

# Multiple Aircraft Scene Response

Developed by  
Missouri State Advisory Council on EMS  
Air Ambulance Sub Committee

In cooperation with  
Missouri Association of Air Medical Services





# Objectives

- Identify Missouri Air Medical Programs
- Review examples of multiple aircraft responses
- Identify challenges associated with multiple aircraft response
- Present an example Standard Operating Guide (SOG) for multi-aircraft response following National Incident Management System (NIMS) criteria

# Missouri Air Medical Programs

- LifeFlight Eagle
- Staff For Life
- Air Evac Lifeteam
- LifeNet of the Heartland
- Eagle Med
- MEDFLIGHT
- Cox Air Care
- St. John's Life Line
- ARCH Air Medical Service
- Children's Mercy Hospital, KC MO







# Multiple Aircraft Operations

“We need to use standard operational procedures on all events, even the one and two patient scenes, so that when the multi-patient/agency event occurs, we are ready.”

Allen Brunicini, Retired Fire Chief,  
Phoenix Fire Department



# Multiple Aircraft Response (MAR) Definition

- An emergency incident in which more than two air ambulances are called to the scene.





How frequently do you think these occur?



# Multiple Aircraft Scenes

- June 26, 2006: Clinton, MO building collapse, 5 aircraft
- Nov 27, 2006: Anderson, MO group home fire, 7 aircraft
- Feb 23, 2007: Warrensburg, MO, 2 vehicle MVC, 5 aircraft
- Oct 9, 2007: Reynolds County, bus wreck, 12 aircraft
- Dec 27, 2008: Henry County, 2 vehicle MVC, 5 aircraft

# Reynolds County Bus Wreck

- Very remote and hilly terrain, unable to land aircraft at scene.
- 32 kids on board the bus, 3x side rollover.
- Identified 2 separate LZs, each approx. 1 mile east and west of the crash site.
  - Intersection of County Rd J-K.
  - Church parking lot in Oates, MO.







# Reynolds County Responders

- Viburnum – Iron County Rural Fire
- Acadian Valley- Ironton Fire
- Centerville Fire
- Iron County EMS
- Acadian Valley EMS
- Centerville EMS
- Reynolds County EMS
- Reynolds County Sheriff and Centerville 911

# Reynolds County Air Response

- Over 15 helicopters initially committed to scene
  - ARCH: 4 aircraft
  - Life Line: 3 aircraft
  - Staff For Life: 1 aircraft
  - Air Evac: 7 aircraft

Total of 12 patients transported by air

# Reynolds County Timeline

- Initial call from Reynolds County Sheriff to Air Evac Central Communications
  - 1720: initial request 2 aircraft
  - 1726: 2 more helicopters requested
  - 1749: 6 more aircraft requested
  - 1751: 5 more helicopters requested
  - 1808: first helicopter on scene
  - 1918: 12 patients transported by air, all other inbound aircraft cancelled, remaining pts to go by ground
- Last aircraft not off scene until approx 2000 hrs

# Lessons Learned

- Multi air responses are becoming more frequent in Missouri...
  - Rural
  - Suburban
  - Urban
  - Night and day





# Lessons Learned

- **MAR incidents have unique operational challenges...**
  - **Communications**
  - **Landing areas**
  - **Location of incident**
  - **Response times of air resources**
  - **SAFETY**





↑ JEFFERSON CITY 13  
← CENTERTOWN 8

# Step 1: Determining Needs and Resources

- Ground vs air transport resources
- Number of patients needing air transport
- Destination hospitals
  - Capabilities
  - Location
- Capabilities and ETA of aircraft
  - Ability to transport one or two patients
  - Patient size/weight
  - Medical care/treatment required  
splints, Haz-Mat





# Step 2: Establish Air Operations Branch

“Flight SAFETY is a paramount concern in complex operations, it supports the requirement for a designated

*Air Operations Branch,*

to avoid conflict of assets, and integrate SAFETY into operations planning and mission execution.”

NIMS Basic, the ICS

## Step 3: Identify Roles

- **Air Ops Branch Director:** coordinates all air operations and communications with Operations Section Chief and/or Incident Commander.
- **Air Ambulance Unit Leader (LZ coordinator):** coordinates inbound helicopters for issues related to LZ challenges and timing for other inbound aircraft.

# Air Operations Branch

- Command structure and organization will be dependent on nature and size of the incident and availability of resources.
- When the incident requires only one or two helicopters and/or the resources are not available the Operations Section Chief or Incident Commander can handle air ops.



# Step 4: Coordination & Communication

- Requesting multiple aircraft
  - Ground resources may all come through one 911 dispatch center.
  - Traditionally, air resources require multiple telephone contacts to get the resources you need.

*Ideally, a single call to one helicopter communication center coordinates all needed resources!*



Communication has been identified as one of the most problematic issues in multi-agency MCI responses.

