California Emergency Services Act

Article 4.5 – Urban Heavy Rescue Act

§ 8584. Citation of article
This article shall be known and may be cited as the Urban Heavy Rescue Act of 1988.

§ 8584.1. Acquisition and maintenance of urban heavy rescue units

(a) It is the intent of the Legislature that the state have an urban heavy rescue capability in the event of a major earthquake. It is also the intent of the Legislature that the Office of Emergency Services and the State Fire Marshal’s Office pursue the necessary funding to carry out this article through the normal budget process.

(b) The Fire and Rescue Division of the Office of Emergency Services shall acquire and maintain urban heavy rescue units and transportable caches of search and rescue gear, including hand tools and protective gear. The division shall position the units and caches to ensure a rapid response of personnel and equipment anywhere in the state, and ensure that a unit will be available on the scene within one hour of a major earthquake.
History

- In 2007, the Governor’s Office of Emergency Services (OES) and California Fire & Rescue Training Authority made an application to the Governor’s Office of Homeland Security (OHS) for grant funding. The request was for US&R “Medium” Type-2 Cache on a trailer.
- The first installment was funded with $1,000,000 on 9/25/2007.
- The second installment was funded with $1,434,244 on 4/29/08.
History

- 1st Installment Purchased
  - 5 – Type 2 US&R Equipment Caches
    - 22’, 2-axle equipment trailers
  - 1 – Training Cache
    - 22’, 2-axle equipment trailer
    - Rescue Systems-I training equipment
    - Rescue Systems-II training equipment
    - Trench Rescue training equipment
    - Confined Space Operational training equipment
  - 1 – Type-3 US&R Equipment cache only
History

2nd Installment Purchased

- 11 – Type 2 US&R Equipment Caches
- 22’, 2-axle equipment trailers
- 2 – Type 2 US&R Equipment Caches
- 16’, 2-axle equipment trailers
History

- On January 8, 2008 the contract was finalized and awarded to Grainger.
- OHS granted an extension to Jan 31, 2008 due to the fires in Southern California which caused the delay in completing the formal bid process.
History

- Assignees were chosen
  - Based on a GIS map
  - Goal - that no California location would be more than 2 to 3 hours away from a US&R Rescue Unit
  - Assignees near these GIS points that could staff these Units were approached
  - Staffing needed to comply with FIRESCOPE recommended training
Assignees will operate under a MOA based on the Fire & Rescue Branch Engine Program

- Meet MOA conditions
- Provide Insurance
- House Equipment
- Respond to Mutual Aid requests
- Be subject to Inspections by Cal EMA
US&R Capability

Type-2

- Heavy Wall Construction
- High Angle Rope Rescue
  - (not including highline systems)
- Confined Space Rescue
  - (no permit required)
- Trench and Excavation Rescue
US&R Capability

Type-3

- Light Frame Construction
- Low Angle Rope Rescue
US&R Capability

Other Types  Type-1

☐ Heavy Floor Construction
☐ Pre-cast Concrete Construction
☐ Steel Frame Construction
☐ High Angle Rope Rescue
  ■ (including highline systems)
☐ Confined Space Rescue
  ■ (permit required)
☐ Mass Transportation Rescue
US&R Capability

Other Types  Type- 4

- Surface Rescue
- Non-Structural Entrapment in Non-Collapsed Structures
Required Training

Type-3 US&R

- Rescue Systems-I
- Confined Space Awareness
- Hazardous Materials First Responder Operational
- BLS First Aid
Required Training

Type-2 US&R
- Rescue Systems-I
- Rescue Systems-II
- Trench Rescue
- Confined Space Awareness
- Hazardous Materials First Responder Operational
- BLS First Aid
Trailer Basics

- Trailer
  - Charmac
    - 2-Axle (6000 # axles), Electric brakes
    - 22’ foot box length
    - 2-48” x 96” through compartments
      - Roll-up doors each side forward of axles
      - Slide out equipment trays
        - Slide out both sides
    - 14 foot rear entry compartment
      - Rear ramp door
    - Code-3 Lighting package
Trailer
Trailer
Equipment Load

- Equipment is loaded to provide a balanced, safe ride without overload.
- CHP have assisted in weight and balance between axles and tongue weight
- GVW of Trailer is 9,999 pounds
- Tongue weight is loaded at 1200 pounds
- Load equalizer Hitch is supplied
Equipment Load
Trailer Electrical

- Trailer is setup for both 12 volt and 110 volt interior lighting.
- Protected with Code Standard breaker protection
- 6500 KW Generator can power trailer
- 110 volt Duplex boxes on trailer are GFI protected
Trailer Electrical
Trailer Electrical
Trailer Electrical
Door Protection
Door Protection
Equipment Storage
Equipment Storage
Equipment Storage
Equipment Storage
Position Labels
Position Labels
Equipment ID
Equipment ID
Equipment ID

[Image of various climbing gear and equipment]
Portable Lighting
Portable Lighting
Portable Lighting
Rope Rescue
Rope Equipment
Rope Equipment
“A” Bag Setup
Bag “A”

- 2 Complete RPM setup
  - 1 with 2 pulleys for “Z” rig
    - With 1 each color webbing
  - 1 with 1 pulley (i.e.: change of direction)
- 6 webbing each color
- 6 pairs of prusik cords
- 14 carabiners
  - 15th carabiner is attached to “pre-rig”
Bag “A”

