

# AN INTRODUCTION TO DXPEDITIONS

## A Compendium

Nick Hall-Patch

Setting up a listening post away from normal sources of interference to concentrate on DXing is known as a DXpeditions. One can go to a rural site where there is room to set up Beverages or rhombics, or compare and try new equipment and accessories, or share experiences and expertise on the spot with other DXers. A good DXpedition is not just a lot of sitting around listening to the radio. We've all experienced the thrill of hearing one of those "tough catches;" at a DXpedition, all can share the experience. When one DXer hears "This is Tristan radio," you can be sure that there will be some sort of verbal expression that will alert the others present that something significant is afoot. You can't help but share.

As you enjoy the advantage of a low-noise area and better antennas, you will likely put more into DXing on a DXpedition. DXers occasionally listen all night; a DXpedition could be a weekend of all-nighters in good DX surroundings with more ears nearby. (M.A.R.E. DXpedition Guide [1])

The primary aim of DXpeditions is DXing, but while DXing is traditionally a solitary activity, DXpeditions are usually a social activity as well. ODXA's "DX camps" at Longford Mills can be quite a large social event, and are more like a DX club convention held at a site suitable for DXing.

The more common DXpedition involves two to five people and may run for a long weekend, with some DXers dropping by for a night or two. In northern Europe, DXpeditions can stretch over a couple of weeks with "shifts" of DXers attending. It's pleasant if such expeditions can take place in a heated building, but they have been quite successful using campers, vans, and the occasional car or tent, not to mention the University of Manitoba DX Club's "DX bus."

Overnight DXpeditions often involve hopping into one's car with the necessary equipment and going to a good site within an hour or two's drive, tossing an antenna into the trees, hooking up the receiver to the car's 12 volt supply, and DXing for a few hours before returning home. These trips can be a good way for a DXer to check out a new site before inviting the crowd along.



Even if you're lucky enough to have a permanent location for your DXpeditions, the one thing which will guarantee success other than great conditions, is PLANNING; it's the best way to keep Murphy at bay. You will want to plan when and where to go, who to go with, what to bring, who will bring what, how to set things up, and what to listen for. DXpeditions are a kind of camping trip, so if you're a well-organized camper or traveller, planning for a DXpedition shouldn't be too onerous. Niel Wolfish offers this DXpedition equation:

"less work = more time to DX"

By planning ahead, you can make much less work for yourself, and still have some time and energy left over for DXing.

Nick Hall-Patch is shown in the photo on the left, posing with an early version of his home brew solid state DX receiver. Besides being Technical Editor of IRCA's DX Monitor, Nick is one of the more veteran DXpeditioners in the listening hobbies.

## WHERE TO GO

--someplace electrically quiet, which usually implies a place far from power lines and local transmitters, that is, from populated areas. This is the single most important point. A simple antenna and an inexpensive receiver can perform wonders in a quiet location.

--someplace with enough space and trees available to support the various antenna structures. Beverage antennas are easily erected and work very well, but should be at least 1000' long and aimed towards the area you want to hear. Is there enough room for two or three Beverages aimed at prime DX areas?

--the location should have a relatively clear horizon in the desired direction, as large hills and mountains may shadow you from the low angle DX signals you are after. Of course you may also use this shielding to reduce signals from local stations.

--be sure you are allowed to use a location, so you won't run afoul of the law. Camping or even overnight parking may not be permitted in some areas.[3]

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The first step is to check with friends for facilities they may already have available such as a weekend cabin or a home in the country. They may be willing to lend you a building or a camp site on their property. (John Bryant suggests you emphasize medium wave listening in this situation. Some people equate shortwave with "hot" and unsightly amateur radio antennas, but are tickled at the idea of you hearing Australian BCB on their property.

Check out public facilities such as parks and campgrounds. Some are equipped with cabins or similar shelters, but also come with lots of rules and regulations. Find out what they are, understand them, and let the authorities know exactly what you are going to be doing. There may be limitations on antennas. M.A.R.E. DXpeditions have been held in an ideal structure in a State Park, an insulated cabin with a wood stove and bunk beds.

Those who are willing to DX in tents or vans have more options than those who need more shelter, but consider the variation in weather likely to be encountered. Tent DXing in the snow can be done, but gives you at least two or three more worries. When a potential site is found, explore it on foot. Check each direction for obstacles to erecting antennas. Locating obstacles on a map and noting compass directions can be helpful before putting up antennas.

