COLORADO MOUNTAIN RESCUE TEAM (CMRT) TEIR 1 TRANING 14 JUL 17


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CONG
HAATS
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AASF
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SAR Coordinators
MAJ Scott Tucker
CW2 Clayton Horney
COARNG
SAAO
LTC Josh Day

TRAINING OVERVIEW

- **Tier 1 – Rescue Process / Equipment / Procedure Orientation**
  - Classroom training, hands-on aircraft orientation optional
  - Widest dissemination to all personnel involved in SAR / Disaster Relief
  - Aircraft immaterial

- **Tier 2 – Patient Packaging / Aircraft Loading / Hoist Operations**
  - Classroom training / dynamic dummy-load training with aircraft
  - Select rescue personnel as determined by rescue organization
  - Training recorded by person
  - Training conducted with 2 aircraft when available: UH-72, UH-60

- **Tier 3 – Rescuer Deployment / Recovery and Hoist Operations**
  - Select rescue personnel determined by COARNG
  - Recurring training required for currency
  - Training specific to airframe

AGENDA

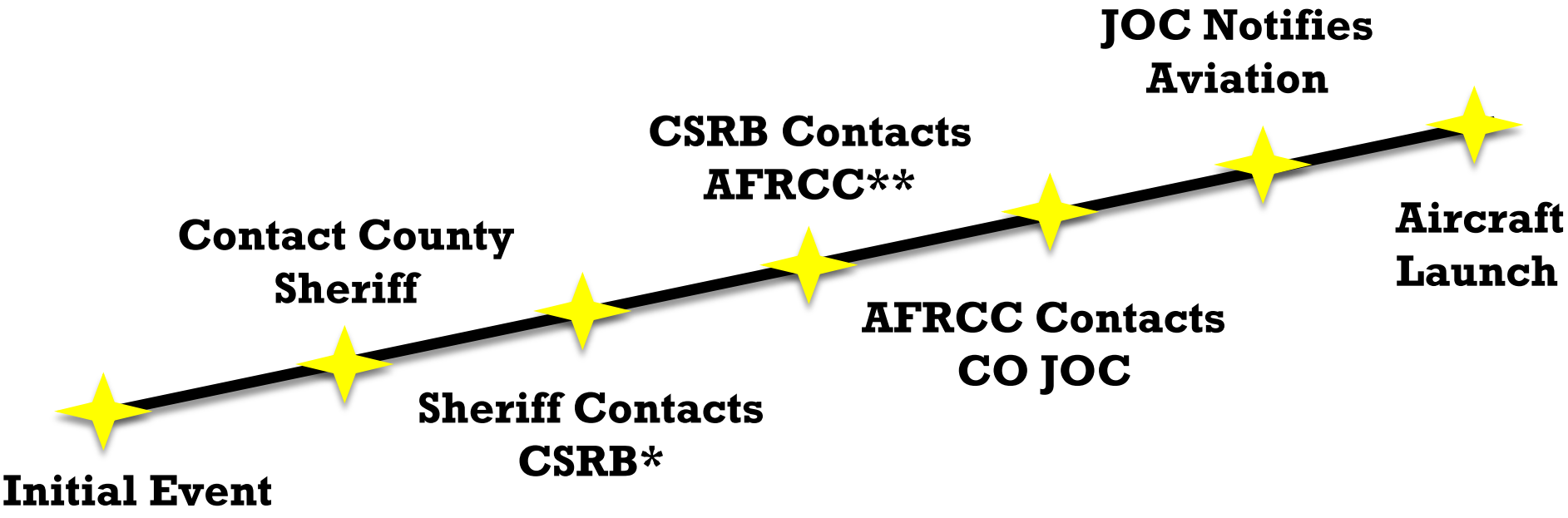
- Request Process
- Mission Request Information
- Contact Information
- CONG SAR Structure
- Aircraft Overview
- Equipment Overview
- Rescue Procedure Overview
- Communications

CONG REQUEST PROCESS

- Small Scale Event
  - Search and Rescue
  - Team Insertion / Extraction

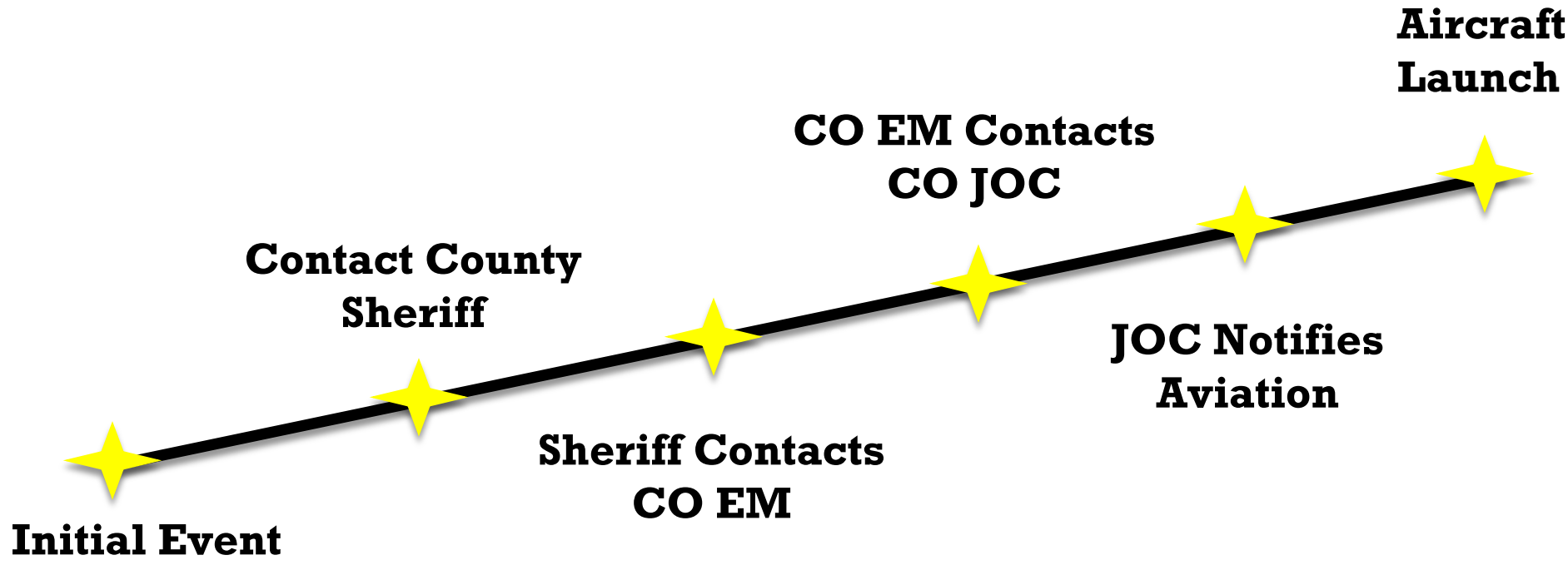
- Large Scale Event
  - Flood
  - Blizzard
  - Wild Fire
  - Mud Slide

