

Your 24-Hour Pack



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Basic to your effectiveness as a member of a Disaster Response Team (DRT) for [Virginia RACES](#) is your 24-hour pack. Each Virginia RACES member who has completed the Basic Operator's Course is eligible to provide mutual aid outside of their home jurisdiction. If you choose to volunteer and prepare yourself for this vital mission, you are responsible for development of a 24-hour pack and its maintenance, ensuring that it is present and ready for every mission.

Your role as a DRT member is to motivate other Virginia RACES members to excel in their personal preparedness, to be ready to provide emergency communications, anytime, anywhere. You are expected to motivate and lead other amateurs to become better prepared by setting a good example. *Virginia RACES considers the 24-pack so important that DRT members are asked to bring them to all RACES functions.*

As a Virginia RACES Disaster Response Team member, you may be called upon to provide communications supporting Neighborhood Watch, Community Emergency Response Teams (CERT), damage assessment or search and rescue.

The area in which you live may be unaffected by a current events. You may live in the city, and not think that you really need to carry a map & compass, pocketknife or fire building materials. During a disaster declaration, your RACES team could be activated to provide mutual aid away from home, in a neighboring county, perhaps in an unfamiliar, rural area. So carry at least the **Ten Essentials.** **Additional items** on the list are highly recommended. *The **CLOTHING** that you wear deserves thought, because it is also part of the "package."*

The CONCEPT...



...of your 24 hour pack is that its contents are up to you, *but that it must enable you to:*

- Provide communications while traveling moving on foot, outdoors, in varied terrain, away from your vehicle, usually for an 8-hour shift
- Provide food and shelter supplies to rest during breaks until your next shift, and remaining available up to 24 hours or until relieved
- Enable you to operate a portable handheld radio for up to 24 hours
- Be prepared (in a worst case) to spend a night afield, if necessary
- Be equipped to perform your mission safely, in relative comfort.



Attention must be given to the weight of necessary items that you MUST carry to safely complete your mission, your physical condition, and your need for mobility.

The approach for the 24-hour pack, widely used by search and rescue groups and highly recommended by Virginia RACES is a total package consisting of three LEVELS:

Level I:



Is the clothing which you are wearing and your pocket contents: Minimum survival items such as a "Scout" type pocket knife, lighter or matches, eyeglasses, small "backup" flashlight, your cell phone and pager. Carry your cell phone or pager if you use one for alerting, or a 2-meter or dual-band HT whenever you can, plus, you should increase your general knowledge, skill, and abilities and maintain a positive "can-do" attitude!

Level II:



Consists of basic operating equipment, comfort and safety items: Your first aid kit. "Stuffable" rain gear and hat. Keep your HT here if *not carried for Level I*. Include an extra HT battery and AA battery case, earphone, notebook and pencil, map and compass. Here goes your larger primary flashlight with extra bulb and batteries, water bottle, snacks and personal medications for a day, sunglasses, multi-tool or pocket knife (*if not carried at Level I*), and wind-up J-pole, telescoping 1/2 wave antenna or "long" flexible dual-band 1/4 wave antenna with "tiger-tail" counterpoise.



Level II items can be carried easily in a lumbar pack, multi-pocket vest, or zippered waist pouch which fits easily in your desk drawer or briefcase.

Level III:



Consists of bulky life support items "to go" stashed in a backpack, containing the **Ten Essentials** of map, compass, knife, fire starting and signaling materials, emergency shelter, extra clothing, water, food and first aid items. A medium, internal-frame pack of 1500-2000 cubic inches, is a good choice. A larger pack of 2500 cubic inches or more, equipped with compression straps enables you to stow clothing layers, removed due to weather or exertion, or carry more specialized rescue equipment.

Your radio and accessories should be carried in a utility pouch, which may be either attached with a snap-link to the outside of your backpack, worn on load-bearing suspenders or a chest pack. There are LOTS of options...