A.C. power at a site is a mixed blessing. It can make life simpler by supplying light, heat, receiver power, etc., but can also supply interference. See whether any A.C. power can be shut off, at least for some periods.[1]

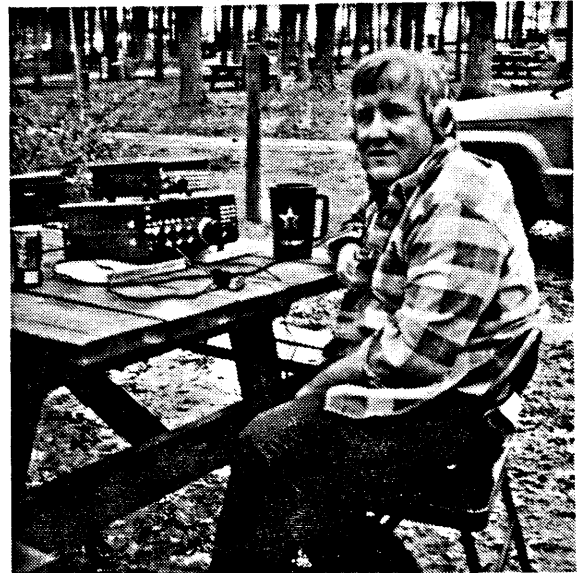
\* \* \* \* \*

Choosing an antenna site which favors best reception of DX signals still seems to be an infant art. Obviously a site by the ocean will provide DX from the other side of that ocean, but why have sites in the eastern foothills of the Rocky Mountains provided good MW DX from Australia?

Perhaps in the future there will be communication between listening sites using amateur radio which will help determine which sites have more DX potential than others. There is a lot of research waiting to be done in this field.

\* \* \* \* \*

Finally, consider a site from a camper's point of view. Will a cold, damp location, or hordes of mosquitoes assist you in logging that rare one?



Some of our southern contingent at the beginning of a 1990 Shortwave Week DXpedition to Mississippi. The left-hand photo catches the dapper Jerry Lineback in the background and Kevin Atkins in the hair. The right photo is John Tow on the same DXpedition. Kevin and Jerry wouldn't let John in the tent 'cause he brought along a scanner!

## WHEN TO GO

Don Moman suggests that your listening plans and targets should be planned according to which DX paths are likely to be open, although there is usually DX possible on some band at any given time; you've just got to find the band. Obviously it's an advantage if you're an all band DXer. Solar indices (via WWV at 18 past and WWVH at 45 past the hour) should be monitored before and during the expedition, as solar flares and storms can produce enhanced reception of certain paths. Depending on your location, certain areas may be more likely to be heard at certain times of year, but summer static levels may make listening unbearable on the lower frequencies.

Don't always assume that traditional wisdom is correct concerning DX possibilities. DX has been received on the "wrong" direction Beverage antenna, and at unexpected times and under unusual ionospheric conditions. However you may want to call a DXpedition off under certain ionospheric conditions, especially if you're concentrating on one band or area of the world. Weather conditions can also put a damper on a DXpedition, especially if you will be camping in primitive conditions. Be sure to get to a site in plenty of time to set up the desired antennas and other equipment, as these activities can become tedious in the dark. Also, there is no point in being too exhausted to DX after rushing a 2 hour site set up in half an hour!

## WHAT TO LISTEN FOR

Random tuning may bring in a good catch or two, particularly if one is not an experienced listener. And bandscans can give one a feel for what is getting through the ionosphere. "A little preparation before the DXpedition can make your listening more fruitful, especially if you are going for new stations, countries or QSLs. Make up a "hit list" of the stations you want to try for. Go ahead, don't be shy, put down the Bhutan English Service; do you have anything better to do at 0830? Make a list out by time, like a broadcast schedule. That way, you can plan your listening from hour to hour, as well as your sleep schedule. If there are several people present, there will usually be someone in action most of the time. Leave a wake-up call if you plan to sleep.

Be prepared to adjust your schedule depending on DX conditions and openings. If the medium-wave TA's are booming in, you may want to sacrifice those African SW's you were after or vice-versa. You can try for those you missed the next night."<sup>[1]</sup>

A time-organized hit list makes listening a bit easier to manage, but also consider a hit list by area. If a regular station is in at unprecedented strength, that may be the time to check the rare ones in its neighborhood, and to find out if the opening extends to other frequencies.

## WHO TO GO WITH

Other DXers, naturally. As with any social occasion, it's best to have compatible people along, but don't let this advice turn DXpeditions into closed events. New participants keep things interesting, and in the unlikely event that someone wants to turn the occasion into a beer bash, you will always know for the next time.

Be aware that the more DXers there are, the more complicated the planning for the trip becomes. Usually, two or three DXers is a reasonable trade-off between good fellowship and planning complexity. Even with a small number, it is useful to visualize the shared receiver and antenna set-ups ahead of time so that the right number and kind of antenna and power cables, connectors and adaptors are brought along. For example, antenna splitters using BNC jacks, are not much use for another DXer who uses UHF-type connectors exclusively. Murphy's Law will prevail at all times, so be ready to improvise, no matter how well prepared you are.

## ORGANIZING A DXPEDITION

Each DXpedition should have an organizer, or at least a focal point for communications and questions. All participants should have the following information:

1. A detailed map or directions to a location.
2. Specific dates and check-in and check-out times if appropriate.
3. Any special rules at the site (e.g. no alcohol, no fires)
4. Utilities and facilities available and not available.
5. Checklist of items to bring.
6. List of specific persons to bring certain items.

