

Search and Rescue and Disaster Gear

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Winter-only items in **cold blue**, summer-only items in **hot orange**

I. SAR pack (everything in **green goes into disaster pack or duffel for disasters) *check for some items in bike panniers, hanging on inside of coat closet door, or daypack hanging on wall above downstairs landing***

- Belt pouches/hipbelt stuff (often in bag for easy transfer between packs):
 - Left hipbelt pocket (LowePro D-Res 10AW camera pouch)
 - Waterproof notebook and pen
 - 2 granola bars
 - spare AAA disposable lithium cells (2 packs of 3, sealed in plastic) for headlamp
 - Petzl Tikka XP headlight²
 - Right hipbelt pocket (LowePro D-Res 10AW camera pouch)
 - Compass/whistle
 - wrist and head sweatbands
 - contacts saline
 - earbud speaker-mike for Yaesu handheld radio
 - small roll duct tape
 - counting beads:
 - 5 light 1 dark, 5 light 1 dark
 - 10 light on longer string
 - Garmin GPS 60 CSx **Grey pouch** with:
 - belt clip and protective case
 - Garmin 60csx handheld GPS unit with Garmin City Navigator maps for entire continental USA loaded on 2 GB micro-SD card (installed), along with topo/water overlays for SW PA; Spare preformatted micro-SD card with topo maps for

¹ My theory is to keep pretty much everything packed in the SAR pack and then take stuff out of it when heading out—this way I'm less likely to forget something important. I also won't put liquids in my gear unless they are (1) in a Nalgene container, or (2) inside an Aloksak heavy-duty zipper plastic bag. I also color-code everything. I used to think that this was an affectation by some SAR people I know, but from 35 years of SAR experience, I now tend to color code more than I used to. However, I still don't beat Gene Harrison—Bru Randall once went to a costume party wearing a large cardboard box, painted white, with big, wide green-red-green stripes running down it. Everyone immediately knew he was dressed as Gene's refrigerator.

² This replaced a Princeton Tek EOS headlamp, which replaced a Petzl Zipka Plus Headlamp, which replaced a Petzl Zipka headlight. I liked the Zipka because it was so light, and bright enough for quick-and-dirty use, but it wasn't water-resistant at all, the switches tended to corrode over time and required taking the unit apart and cleaning with contact-cleaner and a steel brush. And, the foam pad that kept it from denting your forehead got all sticky and gooey after about a year of use. The Petzl Zipka Plus was a step up: brighter (one more LED, better LEDs), water-resistant, non-corroding switch, non-gooey head pad. But then the Princeton TEC EOS offered a 1-watt Luxeon Start side-emitting LED, which was much brighter and threw a beam farther. But *then* Petzl came out with the Tikka XP, which had a 1-watt Luxeon Star, AND was tiltable to various angles, and includes a diffuser that is an integral part of the light and can be drawn across the front to provide a diffuse area light. It also offers a "boost" option which will, for a few seconds, give you a quite bright beam. And, note: all of these lights use a set of three AAA cells (I use disposable lithium cells from REI), are very small, very light, and all fit in one of these belt pouches with lots of room for other stuff.

Eastern Great Lakes area from Garmin (in battery compartment)

- Garmin GPS accessories:**
 - Quickstart Guide
 - USB cord for Garmin GPS
 - USB extension cord (above not quite long enough to use with laptop in car; can hang on rearview mirror and works well as external USB GPS for laptop)
 - Wrist strap for Garmin GPS
 - Belt clip for Garmin GPS
 - Instructions for Garmin GPS
 - 2 spare alkaline AA cells for Garmin GPS (can't use lithium cells)
- Folding toilet trowel/toilet paper
- Altimeter
- Top Compartment Stuff:**
 - 2-person and 4-person European-style group Bivouac Sacs (SilBothy 2 and 4 by Integral Designs)
 - 1-Liter Nalgene Water Bottle with duct tape wrapped around it (dayglow orange so may also be used for marking)
 - Pack Rain Liner³
 - Small Aloksak plastic bag for wallet, etc.
 - Large Aloksak plastic bag for use as waterproof map case
 - 8 fast-food-type salt packets, sealed in plastic in pairs, for salting food/drinks in hot weather
 - Aloksak plastic bag with
 - Nalgene bottle (60 mL) with sunscreen
 - Nalgene bottle (30 mL) with insect repellent
 - 2: ASRC Commo Crib Sheets, on waterproof paper
 - 2: ASRC Grid Overlays
 - 2: spare small Rite-in-the-Rain pocket SAR notebooks
- Basic Survival/Junk Bag⁴**
 - Outdoor Research Mesh Cube #4 (outer case)
 - two heavy-duty Aloksak plastic bags sized for wallet
 - Sears ignition pliers
 - half roll of flagging tape
 - 1 packet of Gatorade mix, to make 1 liter
 - water purification tablets (sealed, backup only)
 - plumber's candle melted into 2-oz cylindrical fliptop plastic container

³A pack liner seems much more manageable than a raincover; I have a sil-nylon liner for both this big SAR pack and for my daypack (Vaude Rock Ultralight 25 pack: 1525 cubic inches), which is a top-load pack; instead I use an Integral Designs sil-nylon pack liner, size large; my daughter has a Vaude Rock Mini Rock Comfort 16 pack, 975 cu. in., which takes a small silcoat pack liner. The pack liners are much less klunky than the raincover and work even better to keep your gear dry.

⁴ Always have in pocket: Swisschamp Swiss Army knife with crosscut saw, file, etc.; windproof Windmill lighter; two Photonlights; small lockback knife.

- 2.5 gallon military-style canteen-liner water bag, in pint freezer Ziploc bag for protection
- waterproof/windproof matches + striker card in waterproof matchcase
- tiny stuff, in film can: small bits of thread, 5 assorted-size safety pins, 2 paper clips, 4 small pieces of Radio Shack easy-melt solder, one 8-32x1" bolt with nut and two lockwashers, 2 12-14x1 self-drilling screws
- Lexan spoon
- 1 packet of Gatorade mix, to make 1 liter
- 8 fast-food-type salt packets, sealed in plastic in pairs, for salting food/drinks in hot weather
- Aloksak zip-lock plastic bag with
 - Blanket pin
 - package of four single-use tubes of cyanoacrylate glue
 - 1 50' length of Kelty reflective tentcord
 - 1 5-yard roll duct tape (from rei.com)
 - cable ties:
 - 3" – 2
 - releasable 7" – 2
 - mounting-hole type 10" - 2
 - releasable 11" - 2
 - eyeglass repair kit with screwdriver and spare screws
 - 3" strip of kneadable epoxy putty
 - 5 misc. sized needles, in old case for spare mechanical-pencil erasers
- Aloksak zip-lock plastic bag with
 - 3 leaf bags
- Aloksak zip-lock plastic bag with
 - Fiskars pocket knife sharpener
 - 4 small packets toilet paper, in tiny thin zip plastic bags
 - red cotton bandanna (with leaf bags in protective Ziploc bag)
 - Tiny survival compass
 - magnesium firestarter
- Aloksak zip-lock plastic bag with
 - waterproof notebook
 - 2 pens
 - 2 pencils
 - tiny pencil sharpener
 - Petzl e+LITE Headlamp
 - 4 spare CR2032 lithium cells for e+LITE headlamp (takes 2 at a time)
- disposable AAA lithium cells, for main headlamp, 2 sets of three
- Aloksak zip-lock plastic bag with
 - tiny bottle contacts solution
 - 30 mL bottle sunscreen
 - 30 mL bottle insect repellent
- Extended Survival/Junk Bag**
 - Outdoor Research Mesh Cube #1 (outer case)
 - MSR 700 mL titanium pot with handles
 - disposable AAA lithium cells, for main headlamp, 2 sets of three
 - pack of tiny playing cards