SMALL SCALE REQUEST PROCESS



*Encouraged by not required
**AFRCC approval negates charges to county

LARGE SCALE REQUEST PROCESS



Wild Land Firefighting SAR Support

- City or County Managed Fire
  - Sheriff contacts AFRCC
- State or Federal Managed Fire
  - Without pre-coordinated support SAR aircraft
    - County Sheriff contacts AFRCC
  - With pre-coordinated support SAR aircraft
    - IC has aircraft launch authority

Mission Request Information (If Available)

- Location (dd mm.mm)
- Elevation
- Patient Information
- Rescue Situation
- Required Equipment
- ICP Location (If applicable)
- Communications Plan
  - Interoperable Channel
    - DTR, if available for long range communication
    - Direct frequency required for on-scene
- Weather Conditions
  - Temperature if known
- Obstacles

Contact Information

- County Sheriff Department
  - 911
- Colorado Search and Rescue Board (CSRB)
  - (800)-593-2772
  - **Contacted by County Sheriff**
- Air Force Rescue Coordination Center (AFRCC)
  - (850)-283-5955
  - **Contacted by CSRB after notification by County Sheriff**
- Colorado Department of Emergency Management (COEM)
  - (303) 279-8855
  - **Contacted by County Sheriff**

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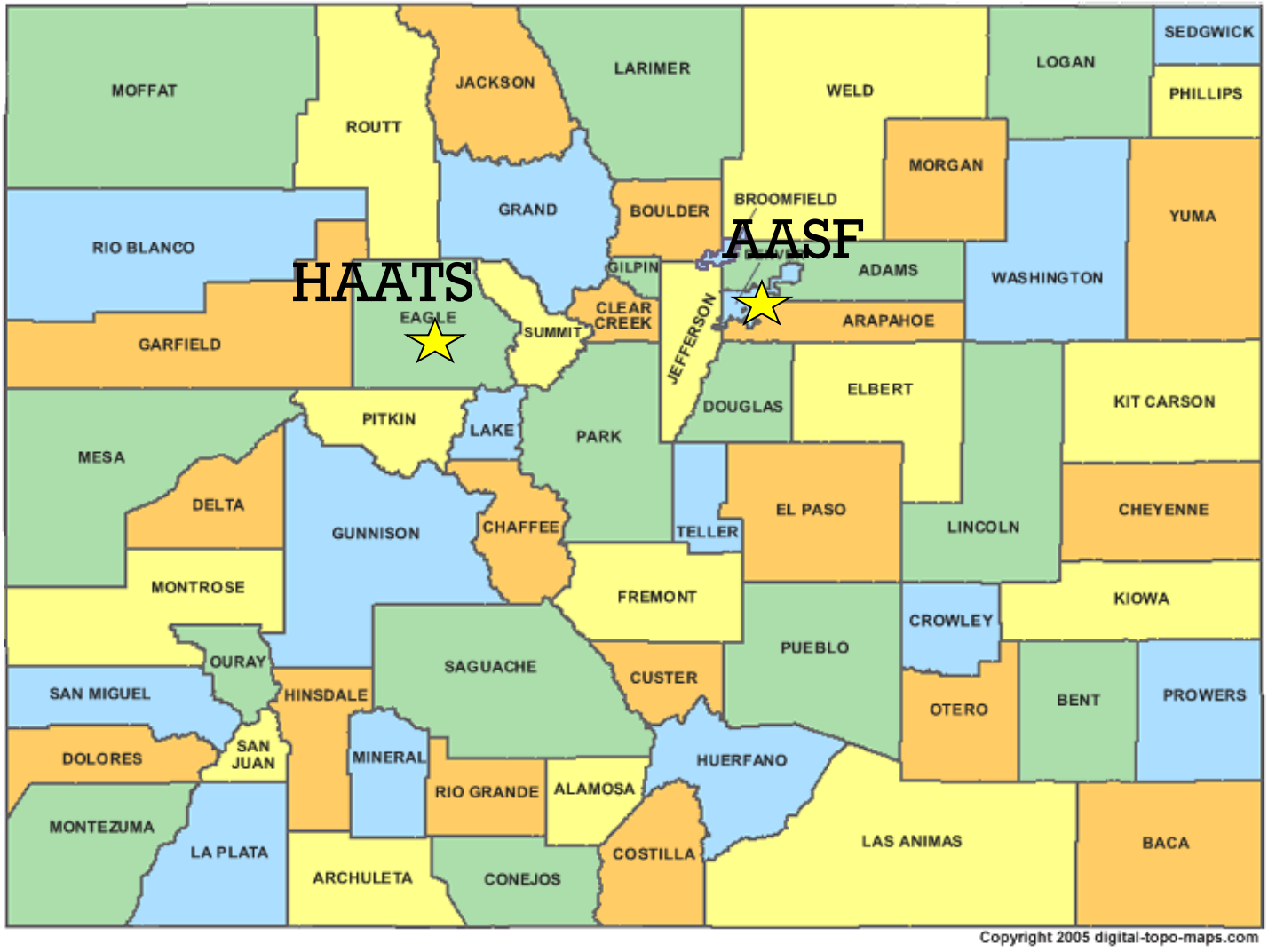
CONG SAR AVIATION OVERVIEW