A sheet with all the pertinent information for all participants is recommended. Be sure to include the organizer's name, address and phone number so that contacts can be made.

The map details and directions required will depend mainly on how isolated the site is. Include a copy of the appropriate section of a road map, but also include a sketch of the access from main roads. Note distances and check points, such as "Turn right off Whistle Britches Road at the Murray for Mayor sign; go 2.5 miles east to the abandoned car; we are in the old barn on the left." Folks not sure where they are going should check out the site ahead of time, or make sure they can ride with or follow someone else. Finding the place at night may not be a simple task.

Special rules such as check out times usually apply at public facilities such as parks and even on undeveloped public property. The same sort of rules may apply on private property. Let everyone know what the rules are; following them will help your chances of using the site again. Good DXpedition sites are hard to find.

The utilities available at the site should be known, so that each participant can plan accordingly. Is there water or power on the site? What are the toilet facilities? Participants must know what to expect ahead of time.

The organizer needs to know how many will be present to plan space available, and to arrange for shared items to be brought. The number of people involved should be determined by the space available. Space to sleep, space to set up receivers, and space to put up antennas are the key factors. It will be necessary to plan antennas collectively, as there will be quite a wire jumble if each DXer puts up three or four antennas to his targets. About 20 square feet per DXer will allow room for receivers, reference books, logbooks, coffee cups and elbow room.

Certain items will be used by all participants, such as camp lanterns, camp stove, first aid kit etc. Let the organizer know what you have, so that he can assure that someone brings them. Backups for these items can be handy so bring them if you have room. If you don't bring the grill, bring the charcoal and lighter. If you don't bring a lantern, bring a cylinder etc. If you don't bring a receiver, you'll be bored all weekend.

General lighting can be provided by camp lanterns. Two or three may be required, as just one will cast shadows. Bring two cylinders per lantern, or have each person contribute a cylinder to the cause.

A propane camp stove is much easier to use than a charcoal grill as it can be used inside. A one pound propane cylinder will probably last the weekend, but have an extra available. (The long term or frequent DXpeditioner will probably want to use a larger refillable propane tank in order to save money...)

After a few times out, it may be unnecessary to tell the "veterans" what to bring, but it is to be hoped that there will always be some new blood on a DXpedition. Having a packet of basic information can save the organizer and the DXer a lot of time and some unnecessary trips back to town. This will be especially true whenever a new site is found.[1]

## WHAT TO BRING

Experienced campers already know that going through a checklist is really helpful before leaving. The DXpeditioner simply adds radio related materials to the camper's checklist. The author once took only 20 minutes between the decision to DXpedition and actually leaving the house with everything needed, but has also once left his reel of Beverage wire sitting on the basement floor. A well-known DXpeditioner (who shall remain anonymous) has left his radio at home, which must have caused his wife to wonder what he was really up to!

Though each person will have his own specialized checklist which will depend on how extensive a trip is anticipated, Figure 1 is a sample list garnered from several sources. Each category is broken down into a "common" category (e.g. each DXer brings a radio) and "extra suggestions" category (not everyone wants to bring several dozen Jolt Cola).



The photo on the right shows RCI's interview of the Canadian International DX Club on one of their more-or-less annual DXpeditions at Pembina Forks, Alberta. The interviewer on the right is Larry Shewchuk. The others from the left: Nigel Pimblett, Nick Hall-Patch and Don Moman.

# FIGURE ONE DXPEDITION CHECK LIST

## LISTENING POST

**\*\*Common\*\***

- main receiver
- extra fuses for any fused equipment
- all interconnecting antenna cables, patch cords, adaptors, power cords etc. It helps if these are neatly arranged in one case.
- headphones
- Reference books (WRTH etc.)
- Logbook or forms; pens and pencils
- tape recorder with tapes; don't forget batteries or power cable or patch cords
- clock or wristwatch with alarm

**\*\*Extra Suggestions\*\***

- backup receiver, perhaps with memories for quick checks of DX frequencies, parallels etc.
- any other backups: cables, headphones, etc.
- "DX Edge", sunrise/sunset charts or tables
- hunt lists
- hooks or tie downs for routing cables or other support (see article below)
- list of bearings or azimuthal map
- table and chair if needed

## HARDWARE

**\*\*Common\*\***

- screwdriver (multi-head)
- needle nose pliers
- wire cutters
- wire strippers or pocket knife
- extra wire
- duct, packing or other plastic tape
- medium duty work gloves
- good flashlight (it is useful if hardware can all be in one tool kit)

**\*\*Extra Suggestions\*\***

- sandpaper for getting lacquer off magnet wire
- alligator clip leads
- glue
- soldering supplies (see article below)
- shovel; other hand tools for dealing with the bush
- multimeter for basic troubleshooting
- walkie-talkies for communications while stringing antennas

