MAYO CLINIC

LANDING ZONE SAFETY TRAINING

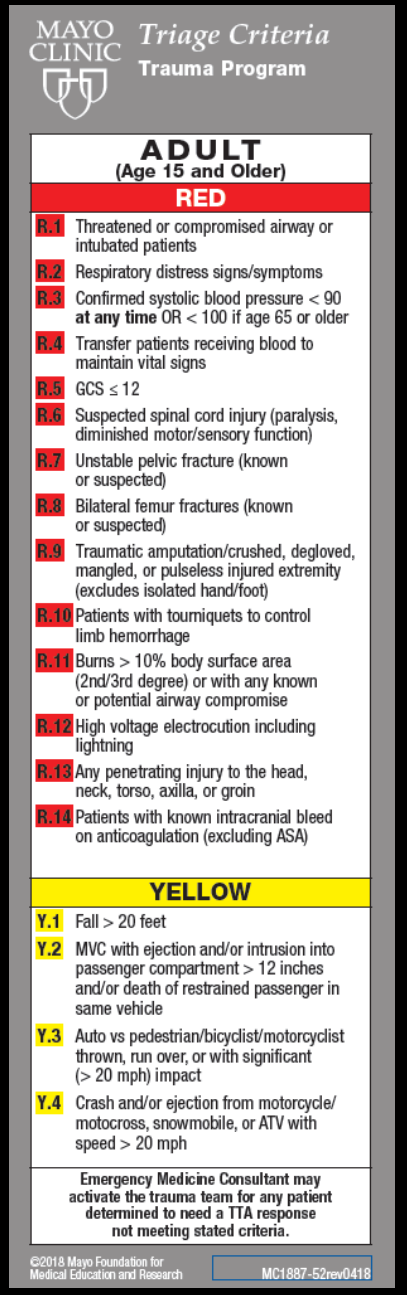
MAYO CLINIC AMBULANCE SERVICE

Take offs are optional, landings are mandatory

OBJECTIVES

- Describe auto launch criteria and which patients may benefit from a helicopter
- Assign roles and select and prepare a suitable landing zone
- Effectively communicate hazards and obstructions to flight crews, including night scene operations
- Articulate emergency and rescue procedures

WHICH PATIENTS BENEFIT FROM A HELICOPTER?



MAYO CLINIC *Triage Criteria*
Trauma Program

ADULT
(Age 15 and Older)

RED

- **R.1** Threatened or compromised airway or intubated patients
- **R.2** Respiratory distress signs/symptoms
- **R.3** Confirmed systolic blood pressure < 90 **at any time** OR < 100 if age 65 or older
- **R.4** Transfer patients receiving blood to maintain vital signs
- **R.5** GCS ≤ 12
- **R.6** Suspected spinal cord injury (paralysis, diminished motor/sensory function)
- **R.7** Unstable pelvic fracture (known or suspected)
- **R.8** Bilateral femur fractures (known or suspected)
- **R.9** Traumatic amputation/crushed, degloved, mangled, or pulseless injured extremity (excludes isolated hand/foot)
- **R.10** Patients with tourniquets to control limb hemorrhage
- **R.11** Burns > 10% body surface area (2nd/3rd degree) or with any known or potential airway compromise
- **R.12** High voltage electrocution including lightning
- **R.13** Any penetrating injury to the head, neck, torso, axilla, or groin
- **R.14** Patients with known intracranial bleed on anticoagulation (excluding ASA)

YELLOW

- **Y.1** Fall > 20 feet
- **Y.2** MVC with ejection and/or intrusion into passenger compartment > 12 inches and/or death of restrained passenger in same vehicle
- **Y.3** Auto vs pedestrian/bicyclist/motorcyclist thrown, run over, or with significant (> 20 mph) impact
- **Y.4** Crash and/or ejection from motorcycle/motocross, snowmobile, or ATV with speed > 20 mph

Emergency Medicine Consultant may activate the trauma team for any patient determined to need a TTA response not meeting stated criteria.