- Petzl e+LITE Headlamp with 4 spare CR2032 lithium cells
- water purification neutralizing tablets
- 1 50' length of Kelty reflective tentcord
- 1 5-yard roll duct tape (from rei.com)
- Set of Aloksak tough/light zipper plastic bags
- Gear Aid Quik Attach Slik Clip Assortment, "one snap lock buckle, one ladder lock buckle and two tri-glide style buckles, all of which can be attached to presewn loops without re-sewing." (www.rei.com)
- McNett Field Repair Kit: "ultralight seam grip repair kit (seam grip, brush, patches)" (www.rei.com, www.mcnett.com)
- Salomon Kevlar Lace Repair kit⁵
- 1 roll Gear Aid Tenacious Tape⁶
- 3 ft of 1" flat black pack webbing
- 1 small cordlock
- 1 packet of Gatorade mix, to make 1 liter
- SAR Stuff bag 1:**
 - Goggles etc.:
 - Lightweight goggles (for air operations; clear/tinted interchangeable lenses) and Swim Goggles
 - Lightweight hearing protection (earplugs on lanyard)
 - 1 roll flagging tape
 - Waterproof handheld radio case
 - 3 Surgical masks and small bottle eugenol (oil of cloves) for masking smell of decomposed bodies
 - Plastic signal mirror
 - 6 disposable AA lithium cells for radios, and 6 AA alkaline cells for GPS in plastic case
- SAR Stuff bag 2:**
 - 2 Orion pocket flares (exp 5/06)
 - 2 Orion 60-second smoke signals (exp 2/07)
 - 2" load strap for litter carries
- Water:**
 - Water Purification Bag:
 - MSR MiOx unit
 - MSR SweetWater Microfilter
 - MSR SweetWater Siltstopper prefilter
 - Platypus Filter Link to attach Microfilter to Platypus collapsible water bottle
 - Platypus 2 liter collapsible water bottle (this and all above available from www.rei.com)
 - Water Purification Accessory Bag (smaller):
 - spare salt (for MSR MiOx water purification device)
 - 4 spare D123 batteries (for MSR MiOx water purification device)
 - spare filter for MSR Sweetwater Siltstopper prefilter
 - (1-Liter Nalgene bottle in top section)
 - (2-Liter Camelbak on outside – summer or winter version, depending on season)

⁵ From REI or rei.com. The Salomon laces are hard to repair with shroud line (parachute cord) or regular laces. Shoes using them are increasingly more popular. I have a pair.

⁶ Very light, gets great reviews for permanent field repairs of tents, sleeping bags and the like; will have to see if it works better than the McNett repair kit, above.

- No-cook food, in 1.9L Lock and Lock box**
 - 2: Pro Bars⁷
 - 3: 3-oz. Packs of Stoned Wheat Thins⁸
 - 1: 4.5 oz can of mackerel fillets in olive oil
 - 3: 2-oz vegetarian sausage sticks
 - 2: 3 oz sealed bags of raw almonds⁹
 - Lexan fork
- Shelter:**
 - Mont-Bell Blizzard Pack compressed disposable sleeping bag
 - Adventure Medical Kits' Thermo-Lite® 2 bivouac sack¹⁰
- GoreTex Pants, Heavy**
- Light:** Spare Princeton Tec 4-AA cell halogen light with improvised diffuser and set of spare batteries and spare bulb and Jakstrap headband; also spare batteries (4)
- Vertical gear bag**
 - Petzl seat harness
 - Titanium BMS micro-rack
 - Petzl Frog ascending system with extra quick-attach ascender
- Minimum rescue gear sling in bag**
 - Gear Sling (single-length 1" tied runner)
 - Gloves
 - Single-length sewn runners
 - Double-length sewn runners
 - Prusik loops
 - Locking D rings
 - Non-locking carabiners
 - Small rescue pulley
 - 20' 1" webbing (for improvised seat harness)
 - Emergency one-hand-opening knife with keeper cord
 - Purcell Prusik with locking D-ring and Petzl Basic ascender
- On outside of pack:**
 - ThermoRest ProLite 3 Short inflatable pad in stuffsack

- GoreTex uniform parka (with balaclava and gloves in pockets)
- Fluorescent mesh Mountain Rescue safety vest
- Backpacking Static Emergency Rope: 80' of 5.5mm Blue Water Titan Spectra Cord (20 kN strength but no energy absorption) tied in a rescue coil
- 2-Liter Camelbak (summer or winter version, depending on season)
- Medical:** WEMSI Personal Wilderness Medical Kit (3 red "First Aid" bags; see official WEMSI kit listing); packed in separate basic REI daypack for "grab and go" availability; also this pack zips to back of big medical kit/REI travel pack.

⁷ My current favorite fruit-and-nut bars; available from rei.com, Whole Foods, etc.

⁸ Packaged with an oxygen-absorber in a food-grade plastic bag sealed with a industrial-type heat sealer.

⁹ A nutritionist I know says that almonds are basically the perfect food for humans. I suppose the fact that I like them helps, too.

¹⁰ From www.adventuremedicalkits.com. I used to carry a Space™ Sportsman's Blanket (heavier than the emergency blanket, and has grommets on the corners), folded in half with sticky Velcro stapled along two edges. This could be un-Velcroed and used as a tarp, or used as is as a quick bivouac shelter. However, this weighs almost a pound, and the Thermo-Lite sack weighs about half as much. There are no grommets on the corners but it wouldn't be hard to tie some shroud line onto the corners, tying around a pebble if needed for strength. The Space Sportsman's Blanket will fold out flat, and the Thermo-Lite sack is sewed on the bottom and partly up one of the sides—but a pair of Swiss Army Knife scissors could make quick work of this. When I put Velcro on my Space Sportsman's Blanket, I put it all the way around on the bottom and side, and left the top open. The Thermo-Lite sack is sewn on the bottom and part-way up the side, and has Velcro up the rest of the side and, unlike my prior home-brew, across the top. But the Velcro is intermittent, with ~6" Velcro strips alternating with open areas. I'm not convinced my homebrew was superior, so I'm going to try the Thermo-Lite as is. One criticism of the Thermo-Lite Bivouac sack (at www.backpackergear.org – great place for gear reviews) is that the small mesh vent at the bottom keeps closing when you make random movement, as there is both hook and pile Velcro on either side of it. I put a small piece of non-sticky pile Velcro in the stuffsack with the bivouac sack which should take care of this.

II. SAR Gear Bag (everything in green goes into disaster pack or rolling duffel for disasters)

- Top Section**
 - Color code tape
 - Short gaiters (may be in everyday daypack)
 - Long gaiters (may be in everyday daypack)
 - for marking convoy vehicle back windows:¹¹
 - In Aლოსak bag:
 - Window Marker
 - Reflective tape ¹²
- Small Side Pocket:**
 - Radio Chest Harness¹³ with spare long-duckie dual-band antenna for handheld radio
 - aluminum clipboard with storage full of SAR forms, pens
 - Bifocal safety glasses in crush-resistant case (2 pr)
- Large Side Pocket 1:**
 - JetBoil stove
 - Sea to Summit 2.5 gallon (10 L) “Pocket Shower” water bag
 - Kahtoola MICROspikes¹⁴
 - Ski Goggles
 - Winter hood with rebreathe flap
 - Winter insulated facemask
 - Neoprene cold-wet gloves
 - Shelled Capilene overpants
- Side Pocket 2:**
 - MSR 10L water bag
 - Acme signaling horn
 - Sorel winter backpacking boots with pac liners
 - two extra pair of liners and large mesh bag for hanging liners on pack to dry
- Main Section:**
 - Boots:** Limmer¹⁵ custom backpacking boots with boot socks/liners
 - 2 Rolls flagging tape**
 - Austere Toilet Kit**
 - in separate large net bag for drying: 1 large and 1 small PackTowl

¹¹ I used to use liquid white shoe polish to mark back windows. But the last time I got some, it's not polish, it's now “shoe whitener” and it leaves barely-visible markings on the window. I switched to soap, that that wasn't as good. Window markers are available at local craft supply stores and on amazon.com. It washes off with the slightest water, but you can write first on the outside and then trace it on the inside. For the brand I got, blue is the most visible. The reflective tape is for really bad situations, likely convoying through a hurricane (I've done that twice, it's no fun).