## PERSONAL OR CAMPING ITEMS

**\*\*Common\*\***

(some will be unnecessary on short trips)

- food (snacks if short term; main meals if longer term. Secure food if animals are a problem, or use cans)
- drinks (bring plenty of water if none on site).
- personal sundries: towels, wash cloths, soap, tooth brush and paste, toilet paper, personal medicines, sunscreen, etc.
- plates and cups; eating utensils
- paper towels, tissue, napkins
- insect repellent
- clothing (bring a variety of light and heavy clothing; rain or snow gear as appropriate. Best to have extra clothes to compensate for being caught in a downpour)
- sleeping bag and pillow
- first aid kit
- light source, fuel, matches or igniter. Even if camp lanterns are to be the main light source, bring some candles and matches
- plastic garbage bags
- can and bottle opener
- camp stove, fuel, matches
- car emergency supplies; tools, jumper cables, water
- sturdy boots
- pots and pans

**\*\*Extra Suggestions\*\***

- cooler with ice or cold packs.
- tent, tarp, ground sheet, pegs etc.
- camera, film, flash
- heat source, fuel, matches
- orange vest or hat to keep hunters at bay

## ANTENNA MATERIALS

**\*\*Common\*\***

- antenna wire and lead-ins
- ground rods and wire
- pre-made antennas (dipoles, active, loops etc.) with lead-ins, power supplies, batteries, etc.

**\*\*Extra Suggestions\*\***

- miscellaneous antenna supports, matching transformers, splitters, antenna switches, preselectors, tuners, phasing units or other accessories and all interconnecting and power cables
- compass (for aiming antennas)
- termination resistors for Beverages
- rope or twine for pulling and guying antennas
- hammer or hatchet for ground rods and antenna support stakes
- wire winder for taking in antennas

# DXPEDITION HINTS AND KINKS

## POWER

AC power may be available, but most of us will be using 12 volts DC for our radios. The automobile cigarette lighter outlet is a favorite DC source, particularly on overnight DXpeditions. However, some of the modern receivers draw reasonable current, and an all night session may kill a weak car battery. One more reason to maintain your car and to have at least two vehicles along on any major expedition.

The DXpeditioner with masses of power hungry equipment would be well advised to invest in an auxiliary rechargeable battery. Marine/RV deep cycle batteries will handle many charge/discharge cycles, unlike an average automobile battery. "Gel-cells" are a rechargeable lead-acid battery which will not spill acid, and will take deep discharge cycles but are expensive. Unfortunately, surplus gel-cells are not always in good shape, so buyer beware.

If you have a D.C. voltmeter, check your battery occasionally throughout the DXpedition. A new, fully charged 12 volt battery should put out between 13.0 and 13.8 volts. A battery at about 12.5 volts will likely have a very limited useful life and a battery reading 12.0 volts is essentially used up and must be recharged. You should check the voltage every few hours to gauge the use rate, especially if the battery reads 12.5volts or less at the beginning.

A typical car alternator can charge a normal battery in 1 to 4 hours, depending on the battery rating and the car. Connect your battery directly to the car with jumper cables or connect it via the cigarette lighter. That way, you can make a run into town or tour the country-side while your battery is charging.

If you have never run your receiver and accessories on batteries before, make a trial run before the DXpedition to determine the battery life. For example, type C or D cells will typically last only a few hours, so you will probably need refills. Find out what to expect and bring extras. Alkaline cells last considerably longer than regular cells and are usually worth the extra cost. It may be worthwhile to use an adapter to run smaller radios off a 12 volt rechargeable DC supply, or bring along two sets of charged ni-cad rechargeable cells. Be sure that you include all your accessories in your battery life tests.[1]

## 120 VOLTS AC ON DXPEDITIONS

The stories of DXpedition dreams hashed under S9+20 electrical noise were so awful that John Bryant never even took a portable radio to a local rental outlet to check out any AC generators. In 1989 however, he purchased a small gasoline powered AC/DC generator, the Coleman PowerMaster model PM-1500, for under \$400. The generator had a grounding lug which John felt might indicate that the designers were thinking about RFI suppression. He was right; even without the PM 1500 grounded, no RFI was introduced into the receiver. Now, he often takes the Coleman generator on DXpeditions even though all his gear is DC powered. It is wonderful to have several 100 watt work lights around; you can actually see how haggard all the DXers look at 4 AM.

Why are his results so different from those reported by others? Maybe their generators used cruder technology or maybe the Coleman designers really cared about RFI.

There is some ambient engine noise using this generator, so he usually puts it at the other end of a 50' extension cord. Although it hasn't been used in bad weather yet, it probably should be protected from the elements.

So, before you buy or rent an AC generator, use a portable radio to check out its RFI performance in action. You too may be able to DXpedition using 120 volts AC.