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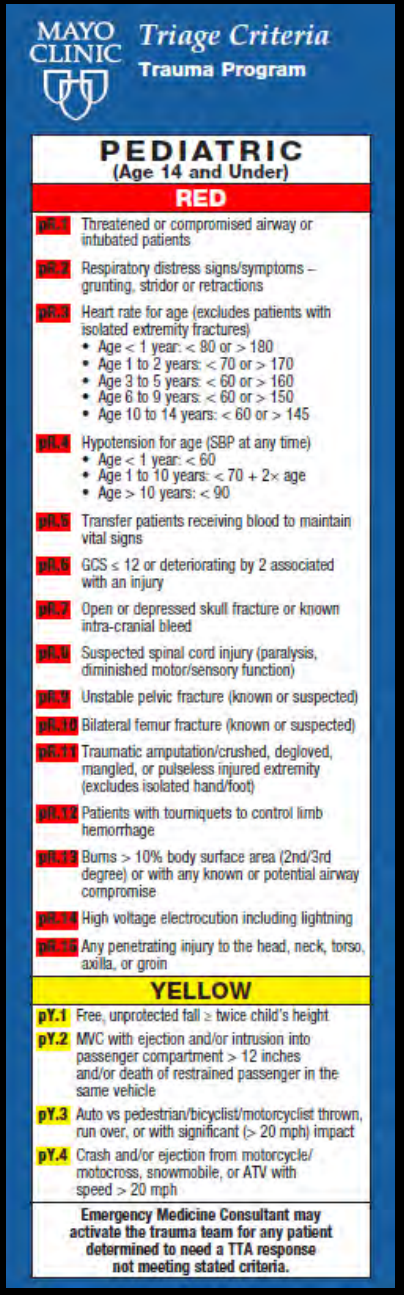


MAYO CLINIC *Triage Criteria*
Trauma Program

PEDIATRIC
(Age 14 and Under)

RED

- **pR.1** Threatened or compromised airway or intubated patients
- **pR.2** Respiratory distress signs/symptoms – grunting, stridor or retractions
- **pR.3** Heart rate for age (excludes patients with isolated extremity fractures)
  - Age < 1 year: < 80 or > 180
  - Age 1 to 2 years: < 70 or > 170
  - Age 3 to 5 years: < 60 or > 160
  - Age 6 to 9 years: < 60 or > 150
  - Age 10 to 14 years: < 60 or > 145
- **pR.4** Hypotension for age (SBP at any time)
  - Age < 1 year: < 60
  - Age 1 to 10 years: < 70 + 2× age
  - Age > 10 years: < 90
- **pR.5** Transfer patients receiving blood to maintain vital signs
- **pR.6** GCS ≤ 12 or deteriorating by 2 associated with an injury
- **pR.7** Open or depressed skull fracture or known intra-cranial bleed
- **pR.8** Suspected spinal cord injury (paralysis, diminished motor/sensory function)
- **pR.9** Unstable pelvic fracture (known or suspected)
- **pR.10** Bilateral femur fracture (known or suspected)
- **pR.11** Traumatic amputation/crushed, degloved, mangled, or pulseless injured extremity (excludes isolated hand/foot)
- **pR.12** Patients with tourniquets to control limb hemorrhage
- **pR.13** Burns > 10% body surface area (2nd/3rd degree) or with any known or potential airway compromise
- **pR.14** High voltage electrocution including lightning
- **pR.15** Any penetrating injury to the head, neck, torso, axilla, or groin