There are three types of **PACKS**:

- **Unframed packs:**



"Traditional-style" unframed packs are suitable for storing emergency gear needing to be carried only a short distance from your vehicle to a temporary location. They are fine to carry lunch, water bottle, rain gear, your HT and a sweater on easy terrain for public service events, close to your vehicle. They aren't "really" suitable for added shelter and bedding needed overnight or to carry loads very much over 20 pounds, in rough terrain for distances more than a mile or two.



Much better, if you need a minimal pack for maximum mobility, is a lumbar-pack, with load-bearing suspenders and waist belt, such as those commonly used in the Western states for used for wildland fire fighting.



- **Internal frame packs** ride close to the body.

Most SAR teams use internal frame packs. They are best for use in mountainous or varying terrain and off-trail travel. Small to medium versions usually have side pockets for water bottles, but generally lack other external storage.



- **External frames** are recommended for general backpacking.

External frame packs usually have multiple side and back pockets which are convenient for storing small, readily accessible gear.



If you really think that you are in "good shape" and that your pack is not "too heavy," try carrying it during evening conditioning hikes for several miles, on easy terrain, three days a week while you chat with the XYL or walk the dog. That may give you motivation to, either get in better physical condition, lighten the load in your pack, or, do BOTH!

Keep in mind that the majority of Virginia RACES operators are "middle aged" and older and not in the prime of physical condition they once were. A pack weighing 25 to 30 pounds is the maximum which a 30 to 50 year-old male in "relatively good" physical condition, with no medical problems, should carry all day on easy terrain, without undergoing medical evaluation and a stress test, and when necessary followed by a structured conditioning program under proper medical supervision.

The inventory of your 24-hour pack will "evolve," as you become more experienced. You are expected to periodically inspect and adjust its contents as the seasons, or circumstances change. Being able to share what you have learned with other team members (such as what equipment works and which doesn't) is valuable and is why we ask you to bring your 24-hour pack to all Virginia RACES training sessions, functions and exercises. At minimum, your 24-hour pack should include what search and rescue groups refer to as...

The Ten Essentials:

- **Map(s)** At minimum you should **ALWAYS** carry a Virginia Dept. of Transportation (VDOT) state road map. DRT members should also carry a regional topographic atlas such as Delorme. USGS 24,000 scale, (7-1/2 minute series) topographic maps are the standard for search & rescue use in Virginia. CERT, SAR and damage assessment teams should always carry topographic maps covering their assigned sector.
- **Compass** Learn basic map and compass skills. It is vital to understand the difference between a "magnetic" and "true" bearing. An orienteering compass on a "dummy cord" with luminous dial is recommended. In Northern Virginia the average declination is 10-1/2 degrees west. *To find the declination for your area, contact any registered surveyor.*
- **Flashlight** Two flashlights are better than one. Rugged, sturdy lights using common AA batteries, of the same type used as auxiliary power for your handheld radio are recommended. A single cell LED such as the CMG Infinity® Ultra Task Light is a good backup light which runs 24 hours on a single AA. It is adequate for writing messages and in your radio log, searching for items your pack or finding your way around a familiar area. A stronger light such as a 4-AA Pelican StealthLite® is better general use. Carry an extra set of AA alkaline batteries for each flashlight, and enough to refill the dry cell battery case for your HT. A headband to hold the light, enabling you to keep your hands free is recommended.
- **Water/Food** All surface water in the lower 48 states is contaminated. You must either bring 1 gallon of water per day with you or be prepared to purify or treat all water. Carry a minimum of 2 liters of drinking water at all times. Nalgene® bottles that can be heat-sterilized are recommended. If you expect to be away from a water supply for more than 4 hours, a backpack hydration unit of minimum capacity of at least 100 ounces is recommended. Water purification tablets or an EPA-rated personal water filter is also highly recommended. **Drink continuously at regular intervals.** For easy walking in flat terrain, you must consume 1 pint of water per hour. Increased water consumption is needed for strenuous activity. Carry a day's supply of food that can be eaten cold with little or no preparation. Energy bars, trail mix, peanut butter, raisins, jerky and tortillas are all good choices. Two military "MREs" are adequate and convenient.