CONG Aviation Crew Makeup

- 2 x Pilots
- 1-2 x Crew Chief / Flight Engineer
- 1 x Flight Medic (Mission dependent)
  - Minimum Medical Training – Paramedic

CONG AIRCRAFT OVERVIEW

- UH-72A Lakota
- UH-60L Blackhawk
- CH-47F Chinook

UH-72A Lakota (EC-145)

- 7 Aircraft – 4 MEDEVAC w/ external hoist, 3 Slick w/o hoist
  - HAATS – 3
  - AASF - 4
- Dual engine, rated at 738 SHP each
- Four-bladed, “fully rigid” hinge less rotor system
- 7903 lbs max take-off weight
- 600 lbs max hoist load
- 295 ft (approximately) usable hoist cable length

UH-72A Lakota (EC-145)

Usage:

- Search and rescue
- Command and control
- Confined area extraction
- LZ operations up to 14,000* ft w/ small load
- Hoist operations below 10,000* ft
- Lowest per hour operating cost

* PIC makes final determination, specific conditions may increase or decrease aircraft capabilities

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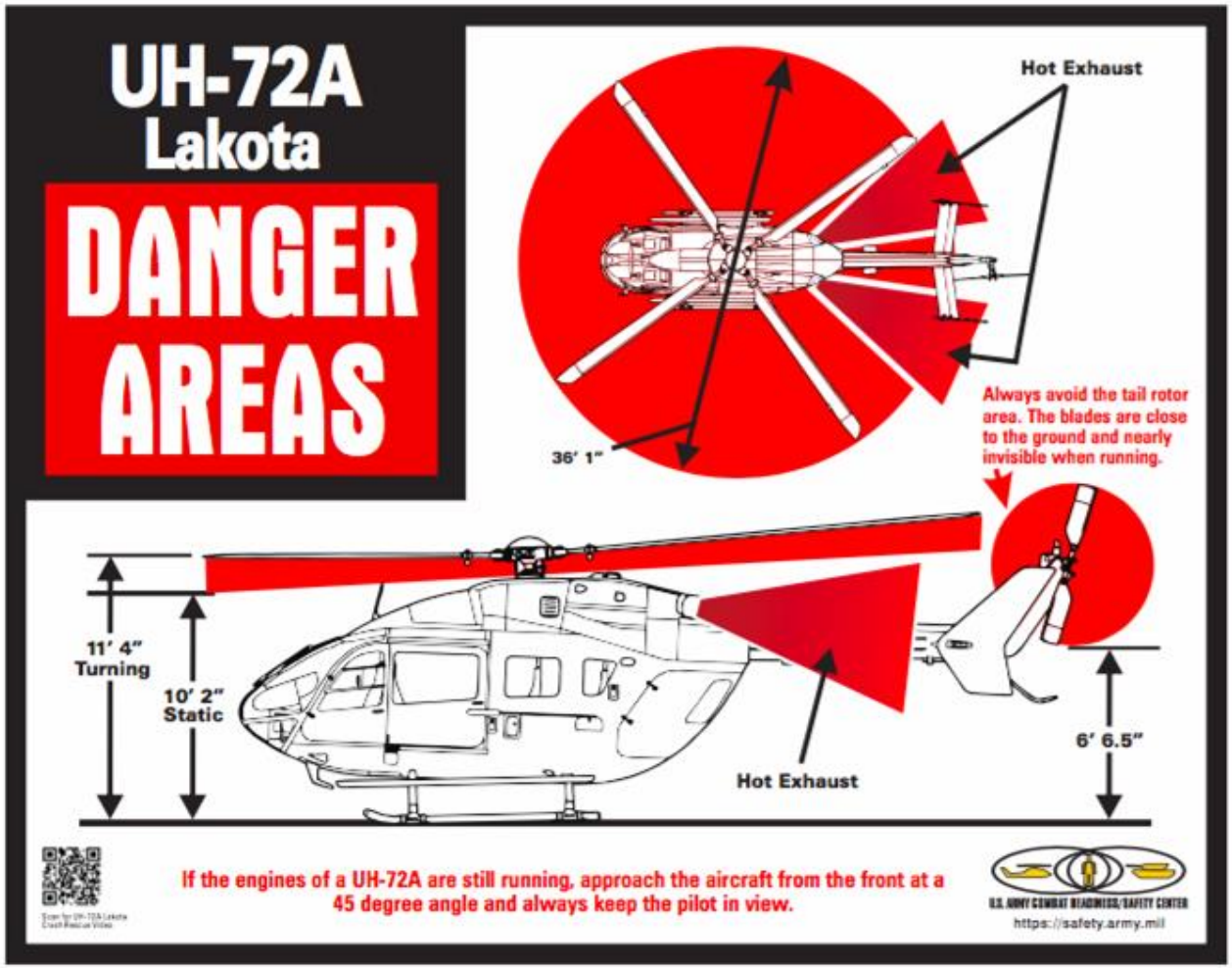
UH-72A Lakota (EC-145)