¹² Trailer DOT reflective-tape Conspicuity Kit from eBay provided cheap source of such strips. In cardboard sleeve to protect them from folding/breaking.

¹³ Currently I favor one from mightypouch.com; I also use one of their cases for my cellphone when in the outdoors, and I've used their cases for several generations of handheld radios.

¹⁴ Have tried Yaktrax (good for flat, slide up over the boot toes going uphill or running), Stabilicers (too klunky) and these seem the best all-around “creepers” for nontechnical ice and snow; get great reviews at rei.com.

¹⁵ Peter Limmer and Sons of Intervale, NH (limmercustombboot.com) has been making custom-fitted backpacking boots for almost a hundred years. They are heavy, traditional leather boots, but exquisitely comfortable. I was even able to get Peter to install a set of instep tricounis on my boots. Tricounis are the old metal cleats used on leather soles before Vibram rubber soles were available. When crossing a stream on a log, these bite in better than simple rubber lugs in the instep.

- in separate large net bag for drying: washcloth made from piece of Packtowl
- Contacts solution, contacts case, razor, Q-tips, Sea to Summit Travel Soap¹⁶
- Pocket tissues
- Tampax¹⁷
- 2 Travel Bath towels, sealed in bags
- Toothbrush and paste, floss, flossers, Stimudents
- Comb
- track shorts
- CoolMax tank top
- 2 REI 1-ounce clotheslines (www.rei.com)
- Food for Heating/Cooking, in 1.9L Lock and Lock box:**¹⁸
 - 3 Mountain House Pro-Pak (compressed) entrées
 - 2 Lexan spoons
- Clothing**
 - Polartec Fleece Top and Bottoms (Crestone Alpine Designs)
 - 2 pair dry/clean boot socks/liners
 - Pants Bag:
 - 2 pr CoolMax underpants (briefs)
 - 1 pr polypro long underwear
 - 1 pr artificial-fabric “jogging pants” (LL Bean climbing pants)
 - 1 pr Ex-Officio fleece-lined nylon pants
 - 1 pr Patagonia shelled Capilene overpants
 - Shirt Bag:
 - 1 cotton long-sleeved ASRC uniform shirt
 - 1 cotton ASRC uniform T-shirt
 - 1 Sequel net CoolMax desert shirt
 - 1 zipper-turtleneck mid-weight wicking top
 - 2 Lightweight CoolMax fishnet T-shirts
 - Bug suit (mosquito netting)

III. Technical Rescue Bags

A. Kept in vehicle all the time

- Rope:** 100' PMI static rope in rope bag
- etc.

B. Only thrown in as needed

- Rope:** 50 meter dynamic climbing rope
- Technical Gear:** about 50 lbs of misc. climbing and technical rescue gear including three deadmen (can use in mud, e.g., in caves)
- Winter:** three snow pickets, crampons and crampon wrenches in crampon case

¹⁶ 50 quick-dissolving leaves of soap suitable for shampoo, soap, laundry soap, dishwashing soap; Replaces 30mL Nalgene bottle of shampoo; saves an ounce of weight. Package inside a 3"x5" heavy-duty ziplock plastic bag to protect against water. From REI.

¹⁷ No, no, not for me—to sell to desperate women. Sometimes worth their weight in gold—well, they don't weight very much, do they?

¹⁸ Lock and Lock boxes are reasonably sturdy (though I've had a few broken by airline baggage handlers even inside baggage), reasonably lightweight, mouse-proof, waterproof, airtight. This size available as part of a set from amazon.com

IV. Caving Gear

- Misc: Caving Gear
 - Boots and socks
 - Polypro tops and bottoms
 - Helmet with HDS Systems Actionlight and Princeton Tec lights
 - Coveralls with:
 - gloves
 - waterproof paper, pen, pencil
 - small contacts saline (2)
 - Malden Powerstretch 100 union suit, underpants and CoolMax fishnet and socks
 - Caving necklace (quick-release) with
 - tip cleaner brush
 - small folding knife/screwdriver
 - whistle
 - small compass
 - 2 Photon microlights
- Cave Pack Contents
 - 500 cc water bottle with duct tape
 - extra food: 4 power bars and some jerky/in bottle
 - thin balaclavas/in bottle
 - thin pile sweater/in dry bag
 - 8 lithium AA cells and iodine water tablets/in bottle
 - hypothermia kit/in bottle:
 - 3 leaf bags
 - candle/in bottle
 - matches/in waterproof case
 - Mg metal firestarter
 - junk incl. 2 Photon microlights/in bottle
 - minimum vertical kit (seat, biner, 2-knot rig)
 - first aid kit
 - SamSplint
 - standard daypack/cavepack first aid kit
 - Swiss Army Knife and mini Leatherman/on lanyard
 - 30' parachute cord

V. Disaster Gear items in red must be added to gear on deployment; note that some "add from SAR pack" items may be in daypack or bike panniers; items in italics stay in disaster duffel

- Rolling Duffel (from basement across from freezer¹⁹)
 - Upper Outer Pocket:
 - straps for strapping pack to rolling duffel*
 - pack lock and multi-luggage cable lock*
 - Ziploc bag with multiple small bottles of waterless hand-cleaner*
 - ID case for hanging around neck and one for arm*
 - Rental-car laptop mount (custom built)*
 - Outdoor Research Portable Pocket #2 with tiny compressed Lightload towel and tiny bottle of Windex to clean windshield: add cellphone windshield mount and 12V power supply with 12V 1:2 adapter (from small vehicle)**
 - Laptop sunshield (from green overnight bag in master bedroom closet)
 - In Aloksak bag: (add from SAR pack)
 - 60 mL Nalgene bottle of sunblock
 - 60 mL Nalgene bottle of insect repellent
 - for marking convoy vehicle back windows (add from SAR Gear Bag)
 - In Aloksak bag:
 - Blue window marker²⁰
 - Reflective tape
 - Lower Outer Pocket:
 - Lightweight luggage scale²¹*
 - leather work gloves (Bucket Boss type) with minibiner*
 - 4 spare waterproof mini SAR notebooks*
 - laminated index of DMAT Pharmacy Cache*
 - 2: spare Velcro "CONOVER" name tapes*
 - 1: box of PUUR water purifier packets (each flocculates and chlorinates 10 liters)²²*
 - Cellphone charger base and cord, and separate spare-battery charger, with 3:1 AC adapter and AC cheater (2-prong > 3-prong) (from green overnight bag in master bedroom closet)
 - Laptop sunshield (from green overnight bag in master bedroom closet)
 - Inner pocket (net pocket on bottom of divider):
 - Cooking: MSR multi-fuel stove, new unused fuel bottles, gas siphon²³*

¹⁹ High Sierra (highsierrasport.com) AT202 36" Drop-Bottom Wheeled Duffel with Backpack Straps, purchased from Cabela's, www.cabelas.com). An alternative but somewhat smaller wheeled duffel from Ricardo gets mediocre or slightly worse reviews on amazon.com. The High Sierra one gets significantly higher ratings there.