YELLOW

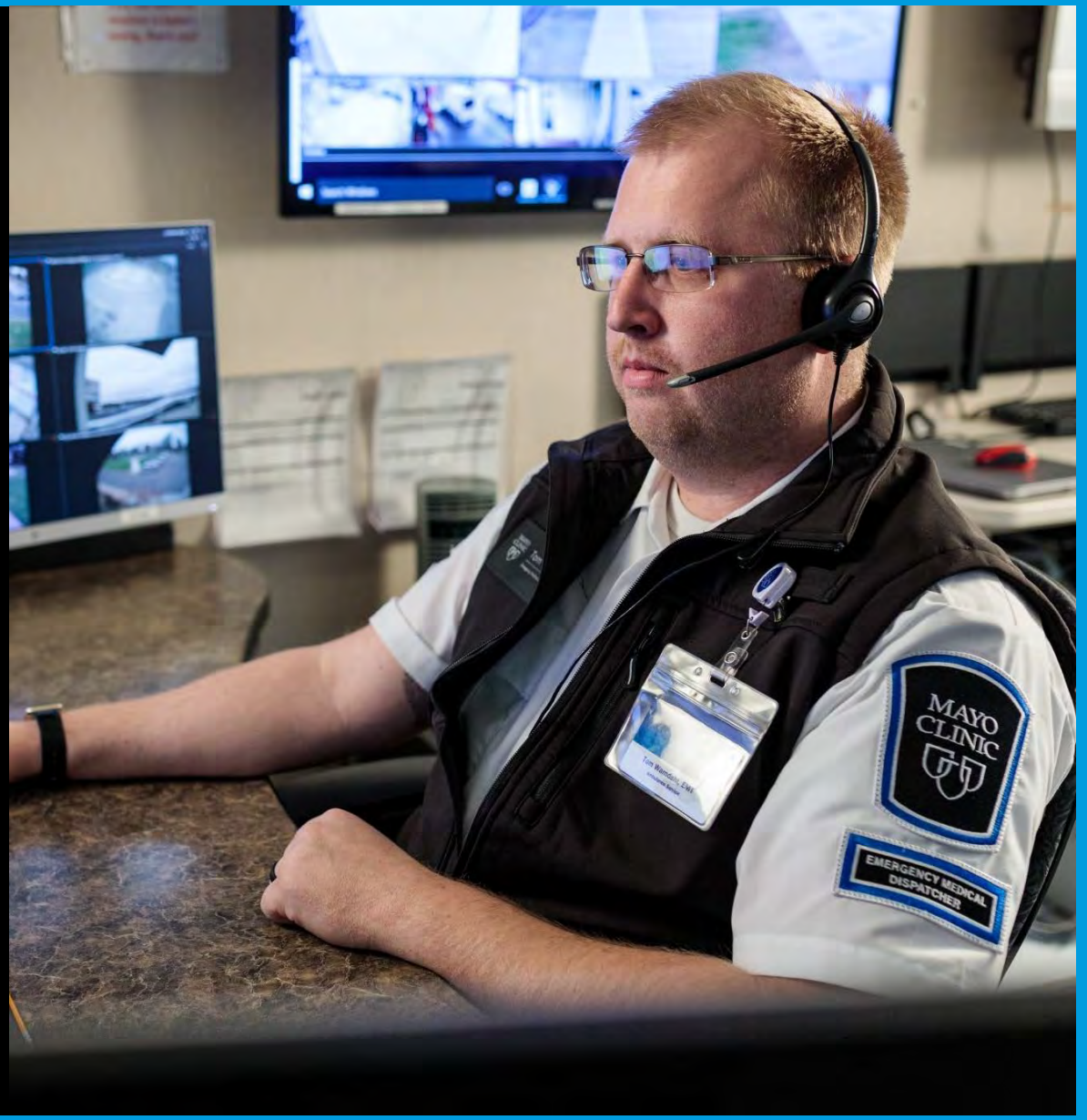
- **pY.1** Free, unprotected fall ≥ twice child's height
- **pY.2** MVC with ejection and/or intrusion into passenger compartment > 12 inches and/or death of restrained passenger in the same vehicle
- **pY.3** Auto vs pedestrian/bicyclist/motorcyclist thrown, run over, or with significant (> 20 mph) impact
- **pY.4** Crash and/or ejection from motorcycle/motocross, snowmobile, or ATV with speed > 20 mph

Emergency Medicine Consultant may activate the trauma team for any patient determined to need a TTA response not meeting stated criteria.

AUTOLAUNCH

TIME SAVES LIVES!

- Helicopter dispatched simultaneously with other responding agencies
- Established in multiple regions
- Can request an aircraft even if criteria is not met
- May cancel if not needed



LANDING ZONE SAFETY: MAYO CLINIC AMBULANCE SERVICE

https://youtu.be/j8Xyh5mv3OM

ASSIGNING ROLES

LZ COORDINATOR

- Chooses landing zone
- Preps landing zone
- Responsible for communication with aircraft