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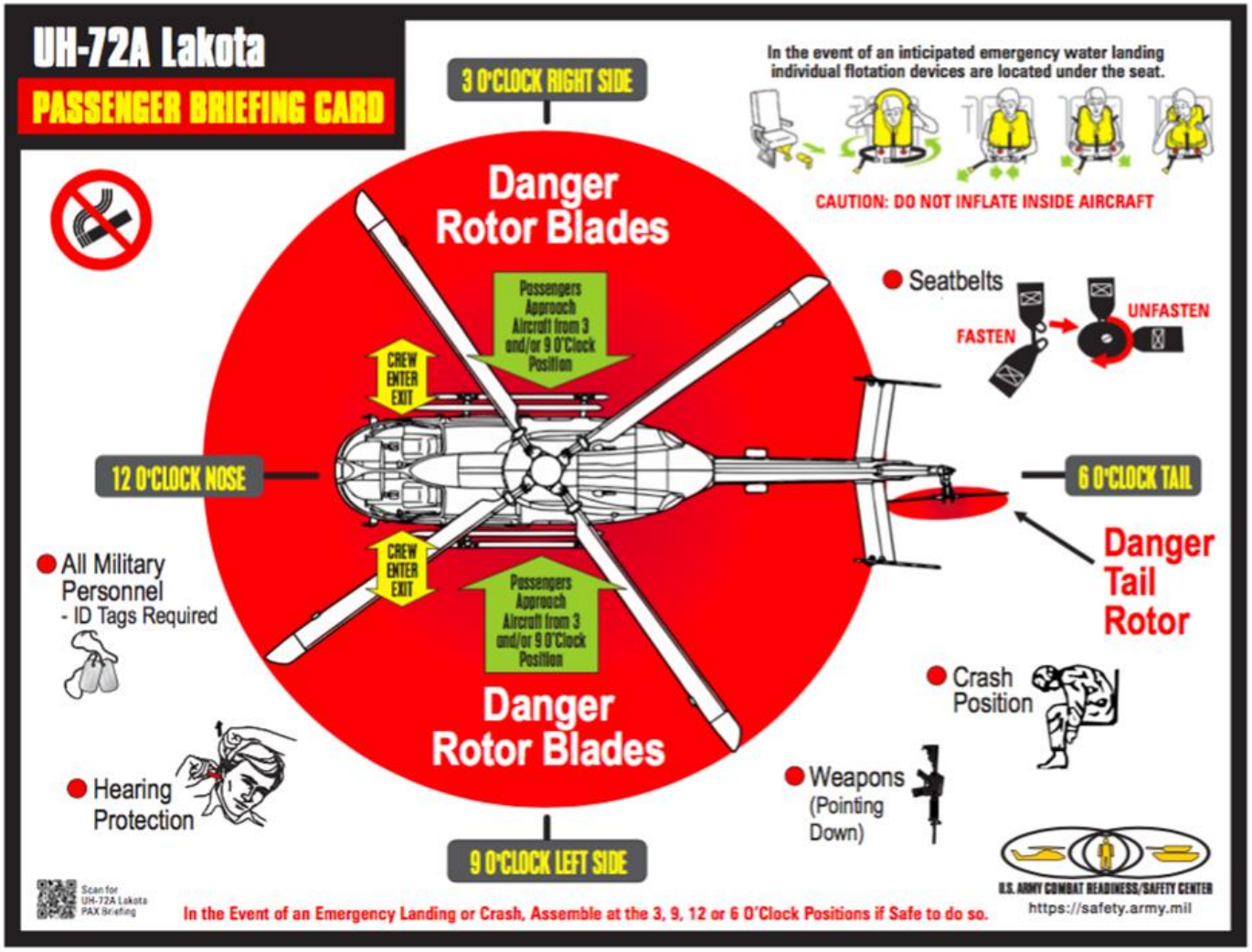
UH-72A Lakota (EC-145)



UH-60L Blackhawk

- 16 aircraft – 8 MEDEVAC, 8 Slick w/ hoist
  - HAATS – 4
  - AASF - 12
- Dual engine, rated at 1890 SHP each
- Four-bladed, fully articulating rotor system
- 23,500 lbs max take-off weight
- 600 lbs max hoist load
- 250 ft (approximately) usable hoist cable length
- Single cargo hook rated at 8000 lbs

UH-60L Blackhawk

Usage:

- Search and rescue
- Command and control
- LZ operations up to 14,000* ft w/ medium load
- Hoist operations below 12,000* ft
- Moderate per hour operating cost

* PIC makes final determination, specific conditions may increase or decrease aircraft capabilities