²⁰ I have tried all sorts of things for marking back windows of cars in a convoy. White dab-on shoe polish (worked, but now you can only get dab-on shoe "whitener" which I found out was useless); soap; 3M vinyl tape; and most recently markers specifically made for marking glass for decorations, available at craft stores or amazon.com. There are many brands; of the brand I got, the blue was the most visible. If you can write backwards, you can write on the inside of the back window to protect it from rain. The reflective tape is much harder to remove, but may be useful for driving during a hurricane (which I have done several times; search amazon.com for "conspicuity tape").

²¹ For weighing packs prior to rotor-wing transport.

²² Backup for the MiOX unit/filter, but more for passing out to others. Weighs basically nothing (5 grams/packet).

- Nalgene bottle with one load's worth dry laundry detergent (and room for more if can scrounge)*
- 10 lightweight clothespins (N.B.: tiny clothesline/pins also found in Austere Toilet Kit)*
- Building escape kit: 70' of 7 mm nylon rope, in rescue coil, pear-shaped locking carabiner for Mütter hitch rappel, and 10' 1" webbing for diaper seat, and center-punch for shattering windows*
- Eating: Large Aloksac plastic bag with*
 - Lexan knife/fork/spoon/soupspoon*
 - Orikaso folding cup, plate, bowl²⁴*
 - small mesh bag with small bottle of dishwashing soap and scrubber*
- Outdoor Research Clear Pocket #3 zipper bag:*
 - medical headlight²⁵ (from black bag)*
 - otoscope/ophthalmoscope and otoscope extras (specula, currettes) (from black bag)*
 - Broselow pediatric resuscitation measuring tape, laminated pocket cards (from black bag)*
 - tools (bandage scissors, Kelly clamps, needlepoint ViseGrips, McGill forceps, FB remover, lightweight stethoscope) (from black bag)*
 - Olympic safety glasses with magnifiers (instead of loupes; add from SAR Gear Bag)*
- Lightweight nylon dirty-clothes bag (from overnight bag in master bedroom closet)*
- MSR DromLite 10L water bag (add from SAR Gear Bag)*
- Main Compartments**
 - Disaster Pack (Golite Jam Pack²⁶), with emptied internal CamelBak Lobo Hydration Pack - 100 fl. oz=3L: both go flat into large rolling duffel; can use to separate gear into two items for weight limitations if needed.*
 - Plastic clipboard with paper storage with paper, pens and pencils.*
 - Yellow Packing Cube: uniform tops (2)/trousers (4)*
 - Blue Packing Cube: Uniform Shorts (2) (summer only)/DMAT PA-1 uniform T-shirts (4) including black/navy CoolMax fishnets (4) to wear under uniform t-shirts*
 - Spare underwear (7 pr) and socks (7 pr) and T-shirts (2), polo shirt (1)²⁷, packed in Eagle Creek packing modules and labeled (from overnight bag in bedroom closet/bedroom)*
 - backup GoreTex jacket (winter only)*
 - Purple toilet kit (from overnight bag)*
 - black zip-up military boots (from vehicle)*

²³ It is permissible to carry a stove on commercial aircraft provided the fuel bottle is unused; can siphon gas from a vehicle, and then dispose of the fuel bottle prior to the flight back.

²⁴ This clever "origami" style folding cup and dish/bowl fold flat for storage and are very light and easy to clean. About \$5 each.

²⁵ VersaBrite II from Pelican with a Strapit headband; can position light between eyes for seeing into noses, ears, etc.

²⁶ 50 liter = 3050 cubic inches, 1 lb 15 ounces, \$150; foam pad in pack can be removed and used as additional insulation under ThermoRest pad for in winter.

²⁷ All wicking and fast-drying, except the socks; no artificial-fiber socks work as well as wool. Yet.

- Clothing:** appropriate outer clothes for season and area, khaki Tilley hat (from vehicle)
- Electronics:** clear plastic "For Disaster Response" Computer Misc. Box Lock and Lock case (from vehicle)
- Shoe driers** (12V and 110V) (winter only) (from green overnight bag in bedroom closet)
- Everyday shoes** (Summer: Teva Sandals, Fall and Spring lowtop walking shoes?, Winter: hightop walking shoes) (from bedroom/bedroom closet)
- Sorel winter boots** and liners (winter only)
- Nalgene 1-liter water bottle** (add from SAR Pack)
- Aloksac plastic bag with** (add from SAR Pack)
 - Nalgene bottle** (60 mL) with **sunscreen**
 - Nalgene bottle** (30 mL) with **insect repellent**
- Small grey Tumi pouch with Garmin GPS 60 CSx**, belt clip and protective case, and two hipbelt detachable pockets²⁸ (add from SAR Pack)
- Austere Toilet Kit** (add from SAR Gear Bag)
- Sea to Summit 2.5 gallon (10 L) "Pocket Shower"** water bag (add from SAR Gear Bag)
- Water:** two water purification mesh bags with filter pump and MiOx unit
- WEMSI Personal Medical Kits** (three red bags in black REI daypack from back of vehicle)
- Shelter:** **Small tent** (orange stuffsack, MSR Hubba) for winter or **Hennessy hammock** for summer (from back of vehicle)
- Sleeping:** **ThermaRest NeoAir** sleeping pad (from back of vehicle)
- Sleeping:** **Sleeping Bag** stuffsack with liners, lumbar pillow and stuffable pillow (in winter, also include auxiliary stuffsack with down booties and overboots) (from back of vehicle)
- Basic Survival/Junk Bag** (from SAR Pack)
- Extended Survival/Junk Bag** (from SAR Pack)
- SAR Stuff bag 1** (from SAR Pack)
- SAR Stuff bag 2** (smoke, flares) (from SAR Pack; add only if traveling by ground)
- Food** (add two additional Lock and Lock boxes of food from SAR Gear Bag and SAR pack to make 3 days' worth)
 - Food for Heating/Cooking** (from SAR Gear Bag)
 - No-cook food**, in 1.9L Lock and Lock box (from SAR Pack)
 - Freeze-Dried Food:** 2.6L Lock and Lock box²⁹ with 3 freeze-dried compressed ProPak Mountain House or dinners ("Serves 2" – yeah, if you're not hungry)
 - Extended Food:** 2.6L Lock and Lock box (take out unless known extended austere deployment)
 - 6 1-liter packets of Gatorade mix**

²⁸ Have almost but not quite decided to switch to Android phone with Locus Pro and downloaded topo maps, carrying an AA-cell cellphone charger for SAR and that and a solar charger for disasters.

²⁹ Available at Target stores; cheap, sturdy enough to be crush resistant (though not so much as an Otter or Pelican box, only a fraction of the weight and bulk), waterproof and airtight.