- **Extra Clothes** Rain and wind protection is necessary. A hat prevents excessive body heat loss and reduces UV exposure. Wool or polypropylene fleece is warm when wet and best for layering. Space Blankets® have multiple emergency uses.
- **Fire starter** Always have three methods for building a warming fire which are waterproof. "Lifeboat matches," a lighter, and either a magnesium and flint starter or burning lens are recommended. Practice using these before you need them! Cotton balls, stored in a 35mm-film canister, liberally infused with petroleum jelly are recommended by search and rescue groups as an excellent fire starter. The cotton is a wick for the petroleum jelly, which lights easily with a match.
- **Candle/Fuel** Candles or fuel tablets are effective as hand warmers, to make a quick hot beverage or making a warming fire easier to start. Six "tea" candles in cans and either a 9-hour survival candle or six (two packages) of military compressed Trioxane fuel bars are recommended.
- **Knife** "Boy-Scout style" pocket knife, Swiss Army Knife, Leatherman® SuperTool or Gerber® multi-tools are recommended. A larger camp knife such as a K-Bar is useful for digging and gathering firewood, etc.
- **First Aid Kit** Basic first aid and CPR training are recommended. Appropriate contents for your first aid kit will depend upon your level of training. All RACES members should be trained in at least basic first aid. A relatively complete first kit should include a dozen antiseptic prep pads, ten Band-aids®, tweezers, medic shears, two 2" stretch roll gauze, twenty 3x3" gauze dressing pads, triangular bandage, adhesive tape, a trauma dressing or military wound bandage, twenty Tylenol® or Advil® tablets, Immodium AD®, ACE® wrap and/or SAM splint, Latex gloves, CPR mask, foot powder, Spenco Second Skin® or moleskin for blister management, antibacterial hand cleaner, lip balm, and SPF30 sun block.
- **Signal Device** At minimum at least carry a whistle. Fox40, Windstorm or ACR, Coast Guard approved models are recommended. Aerial flares are a "one-shot" deal, and less visible from aircraft than a signal mirror. Laminated glass military versions are best, the bigger the better. Once an aircraft has spotted you, use smoke to mark your position if in daylight. A flashing strobe light is best at night. Flares are a fire hazard and frowned upon in dry, wildfire areas. In cold/wet conditions when you can't find small dry tinder, SAR team leaders agree that having several auto flares (7-8 ozs.) which can start a fire even with wet wood in the worst conditions, are a lifesaver and also good for marking a night helicopter landing zone.

Note: Some that "**Ten Essentials**" lists replace the signal device with sunglasses, which are included in our following list of...

Additional Items

You won't have room to carry all of this "stuff" within a practical 25-30 pound limit. Therefore, you must make decisions regarding what is important for YOUR situation, taking into consideration shared items, which may be carried by other team members.

- **Radio** Remember that your RACES mission is communications. Your portable radio is "Mission Essential" if not "survival essential." You may be trained to function as a full member of a CERT, damage assessment or ground search team, but *ensuring the safety of fellow team members depends on maintaining radio contact with your base*. Your 2-meter or dual-band portable should be capable of 5w transmitter output, and be frequency-agile with a minimum of ten field-programmable memories per band. Carry a high capacity NiCd or NiMh battery pack, AA battery case with two sets of batteries, external power cord and sealed gel cell battery of 2ah or greater, plus either a 1/2 wave telescoping VHF or a full-sized ¼ wave flexible dual-band antenna with a "tigertail" counterpoise, and an ear phone for listening. A "hand's free" chest pouch is highly recommended for carrying your radio, accessories, compass and flashlight.

Shelter Clothing and rain gear are important for preventing hypothermia as well as determining how comfortably you may spend the night. A large plastic trash bag is far better than nothing, and takes little space. Better choice, the choice of experts like Air Force survival instructor Peter Kummerfeldt, is a large 20-mil trash bag of the type used by VDOT road cleanup crews. They are big enough for a six-foot person, very difficult to tear, and come in "safety orange." A second choice is a commercial-grade 55gal drum liner.