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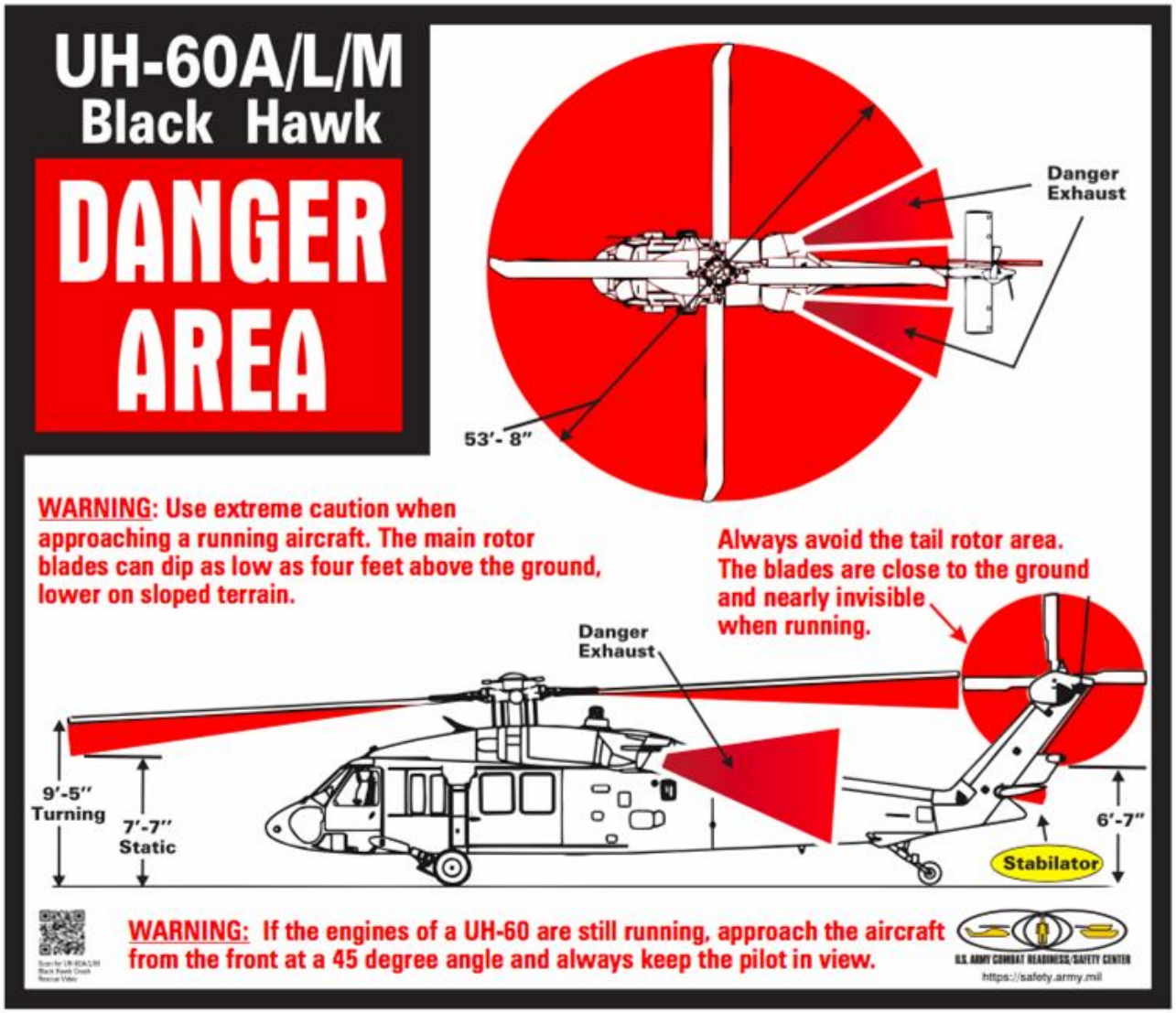
UH-60L Blackhawk



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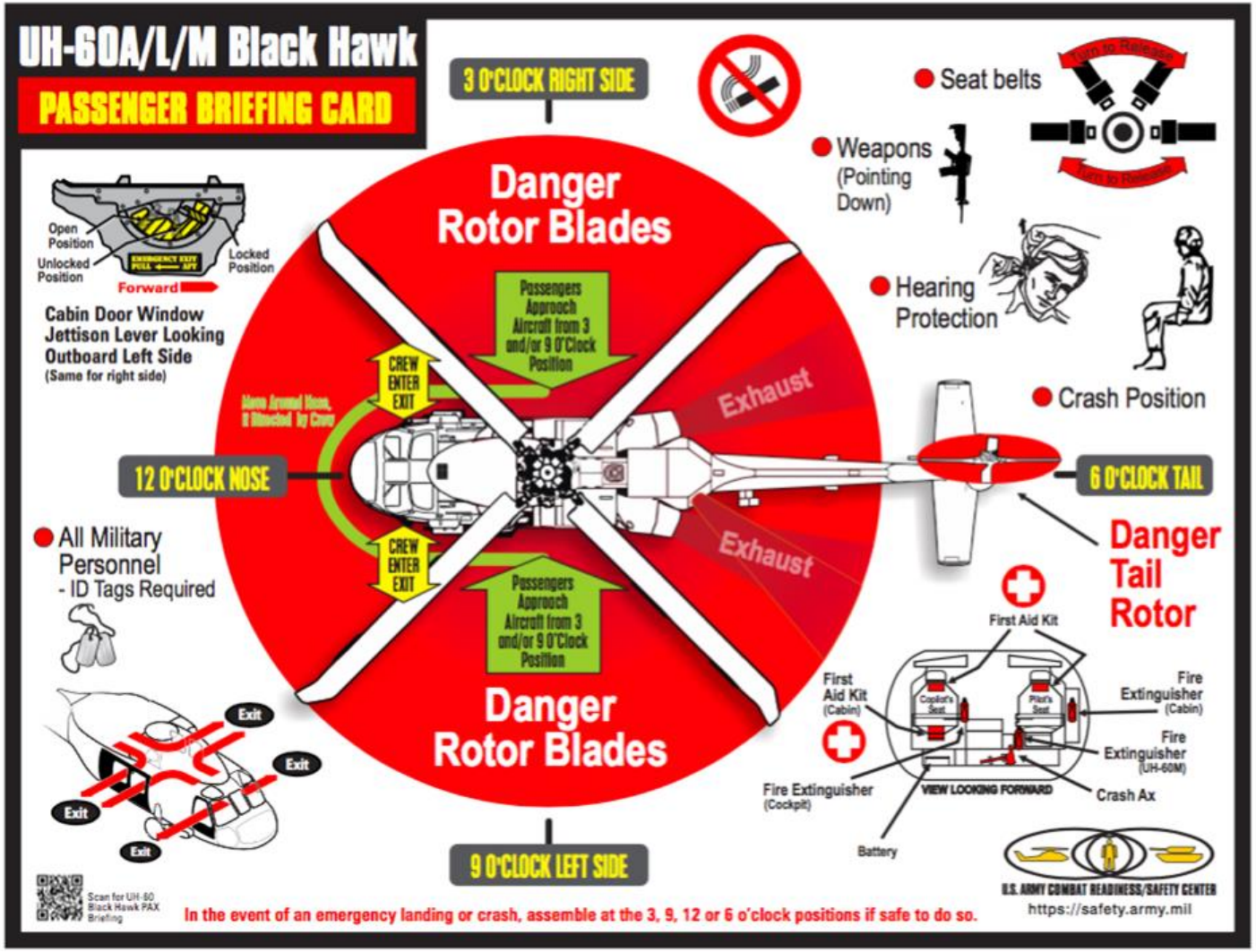
UH-60L Blackhawk