- 2 4-oz. packets of almonds, sealed (with commercial food bags sealed with a commercial heat-sealer, with oxygen-excluder packets in each)
- 6 oz. Stoned Wheat Thins sealed in bag
- 1 lb (6 blocks) of Mainstay compressed emergency food rations³⁰
- Travel waist pack:**
 - Passport, medical license, DEA license, EM Board certificate³¹
 - Small (500 mL) Platypus collapsable water bottle: (fill from water fountain once through security at airport)
 - ThermaRest "neck" pillow with eyeshades and earplugs
 - bandannas (2), minibiners (2), elastic straps for head to keep head from flopping around when sleeping sitting up in the back of a C-130
 - food: several food bars and some nuts
 - small book
 - toilet paper in Ziploc bags
 - 2 Travel Bath towels, sealed in bags
 - Toothpaste and toothbrush
 - Waterproof notebook and pen
- 24-hour "ready" pack: (fluids to remove for air travel highlighted); use Tumi (AlphaTumi T-Pass™ Business Class Briefpack style: 26578) pack, add to it/leave in it:**
 - Everyday Emergency Kit (move EEK buttpack to outside to make more room for stuff inside if needed)**
 - Back Top Compartment:**
 - Logitech Anywhere wireless laptop mouse
 - 2 spare lithium AA cells for mouse
 - Sunglasses
 - Back Bottom (small) Compartment:**
 - Spare multipurpose contacts solution: 2 3 mL dropper bottles, 1 8 mL dropper bottle
 - 2 spare pens
 - 2 spare combs
 - hipbelt and sternum strap for pack
 - infrequently-used membership cards
 - spare business cards
 - pen refills
 - bookmarks
 - Back Bottom (big) Compartment:**
 - Lightweight iGo Green power supply (does work for Sony Vaio Z laptop both AC and DC) (add Powerstripsaver, AC cheater, and AC extension cord from on top of books next to Color Laserjet in home office)
 - Glasses case (Oakley Vault small) with**
 - Glasses
 - contacts case
 - Contacts Solution 8 mL dropper bottle**
 - Glasses keeper cord
 - Spare laptop battery

- Ultralight camera (Canon Powershot SD1100 S) in neoprene case with spare battery
- Spare car key on lanyard attached inside compartment
- In small pockets inside compartment:
 - Pocket 1:
 - Checkbook
 - Pocket 2:
 - Nail file
 - Highlighter
 - Spare pen
 - Sharpies (1 each small, regular, large)
 - Mechanical pencil
- Inside-pack "laptop" pouch**
 - thin clear 9x11.5" document file envelopes (3)
 - Grey pouch with**
 - Personal meds: Pulmicort, Atrovent and albuterol inhalers, steroid nasal spray, Pepcid, cardboard inhaler spacer
 - small roll of color code tape
 - bit of toilet paper in small plastic bag.
 - Sweatband
 - Collapsible backscratcher
 - ¾" flat black nylon webbing straps with Fastex buckles (for attaching things to lash patches sewed to front of Tumi pack) (2 sets, long and short)
 - Aloksak 11x13.75" waterproof plastic bag for laptop (loksak.com)
 - Heavy-duty Aloksak plastic ziplock plastic bag sized to fit wallet
 - Sil-nylon pack raincover (XS, www.granitegear.com)
 - Ultralight waterproof/breathable parka (North Face Triumph jacket)
 - Light GoreTex pants (Cloudveil www.cloudveil.com)
 - Small Mesh bag travel emergency overnight kit: Tiny MSR Packtowl Personal, Sea to Summit Pocket Body Wash³², CoolMax underpants, light CoolMax fishnet T-shirt, pr. wool socks. (Already have toothbrush, toothpaste, contacts solution and combs in other pockets of pack.)
 - Disaster Toolkit:**
 - Screwdrivers and sockets:³³
 - Husky 8-in-1 Precision Screwdriver Set³⁴
 - Screwdriver/socket bit set and driver³⁵

³⁰ Take a block, crumble into a cup. Add about a cup and a half of hot water. Stir. Wait for a few minutes. Makes an OK breakfast cereal, especially if you add raisins. Not as good as the old Mainstay rations, which made really good cream of wheat.

³¹ Printed on Rite-in-the-Rain paper; lighter than laminating.

³² 50 quick-dissolving leaves of soap suitable for shampoo, soap, laundry soap, dishwashing soap; Replaces 30mL Nalgene bottle of shampoo; saves an ounce of weight. Package inside a 3"x5" heavy-duty ziplock plastic bag to protect against water.

³³ At under a pound, this tool set has small and large screwdrivers including Torx and Allen, and ¼"-3/4" and 7-19mm sockets with a ratchet driver.

³⁴ Overall lighter and smaller than similar offerings from Sears and Kronus; approx. 1.5 ounce. with following bits, some from a separate 8-in-1 Torx version of the same screwdriver set): Slotted 1/16", 5/64", 3/32", 1/8" (1-2); Phillips #000, #00, #0, #1; Torx T4, T5, T6, T7, T8, T9, T10, T15.

³⁵ Sears Craftsman 947483 Magnetic 32-piece Screwdriver Set, selected bits only: slotted 3-4 (5/32"), 8-10 (1/4"), 12-14 (3/8"), 14-16 (29/64"); Phillips #2, #3; Torx T20, T25; Hex (Allen) 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16"; ¼" hex to ¼" square adapter. Craftsman handle at > 7" is too long for airplane

- Lutz 2-in-1 Phillips #1 and 5-6 (3/16") slotted screwdriver³⁶
- Small Channel-lock pliers
- Leatherman Squirt E4 electronics tool (with wire stripper, with knife broken off to pass TSA security for flying)
- Radio Shack contact cleaner pen
- Radio Shack pocket digital multimeter
- Lightweight magnifiers: Model CO5: 2.5x 8" focal distance, from Donegan Optical Company³⁷
- cable ties:
 - 4 - 2"
 - 2 - 4"
 - 2 - 8" (with mounting hole at end)
 - 2 - 10"
 - 2 - 15.5" releasable
- Self-drilling screws:³⁸
 - 4 - 12-14x1"
 - 4 - 10-16x1.5"
- 4 tiny strips Radio Shack easy-melt solder
- Miniature sewing kit (1 ounce)
- 2 - tampons, in Aloksak plastic bag
- 2 safety pins
- Outside the "laptop pouch"** but inside the laptop compartment:
 - laptop
- Right side compartment:** pouch with
 - Various Hospital IDs and clip for FEMA/DMAT IDs (IDs in wallet)
 - Oral B Travel Toothbrush and small toothpaste**
 - Grey "computer" pouch with
 - iGo powerXtender Battery Operated Charger (will recharge cellphone from AA cells) with A97 micro-USB tip
 - iGo tips for above and other iGo chargers, 10 misc tips
 - Solio Classic Solar Charger/Battery (charged up already via USB)
 - Solio USB charging cables:
 - USB-Solio for charging Solio
 - Solio-iGo with A97 micro-USB tip for charging cellphone
 - Ultrapod micro camera tripod with nylon 1/4-20 bolt to position solar charger
 - iGo laptop charger DC cigarette-lighter cord
 - iGo cigarette-lighter DC charger adapter for cellphones with A97 micro-USB tip
 - AC-USB power adapter
 - 1 short USB-micro-USB cable

- ZipLinq RJ-45 cable
- iGo 1 -> 2 tips adapter
- micro-USB 1 -> 2 adapter
- USB-iGo tip adapter cord
- 2 GB thumb drive for laptop backup (also keep 8 GB USB keys on keychain)
- micro-mini-standard SD card adapter set
- 1/4 of a microfiber lens cleaning towel; for cleaning glasses, camera, laptop)
- small Windex bottle for cleaning laptop screen**
- 1 3mL bottle of dried habanero pepper (for boring food)
- Left side compartment:** with radio equipment:
 - Field-programmable amateur handheld VHF/UHF radio (Yaesu FT-60R) loaded with empty AA cell battery pack
 - extra antennas
 - cells (6 lithiums, 6 alkalines)
 - extra empty 12-cell AA case (can usually buy and fill with AA cells locally)
 - Bag with:
 - auto power adapter
 - clip-on external auto antenna BNC mount
 - BNC > SMA and SMA > BNC adapters
- Main Compartment**
 - Everyday Emergency Kit/buttpack (see separate listing)
 - Toothpaste and Mouthwash**
 - Shoulder strap and backpack straps for everyday emergency kit buttpack
 - Spare small sil-nylon stuffsack
 - luggage tag
 - Laptop sunsreen (add from car or elsewhere)**
 - travel documents**

carry-on luggage per the TSA, so replaced with a (short) Task Force 7-Piece Multi Bit Screwdriver Item #:307991, Model: 53905 from Lowe's for \$2; all the bits fit in the handle if you unscrew and take out the little bit clip in there; also a 2" magnetic bit driver that extends this stubby screwdriver to full length. Also added Neiko pocket 1/4" ratchet driver, 3/8" to hex adapter, and Gator Grip ETC-200MO Universal Socket 1/4"-3/4" and 7-19mm. Total weight ~11 oz.

