

## SEARCH AND RESCUE AIRCRAFT – HELICOPTER/ROTARY WING

DESCRIPTION	The Search and Rescue (SAR) Aircraft - Helicopter/Rotary Wing resource is equipped to conduct helicopter-based search, rescue, and recovery operations.		
RESOURCE CATEGORY	Search and Rescue	RESOURCE KIND	Aircraft
OVERALL FUNCTION	<ol style="list-style-type: none"> <li>Provides air SAR using rotary wing aircraft during day or night under Visual Meteorological Conditions (VMC)</li> <li>Completes SAR personnel insertion or extraction and SAR equipment transport</li> <li>Performs air SAR that includes technical rescues, hoist or short-haul techniques, specialized helicopter operations in all water environments such as swiftwater, and evacuation</li> <li>Provides medical care that includes Basic Life Support (BLS) and transport to Advanced Life Support (ALS) providers</li> <li>Operates in environments with or without infrastructure, including those with compromised access to roadways, utilities, transportation, or medical facilities, and with limited availability to shelter, food, and water</li> </ol>	COMPOSITION AND ORDERING SPECIFICATIONS	<ol style="list-style-type: none"> <li>Discuss additional requirements prior to deployment, including: <ol style="list-style-type: none"> <li>Communications beyond the resource's intra-team communications, such as command, logistics, aircraft, and military</li> <li>Additional specialized personnel, such as advanced medical personnel, animal SAR personnel, or helicopter support personnel</li> <li>Any contaminated environments and related personal protective equipment (PPE), respiratory protection, clothing, and equipment</li> <li>Resource logistics support, such as security or force protection, lodging, transportation, and meals</li> </ol> </li> <li>Deploys with a full complement of personnel, unless requested otherwise, and the requestor provides a Flight Observer</li> <li>Hours per shift and duration must comport with Federal Aviation Administration (FAA) regulations</li> <li>Personnel numbers listed reflect those reasonably necessary to conduct operations safely; agreement between the requestor and provider can adapt team positions within the personnel numbers</li> <li>The requestor should base the number of requested aircraft on the nature and magnitude of mission, logistics, intensity of demand, and duration of service activity</li> <li>The requestor determines and specifies mission operations under Instrument Flight Rules (IFR) or using night vision goggles (NVG)</li> <li>The requestor should specify special environmental capabilities and load needs during ordering</li> </ol>

RESOURCE TYPES			TYPE 1	TYPE 2	TYPE 3	TYPE 4
COMPONENT	METRIC/ MEASURE	CAPABILITY				
Personnel	Per Team	Minimum	5	4	Same as Type 4	3
			NOTES: Not Specified			
Personnel	Per Team	Management and Oversight	Same as Type 2	Same as Type 3	Same as Type 4	Same as Type 5
			NOTES: Pilot should have training for NVG use and have a rating to operate in IFR conditions.			

Superseded

RESOURCE TYPES			TYPE 1	TYPE 2	TYPE 3	TYPE 4
COMPONENT	METRIC/ MEASURE	CAPABILITY				
Personnel	Per Team	Operations and Support	Same as Type 2, PLUS: 1 - NIMS Type 1 Emergency Medical Technician (EMT)	Same as Type 3, PLUS: 1 - NIMS Type 1 Helicopter SAR Crew Chief	Same as Type 4	Same as Type 5, PLUS: 1 - NIMS Type 1 Helicopter SAR Technician
			<b>NOTES:</b> 1. Crew Chief and Technician should have training for NVG operations. 2. Flight Observer is not a NIMS typed support position and the requestor should acquire locally. The position is not a part of the crew and does not deploy with the aircraft.			
Capability	Per Aircraft	Functions	Same as Type 2, PLUS: 1. Multi-engine 2. Capability to provide medical attention for at least two persons being transported	Same as Type 3, PLUS: 1. Night operations 2. IFR capable 3. NVG capable	Same as Type 4	Same as Type 5, PLUS: 1. Rescue capability 2. Ability to transport at least two persons, one of which can be in a litter
			<b>NOTES:</b> Only crew members with certification in accordance with Authority Having Jurisdiction (AHJ) requirements may administer medical care, including BLS.			
Equipment	Per Aircraft	Operations	Same as Type 2	Same as Type 3, PLUS: 1. NVG 2. IFR equipment	Same as Type 4, PLUS: Access, rescue, and recovery equipment, including: 1. Air rescue litter 2. Straps 3. Baskets 4. Human cargo hoist 5. Dual external hooks or hook and harness/ backup  6. BLS level care and equipment	Same as Type 5, PLUS: 1. Human cargo dual external hooks or hook and harness/ backup 2. One litter or ability to carry one person flat
			<b>NOTES:</b> Recommend for daylight search only unless the aircraft is equipped with a thermal imager, search light, or NVG certified/capable aircraft for night searches.			
Equipment	Per Aircraft	Communications	Same as Type 2, PLUS: Dual VHF aviation radios	Same as Type 3	Same as Type 4	Same as Type 5
			<b>NOTES:</b> 1. Intra-team and inter-team communications should be consistent with National Interoperability Field Operations Guide (NIFOG). 2. Consider alternate forms of communication, such as satellite phones, based on the mission assignment and team needs.			