## SOME HANDY COMPONENTS FOR DXPEDITIONING

John Bryant suggests:

A) The 2 for 1 Cigarette Lighter Converter (Radio Shack #270-1535 \$5.49) This gadget permits use of two 12 volt devices from one cigarette lighter outlet. Also available from Radio Shack is a 3 outlet cigarette lighter receptacle which is mounted in a small box and gets its power from the vehicle cigarette lighter. (RS #270-1544 \$10.49)

B) Extra Stout Hook Fastening Material (RS #64-2360). This material comes in pads of approximately 1" x 4" and is made up of the "hook" part of the Velcro fastening system. Two of these pads will mate with an audible "pop" and are extraordinarily strong. John's ICF-2010 has travelled more than 3000 miles mounted to a vertical wall in his trailer with four 1" x 1/2" pieces of this material. The material is now used in many other applications where things are fastened only semi-permanently. Super Stuff!

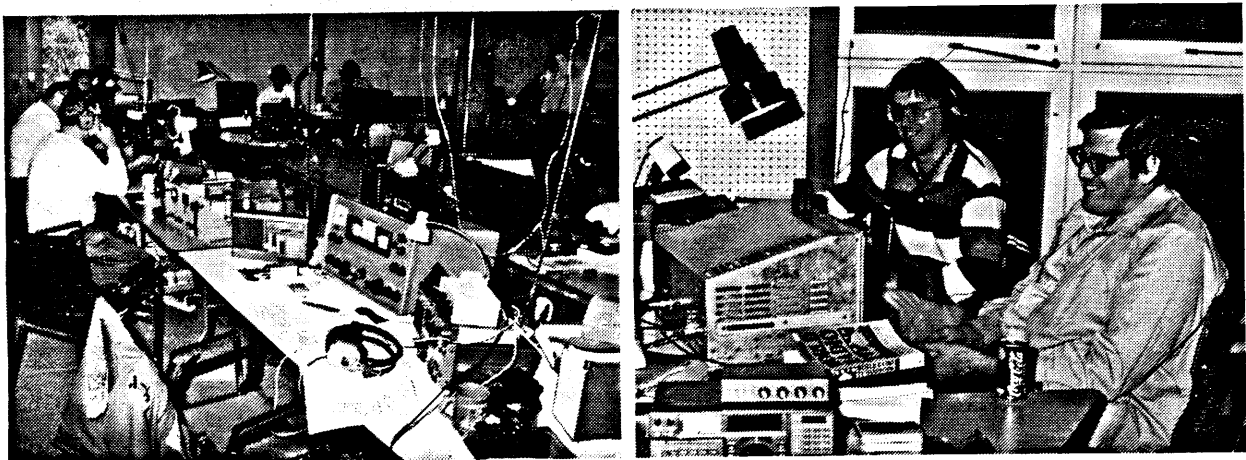
C) A replacement for "in-line" cylindrical fuses

In-line fuse holders are the dastardly spring-loaded plastic housing which snap apart to reveal a standard cylindrical glass fuse. Even Hulk Hogan would have trouble opening one of these; they are a real irritant when dealing with 12 volt fuse protected circuits. Another type of "fuse" is available apparently only at RV parts houses. It is a 20 (or 30) amp circuit breaker and is a little block of plastic about 1" x 1/2" x 1/2" with two threaded connection studs on one face. The type made by Tekonsha costs about \$3.00 each. This is a bi-metal device that opens the circuit if it is heated by overloading; when it cools, it reconnects the circuit automatically. There is no visual cue to tell whether the device was open or closed, but a circuit tester out of a 12 volt bulb and two alligator clips works fine. No more Hulk Hogan impersonations replacing in-line fuses!

## SOLDERING AIDS

Unfortunately, there are unfortunately times on a DXpedition when a soldering pencil would come in handy, but you may have been deterred by the outrageous prices of 12 volt DC soldering irons or of the small butane powered soldering torches. Recently, Radio Shack has offered a soldering pencil (#64-2105) at a mere \$5.49 complete with a cigarette lighter plug. It heats up quickly and is fine for small jobs.

For larger work, like thick wire to ground rods, haul out your propane blowtorch and fit a soldering head onto it. The head is available as an accessory for the torches, and is often supplied in a complete blowtorch kit. These are only good for larger jobs out in the open, and you have to be very careful of where the flame from the torch is playing while you're soldering.



These two photos were taken at ODXA's justly famous annual club-wide DXpedition at Longford Mills, Ontario. The left photo is a shot of just one corner of the DX "shack." Nearly a hundred receivers! The right photo shows John Fisher in the background and Cedric Marshall driving Cedric's vintage R-388 hollow state receiver.



## THE USES OF BRIGHT COLORS

If you use a lead weight to toss antennas into the tree branches, paint it with a bright color, or tie a piece of bright ribbon to the weight. If you tend to drop wrenches, screwdrivers etc., they're a lot easier to find in the shrubbery along with that lead weight if they're all brightly colored.