³⁶ Long thin shaft for recessed screws; wt. 1 ounce.

³⁷ Will work by themselves or can be clipped to glasses; 4 ounces including separate protective cases for glasses-frame part and magnifier part.

³⁸ Gator Grip socket

VI. Miscellaneous Gear Bag³⁹

- Light:**
 - Eveready fluorescent D-cell lantern with lithium cells
- Water:**
 - 3 1-liter bottles (full)
 - MSR water bag if not on pack
 - Backpacking PUR water filter (superseded by small filter/MiOx unit)
 - Extra canisters for backpacking water filter
 - Empty 2.5 gal water bag and bladder
 - Seattle Sports folding bucket and basin
- Shelter:**
 - Disposable compressed sleeping bag
 - Roll of leaf bags
 - Wad of smaller trash bags
- Clothing:**
 - Small size Pack Towel
 - Old Goretex parka/pants
 - Spare nylon pants
 - Bag with spare gear:
 - 2 wool balaclavas
 - 1 pair wool mittens
 - 2 pair brown fleece gloves
 - pair wool socks and liner socks
 - leather gloves
 - cheap compass and 2 whistles
 - spare goggles
- Food (in mouse-resistant boxes):**
 - MRE/Fireline Meals: 4
 - MRE heaters: 3
 - Can of dried greens: 1
 - Granola bars: 1 box
 - Bacon bits: 1 small can
 - Survival (cream of wheat) bars: 1 package
 - Quick-cook dried veggie meals: 3
 - Lexan lunchbox: 1
- Stove accessories:**
 - Windscreen
 - Base
 - Extra fuel canisters (1 small, 1 large)
 - Large Pots, potscrubber and detergent
 - Cups and plates and utensils (2 each)
- Tools etc:**
 - Spare set of Aloksak zipper plastic bags
 - Folding saw
 - Survival knife
 - Magnifiers
 - Solar Still
 - Daypack
 - Frisbee
 - Cards

- Organic vapor respirator
- 10' 1" flat black pack webbing
- 1" black nylon pack webbing hardware: 2 ladderlocks, 2 triglides, 1 adjustable buckle, 2 D rings
- 2" adjustable buckle and 2 2" triglides
- 1 cordlock
- 1 Zipper Repair Kit (www.rei.com)

VII. Items Loose in truck or garage shelves (everything in green goes into disaster pack/duffel for disasters; add items in red)⁴⁰

- laptop sunscreen** (usually to the left of the front passenger seat)
- Computer Misc. Box** (note: two USB keys on personal keychain; also see Computer Bag in Ready Pack)
 - CD-Rs (2) and DVD-Rs (4) in thin cases and small and large Sharpie for marking
 - USB printer cable
 - adjustable-angle female>male USB adapter
 - lightweight 1 > 4 USB hub
 - Micro-SD>SD card adapter
 - FT-60 USB handheld radio programming cord (www.usb2ttl.com) and cloning cord
 - 1 short Monster 1->3 extension cord
 - Powerstripsaver
 - 1->3 outlet AC adapter
 - AC "cheater" 3-plug > 2-plug adapter
 - 3 Velcro cable wraps
- FRS Radios:** 4 cheap FRS radios with spare AA alkalines
- Charcoal Vest** HeatPac hypothermia rewarming device with 18 hours of fuel in Pelican box
- Mini-Opkit** (in a file box)
 - Equipment**
 - File Case with label on outside
 - File Case insert, slide-in style, with
 - 2 sets of dry-erase colored markers
 - 2 sets of colored highlighters
 - several pens
 - roll of 2" clear adhesive tape
 - Canine Resource Capabilities Summary forms
 - File Case insert, flip-open style, with
 - 2 Scotch tape dispensers
 - 1 small roll KC color code tape
 - paper clips
 - 1 pr. Scissors
 - 1 stapler
 - spare staples
 - mini-grid overlays
 - protractor
 - Canon i80 color inkjet printer with
 - USB cord

³⁹ Miscellaneous Bag, SAR Gear Bag, Caving Gear Bag, and Technical Rescue Bag are Patagonia boot/duffel bags, circa 1990, which I don't see in the catalog any more. Uniform size and shape makes packing the back of the truck easier. Each is labeled with a 3x5" laminated tag with the name of the bag on the front, and my name/color code/contact information and a brief contents on the back, attached via a 2" Versalink type keychain put through a brass grommet on the tag and then around a zipper pull; similar tags on the SAR pack, tool kit, etc.

⁴⁰ Truck is a beat-up 1988 Range Rover with a variety of additions, including a newer 3.9 L V8 engine, ARB bar on the front with extra Hella lights, and a 9000-lb Warn electrical winch, skid plates and tow points underneath, a Odyssey primary and Optima yellow-top deep-discharge secondary battery with a Husky isolator, and a Jottodesk with an integrated iGo power supply for my laptop, and an iGPS USB GPS permanently installed on the roof with the USB cable sticking out of the dash near the Jottodesk, a VHF/UHF mobile radio, and a 12V charger for my Yaesu FT-60 handheld.

- Power adapter
- spare ink cartridges
- blank paper (~75 sheets)
- Extension cord, 30'
- Powerstrip Saver
- 2 > 3 prong power adapter
- 1 > 3-prong adapter
- Maptech CDs for VA, WV, MD, PA (part of Ohio)
- Mission Folder Set:** Two Sets of Five Master Folders for search:
 - General File
 - Area Poster Signs: Staging Area, Operations, Sign-In, Commo
 - Daily Form #1: Command Log (4 sheets)
 - Daily Form #2: Table of Organization (1)
 - Daily Form #3: SAR Unit Personnel Register (4 sheets)
 - Daily Form #4: Local Volunteer Personnel Register (4 sheets)
 - Daily Form #5: Vehicle Register (4 sheets)
 - Daily Form #6: on Tasks Completed Folder (1)
 - Daily Form #7: on Tasks in Progress Folder (1)
 - Daily Form #8: Communications Log (4 sheets)
 - Daily Form #9: SAR Resources Worksheet (1)
 - Incident Form #1: Missing Person Questionnaire (1)
 - Incident Form #2: Incident Objectives (1)
 - Incident Form #3: Medical/Evacuation Plan (1)
 - Incident Form #4: Communications Plan (1)
 - Tasks to be Done (with 10 Task Assignment Forms, dual stapled forms, ready for carbon paper)
 - Tasks in Progress (with Daily Form #7: Clue Log attached to front)
 - Tasks Completed (with Daily Form #6: Task Log attached to front)
 - Tasks Not Done
- Other Folders
 - Folder: Transparency Masters (20)
 - Folder: Grid Overlays (3 each of clear in vertical and horizontal, and one of both vertical and horizontal in green, yellow, red, blue)
 - Folder: Carbon Paper
 - Folder: Transparency Masters (for copier)
 - Folder: blank paper (for copier) (about 100 sheets)
 - Folder: Searcher Information Sheets (about 20)
 - Folder: Essential Documents
 - Pennsylvania State Highway Map
 - Pennsylvania USGS Topographic Map Index
 - ICS Field Operations Guide (ICS-420-1)
 - Search is an Emergency Field Coordinator's Guide
 - Folder: Originals to Photocopy (PSARC Forms Packet, PSARC Grid Overlay)
 - Folder: Spare Forms
 - Folder: Cave Rescue Forms
 - ER-NCRC Level of Urgency Chart (1)