- 14 carabiners
- 3 – 4” pulleys
- 2 Brake Bar Racks
- 2 Eight Plates
- 2 Collector Plates
- 2 Load Release Devices (LRD or Mariners Knot)
Bag “A”

- 24 Pieces of webbing
  - 6 each color
- 6 Pairs of prusik cord
  - 6 long; 6 short
- 1 Pick-off strap
- 1 Etrier
- 1 Gibbs ascender
- 1 Edge Protector
Bag “B”

- 1 Complete RPM setup
  - 1 with 2 pulleys for “Z” rig
    - With 1 each color webbing
- 6 webbing each color
- 5 ½ pairs of prusik cords
  - ½ pair (green short in “Pig-rig bag”)
- 9 carabiners, plus
  - 3 carabiners in “Pig-rig” bag
Bag “B”

- 9 carabiners
- 2 – 4” pulleys
- 2 Brake Bar Racks
- 2 Eight Plates
- 1 Collector Plates
- 2 Load Release Devices (LRD or Mariners Knot)
Bag “B”

- 24 Pieces of webbing
  - 6 each color
- 6 Pairs of prusik cord
  - 6 long; 6 short
- 1 Pick-off strap
- 1 Etrier
- 1 Gibbs ascender
- 1 Edge Protector
RPM - “A” & “B” Bags
Single RPM Setup

LOW ANGLE ROPE RESCUE OPERATIONAL

In environments where operating distances between the anchor and the working edge require equipment that can be used in high-angle rope rescue operations.

1. Systems configured in this way minimize equipment needs and weight of systems utilized in high-angle rope rescue operations.
2. Although not specifically shown in this text, systems configured in this way are currently being used safely and efficiently in low angle rope rescue operations.
3. The instructor will modify the RPM configuration to best meet local and regional needs.
Single RPM Setup
RPM into Z Rig Setup

LOW ANGLE ROPE RESCUE OPERATIONAL
Ch. 12: Low Angle Rescue (Small & Medium) Systems

1. Set the prusik(s) below.
2. Run rope back and forth through the DCU.
3. Attach slack end(s) (above) to line on lead side of prusik(s).
4. Install lead line in mechanical advantage pulley.
5. Connect mechanical advantage pulley to lead prusik with centipede.
Dual RPM Setup

Prerigged Dual RPM Systems

- Prerigged dual RPMs with halyard points are a common setup for operations where low angle rope rescue systems are most often used. Carefully selecting a directional change pulley will eliminate slack.
- When attached to anchors, the RPMs are configured with the trailing halyards (ERPs) in the middle and adjusted as shown.
- This configuration is ideal for low stress operations in environments with a limited operating distance between the main anchor and the working edge. This is a common scenario in over-the-wall operations or use as a bridging technique.
- Either RPM can become the belay/safety or main line side of the system based on site specifics and operational needs.
- The equipment required for the construction of the mechanical advantage system is consistently carried in a pocket in one of the two ropes, in a bag or harness, or preassembled and attached to a lifeline in a separate rope bag. (Figure 8.3)

September 20XX

Amy
Pig Rig Setup
Pig Rig Setup

LOW ANGLE ROPE RESCUE OPERATIONAL

Pig Rig Constructions 3:1

1. Tie a figure eight on a tag with a 4" loop in the end of the pig rig line.
2. When rope is on the ground, forming two holes as shown above.
3. Place figure 8" rope in pulley and secure a carabiner to this pulley.
4. Connect an anchor sling (6'-20') to this carabiner.
5. Place figure 8" rope in pulley and connect a carabiner to this pulley.
6. Secure figure 8" on a tight rope (4" carabiner) on top of the pulley.
7. Connect the chain to this carabiner.

Figure 11-23: How to Construct 3:1 Pig Rig

Figure 11-24: Assembled 3:1 Pig Rig
Pig Rig Setup
Pig Rig in use Setup

LOW ANGLE ROPE RESCUE OPERATIONAL

Figure 15-31 Mechanical Advantage

See previous page for the first 13 steps.

14. Attach second land point to line as shown.
15. Install lead line through second mechanical advantage pulley.
16. Connect second mechanical advantage pulley to second land point with connector.
17. System is "Ready" position.
Liter Pre-Rig
Liter Pre-Rig
Pre Rig Bag

- 1 Collection Plate
  - From “B” bag
- 2 16’ Orange kernmantle tied into 2 legs each
- 6 Carabiners
  - 1 from “A” bag
- 4 Prusik cords
Victim Harness
Legal

Vehicle Registration (copy)
☐ Laminated
☐ In Pouch In Side Compartment

☐ If you use a toll road or toll bridge, you must pay the toll for the trailer
DO NOT’s

□ DO NOT add more load weight
  ■ Fill the 3 fuel cans, that’s it !!!

□ Do not apply decals, signs, stickers, or mount anything to the outside or inside of the trailer
  ■ No Exceptions

□ Your Fire Chief has signed a legal document agreeing to the above.
DO’s

- Plan For Safe Operations
- Follow Safe Practices
- Keep Each Other Safe
- Train, Train & Train
- Familiarize Yourself With The Tools & Equipment
- Good Luck & Enjoy the Rescue Unit
Questions

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Cal E*M*A Contact

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