CH-47F Chinook

- 7 aircraft
  - HAATS – 2
  - AASF – 5
- Dual engine, rated at 4733 SHP each
- Tandem three-bladed, fully articulating rotor system
- 50,000 lbs max take-off weight
- Litter patients must be hoisted in the vertical configuration
- Triple single cargo hooks rated at 26,000 lbs

CH-47F Chinook

Usage:

- LZ operations up to and above 14,000* ft w/ large load
- High per hour operating cost

* PIC makes final determination, specific conditions may increase or decrease aircraft capabilities

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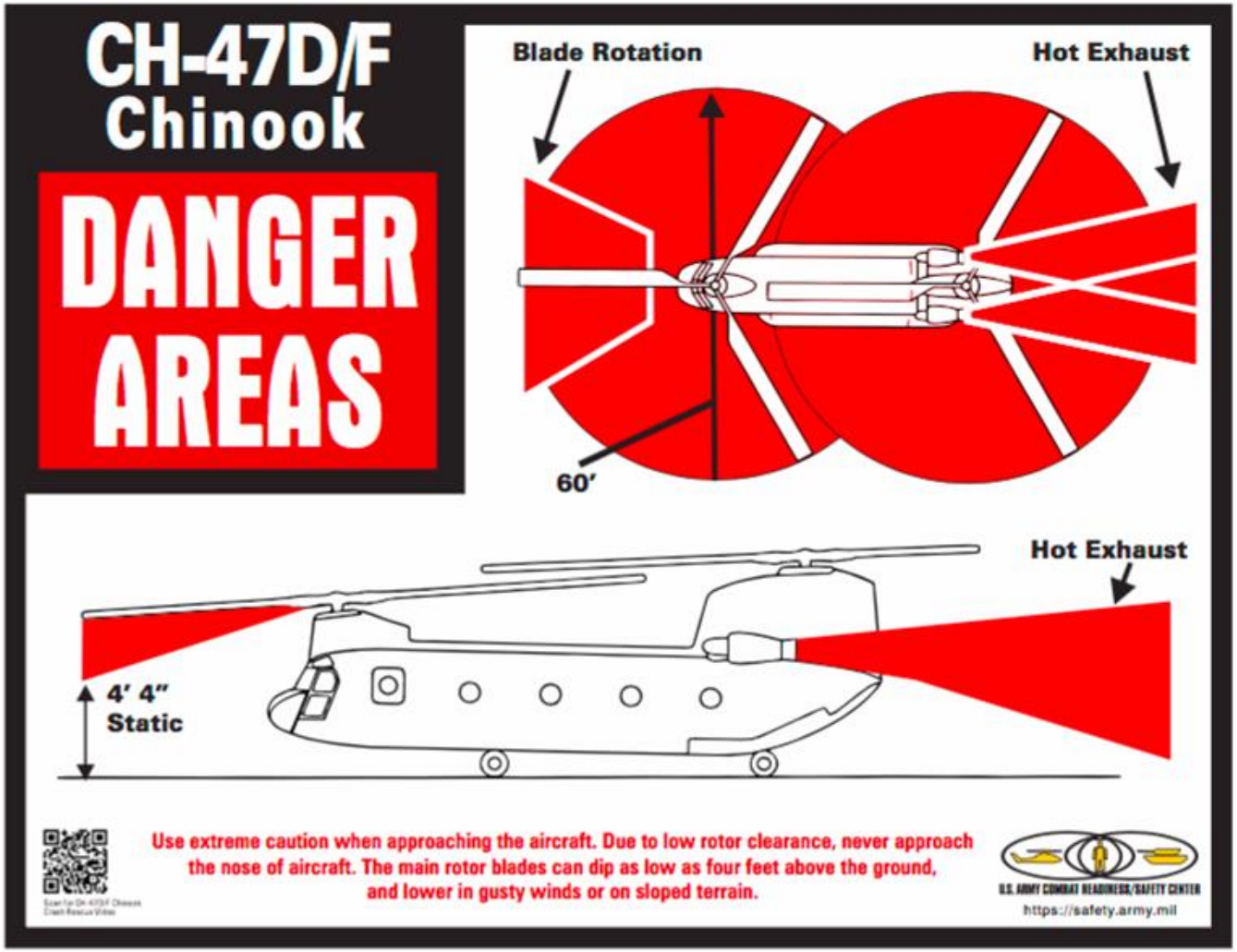
CH-47F Chinook



