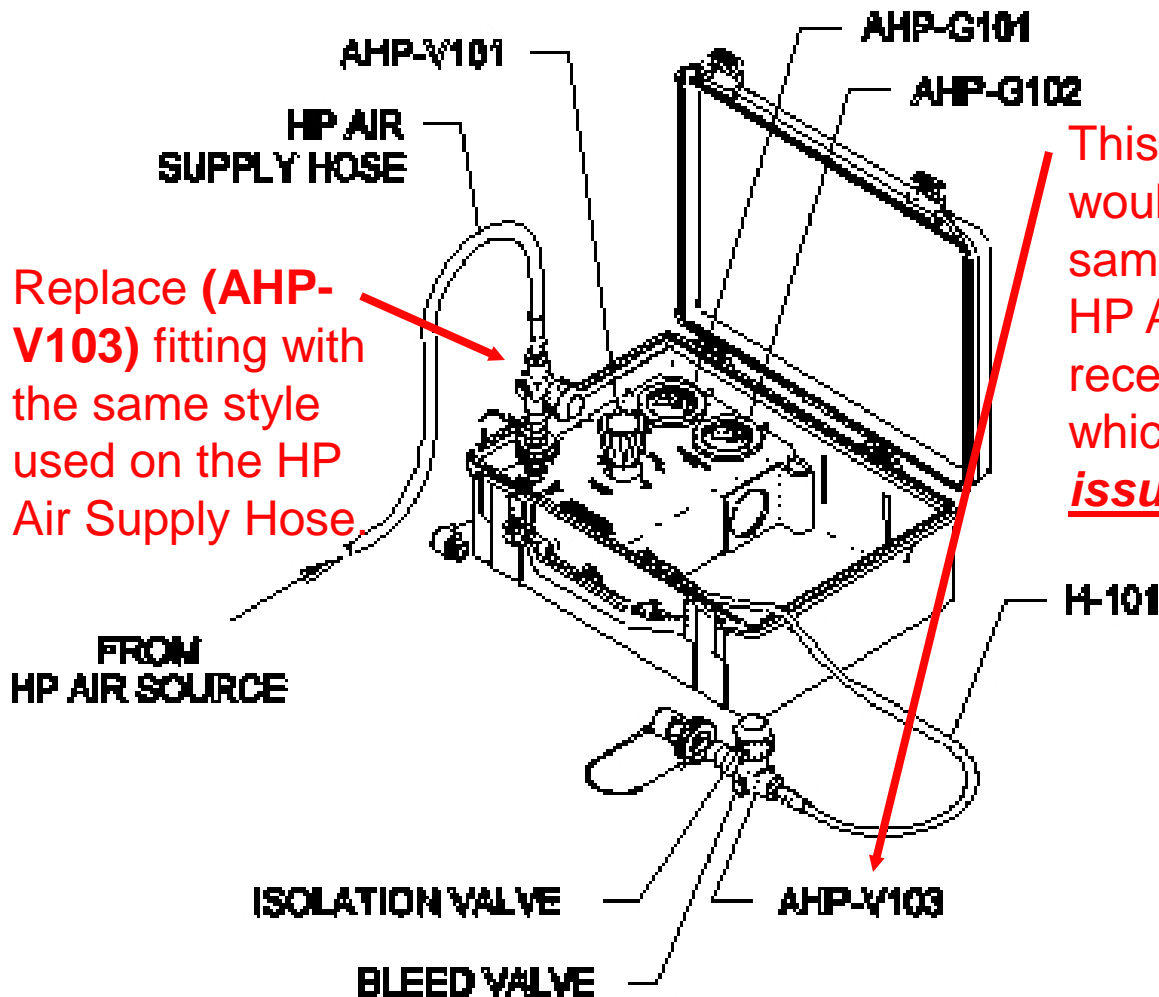
# SCOTT Ska-Pac



- The SCOTT Ska-Pac will allow the use of our present shipboard firefighting SCOTT SCBA masks with voice amplifier.
- This means not having to use the present MSA mask without voice amplification and worrying about the what if the mask needs repairs, replacing, or the proper size restrictions (the SAR/SCBA kit was only outfitted with medium masks).
- Refilling problems: The BARS refill hose used for SCBA needs to be modified using the same fitting that connects to the PASP/RASP bottles (it has a longer threaded shaft). If not the bottle leaks HP air from the vent holes on the fill connection.



# SCOTT Ska-Pac



This connection (AHP-V103) would require replacing with the same style used to connect to the HP Air Supply Hose. If not you will receive high pressure leakage which is a **significant safety issue.**

An easy *Temporary* fix is to provide an adapter. On the other hand, we no longer fill SEEDS and that only leaves this for SCBA refill so lets fix it.



