

Your USAR Gear Guide

What every USAR technician should carry on various incidents



By Rich Atwood

Remember your first years on the job? A seasoned veteran likely took you under their wing and showed you the ropes, from how to pull hose to how to clean the station. Something else they probably told you: what to keep in your turnout pockets. If you need a refresher, this column will outline the gear an urban search and rescue (USAR) technician should carry on various types of incidents. These items will vary greatly by shift, department, region and state; modify your lists accordingly.

SHORT- VS. LONG-DURATION INCIDENTS

As a USAR technician, you must carry some basic gear on all incidents; however, you'll need more gear for a long-duration incident than you would on a short-duration incident. Let's review both.

A short-duration incident doesn't remove you from your base of operations (BOO), vehicle or main

body of equipment for more than 1 hour. For this type of incident, you'll need some essentials, including proper personal protective equipment (PPE), as well as sometimes-forgotten items, such as a note pad, a pen, a Sharpie marker, a good set of knee pads that don't slide down, disposable ear plugs and a small flashlight.

As you might expect, a long-duration incident keeps you away from your BOO, vehicle or main body of equipment for more than 1 hour. Examples: searching a tornado-torn neighborhood on foot, working a rubble pile for a 12-hour shift or any situation in which you need to bivouac overnight.

Regardless of the length of the mission, how should you determine what gear you need? Your level of gear depends on many factors, including location, time of day, predicted weather conditions and the complexity of the incident. There are three levels: first-line gear, second-line gear and third-line gear, or packs.

First-line gear is what you carry in your uniform pockets, belt, etc. Second-line gear involves "load-bearing equipment"—items that are too big to fit in your pockets. Third-line gear includes specialized gear taken on extended operations. Each level can be upgraded or downgraded according to your needs. Let's take a closer look at all three types of gear. ▶

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A USAR team packs third-line gear for an extended mission.

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FIRST-LINE GEAR

First-line gear is what you carry on your person. Following are important tips about first-line gear:

- Always carry your wallet with identification.
- Take a knife that can be stored in your pants' pocket or in a sheath on your uniform belt. A folding knife or a multi-tool is a good choice.
- Store small, high-energy snacks in your USAR uniform's shoulder pockets.
- Don't forget a notepad and pens—they're a must.



Above: First-line gear includes gear you can carry on your person.

Right: Second-line gear won't fit in your pockets and, therefore, involves a harness system designed to carry your vital tools and equipment in a comfortable, balanced, easy-to-access way.



Second-line gear includes your water, communications device, FOG manual, spare batteries, pens and notepad, and much more.



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- Store gloves in your shirt pockets.

Some guys I work with like to call themselves minimalists, and that's great ... until they have to run back to the rig to get something or ask you for gear. In the USAR environment, your work period may last 12 hours or more; therefore, you must consider all your possible needs. Ask yourself, "Am I prepared for current or predicted weather conditions? Will the work period go into the night?" and anything else you think is relevant to the mission.

SECOND-LINE GEAR

Second-line gear won't fit in your pockets and, therefore, involves a harness system designed to carry your vital tools and equipment in a comfortable, balanced, easy-to-access way. This system can be as complex as you see fit.

The load-bearing harness consists of the following:

- Vest with multiple pockets to carry all the vital things you may need (while working a rubble pile, for example).
- Hydration bladder for when you're working long shifts or in hot weather. (*Remember:* Drink water and drink it often!)
- Load-bearing belt onto which you can attach heavier pouches.
- Fanny pack that carries a half-mask air-purifying respirator (APR), an MRE, a bivy sac, rain gear, an emergency blanket, etc.

Companies that manufacture load-bearing gear include Infinity Gear (www.infinitygear.com), True North Gear (www.truenorthgear.com), Wolfpack Gear (www.wolfpackgear.com) and Maxpedition (www.maxpedition.com).

Once you've set up your system, here are some items to consider carrying in your second-line gear:

- Pens, Sharpie markers and grease pencil
- Weather-proof notepad
- Field operations guide
- Safety glasses and wipe rag
- Safety goggles
- Half-mask respirator with P100 filter
- Flashlight
- Multi-color, high-intensity chemical light sticks
- Disposable ear plugs
- Small, personal first-aid kit
- Over-the-counter medicine for headache, allergies and upset stomach. (*Note:* If you take any medication, let your team medic know.)
- Snack food, such as energy bars
- Spare batteries for your head lamp, lights, GPS unit, etc.
- Compass
- Zip ties
- Mini roll of duct tape
- 50-foot-long parachute cord
- Travel-size roll of toilet paper
- Hand sanitizer
- Sunscreen
- Lip balm

Try to take synthetic materials—not cotton; wet cotton saps your body of vital heat. Instead, choose synthetics, such as Polar Fleece & Coolmax.



PHOTO RICH ATWOOD

Your fanny pack or small attachable packs are appropriate for carrying what you'll need for extended operations, including your PPE. Toss in an extra MRE, energy bars and water.

If the operation could keep you overnight, ask yourself, "What will I need to get by?" The simple answer: food and water. However, you may also need thermal layers of clothing and bivouac gear (a hasty lightweight sleeping arrangement).

Your fanny pack or small attachable packs are appropriate for carrying what you'll need for extended operations. Toss in an extra MRE, energy bars and water. Remember, drink at least a gallon of water a day; that amount will increase as temperatures rise and work hours extend.