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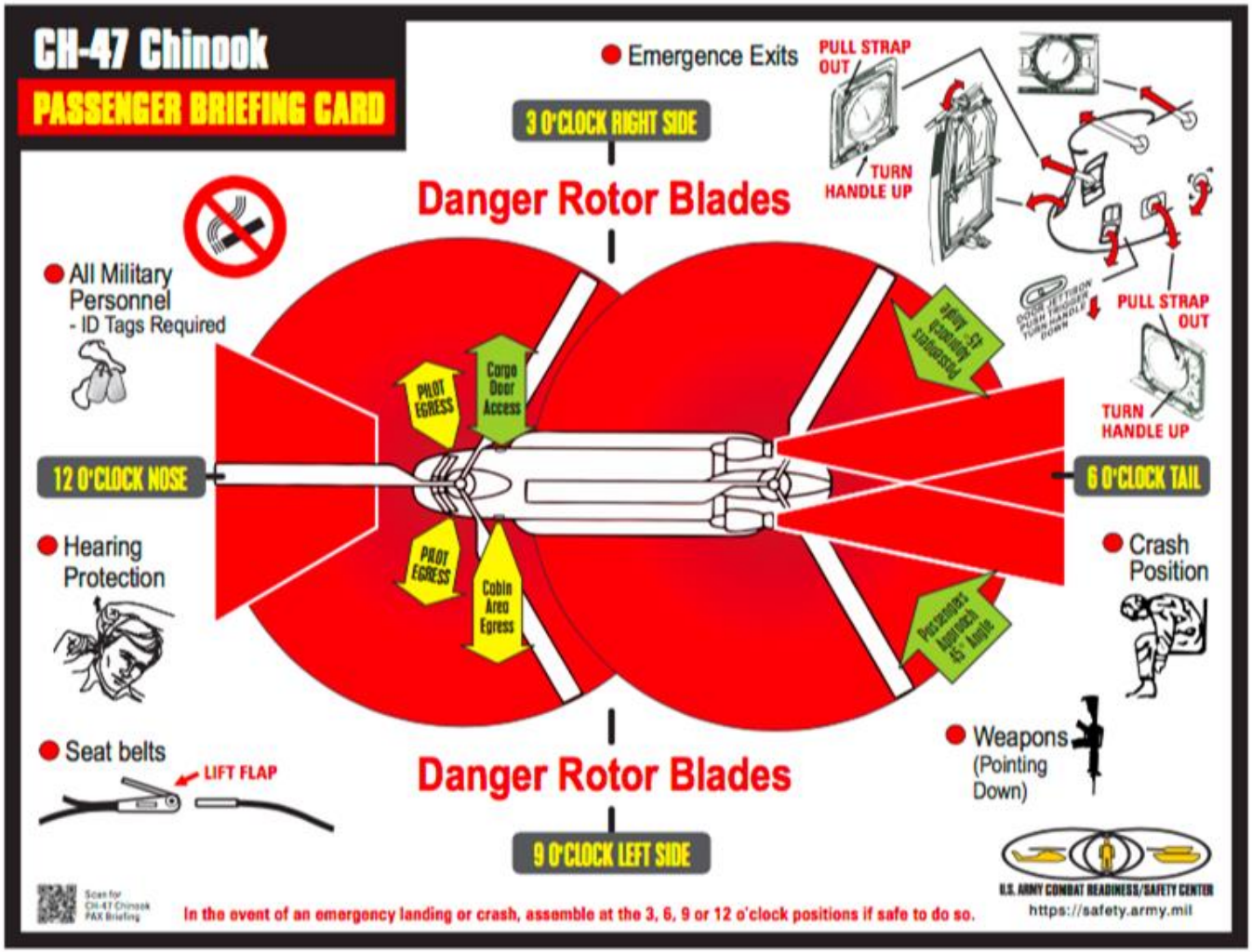
CH-47F Chinook



RESCUE EQUIPMENT OVERVIEW

- TRI-SAR / Triton Harness
- Quick Strop
- Jungle Penetrator / Rescue Seat
- Stable Flight Heli-Bag
- Stokes Litter
- Tag Line

TRI-SAR Harness

- Worn by Rescuer
- Rescuer can ride with:
  - Ambulatory Patients
  - Litter Patients
- Used in conjunction with strop or litter system

Quick Strop

- Ambulatory Patients
  - Conscience
  - Cooperative
- With or without Rescuer

Rescue Seat

- Ambulatory Patients
  - Conscience
  - Cooperative
- Use
  - UH-60
  - UH-72

Stable Flight Heli-Bag

- All Aircraft
- Can be used with or without Rescuer
- Requires structure
  - Stokes Litter
  - Back Board
  - Vacuum Splint
- Does not requires Tag Line
- Compact for delivery and ground movement