Superseded



RESOURCE TYPES			TYPE 1	TYPE 2	TYPE 3	TYPE 4
COMPONENT	METRIC/ MEASURE	CAPABILITY				
Equipment	Per Team Member	PPE	Same as Type 2	Same as Type 3	Same as Type 4	Same as Type 5
<b>NOTES:</b> PPE should meet requirements in 29 Code of Federal Regulations (CFR) Part 1910.134 Respiratory Protection and 29 CFR Part 1910.1030 Bloodborne Pathogens.						

Superseded



RESOURCE TYPES			TYPE 5	NO TYPE 6	NO TYPE 7	NO TYPE 8
COMPONENT	METRIC/ MEASURE	CAPABILITY				
Personnel	Per Team	Minimum	2	Not Applicable	Not Applicable	Not Applicable
			<b>NOTES:</b> Not Specified			
Personnel	Per Team	Management and Oversight	1 - National Incident Management System (NIMS) Type 1 Helicopter SAR Pilot	Not Applicable	Not Applicable	Not Applicable
			<b>NOTES:</b> Pilot should have training for NVG use and have a rating to operate in IFR conditions.			
Personnel	Per Team	Operations and Support	1 - Flight Observer	Not Applicable	Not Applicable	Not Applicable
			<b>NOTES:</b> 1. Crew Chief and Technician should have training for NVG operations. 2. Flight Observer is not a NIMS typed support position and the requestor should acquire locally. The position is not a part of the crew and does not deploy with the aircraft.			
Capability	Per Aircraft	Functions	1. Search only 2. Aircraft may be multi- or single-engine 3. Operates under Visual Flight Rules (VFR) 4. Day operations only	Not Applicable	Not Applicable	Not Applicable
			<b>NOTES:</b> Only crew members with certification in accordance with Authority Having Jurisdiction (AHJ) requirements may administer medical care, including BLS.			
Equipment	Per Aircraft	Operations	1. Aviation Global Positioning System (GPS) equipped 2. Equipment suitable for day operations 3. Portable Basic First Aid equipment 4. Gyro-stabilized handheld binoculars 5. Spare batteries	Not Applicable	Not Applicable	Not Applicable
			<b>NOTES:</b> Recommend for daylight search only unless the aircraft is equipped with a thermal imager, search light, or NVG certified/capable aircraft for night searches.			