If you DXpedition in the woods during hunting season (and even outside the season; not everybody observes the rules) wear a bright vest or cap. These are available as safety items at hardware stores. You haven't lived until you are reeling in a wire on a foggy morning with the sound of rifles in the distance, and your vest is back home... A can of fluorescent orange spray paint is therefore a useful aid to the DXpeditioner, as presumably one could save the cost of a safety vest by spray painting an old jacket along with the tools and the lead weight. --NHP

## DXING COMFORT TIPS

"If you are alert, comfortable and well-organized, you will make the best use of your limited DXpedition time."

--Don Moman

No matter what accommodation you use for DXpedition, personal comfort is very important while DXing. That's why many of us prefer a cabin or motor home for our DXpeditions. They provide some stretching room, and they keep us warm and dry. Truck campers or camperized vans can be pleasant places from which to DX, as they have table and chairs and provide sleeping accommodation for one or two people as well.

Heating any of these DX shacks can be a problem, unless they're equipped with a proper heater which is vented to the outside. Unfortunately, by the time you've warmed up a van or tent with a portable kerosene or propane heater, you've created a fuggy, and possibly dangerous, atmosphere which will incline you to sleep rather than to DX. It does seem that the "catalytic" heaters which are fueled by propane or white gas provide good heat without fouling the atmosphere.

Of course, the intrepid winter DXer should be dressed in multiple layers of clothing. He may sit up in a sleeping bag to cut down on heating requirements, but he will still need to keep his hands warm. For vehicle DXing, warm clothing, body heat, plus occasional sessions with the car heater running may be sufficient to keep the listener comfortable on all but the coldest nights. One DXer used a small domed tent for DXing and kept himself warm with his propane lantern and sleeping bag. Now, that's efficient use of heat, as temperatures outside were 10 degrees F.

\* \* \* \* \*

Each DXer's set-up should allow for space for books and other items in addition to receivers. Antenna lead-ins should be held out of the way with cup hooks or other fasteners. Besides general lighting, a small light source at each DXer's area can help when looking up items in books or making log entries.

A chair with a back and arms is highly recommended, as you will be sitting for long periods, and a bench can quickly become uncomfortable. If you need to bring your own table, make sure that chair and table match for comfortable writing and use of equipment.[1]

\* \* \* \* \*

The above recommendations are harder to follow if you're DXing from a vehicle, though some have quite comfortable bucket seats. But getting receivers, peripheral equipment and a writing surface set up in a small vehicle with two DXers requires some improvisation. Try setting up at home first to see whether things will work out as comfortably as possible.

Sleeping accommodation is important for those of us who can't DX all the time. Tom Gavaras has DXed in a sleeping bag on a fold-out lawn chair and found it comfortable when DX was not so good and sleep beckoned, but others prefer comfortable sleeping accommodation away from the radio.