Also, pack thermal layers if you expect a temperature drop. Try to take synthetic materials—not cotton; wet cotton saps your body of vital heat. Instead, choose synthetics, such as Polar Fleece and Coolmax.

The bivouac gear can be as simple as a disposable emergency blanket to as elaborate as a Gortex bivy sac. I found a small bivy sac from Adventure Medical Kits, which retails for around \$26 and can be found online or at many camping retailers.

As noted above, specialized pouches can be added to second-line gear to meet the needs of the mission, whether it involves search, shoring or cutting/breaching. Such preconfigured pouches, which can be attached and removed as you need them, enable you to quickly assemble necessary gear. With this in mind, let's review some of the gear you'll need for specific mission types.

Search: When assigned to a search, you'll need marking paint, flagging tape of various colors, chemical light

sticks of various colors, chalk, lumber crayons, Sharpies and a search-markings sheet. Some team members will carry GPS units as well.

Shoring: Shoring teams carry some common tools useful for the planning, layout and construction of shoring systems. Although a framer's belt is unnecessary for a typical shoring job, you'll want to carry a framing hammer, a tape measure, a speed square, a lumber pencil, a lumber crayon, Sharpies and assorted nails.

Cutting & Breaching: These operations involve a multitude of specialized tools. At my department, we configured a holster for our cordless reciprocating saw. The holster attaches to our load-bearing belt with side-release buckles. We also sewed pockets for reciprocating saw blades onto the holster, eliminating the need to call out for replacements. Another tool that uses a holster: our powder-actuated nail gun, which nails wood to concrete or steel. The holster holds the gun, field cleaning tools and a pin-setting tool. Also, in our fanny packs, we each carry a spare battery and/or an AC/DC converter.

Mass Casualty Incidents: In the event of a mass-casualty event, USAR technicians will be called upon to complete structural assessment, stabilization and rescue. As such, you may need to wear a specialized weapons of mass destruction (WMD) suit for protection. The problem: The suits do not include proper pockets to carry gear. However, you

Weapons of mass destruction suits do not include proper pockets to carry gear. However, you can quickly modify your second-line gear to accommodate WMD gear.



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Above: A pouch for search-related operations should include marking paint, flagging tape of various colors, chemical light sticks of various colors, chalk, lumber crayons, Sharpies and a search-markings sheet.

Left: A pouch for shoring-related missions should include some common tools useful for the planning, layout and construction of shoring systems. You'll also want to carry a framing hammer, a tape measure, a speed square, a lumber pencil, lumber crayon, Sharpies and assorted nails.

Whether you're working a vehicle extrication, machinery entrapment, tunneling or performing rubble pile work, you want a personal tool pouch with you.

PHOTOS RICH ATWOOD



A personal tool pouch can be detached and used independently of the second-line gear.



can quickly modify your second-line gear to accommodate WMD gear. How? Mount a powered APR to the load-bearing belt, and swap the hydration system with a WMD-rated unit that plugs into the drinking tube on the mask. Additionally, certain team members, such as medical and technical-search specialists, may carry small- or medium-size packs that quickly attach to or detach from their load-bearing harness.

Regardless of the type of incident you're working, one of the most used pouches is the personal tool pouch. Whether you're working a vehicle extrication, machinery entrapment, tunneling or performing rubble pile work, you want this with you. Imagine working to breach a concrete wall with a jackhammer and then encountering a box spring and mattress. That 90-lb. jack will not get you through the concrete, but what about the box spring?

Following is a list of hand tools to consider carrying in your personal tool pouch. *Note:* Purchase *high-quality* tools so they don't fail you in critical moments.

- 4-in-1 screwdriver;
- Utility knife;
- Folding hand saw (and reciprocating saw blades) for making surgical cuts around a victim and in places you cannot maneuver a mechanical tool;
- Aircraft snips for ducting, T-Bar tracking and other lightweight sheet metal found in office buildings;

RESCUE TRAINING

Third-line gear includes a small or medium pack that can be attached to your harness, or an independent pack that's worn over the harness.

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- Spring-loaded diagonal cutters for one-handed operation;
- Voltage tester to determine if wires are energized;
- Spring-loaded punch;
- Channel locks;
- “Srench”: a multi-tool for adjusting chainsaws and rotary saws; and
- Chemical light sticks.

THIRD-LINE GEAR

Specialized USAR operations may require you to carry more equipment and personal items than the second-line gear can accommodate. This is when you need third-line gear, which includes a small or medium pack that can be attached to your harness, or an independent pack that's worn over the harness.

Your third-line gear configuration should allow you to easily manage specialized tools, technical search equipment and medical gear for a worksite hike-in. These packs can be quickly doffed and cached in a common safe area. Not all the items are critical for working on the rubble pile, but will extend your operational period.

The packs should be of a durable construction and made from durable materials, such as 1,000-denier Cordura or ballistic nylon. They should also be water-resistant and include heavy-duty zippers and internal-frame construction.

GEAR UP

Whether you're new to USAR operations or a seasoned veteran, this article can serve as your gear guide for any incident. It doesn't matter if you're assigned to a local rescue company, a regional rescue team, a state task force or a national task force; you must carry the right gear for the job. So plan ahead, be prepared, and create a versatile system you can easily modify from mission to mission. ☯

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