- Personnel Log (1)
- Communications Log (1)
- Entrance Control Log (1)
- Equipment Log (1)
- Rescue Event Log (1)
- Lost Person Questionnaire/Checklist
- Mission Personnel Register (1)
- Medical Assessment Flow Sheet (1)
- Mini-Information Form (1)
- ER-NCRC Task Assignment Form, double, with carbon paper (10)
- Spare Folders (10)
- Helmet** with 2 lights (HDS Systems ActionLight III on order to replace old ActionLight I; Princeton Tec 4-AA cell halogen flashlight with improvised diffuser mounted to helmet with mounting-style cable ties)
- Hanging Clothes/ etc.:**
 - Tilley hat (add to Tumi Pack for disasters)**
 - Best GoreTex Parka (Marmot Glenmore) with hat, facemask and gloves
 - Powerstretch fleece pullover (LL Bean)
 - Thick fleece jacket (Lowe)
 - Fleece stretch tights (Lowe)
 - Softshell jacket (Cloudveil Serendipity) with Cloudveil hat, facemask and winter gloves
 - Primaloft vest (Cloudveil Enclosure)
 - Expedition down parka and pants and mittens (for standing around for long periods in cold weather)
 - ASRC Uniform Shirts:
 - Short-sleeve cotton shirt
 - Long-sleeve cotton shirt
 - Long-sleeve CoolMax shirt
 - Long-Sleeve lightweight polyester fleece/chamois shirt
 - DMAT/SAR Base Buttpack**⁴¹ with two full 750 mL water bottles, spare LED headlamp, spare flagging tape, Water bottle/water bottle belt pouch
 - laptop computer sun visor
 - Aloksak 11x13.75" waterproof plastic bag for laptop (loksak.com; for laptop computer when it's raining)
 - big goggles
 - hearing protectors
 - leather work gloves (Bucket Boss type) with minibiner
 - bag of flagging tape
 - small bottle of waterless handcleaner
 - neck lanyard/ID holder
 - PolarWrap sport rebreathe flap
 - 2 water bottles full of water in side pockets, and one bottle full of water in separate belt pouch

⁴¹ The Mountainsmith Cairn model is big enough to fit both the Everyday Emergency Kit small buttpack (which is almost always with me) and a laptop computer along with a few other things. Handy for carrying at a base somewhere – especially when you don't want to leave your laptop laying about. Yes, you could use a daypack, but a lumbar pack is a lot easier to manage when you're taking it off and putting it on over and over. Also, the lumbar pack with the Everyday Emergency Kit and a couple of other items from the SAR pack makes a dandy pack for a short SAR task in warm weather.

- DMAT uniform** for local deployment
 - team t-shirt
 - uniform blouse
 - uniform pants/belt
 - team hat
 - below hanging clothes: combat-type boots with zip-up inserts (summer Danner Striker GoreTex boots or winter Matterhorn ATD insulated boots, depending) with two pair Rohner brown trekking wool socks (add to Disaster Duffel)
- Sleeping bag stuffsack**⁴²
 - Sleeping bag (3-season or winter: Western Mountaineering down bag)
 - Polypro liner
 - Silk liner
 - ThermaRest Stuffable pillow
 - ThermaRest Lumbar pillow
 - Extra stuffsack with:
 - Down booties
 - Overboots for staggering around in deep snow in down booties
- ThermaRest NeoAir**⁴³ inflatable pad in stuffsack with repair kit in bottom of stuffsack
- MSR Hubba one-person tent and Hennessy Backpacker Asym Ultralight hammock** with extra screw-eyes to mount on buildings, Kelty Triptease Lightline (www.kelty.com) as high-visibility replacement for rainfly pullouts, and added Lazr Hi-Vis titanium tent stakes from Bozeman Mountain Works (www.backpackinglight.com)⁴⁴
- Army blanket to cover everything
- Tracking stick (old bamboo XC ski pole without basket but with rubber bands)
- Flotation vest and polypro throw rope in bag
- Spare VHF/UHF ham handheld radio (Yaesu FT-60)
- Ice Axe
- Ski Poles or walking poles
- MSR Snowshoes
- Old down parka (stuffed)

⁴² Granite Gear compression stuffsack; will compress very tightly and small for packing.

⁴³ Very expensive, >> \$100, but very, very light, warm enough for 3-season use or winter with spare clothes underneath, and very, very comfortable.

⁴⁴ If you browse any of the Internet information on backpacking hammocks, you'll see that these hammocks, though expensive, are the darling of ultralight backpackers. Once you figure it out, you can set it up in under 3 minutes, as long as you have two somethings (trees, telephone poles, road signs, etc.) on which to tie the ends of the cords. Having a couple of tie-outs to either side is also very helpful. You can put it in places where there is neither room nor any flat place without rocks to pitch even a 1-person tent. An open cell pad to insulate underneath can replace your ThermaRest pad—but, due to concerns about the open-cell foam getting wet, and about not being able to use it if you pitch the hammock as a tent, I've given up on this and just use a ThermaRest instead. Although it can be pitched as a tent, the open cell pad won't work as insulation this way, and you need a couple of stakes and something to use as a pole. A quick and handy shelter wherein to sleep for a few hours for when you're in a hurry—I also lived in it for about two weeks when deployed with a Disaster Medical Assistance Team team—much nicer than being in the big tent.

- Vehicle Equipment**⁴⁵
 - Jottodesk, connected to GPS mounted on roof, with iGo 12V power supply for laptop; also with iGo DualPower accessory with A43 tip for charging cellphone
 - VHF/UHF/ham mobile radio
 - 12V/AC charger for FT-60 handhelds/batteries
 - Misc maps (including spare highway maps to give away)
 - Spare Versabrite II headlights (2) mounted on sun visors
 - Glove compartment:
 - Velcroed to inside of top lid
 - Kleenex
 - Tire gauge
 - Rack keys
 - Utility scissors (Fiskars serrated kitchen scissors)
 - Left Front
 - Paper towels
 - Hand sanitizer
 - 3 Gojo hand cleaner towels, individual packets
 - Lens cleaner cloth
 - Contact cleaner pen (for cellphone handsfree kit, etc.)
 - Left Middle
 - Chewable ASA 81 mg tablets
 - Chewable Pepcid tablets
 - Emergency Backup Binky
 - Hair rubber bands
 - Left Back
 - Headlamp
 - Monocular
 - 4 spare AA lithium cells and 4 spare AAA lithium cells
 - roll of quarters (for tolls)
 - Right Front
 - Reflective Mountain Rescue safety vest
 - Right Middle
 - Glass signal mirror
 - 4 pair nitrile exam gloves
 - CPR shield
 - Cat Crap lens treatment
 - Antenna cap
 - Small hearing protectors (earplugs)
 - Right Back
 - Swisstool "Leatherman" tool
 - Swisschamp swiss army knife
 - Supertape
 - Small roll duct tape
 - 6' measuring tape
 - small reversible screwdriver
 - Sharpie marking pen
 - Type 13 Anti-Seize (for antenna mounts, etc.)
 - On mirror/visor: Sunglasses and spare sunglasses
 - Under seat:
 - Small inverter

⁴⁵ Vehicle is a 1988 Range Rover, a bit beat up, with an ARB bar and 9000-lb Warn winch on the front, extra offroad lights on the ARB bar, two batteries with an isolator, an external spare tire carrier, Thule bike rack on the back and Thule roof rack with bike racks and a canoe/Stokes litter rack attached to it.