# Communications

- All air ambulances in MO will communicate on air-to-air frequency to all helicopters in the area.
- Normal ground to air communications may be difficult, i.e. Fire Mutual Aid may be overloaded.

# Ground to Air Communications

- Normal Air Branch communications should occur on Fire Mutual Aid
- Use of individual Fire and EMS channels may not be possible for all of the helicopters
- Consider use of MO interoperability frequencies
  - UTAC 400mhz
  - VTAC 150Mhz
  - MTAC 154.6800



# Step 5: Establish Landing Zones

- How many helicopters are responding?
  - Are ETAs staggered or simultaneous?
  - Do we need to consider a staging area?
  - Are resources available for ground transport to and from LZ if needed?

# Establishing Landing Zones

- **General Landing Zone instructions apply:**
  - Requires an obstruction free, level area about 100x100 ft per helicopter
    - 2:1 ratio to take offs and landings.
    - Check the perimeter for tall obstacles such as trees, poles, and especially wires.

*Where there is a pole, there is a wire, know where they are!*

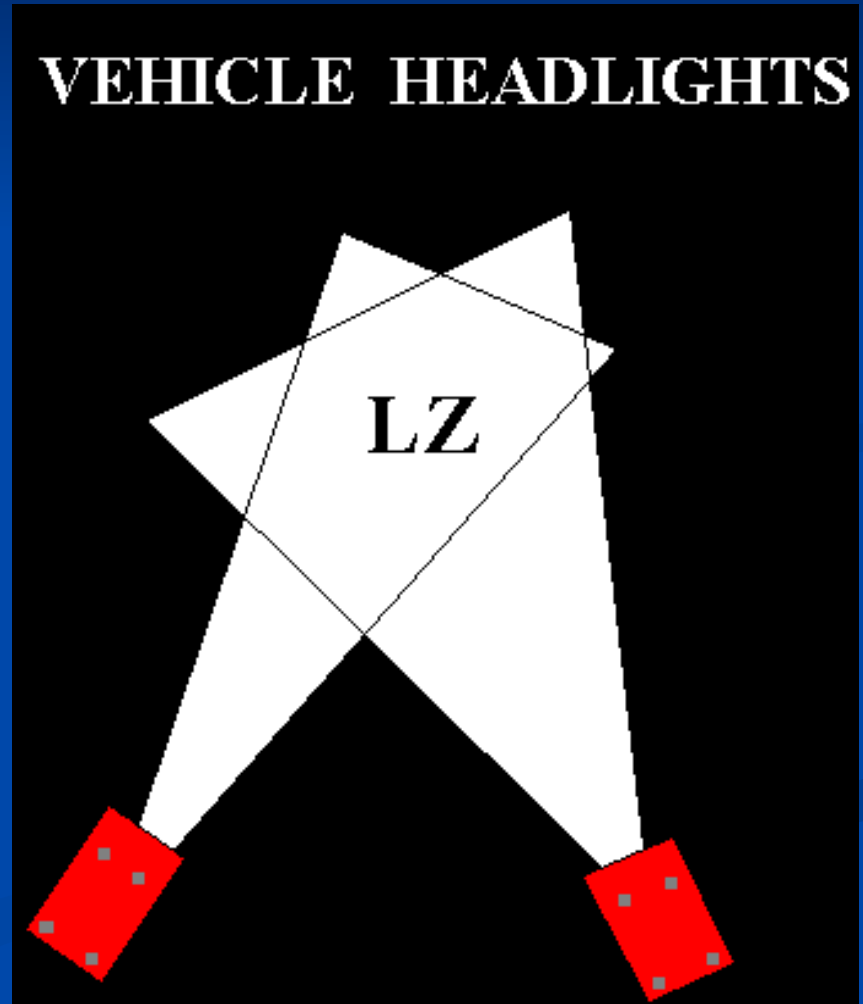
- Walk to check ground for posts, stumps, rocks, unlevel terrain, ditches etc.
- Ground should be firm and free of loose sand and snow.





# Night LZ Considerations

- Obstructions are less visible at night.
- Keep vehicle emergency lights (rotators) on but not pointed towards the sky.
- Illuminate LZ by crossing the headlights of 2 vehicles.





# Landing Zone Safety

- The Air Branch Director or Air Ambulance Unit Leader (LZ Coordinator) must be on the radio with ground-to-air communication at all times.
- If an unsafe situation arises during a helicopter take off or landing it is their responsibility to make an abort call on the radio and/or wave off the pilot.