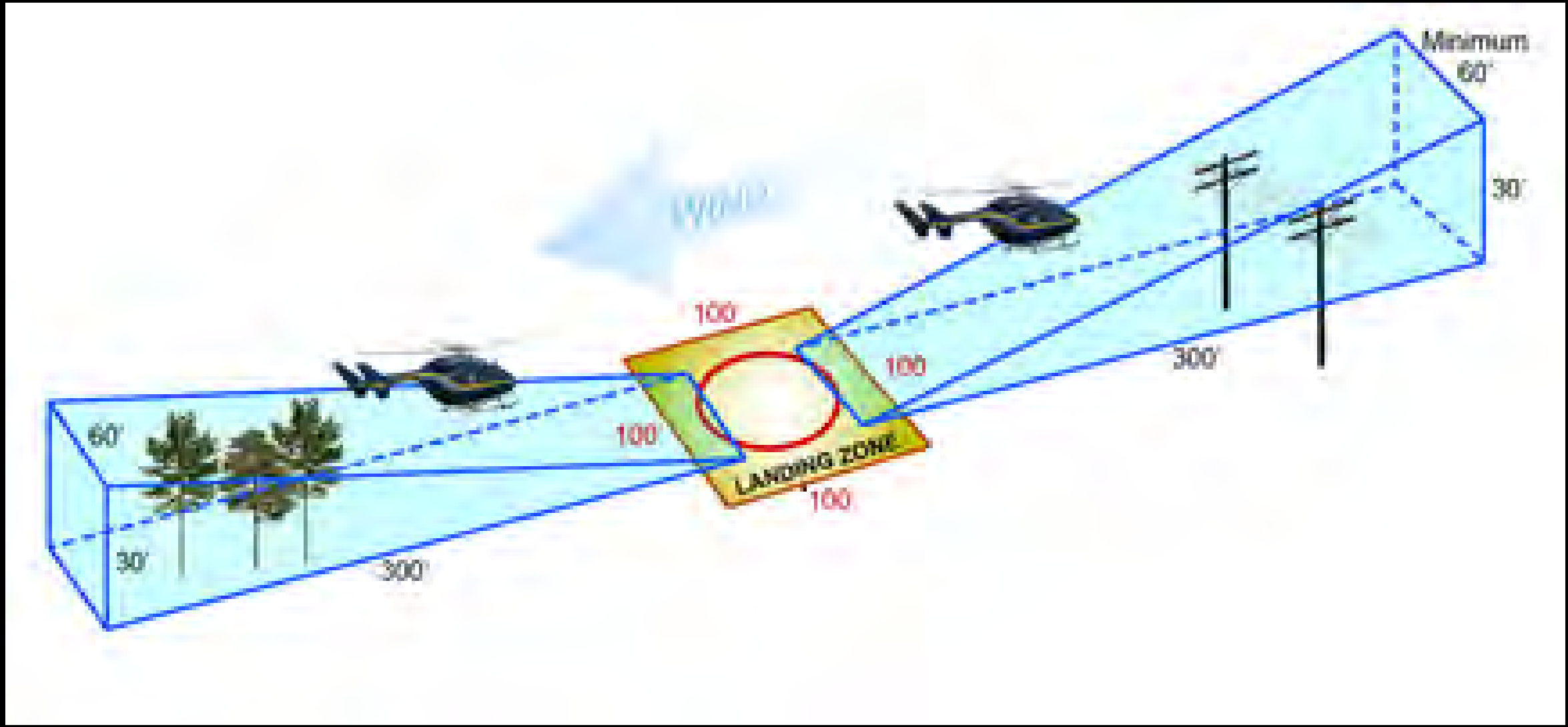
TAIL ROTOR GUARD

- Is positioned at least 50 ft behind aircraft
- Ensures NO ONE / NOTHING approaches the aircraft
- Never leaves this area

LANDING ZONE SELECTION

- What works?
- What doesn’t?
- What is dangerous?

LANDING ZONE



PREPARING THE LANDING ZONE

- Low, medium and high-level scan
- Verify tail rotor guard is in place
- Position vehicles to secure and mark landing zone

RADIO COMMUNICATIONS

- Location-specific frequency assigned by dispatch
- All pertinent information
- Use plain language and visible landmarks
- Mayo Clinic Ambulance Emergency Communications 1-800-237-6822

CLEAR COMMUNICATION IS IMPERATIVE!

LET'S PRACTICE!