STOKES LITTER

- Used primarily by the UH-60
- Can be used with or without Rescuer
- Can be broken down for delivery
- Requires Tag Line
- Does not require backboard / litter for structure

TAG LINE

- Used with litter patients to prevent load spinning
- Connected to foot end of litter
- Disconnect by crewmember and left on scene once litter is brought into aircraft

RESCUE PROCEDURES

- LZ / PZ Selection
- Aircraft Hazards
- Hand and Arm Signals
- Patient Packaging
- Hoist Operations
- Tag Line Management
- Night Operations

LZ / PZ SELECTION

- LZ Size:
  - UH-72A – 75 ft
  - UH-60L – 100 ft
  - CH-47F – 150 ft
- Slope Limitations:
  - < 5 deg - All Aircraft
  - 5 – 10 deg – Possible
- Obstacles
- Snow / Dust

AIRCRAFT HAZARDS

- Downwash
  - Increases with aircraft weight
  - Capable of dislodging personnel and equipment on steep terrain
  - Dead fall / Debris danger

- Tail Rotor
  - Do not operate near the tail rotor on the UH-60 and UH-72
  - High RPM rate makes the tail rotor difficult to see

AIRCRAFT HAZARDS

- Main Rotor
  - Verify clearance when operating on sloped terrain
  - Approach from 3 or 9 o'clock position or as directed by the flight crew for UH-60 and UH-72
  - Approach as directed for CH-47
  - Ensure equipment clearance when operating under / near rotor system (Litters / Antennas)
  - Ensure rotor / tag line clearance on sloped terrain

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HAND AND ARM SIGNALS

Ready for Lower
(Used for hoist hook, Tag Line, Litter, Jungle Penetrator, or equipment)

Cable Down

Cable Down Slowly
(Given when within 5' of the ground)

Cable Down

Stop Cabling

Ready to Lift/ Raise

Abort

HOIST OPERATIONS

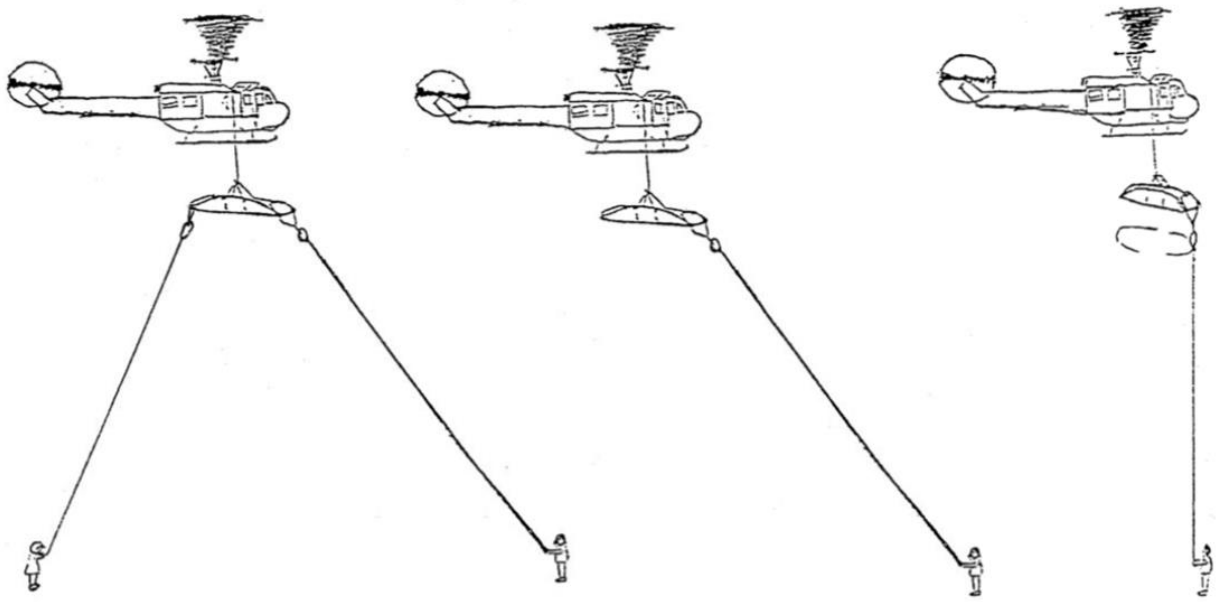
- Types of COARNG Operations
  - Empty hook delivery / patient recovery
  - COARNG Crewmember deployment / recovery
  - Rescuer delivery / recovery with patient (Tier 3)
- Allow hook to contact the ground to discharge static electricity
- Any excess hoist cable must be managed to prevent danger to ground personnel
- Less than 150 ft cable length preferred

1 Wheel / Skid Operations

- Used on excessive slopes or for less than required LZ size
- Less dangerous than hoist operations
- Aircraft is less stable during loading / unloading than normal LZ / PZ operations
- Verify personnel clearance from main and tail rotor on upslope during loading

TAG LINE MANAGEMENT

- Setup on 45 deg angle from aircraft
- Requires gloves
- Maintain control through rope tension



Night Operations

- Higher risk for hoist and LZ operations
- Extraction may be delayed for daylight if patient / situation is stable
- Excess hoist cable management is critical
- Use of ground / aircraft supplemental lighting is encouraged
- Chemlight will be affixed to the hoist hook

COMMUNICATIONS

- Radio communication with ground crew strongly encouraged
- Direct (Non-repeated) for rescue scene
  - Repeater coverage may not be available at PZ
- Choose interoperable channel
- Given no communication plan, CONG aircraft will arrive on 155.160 (MRA1)

Questions