- 110V adapter for handheld radio charger (can be demounted from vehicle then plugged in to 110V)
- Behind seats in pockets
 - Vehicle maintenance records; ham repeater atlases/maps; reference manuals for stereo, VHF radio, etc.
 - Toys for kids to entertain themselves with so they don't destroy the car
 - Common atlases of the area
 - Windex
 - Large umbrella
 - Inflatable Travel Pillows (2; for naps along the road)
 - Sun visor for laptop
- In bag hanging from armrest:
 - Extra Teaching Company CDs (for those long drives—best way to stay awake: www.teachco.com)
- Attached to back of back seats⁴⁶
 - Large truck-style cross lug wrench⁴⁷
 - [Snow brush/scrapper](#)
 - squeegee/window scrubber
 - Life-Link snow shovel
- Spare high-gain 2m/VHF antenna (have antenna mount on roof, used mostly only when vehicle stationary)
- Canvas grocery bags/cotton produce bags and Nalgene bottles for bringing home olives in brine, smoothies, etc.
- Large Medical Pack (REI travel pack; not currently indexed, but full of lots of medical stuff, believe me)
- Attached to inside of tailgate: Hi-Lift 48" jack with attachments and instructions
- Set of hand extrication tools, etc.
 - leaf spring tool (handmade, for cutting)
 - hand sledge hammer
 - hatchet
 - 2 titanium pry bars
 - bolt cutters
 - mini-KT-bar (extrication/wrecking tool)
 - 1970s-era Air Force aluminum survival tool with hatchet, shovel, saw
 - 12-V tire pump
 - Large base for Hi-Lift Jack
- Optional (only added when actually going out for trail maintenance, or if known downed trees from a storm):
 - Set of trail construction/maintenance tools on heavy leather tool belt/tool pouches
 - Woodsman's Pal machete/brush hook
 - Pocket folding loppers (Lee Valley Garden Supply)
 - Buck lightweight pruning shears (www.sarcamp.com)
 - Folding SvenSaw
 - Single-bitted axe in aluminum sheath (sheath from Madsen Logging Supply)
 - Glock entrenching tool⁴⁸

- Stihl Chainsaw
- Ryobi Weedwhacker
- Gas and oil for above
- 10-lb sledge
- Grass whips (2)
- Non-folding loppers
- Large shovel with cutting edge
- Large vehicle Tool Kit
 - Electronics Tools
 - Soldering Irons: 12V, 110V, butane (with lighter-style butane refill tank)
 - Small solder (including low-melting-point solder strips, work with lighter)
 - Misc RF adapters (BNC, PL-259, TNC, SMA)
 - BNC coax patch cables with BNC M/M
 - Pocket multimeter with spare batteries
 - Wire crimper/stripper
 - Electrical Equipment
 - Continuity tester
 - AC extension cord
 - Pocket AC circuit tester
 - Roll of electrical tape
 - car fuses (many kinds and ratings) and fuse puller
 - Light socket to AC adapter
 - Radio Shack Leatherman Squirt EL mini tool (with wire stripper, etc.)
 - Nippers
 - Hand Tools
 - Large and small Vise-grips
 - Sears Craftsman ignition pliers (small)
 - Alltrade needlenose/standard pliers combination
 - Heavy-duty scissors
 - Wrenches (all Sears Craftsman except as noted)
 - Large and small crescent wrenches
 - Adjustable box-end wrench
 - Metric and SAE-Imperial hex key sets, folding
 - Metric wrenches in rolled case:
 - combination wrench set: 8mm-16mm
 - box-end wrench set: 6mm-18mm
 - ignition wrench set: 4mm-11mm
 - SAE-Imperial wrenches in rolled case:
 - combination wrench set: 3/8"-11/16"
 - ignition wrench set: 13/64"-3/8"
 - Socket/hex tools (sockets on Craftman racks):
 - AmPro stubby 1/4"-3/8" ratchet handle
 - Skewdriver® offset hex handle
 - generic hex screwdriver-style ratchet driver with set of bits in handle
 - 6" long hex Phillips screwdriver tip (for deeply-inset screws)
 - 1/4" ratchet handle
 - 1/4" screwdriver-style handle driver
 - 1/4" 3" extension
 - 1/4" 3" flexible extension
 - 1/4"/hex finger-wheel driver
 - 1/4" metric sockets, 5-6-7-8-9mm

⁴⁶ Attached using standard hardware-store spring clamps, attached with self-drilling screws.

⁴⁷ Range Rovers have large tires and require a truck-sized lug wrench.

⁴⁸ Lighter and stronger and better built than all others I've tried.

- ¼" SAE-Imperial deep socket set, ¼"-1/2"
- 3/8" 2.5" and 6" extensions
- 3/8" metric deep socket set, 10-19mm
- 3/8" metric/SAE-Imperial combination socket set: 3/8"-10mm to 7/8"-22mm, also 12, 18 & 24mm
- ½" drive ratchet handle with extra sockets in handle
- ¼" drive ratchet handle with extra sockets in handle
- ½" drive 24 mm socket
- ½" drive spark plug socket
- ½" to 3/8" and 3/8" to ¼" adapters, each both ways
- Small reversible Philips/standard screwdriver
- Craftsman small long screwdrivers, standard and Philips
- Offset standard and Phillips screwdrivers
- Set of 4 small Phillips screwdrivers
- Jeweler's screwdriver and nutdriver sets
- Stubby Philips and standard screwdrivers
- Mini-hacksaw and extra blades
- Type 13 Anti-Seize lubricant in tube
- Mini-pry bars (2)
- Spare batteries: 9V (2: lithium), AA (8: lithium), AAA (6), C (4) D (2)
- Spare mag-mount 2m/VHF antenna
- Large and small cleaning brushes, and battery-terminal brush
- spare roll of color code tape
- duct tape
- Card stock and sheet protectors and Sharpie marker for posting signs
- Aluminum coathanger
- Thin steel wire
- Plastic kitchen trash bag
- Nuts, bolts, screws, nails, cable ties, spare wire, rubber bands, electrical terminals, small Bunji cords, thumbtacks, packets of epoxy glue,
- Red shop towels
- Gojo hand cleaner towels, individual packets, and paper towels
- Heavy work gloves
- Winch Tool Kit
- 2 Aluminum adjustable jack stands (3 ton)
- 2 folding tire chocks
- Jump cable bag (Duluth Trading Co. Deluxe Jumper Cable Bag)
 - Heavy-duty jump cables
 - Work gloves (Bucket Boss)
 - Gunk pressurized can of tire sealer/inflator
 - Disposable coveralls
 - folding cross lug wrenches, Imperial and Metric (for other cars)
- Fire extinguisher
- Spare tire on back
- Bag of straps for roof rack
- Bundle of road flares

- Box of triage tags
- Needle disposal box
- Bag of reflective Mountain Rescue safety vests
- Mag-mount rotating light with yellow/blue/red lenses⁴⁹
- Jar of cat litter (for traction)
- Copper ice scrapers (2)

⁴⁹ For different jurisdictions, as needed; like yellow the best, especially for stopping along the roadside, as people don't get as excited and don't do as many stupid things as when they see a red or blue light.