Superseded



RESOURCE TYPES			TYPE 5	NO TYPE 6	NO TYPE 7	NO TYPE 8
COMPONENT	METRIC/ MEASURE	CAPABILITY				
Equipment	Per Aircraft	Communications	1. Two-way handheld radios 2. Portable radios with ground to air capability 3. Single Very High Frequency (VHF) aviation radio 4. Programmable VHF/Ultra High Frequency (UHF) P25 Radio for air-to-ground communications  5. Marine band radio 6. Electronic direction finder 7. Mobile phones and waterproof bag 8. Handi-mikes or ear/headsets	Not Applicable	Not Applicable	Not Applicable
			NOTES: 1. Intra-team and inter-team communications should be consistent with National Interoperability Field Operations Guide (NIFOG). 2. Consider alternate forms of communication, such as satellite phones, based on the mission assignment and team needs.			
Equipment	Per Team Member	PPE	Minimum PPE, including: 1. Aviation Life Support Equipment (ALSE) in accordance with AHJ definitions and commensurate with the operating environment 2. Flight helmet and other helmets 3. Headlamps 4. Eye and hearing protection 5. Respiratory protection 6. Uniforms, gloves, and other protective clothing	Not Applicable	Not Applicable	Not Applicable
			NOTES: PPE should meet requirements in 29 Code of Federal Regulations (CFR) Part 1910.134 Respiratory Protection and 29 CFR Part 1910.1030 Bloodborne Pathogens.			

Superseded

## COMMENTS

1. Ground safety assurance and air traffic control are important support necessities for injury and crash prevention. This support may be significant depending upon the size and location of the incident.
2. Factors such as the nature and volume of the mission, logistics, intensity of demand, duration of service activity, and allowances for crew rest determine the quantity of air rescue resources necessary.
3. Plan aviation maintenance. Unplanned maintenance may occur during deployment.
4. Plan hangar facilities for all extended operations.
5. Identify aviation fuel tankers or other supply points.
6. Team may need backup supplies and equipment depending upon the number of survivors and type, size, and scale of the event.
7. Aircraft communication equipment should be programmable for interoperability. The AHJ should verify this capability. The AHJ should provide all applicable communication frequencies and should verify a plan for augmenting existing communication equipment.
8. Plan for Landing Zone (LZ) space, clearance, and weight restrictions. The typical civilian air rescue helicopter needs an LZ of 150' x 150'. Military helicopters need a minimum LZ of 200' x 200'.

## REFERENCES

1. FEMA, NIMS 509: Helicopter Search and Rescue Pilot
2. FEMA, NIMS 509: Helicopter Search and Rescue Crew Chief
3. FEMA, NIMS 509: Helicopter Search and Rescue Technician
4. FEMA, NIMS 509: Emergency Medical Technician
5. American National Standards Institute/American Society of Safety Engineers (ANSI/ASSE) Z359.1-2007 Safety Requirements for Personal Fall Arrest Systems, Subsystems & Components
6. ASTM International (ASTM) F2209-14: Standard Guide for Training of Level I Land Search Team Member
7. Firefighting Resources of Southern California Organized for Potential Emergencies (FIREScope) Field Operations Guide ICS 420-1, December 2012
8. National Fire Protection Association (NFPA) 1006: Standard for Technical Rescuer Professional Qualifications, 2013
9. NFPA 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments, 2013
10. NFPA 1670: Standard on Operations and Training for Technical Search and Rescue Incidents, 2014
11. NFPA 1983: Standard on Life Safety Rope and Equipment for Emergency Services, 2012
12. National Search and Rescue Committee, Catastrophic Incident Search and Rescue (CISAR) Addendum to the National Search and Rescue Supplement to the International Aeronautical and Maritime Search and Rescue Manual, v. 3, June 2012
13. NWCG, Interagency Helicopter Operations Guide (IHOG), PMS 510, October 2013
14. Federal Aviation Administration (FAA) 14 Code of Federal Regulations (CFR) Part 139.319: Aircraft rescue and firefighting: Operational requirements
15. Occupational Health and Safety Administration (OSHA) 29 CFR Part 1910.120: Hazardous Waste Operations and Emergency Response
16. OSHA 29 CFR Part 1910.134: Respiratory Protection
17. OSHA 29 CFR Part 1910.1030: Bloodborne Pathogens
18. U.S. Department of Homeland Security, Office of Emergency Communications (OEC), National Interoperability Field Operations Guide (NIFOG), v. 1.4, January 2014
19. U.S. Department of the Interior (DOI), Helicopter Short-Haul Handbook (351 DM 1), February 2010

## NOTES

Nationally typed resources represent the minimum criteria for the associated component and capability.