



# NCEM Swiftwater/Flood Search and Rescue Resource Typing



DESCRIPTION	The Swiftwater/Flood Search and Rescue (SAR) Team conducts search, rescue and recovery operations for humans and animals in swiftwater and swiftwater/flood environments.		
RESOURCE CATEGORY	Search and Rescue	RESOURCE KIND	Team
OVERALL FUNCTION	<p>The Swiftwater/Flood SAR Team:</p> <ol style="list-style-type: none"> <li>1. Searches for and rescues individuals who may be injured or otherwise in need of medical attention</li> <li>2. Provides emergency medical care, including Basic Life Support (BLS)</li> <li>3. Provides animal rescue</li> <li>4. Transports humans and animals to the nearest location for secondary land or air transport</li> <li>5. Provides shore-based and boat-based water rescue for humans and animals</li> <li>6. Supports helicopter rescue operations and urban SAR in water environments for humans and animals</li> <li>7. Operates in environments with or without infrastructure, including environments with compromised access to roadways, utilities, transportation and medical facilities, and with limited access to shelter, food and water</li> </ol>	COMPOSITION AND ORDERING SPECIFICATIONS	<ol style="list-style-type: none"> <li>1. Discuss logistics for deploying this team, such as working conditions, length of deployment, security, lodging, transportation and meals, prior to deployment.</li> <li>2. Requestor and provider address certain issues and needs prior to deployment, including:               <ol style="list-style-type: none"> <li>a. Communications equipment that enables more than intra-team communications, such as programmable interoperable communications equipment with capabilities for command, logistics, military, air and so on</li> <li>b. Type of incident and operational environment, such as weather event, levy or dam breach or risk of hazardous materials (HAZMAT) contamination</li> <li>c. Additional specialized personnel necessary, such as advanced medical staff, animal SAR specialists, logistics specialists, advisors, helicopter support staff or support personnel for unique operating environments</li> <li>d. Additional transportation-related needs, including specific vehicles, boats, trailers, drivers, mechanics, equipment, supplies, fuel and so on</li> <li>e. Additional aviation support, such as helicopter or fixed wing aircraft</li> <li>f. Tools, hardware, software, ropes and survivor evacuation equipment beyond what is specified for this resource</li> <li>g. Any additional equipment, such as thermal imager, litter wheel or night vision goggles</li> <li>h. Potential for contaminated environments and the need for Personal Protective Equipment (PPE), respiratory protection, clothing and related equipment</li> <li>i. Level and duration of self-sufficiency necessary, including food, fuel and shelter</li> </ol> </li> <li>3. To ensure team has appropriate capabilities, requestor specifies whether night operations are necessary.</li> <li>4. Requestor specifies the type of animal rescue involved, such as livestock, equine, companion, avian, non-domestic or exotic animals.</li> <li>5. This team has the authority to transport rescued humans and animals using water-based means; requestor acquires secondary land or air transport separately.</li> <li>6. Operations in SAR environments may be immediately dangerous to life and health (IDLH), per ASTM International (ASTM) F2890: Standard Guide for Hazard Awareness for Search and Rescue Personnel; requestor should consider the need for additional recognized capabilities or endorsements.</li> </ol>



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COMPONENT	TYPE 1	TYPE 2	TYPE 3	NOTES
MINIMUM PERSONNEL PER TEAM	16	10	6	Not Specified
MANAGEMENT AND OVERSIGHT PERSONNEL PER TEAM	Same as Type 2	Same as Type 3, PLUS: 1 – National Incident Management System (NIMS) Swiftwater/Flood SAR Team Leader	1 – NIMS Swiftwater/Flood SAR Team Leader	Not Specified
SUPPORT PERSONNEL PER TEAM	Same as Type 2, PLUS: 2 – NIMS Swiftwater/Flood SAR Technician – Boat Operator 2 – NIMS Swiftwater/Flood SAR Technician – Boat Bowman 1 – NIMS Swiftwater/Flood SAR Technician with the following skill set: animal rescue specialist 1 – NIMS Swiftwater/Flood SAR Technician with the following skill set: communications specialist	2 – NIMS Swiftwater/Flood SAR Technician – Boat Operator 2 – NIMS Swiftwater/Flood SAR Technician – Boat Bowman 1 – NIMS Swiftwater/Flood SAR Technician with the following skill set: logistics specialist 3 – NIMS Swiftwater/Flood SAR Technician with the following skill set: NIMS Type 1 EMT	1 – NIMS Swiftwater/Flood SAR Technician – Boat Operator 1 – NIMS Swiftwater/Flood SAR Technician – Boat Bowman 3 – NIMS Swiftwater/Flood SAR Technician	1. For Type 3, one team member should also hold a NIMS Type 1 EMT qualification. 2. For Type 3, one team member should also have logistics management knowledge. 3. For Type 2, one team member should also hold a communications specialist qualification.
OPERATIONS CAPABILITY PER TEAM	Same as Type 2, PLUS: Is capable of supporting and rescuing animals	Same as Type 3, PLUS: 1. Coordinates or operates in a large operations area using multiple swiftwater/flood rescue resources, including: a. Boat-based operations b. High-clearance vehicle operations c. Helicopter-supported operations 2. Performs technical rope rescue using technical rope systems 3. Conduct 24-hour operations	1. Performs the following water operations in water with a current of 1 knot or greater: a. Paddle and powerboat operations b. Offensive water rescue c. Flood response operations d. Rescue companion animals 2. Performs first aid, including cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) use 3. Requests rope rescue and aviation resources as necessary 4. Operates in HAZMAT-contaminated environments 5. Manages search operations 6. Provides medical care, including BLS 7. Performs low-angle rope rescue 8. Demonstrates self-sufficiency as the operational environment demands	Not Specified