THIS IS WHAT YOU SEE

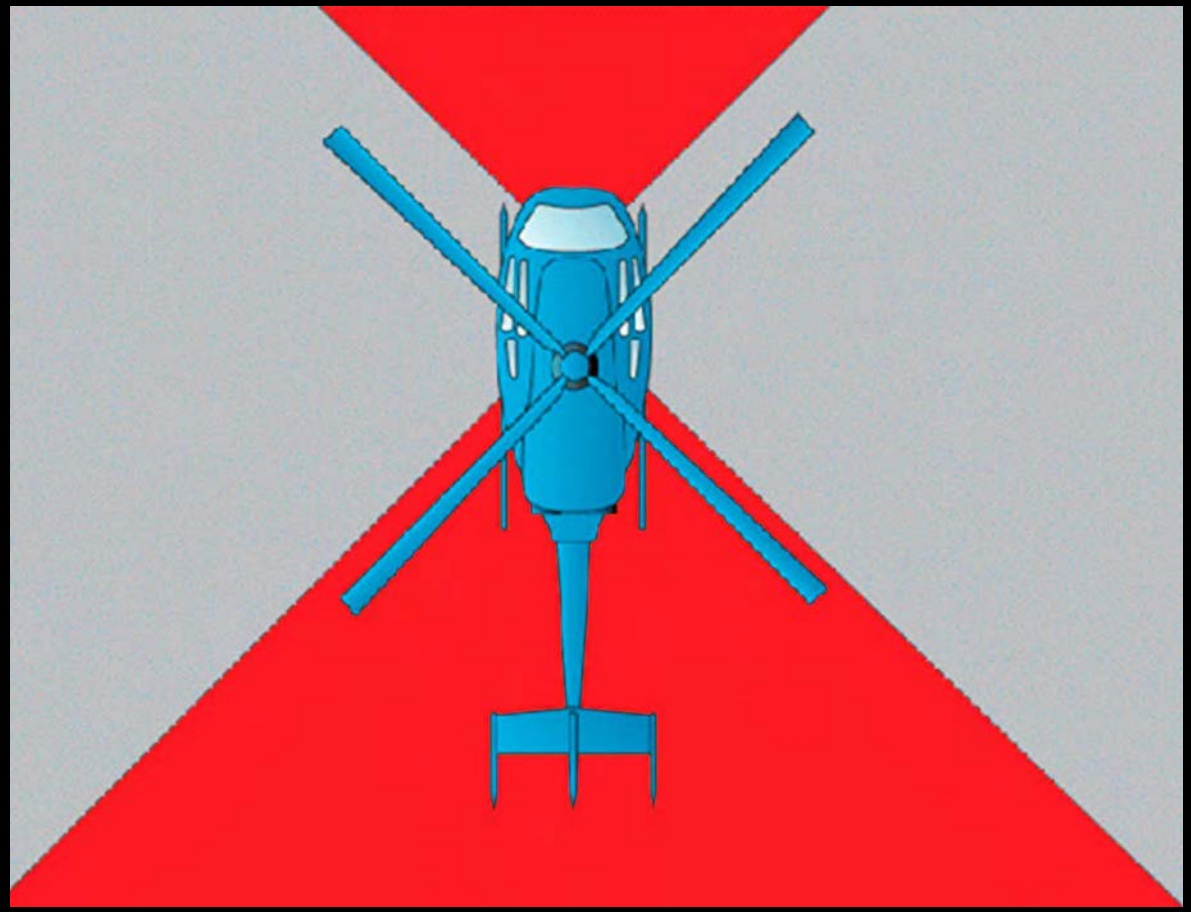
THIS IS WHAT WE SEE

AIRCRAFT FINAL APPROACH

- High altitude scan of LZ prior to landing
- Land into the wind
- Pilot may rotate tail in low hover prior to landing
- Never approach aircraft
- Protect yourself!!

NEVER APPROACH
A HELICOPTER!