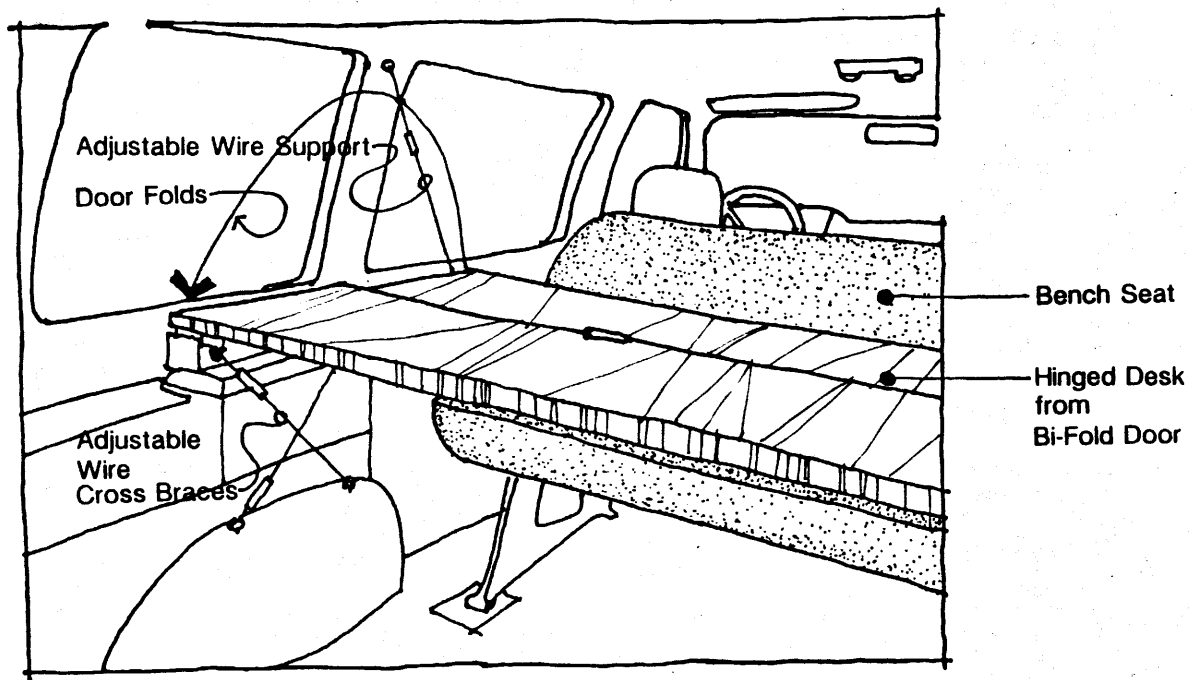
## MODIFYING THE FAMILY VAN AS A DXPEDITION SHACK

Like many DXpeditions, John Bryant has used various vehicles as portable DX shacks. Though he has listened from a sedan, a pick-up, a Chevy Blazer and a van, he's never found the right combination of:

1. a large desk for the radios and log books
2. plenty of 12v power outlets
3. a nice comfortable seat

When his last clunker gave up the ghost, he decided to factor DXpeditions into the new car selection process. His new GMC Safari Van, had four bucket seats in two rows as well as a "quick disconnect" bench seat in the rear. The two middle row bucket seats were removed and, using a power reciprocating saw, the mounts of the bench seat were moved to the "middle row" position in the van. Now, when the van is in its civilian garb, the seating is two buckets up front and a forward facing bench seat in the middle. When it does the Clark Kent/Superman routine, the bench seat is disconnected, spun to face a new removable desk in the rear and reconnected in the mounting cups, a 30 second job.

The desk was fabricated from a hinged two panel "bi-fold" closet door; each panel is 15" wide. See illustration below:



### REMOVABLE DX DESK AND REPOSITIONABLE SEAT IN GMC VAN

The desk, clad in plastic laminate, cost about \$50, counting screws, bi-fold door, laminate and hardware, and took about 8 hours to make. The seat modification cost very little, but it took about 16-20 hours to remove and re-install the mounting cups in the floor pan. Care should be taken not to cut wiring, fuel or brake lines or the frame itself when moving these brackets.

Enough cigarette lighter jacks to power up DXpedition gear were provided by using Radio Shack part #270-1539. This is a female "cigarette lighter receptacle" with an integral snap-on cover. It snaps into an easily made hole in a plastic trim panel, and looks like original equipment. Two of them were wired to the battery with 12 gauge wire and in-line fuses. Works like gangbusters and cost \$5.49 each.

The goal was to design the mod for quick conversion from car to DX shack, while not reducing the resale value of the van. I covered the holes in the carpet from the former mounting points with plastic laminated hardboard which matched the carpet and trim. All other mounting was done with small eye bolts which practically disappear in the carpet pile. John is very pleased with the conversion and recommends it to the "do it yourself/tinkerer/former hotrodder" segment of the DX community.

## ANTENNAS

A major advantage of many DXpeditions is the availability of space to erect large and/or exotic antennas. Beverage antenna DXpeditions seem to be the most common, and there is a good section on putting up Beverage antennas by John Bryant in Proceedings 1989.

DXpeditions in quiet or ocean shore locations can be quite successful using active whips, loop antennas, simple dipoles or random wires and tuners. Most wire antennas and the active whip perform better when placed as high as possible. The usual approach is to support such antennas from trees, so you might choose your site with that in mind. Getting the antenna in the tree usually involves firing a lead weight attached to a light line up into the foliage, and hauling the wire up with the line. See Proceedings 1989, p. F12.7, for tips on putting up an antenna using a slingshot.

The number of antennas you use on an expedition will depend on the time, space and quantity of wire you have available. Overnight expeditions may need only one or two wires, while longer expeditions might include many more types and orientation of antennas. At least two types of antennas (or two Beverages in different directions) is a minimum for serious DXpeditioning. If there are several DXers, they may prefer separate antennas, or they may use splitters on several different antennas (see Proceedings 1989, pp. F12.5 and 6, for a discussion of antenna splitters).

Remember that any antenna may affect other antennas. The worst case could be a vertical antenna inducing atmospheric noise to other antennas or skewing their directional patterns. So keep antennas as widely separated as possible. Multiple antennas should be fed into the receiving area using coaxial cable (and matching transformers if necessary. See Proceedings 1988, p. A3). The antenna signals may then be split, switched or otherwise modified in the receiving area. It helps to label each end of a coaxial cable with a piece of coded masking tape, so that you can identify cables within the listening area without following each to its antenna; they can become a rat's nest at times.

Don't overdo antenna erection and experimentation if you have only limited time. Remember, you want to DX as well.

Some receivers may overload when connected to a very large antenna, and an antenna tuner or attenuator might be necessary. Unfortunately, most receivers with attenuators in the front end use large increments of attenuation when you may require only a few dB at most. Step attenuators can be found in recent ARRL Handbooks. Otherwise, antenna tuners may help to avoid problems. If you plan to DXpedition frequently, you may want to look into a receiver with better signal handling capabilities in order to get the most benefit from your big antennas.