- **Mess Gear** The Sierra cup is too small, GI and mountaineering mess kits are too big. A GI canteen cup with folding handle and nesting warming stand enables a quick hot beverage when warmed with a Trioxane fuel bar. Tie a military stainless steel mess kit spoon on a lanyard over your head and poke it in your shirt pocket. You will always have mess gear. Sharpen one side to use as a knife.
- **Hat** Hardhats offer impact and rain protection and improve visibility. A full brim model meeting ANSI Z89.1-1997, Type I specification with a chin strap is recommended. A full head /face cover (balaclava) of polypropylene or wool provides warmth. Nomex® versions (about \$20) are necessary as personal protective equipment for wildfire assignments.
- **Rope** 20 feet of 1" nylon, tubular "flat-line" is useful, for tying harnesses, securing equipment, etc. A 50-foot length of parachute cord is another useful item. Include snap links and climbing gear if you are trained to use them safely.
- **Glasses** UV protection is important in snow and desert conditions, or on the water. Impact and splash protection is important if you work with lead-acid batteries, use hand tools, or walk through heavily wooded areas. Eye protection with protective side-guards meeting ANSI Z87.1-1989 is recommended. Wearers of prescription eyewear should always carry a spare pair.
- **Machete** Useful for gathering fire good, building emergency shelters or clearing a path for a "stokes" team. *One is recommended per field team.*

- **Saw** A folding camp saw for shelter and fire building. *One per field team.*
- **Spade** For field sanitation and digging fire pits. A folding military entrenching tool (*One per field team*) or individuals may carry a gardener's hand trowel.
- **Sleep Pad** A light-weight, closed cell foam pad for sitting or kneeling during breaks. Insulates you from the cold ground, protects you from jagged rocks and for sleeping. A Thermo-Rest, Ridge Crest®, 72"x20" pad costs \$18.95 and can be cut in half to make two compact 36"x20" pads for two people's 24-hour kits.
- **Poncho** A military poncho rolls compactly and can be used as improvised shelter, worn as rain protection or used as a ground cover. Also good are bright colored, fabric-backed rescue-type Space Blankets®, which also function as a signal panel. Some SAR groups recommend carrying two of these, using one as a ground cover while wrapping yourself (or the victim) up with the other.

Suggestions from those who've "been there and done that..."

- **Adjustable open-end wrench**, to turn off gas and utilities (CERT teams)
- **N95 or P100 respirator**, protects from most common biohazards, noxious fumes, dusts, or mists (required for CERT, and damage assessment teams)
- **Toilet paper roll** sealed in a plastic bag or travel-pack baby wipes.
- **RiteInTheRain®** pocket bound notebook, which doesn't fall apart in the rain
- **Grease pencil and/or Space Pen®**, writes anytime, anywhere
- **"Rite Aid®" Instant Cold Compress (7 ozs.)**, can keep you going if you sprain an ankle.
- **Insect repellent**
- **Sunscreen**. SPF 30 is recommended.
- **Canteen cup** or small utility pot and spoon
- **Duct tape** for repairs
- **Single-burner stove**, MSR®, or Peak1® multi-fuel, or Sterno® or Esbit® solid fuel.
- **Ear muffs**, keep your ears warm and your radio earphone in place
- **Nomex hood** is warm when wet and gives additional protection, about \$20
- **Fire fighter gloves** give puncture protection when handling debris and are warm when wet
- **Glow sticks** give useful light for a long time if need to help others to find you, without dropping your flashlight in the snow. Losing your only flashlight in the snow really sucks!
- **Fiberglass cattle prod sticks (min. 2 per field team)** 1/2"x4 ft. about \$3. Cover with ScotchLite® reflective tape in alternating white and blue stripes. Great as walking sticks for feeling your way, for getting traffic and chopper pilot's attention to landing hazards.