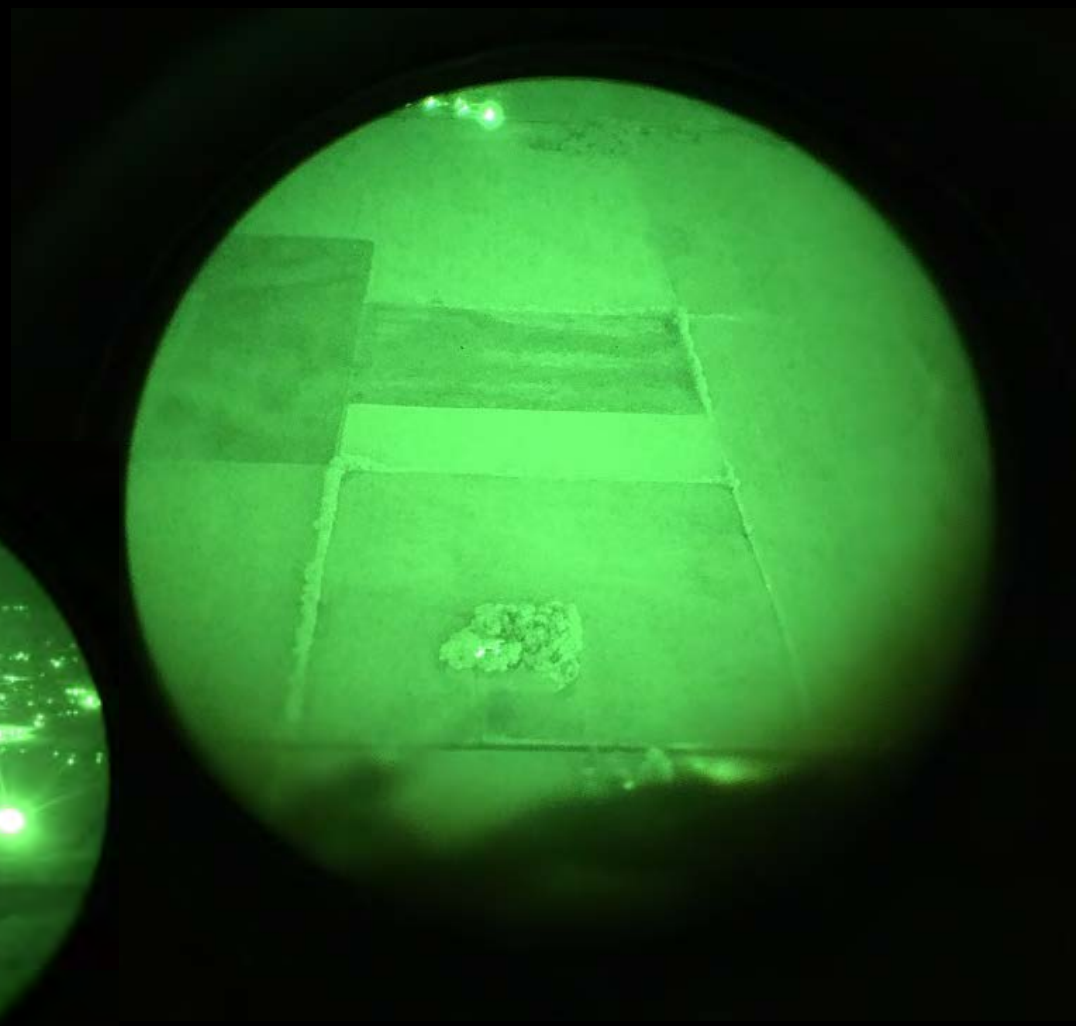
DANGER ZONES



PATIENT LOADING

We may ask for your help!

SPECIAL CONSIDERATIONS FOR NIGHT SCENE FLIGHTS



DRONES

Mayo Clinic Ambulance aircraft will not land or take off if a drone is operating in the vicinity

OTHER CONSIDERATIONS

- Weapons
- Search and Rescue
- Multiple Aircraft

WHAT HAPPENS IF WE NEED TO BE RESCUED?

- Wait for blades to stop
- Emergency shutdown
- Emergency door release
- Avoid identified hazardous areas

MAYO CLINIC

Emergency Shutdown Procedures

Mayo One--N145SM

Step one:

A) Locate the warning unit on the upper portion of the instrument panel.

B) Raise the red guard covering the emergency off switch.

C) Press to release the emergency off switch.

D) Repeat for the second emergency off switch.

E) **Engine shutdown could take up to 20 seconds.**

Aircraft emergency shutdown now complete

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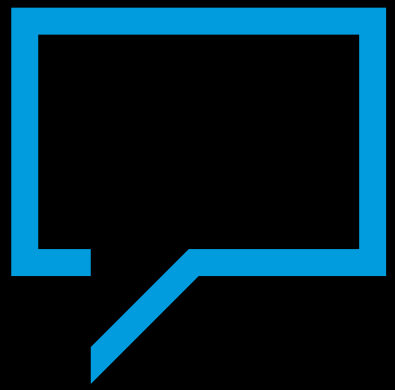
QUESTIONS?



THANK YOU AND STAY SAFE!