# MSA PremAire



- It is 100% compatible with the present equipment provided by MSA **with exception to** the new Firehawk Mask provided with this system.
- Our present MSA masks will not work due to the mask rail system regulator now in use by MSA (Coast Guard Style).
- The new Firehawk mask can incorporate a voice amplification unit and comes in S M L sizes.
- The bottle construction could either be of Carbon Fiber or Aluminum of which Carbon Fiber is preferred due to hydrostatic periodicity (5 vs.3 year).
- Bottle fill problems are the same as if using a SCOTT Ska-Pak.



# NEW EQUIPMENT BEING EVALUATED BY "SWOS"



- Single gas detectors could possibly hit the fleet with NAVSEA Approval to be issued to R / A / E Division personnel.
- Due to watch standing, trouble call and repair work in possible H<sub>2</sub>S environments these detectors could save lives from hidden gasses.
- Within the last year, 2 lives have been lost (Kennedy and Essex) to H<sub>2</sub>S gas.
- Price is approx \$200 a unit and can be returned and refurbished by MSA for about \$70 once the 2 years time period has elapsed.

## ALTAIR™ Maintenance-Free Single-Gas Detector

[ More than two years maintenance-free! ]

### Gases and Measuring Ranges

Gas	Range
Oxygen	0-25% by vol
Carbon Monoxide	0-500 ppm
Hydrogen Sulfide	0-100 ppm

Instrument Type	P/N	1st Alarm	2nd Alarm
Carbon Monoxide (CO)	10070750	25 ppm	100 ppm
Hydrogen Sulfide (H <sub>2</sub> S)	10070749	10 ppm	15 ppm
Oxygen (O <sub>2</sub> )	10070791	19.5% Vol	23% Vol



# NEW EQUIPMENT BEING EVALUATED BY "SWOS"



- 2 lives lost due to H<sub>2</sub>S = \$800,000.
- New Single Gas Detector = \$200.
- Death benefit (SGLI) Could have bought 4000
- Save a Shipmates life = Priceless



This is not a commercial or a joke.

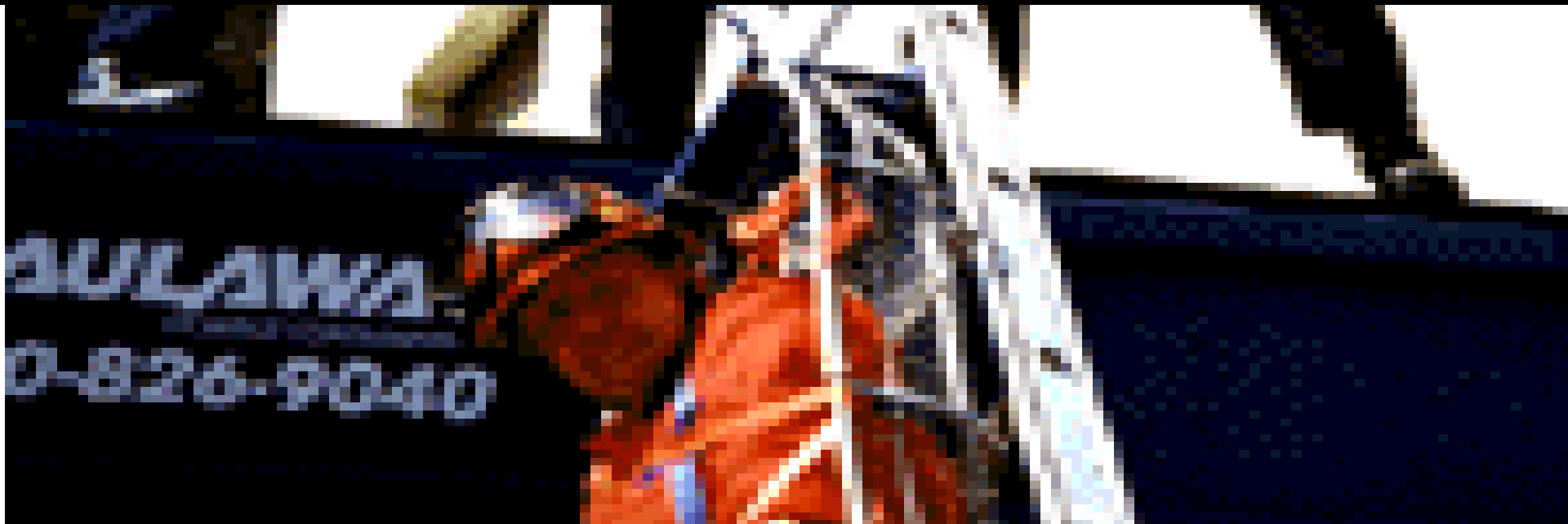
We need to research and find better ways to protect our people!





# **EMERGENCY RESCUE**

## **SUMMARY / REVIEW**



# SUMMARY

**We described the requirements for a confined space rescue.**

**We described the manning requirements when conducting a confined space or IDLH rescue.**

**We described the Emergency Rescue training requirements.**





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

When GFE / GFEEA Orders Entry

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

One Investigator, One Rescuer