CLOTHING

Clothing is your first line of defense against insects, abrasion and exposure to the elements. *It must be durable, wind and rain resistant, comfortable to operate in and layered for adaptability.* **Being able to add or remove layers is necessary to maintain body heat, and to regulate body temperature during and after exertion.** Our Virginia weather is highly variable. A sudden thunderstorm may occur at any time of year. Mountainous regions above 2000 feet present particular challenges for anyone

venturing outdoors. Almost anywhere in the Commonwealth the weather can change from humid summer heat to hypothermia-producing wind driven rain in only a few hours. In the fall and winter months windy, rainy days in the 40s, followed by icy and/or snowy below-freezing nights can be killers of the unprepared.

- **Hat.** At 40° F. an uncovered head radiates one half of the body's heat production. *If you get hot "on the march," take off your hat and unzip your outer garment.*
- **Wicking initial layer.** Avoid cotton socks and underwear which bunch up when sweat-soaked, causing chafing and blisters, and are cold and clammy when wet. Instead, use polypropylene or similar material next to the skin to wick away perspiration. *Polypropylene underwear and a wind shell or anorak of 60/40 ripstop material is usually adequate during active search operations or periods of heavy exertion, if you have a wool sweater or synthetic fleece to put on during rest stops.*
- **Outer wind / water resistant shell garment.** Breathable fabrics such as Gore Tex® are effective, but expensive and not as resistant to tearing or abrasion from rocks and underbrush. *Tightly woven cotton sateen or 60/40 rip-stop used in military field clothing is inexpensive, abrasion resistant, and breathable.* Scotchgard® fabric protector provides adequate good short-term waterproofing. If treated with Thompson's Water Seal® it will withstand wind-driven rain.
- **Warmth layering garment.** Wool is best because it is warm when wet. Also good are synthetic fleece or pile. Quilted bunting of polyester fiberfill is also warm when wet. *Down garments collapse and lose their loft in cold/wet environments.*
- **Boots.** Protect your feet and prevent injury, especially falls. Your feet are your basic means of transportation and deserve careful attention. Sturdy hiking or work boots having a lugged traction sole and safety toe construction meeting ANSI Z41-1999 with impact and compression ratings of 75 are recommended. Boots should be of all-leather construction and waterproofed. Nylon uppers may breathe well, but are not as waterproof or protective from sharp rocks, snakebite and other penetrations as leather. Stay away from heavy "pac" boots or low-cut, walking or running shoes which don't provide adequate ankle support. You want uppers with a height of 6"-10". Higher tops are recommended in snake country and in mountains.
- **Socks.** Wear light non-cotton sock liners next to your skin to wick away moisture and control abrasion. Over those wear heavier wool or wool-blend boot socks for cushioning and warmth. This combination is suitable year-round, to control blisters and keep you comfortable. An extra pair of dry socks, sealed in a Ziploc® bag in your pack has a dramatic effect upon your attitude in cold/wet conditions. Moleskin should be carried by everyone and applied at the first sign of "hot spots" which lead to blistering.
- **Gaiters.** These are handy in most situations in the woods, by sealing poison ivy, brush, dirt, rocks, rain and snow out of your boots. When sprayed with insect repellent they are your first line of defense against biting insects.

- **Gloves.** Leather gloves are necessary for any rope work, protection from rocks and briars and in any working with hand tools or fire. Use wool, silk, or polypropylene liners for layering and finger-less mitts for warmth when manual dexterity is required.

For disaster deployments expected to last several days, a 72-hour annex to the 24-hour pack is highly recommended. The 72-hour Annex is kept in your vehicle and is best thought of as a re-supply point for your 24-hour kit. In the 72-hour Annex you should have:

- 2 full changes of clothes**, including socks and underwear
- Personal hygiene items** - soap, shampoo, hand towel, razors, deodorant, toothpaste, floss
- Food for 3 days** - 6 meals are recommended as a minimum
- Water – 1 gallon per day as a minimum**, a 5 gallon container is recommended
- Sleeping bag**, wool blanket or poncho liner
- Cold weather clothing** – insulated coveralls or trousers, extra socks, parka
- Rain gear**
- Stock of AA batteries** for radio and flashlights, 24 total are recommended

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