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## Team Training

CAPABILITY		Metric/Measure: Per Team			
		TYPE 1	TYPE 2	TYPE 3	NOTES
1	Annual skills proficiency demonstration (by AHJ)	X	X	X	Skills must be in Swiftwater environment.
2	Annual swim demonstration (by AHJ)	X	X	X	Swim demonstration form attached as Appendix 1.
3a	EMS-Advanced 1st Aid & CPR	X	X	X	
3b	EMS-Emergency Medical Technician/BLS	6	3	1	
4	HazMat- Level 1	X	X	X	
5	Helicopter Operations Awareness	X	X	X	
6a	ICS-100	X	X	X	
6b	ICS-200	X	X	X	
6c	ICS-300 & 400	2	2	1	
7	NC Swiftwater/Flood Boat Operator	4	2	1	
8	Swiftwater/Flood Rescue Technician	X	X	X	
9	NC Swiftwater Team Leader or USAR Taskforce Leader Course	2	2	1	
9	Rope Rescue Technician	X	X	X	
10	Technical Animal Rescue or equivalent	1			
11a	Communications-Awareness Level (by AHJ)	X	X	X	
11b	Communications-Operations Level (by AHJ)	1	1	1	
11c	Communications Technician	1			

X =Minimum for all team members

# =Minimum-number team members



## Swiftwater/Flood Search and Rescue Resource Typing Equipment List



CAPABILITY	Metric/Measure: Minimum Per Team			
	TYPE 1	TYPE 2	TYPE 3	NOTES
<b>COMMUNICATIONS</b>				
800mhz (VIPER) Radio	6	4	2	Shall include waterproof bag, spare batteries, and charger
Phone, cellular	6	4	2	Shall include waterproof bag
Radio, portable (waterproof) (internal communications)	16	10	6	Recommend VHF/UHF dual band radio with NIFOG channels pre-programmed
Computer w/ minimum of cellular internet access	1	1	1	
<b>MEDICAL</b> (equipment per protocol of responding agency)				
BLS Medical Kit	2	1	1	
Stokes-type litter	2	1	1	
<b>PERSONAL EQUIPMENT</b>				
Aerial flare kit	2	1	1	
Chemical Light Sticks (cyalume) (4 various colors)	50/ea	50/ea	25/ea	
Dry Gear Bags	16	10	6	
Dry suit with liner	16	10	6	
Flashlight (waterproof)	16	10	6	
Gloves-work/rope/water	16	10	6	
Handheld/PFD survival strobe light	16	10	6	
Headlamps, waterproof	16	10	6	
Helmet, Swiftwater	16	10	6	
PFD, Rescuer (22lbs or greater floatation)	16	10	6	
Rescue knives	16	10	6	
Water Rescue Boots	16	10	6	
Whistles	16	10	6	
Thermal Imaging Camera	4	2	0	



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CAPABILITY	Metric/Measure: Minimum Per Team			
	TYPE 1	TYPE 2	TYPE 3	Notes
<b>TEAM EQUIPMENT</b>				
Admin. Kit/ ICS Agency Forms	1	1	1	
NC Road Map (Hard Copy)	2	2	1	
Air Monitors	2	1	0	
Body Bag	4	2	1	
Chain Saw (w/ bar oil, spare chain, fuel/oil)	2	2	1	
Dust Mask, N95, disposable	100	100	50	
Figure Eight Plate or Friction Device	2	2	1	
Forcible Entry Tool Kit, (Halligan, Axe, Sledge, Bolt Cutters)	2	1	1	
Flagging Tape (Rolls)	8	4	2	
GPS, hand held (w/Topo Maps, FEMA SAR Markings)	6	4	2	
Hand Held Spot Light	4	2	1	
PFD, Victim	16	8	4	
Pole, reaching	2	2	1	
Spare Fuel Capacity (gallons)	60	30	30	
Swimmer Rescue Board	2	1	1	
Throw Bags	16	10	6	
Throwable Flotation Device	2	2	1	
<b>Rope Rescue Kit- Heavy:</b> (20) Carabineer, Locking (4) Harness, Full Body (2) Knot Passing Pulley (12) Prusiks, tandem (8) Pulley (2) Rope, 200' with bag (2) Rope, 300' with bag (1) Line Thrower (6) Webbing 1" x 12' Nylon Tubular (6) Webbing 1" x 15' Nylon Tubular (6) Webbing 1" x 20' Nylon Tubular (6) Webbing 1" x 5' Nylon Tubular	1	1	0	
<b>Rope Rescue Kit- Light:</b> (20) Carabineer, Locking (2) Harness, Full Body (2) Knot Passing Pulley (12) Prusiks, tandem (4) Pulley (1) Rope, 200' with bag (1) Rope, 300' with bag (1) Line Thrower (3) Webbing 1" x 12' Nylon Tubular (3) Webbing 1" x 15' Nylon Tubular (3) Webbing 1" x 20' Nylon Tubular (3) Webbing 1" x 5' Nylon Tubular	0	0	1	