These photos show some of the Proceedings' Northwest crew. The left photo is John Bryant's "Sabbat. Camp," where he, Linda and an NRD-525 spent several months of 1990 on DXpedition. The right photo is from Shortwave Week 1990 at Grayland State Park on Washington's Pacific coast. Left to right are Bryant, David Clark, Bruce Portzer and Craig Siegenthaler.

## GROUNDS

For best listening results and for added safety, receivers, accessories, and particularly antennas should be grounded. Wind and precipitation can build up static charges on antennas to surprisingly high voltages, damaging receiver components. If you are using matching transformers or have a receiver with a tuned front end (FRG-7, SPR-4 etc.) then your antenna is running to ground through an inductance. Otherwise, connecting your antenna to ground through a 1 mH RF choke may be wise. A good ground allows electrical charges to drain off equipment.

The best ground is a 5 or 6 foot rod pounded into good wet soil, but you may have to make do with dampening dry or rocky soil. Try to provide each receiver with its own ground rod, or failing that, use one ground rod with a line to each receiver, not a line from receiver to receiver and thence to ground. Such an arrangement may cause ground loops, which can lead to problems with electrical noise generated at the site.

## FINAL POINTS:

1. send those great loggings into your club bulletins!
2. Man does not live by DX alone. If conditions are bad, you may want to try antenna experiments, or receiver comparisons. Failing that, wilderness DX sites often have attractions of their own, so enjoy the holiday aspects of DXpeditions as well.

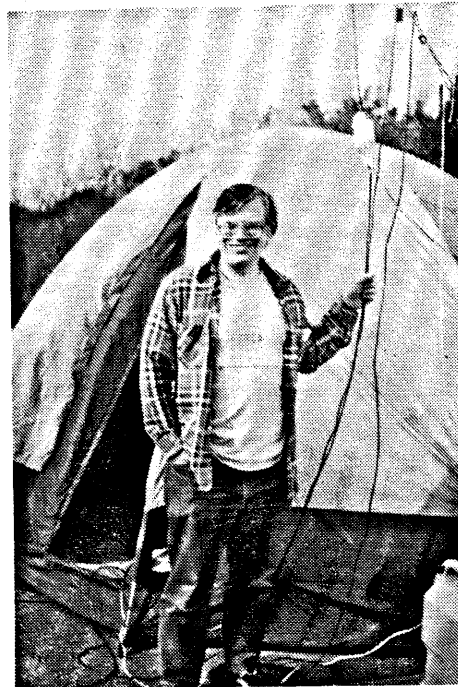
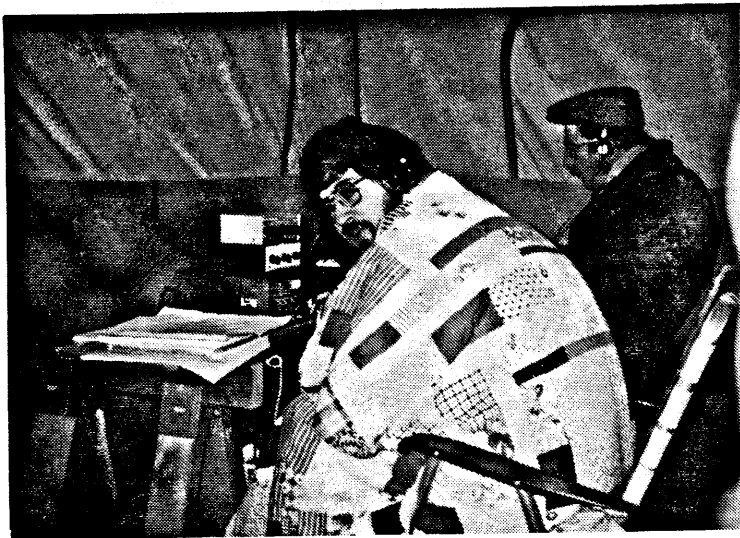
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These two photos illustrate the laid back approach of some of our Virginians on DXpedition. The most laid back of them all is Harold (Dr. DX) Cones on the left, and Chuck Rippel on the right.



This montage of vintage photos shows some of the Proceedings 1990 crew like they really are. From the upper left: Kevin Atkins has been up 36 hours at this point and is hurting; Jerry Lineback is still dapper in the back. The upper right photo catches Bruce Portzer trying for some inspiration by grasping the lead-in of over a mile of Beverage antennas at Grayland, WA. The middle photo records an earlier Grayland DXpedition by John Bryant and Guy Atkins. The lower right photo was submitted for this article by unknown parties and illustrates an innovative approach to Beverage antenna design. FT's Kirk Allen on DXpedition with Kevin Atkins in Oklahoma rounds out our Rogue's Gallery.