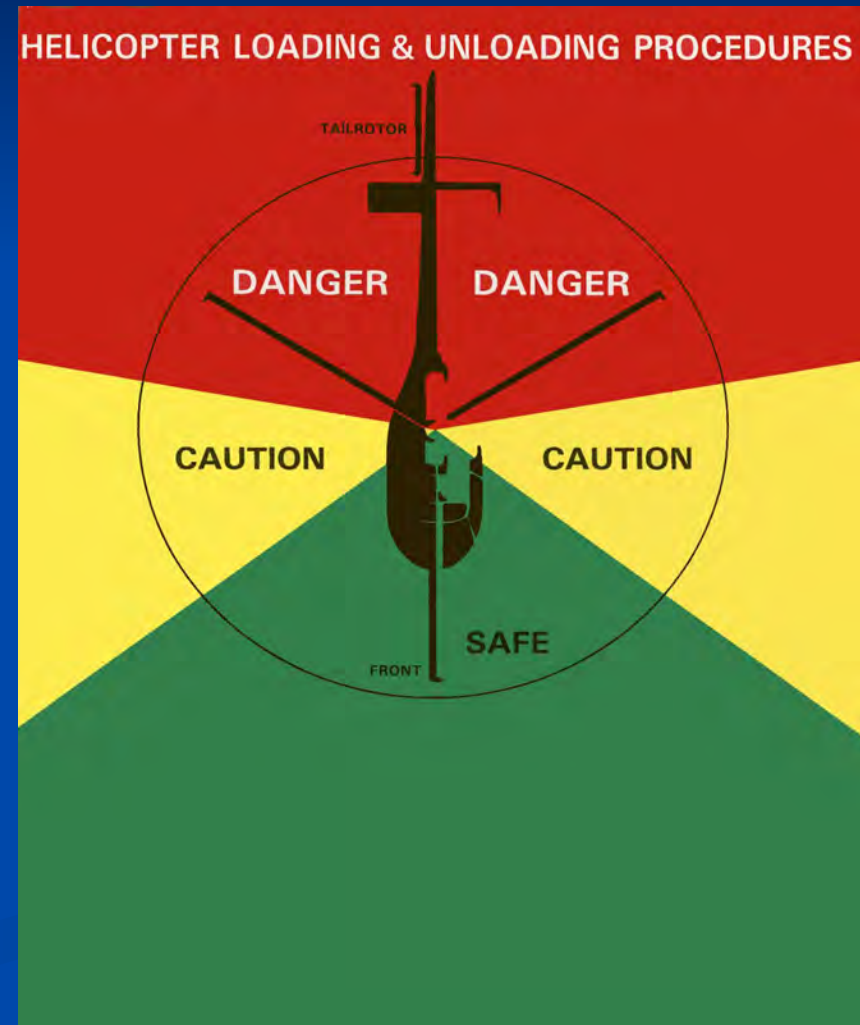
# Landing Zone Coordination

- More aircraft may be requested than needed and may arrive simultaneously creating an air hazard.
  - Group Home Fire, 5 helicopters in the air waiting to land.



# Helicopter Safety

- Hot vs Cold load.
- Always approach from the front, only after being signaled.
- Raise nothing above your head.
- Secure loose items.
- AVOID the tail rotor  
or...



# Tail Rotor Strike





# Staging Area

- **Air Staging - Helicopters circling in a defined area waiting for their turn to land**
  - May be due to no adequate ground staging area or short ETA to availability in the LZ.
  - Initial coordination should be done by the Air Branch Director.
  - Example: Communicate to the next inbound helicopter need to circle one mile away to the east with an ETA on LZ opening.

# Staging Area

- **Ground Staging - Helicopters land in a nearby area, ready to reposition into LZ when requested.**
  - Same safety requirements for scene LZ as described.
  - Consider the distance to the incident and perimeter control.
  - Patients may be transported to the staging area if EMS resources are available.



# Putting it All Together

- Establish local procedure following NIMS guidelines.
- Practice Mass Casualty Incidents involving Air Ambulance providers.



# Sample Standard Operating Guide

- One agency's attempt to develop a plan
  - Metro West Fire Protection District, Mike Theiman.
- Does your department have a SOG for Air Operations?
- Please feel free to adapt this to your local needs and resources.



# Limitations

- Helicopter operations have limitations...
  - Weather considerations
  - Fuel limitations
  - FAA pilot duty time limitations
  - Weight and balance
  - Hazardous materials
- Pilot in command has final authority over helicopter operations!

# HAZARDOUS MATERIALS

- FAA Prohibits transportation of Hazard Material (no contaminated clothing)
- PATIENTS MUST BE DECONTAMINATED PRIOR TO TRANSPORT BY HELICOPTER
  - Helicopter crews do not have protective gear or breathing apparatus



# HAZ MAT Incident LZ's

LZ Should be located at least **1 Mile UPWIND** of explosives, poisonous gases or chemicals in danger of exploding

# Helicopter Shopping

- Calling various operators one after another without sharing the fact that the flight was turned down.
- If another flight program has already declined the flight due to weather it is essential that you communicate this information.



# QUESTIONS?







*MISSOURI*  
**AAMS**

Association of Air Medical Services