## Swiftwater/Flood Search and Rescue Resource Typing Equipment List



CAPABILITY	Metric/Measure: Minimum Per Team			
	TYPE 1	TYPE 2	TYPE 3	Notes
<b>DECONTAMINATION EQUIPMENT</b>				
<b>Decontamination Equip. Kit</b> 2.5 gallon pressure sprayer 5 gallon bucket 40 gallon plastic work box 110 volt submersible pump (2) 25' garden hose Garden hose wye 110 volt power washer Soap and Bleach Solution 1.5" Female to .75" Male Garden hose adapter	2	1	1	
<b>INFLATABLE RESCUE BOAT (IRB)</b>				
Air, electric pump	2	2	1	
Air, manual inflation pump	4	2	1	
Compressed Air Cylinder w/ whip or fill system	8	4	2	
Fuel, bladder, non-venting	6	4	2	
IRB, 4-meter minimum	4	2	1	
Self-Bailing Paddle Raft	2	1	1	
Lanyard, wrist, kill switch	16	10	6	
Dewater Kit (Spark plugs, WD40, wrench)	4	2	1	
Paddles	12	6	3	
Pump Jet Motor, 30HP – 4m or 4.2m boat/ 40HP - 4.7m boat	6	3	2	
Repair Kit, IRB (i.e. Clam Shells, Patch Kit)	4	2	1	
Rotor/Prop, spare	2	2	1	



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CAPABILITY	Metric/Measure: Minimum Per Team			
	TYPE 1	TYPE 2	TYPE 3	Notes
<b>LOGISTICS EQUIPMENT</b>				
Battery, Spare for handheld equipment is this radios or tools	As Required	As Required	As Required	
Center Punch	4	2	1	
Sleeping Kits (Cots, Pads, Sleeping Bags)	16	10	6	
Drop Cord & Accessories	2	2	1	
Drysuit Patch Kit	1	1	1	
Generator with portable lights	2	2	1	
Hand Disinfectant	10	10	5	
Eye and Hearing Protection, case of each	1	1	1	
Cooler	2	2	1	
Ladder, 10'	1	1	1	
Meals Ready to Eat	144	90	54	
Porta Toilet	2	2	1	
Paper Products (Paper towels, toilet paper)	As Required	As Required	As Required	
Tents/Shelter (Rapidly Deployable & appropriate for weather conditions)	16-person capacity	10-person capacity	6-person capacity	Recommend shelters that do not require power/blower for setup.
Water, Bottle (cases)	20	14	8	
Wire Cutter, 8"	4	2	1	
Zip Tie Wire Tie (minimum 6")	100	100	50	

CAPABILITY	Metric/Measure: Minimum Per Team			
	TYPE 1	TYPE 2	TYPE 3	Notes
<b>VEHICLE/TRANSPORTATION</b>				
Vehicle(s) capable of transporting team members and equipment in the field environment in the area of operations	As Required	As Required	As Required	
Vehicle(s) must adequately support three-day operations such as fuel, tires, and maintenance requirements	As Required	As Required	As Required	



# Swiftwater/Flood Search and Rescue Resource Typing

## Appendix 1 - Swim Demonstration



The member shall be evaluated utilizing the scoring card as shown below:

**Pass / Fail**

**Candidate Name:**

Candidate  
Name  
Agency  
Date


### Station - Swimming Skills

#### Evaluation 1 - 100 Meter Unaided Swim

Result

Time

Criteria	Result
Completes swim without stopping or standing up.	Pass
Stops / Stands prior to finishing swim.	Fail

**Criteria: The member must swim 100 yards without stopping using a forward stroke and without using any swim aids. Stopping or standing up in the shallow end of the pool at any point during this exercise will constitute a failure of this evaluation station.**

#### Evaluation 2 - 15 Minute Tread

Result

Time

Time	Result
<15 minutes	Fail
15 minutes or more	Pass

**Criteria: Using no swim aids and wearing only a swimsuit the member will stay afloat by treading water, drown proofing, bobbing, or floating for 15 minutes.**

Comments: