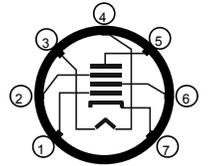


# HOLLOW STATE NEWSLETTER

*"For lovers of vacuum tube radios"*

**Issue # 53**  
**Summer 2002**



**HSN** is produced and published by and for the community of those who appreciate the fine accomplishments of the manufacturers of 'top of the line' vacuum tube communication radios and auxiliary equipment. Originally created by a group of R-390 users, **HSN** has expanded to include industrial, military, and consumer grade receivers by Collins, Hammarlund, National, Hallicrafters and others. **HSN** includes tips, modifications, alignment and restoration advice, product reviews, parts, tubes and service sources, and subscriber buy/sell information - all provided by subscribers and friends of **HSN**. See page 8 for submissions, disclaimers, reprinting, copyrights, subscriptions, reprints, etc.

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***Boatanchor Preservation***  
***Defensive Packing & Shipping***

## Editor's Foreword

Things have been lean lately in the way of contributing authors. (However, rest assured, more is in the works.) So, I decided to do my own piece in this issue -- about a critical issue. There's plenty of info out there on how best to repair, restore and preserve the good ol' tube gear in the technical sense. However, more and more trades and sales involve shipping instead of a pickup or swap meet hand-off, what with Internet contact, online auctions and so on. A radio may have survived a half century intact, then it's put in harm's way for a few days in transit, far from the watchful eyes of the buyer or the seller. Insurance offers some security – mostly false. The best insurance is "defensive packing". I have a great deal of recent experience with many inbound shipments and the benefit of the knowledge shared by countless others. So, it occurred to me – here we fret over this and that detail, refinish panels, knobs, quest after correct missing or broken parts, modify to preserve and strive to keep these gems alive, yet the biggest threat nowadays is not a shorted electrolytic – it is damage in transit. As editor, I keep an eye out for what has not already been extensively exposed, and I have not seen a publication or web site about packing. What I *do* see and hear tell of is a litany of horror stories. So, that said (wrote), here goes ...

The first question is: What is it that you are shipping – or having shipped to you? Most of the following advice applies to boatanchor class equipment – in excess of 30 lbs., more typically 60 lbs. and up, heavy, yet still delicate. The seller should anticipate proper packing before offering the unit up for sale or auction. The buyer should not hesitate to discuss packing details with the seller – before payment.

### **First Step – Pre-Packing Preparation:**

No matter how well you pack, loose or out of place components can get damaged and/or cause damage. Go over the unit with screwdrivers and wrenches. Make sure all module green or red screws are tight. Tighten the panel screws, and chassis-to-cabinet screws as needed. If necessary, find temporary replacements for any critical missing fasteners. Make sure rack handles are tight and meters are snug in their mountings. Often, meters with retaining rings, as on the SP-600's are loose, allowing the meter to rattle around in the panel. If you cannot snug up the ring, then use some tape on the inside surfaces. While you are at it, observe the structural characteristics and integrity of the unit. Check out any heavy parts or assemblies, such as power transformers. How are they fastened down? How secure are the tubes in their sockets? Often, big rectifiers such as 5U4's will be wobbly enough to bang up against nearby components or fall

out altogether as they have only 5 pins. You may find heavy transformers or chokes held down by four small screws on an aluminum chassis. There have been horror stories about these ripping loose and becoming internal missiles or sledgehammers. Look for the delicate parts on front and back panels. All this is for the “inside job” of packing securely, and avoiding “the second collision”.

### **The Inside Job:**

To get the right perspective and attitude, first make the following assumptions:

1. The package **will be** dropped – you can count on it – at least 6 inches, and maybe a foot or more as it is transferred around. People always complain about the carriers’ rough handling. Just try to move a few hundred packages a day, setting each one down gently. Not likely.
2. The package will not remain right-side up, no matter how you mark it. It will be set down hard upside down, face side down, and any which way. Conveyor belt systems cannot read “This Side Up” or “Fragile”.
3. It will be subject to over-the-road bouncing and vibration. Ever ride in the back of an 18-wheeler? Airfreight is even worse, with “expedited” handling and higher frequency vibration while airborne.

### **Depending on the unit, you should:**

1. Remove and bubble or foam wrap any loose tubes or other plug-ins. Do the same for any particularly vulnerable and expensive tubes, plus those that are susceptible to shock damage, such as ballast tubes, 26Z5W’s, 1L6’s, and others the tube tester manuals tell you not to tap.
2. Brace any heavy assemblies that look like they might be prone to rip loose. Figure on putting some cardboard or foam blocks on top of transformers, heavy chokes, etc.
3. Loosely stuff the top of the chassis, if need be, with bubble wrap. This is not necessary or particularly desirable with something like an R-390. It applies to more conventional chassis design, like SP-600’s, most Hallicrafters, etc. Do not stuff tightly and avoid any plastic dials or dial cords/cables, where you might cause damage while stuffing. The purpose of this is to catch anything that might come loose and buffer it.
4. Bubble- or paper-wrap any cables, and particularly the power plug, which tends to find its way to the front panel or some painted surface and add a scratch or two. Rubbing cables can mar paint or silk-screening.
5. Tighten all structural fasteners – like major chassis screws, panel screws, etc. For example, the eight panel screws on SP-600’s just thread into stampings in the side panels – not the greatest design, so snug ‘em up.

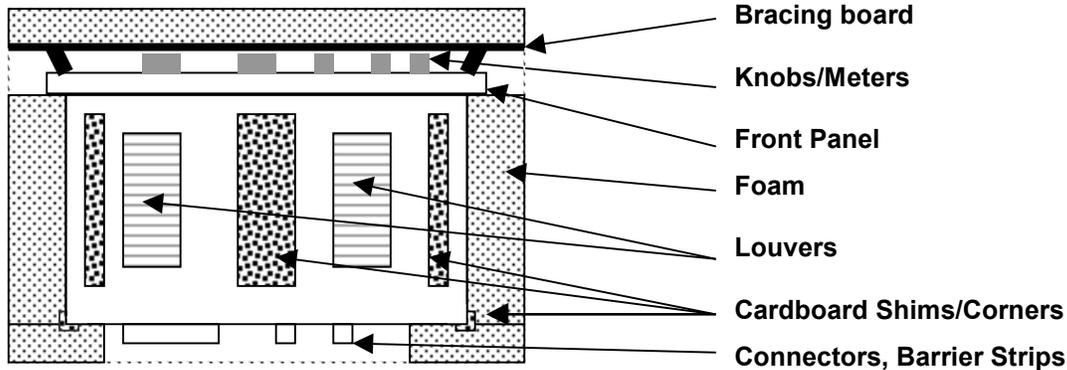
### **Outer Bracing and Prep:**

The best way to approach this is to imagine what would happen if the 80 pound beast is dropped face down from 6-12 inches (or more), and/or gets a rough ride while in that position. Or, it may be set face down with another quarter ton of packages on top of it. You do not want the full force of that weight ramming the knobs and shafts, not to mention any dials or meter glass. What jacks, connectors, terminal blocks, switch shafts and wafers and whatever else will be damaged if it gets dropped on its rear panel? So, I recommend:

1. Cover over any meter glass with cardboard – but avoid applying tape to the front panel – lap it over the top edge or something.
2. Brace the front and rear panels **at their strong points**. If the unit has sturdy front handles that stick out beyond any other part, take advantage of them. It may be sufficient to wedge some stuffing between the handles and the inner carton.
3. Do not stuff the voids tightly. This defeats the purpose of the bracing. In some cases, it is best not to stuff the voids at all.
4. Wrap the unit in plastic – a heavy-duty trash bag, pallet stretch wrap or even Saran wrap works well to keep

packing “fallout” out of the works and prevent scuffing of the packing against finished surfaces. It is very annoying to take delivery on a unit and spend an hour or two nit-picking styrofoam flakes out of every nook and cranny. Also very disconcerting when the radio smokes as it melts styrofoam lurking in the tube shields.

**Bracing example: Top View – R-388/390x Style w/Rack Handles**

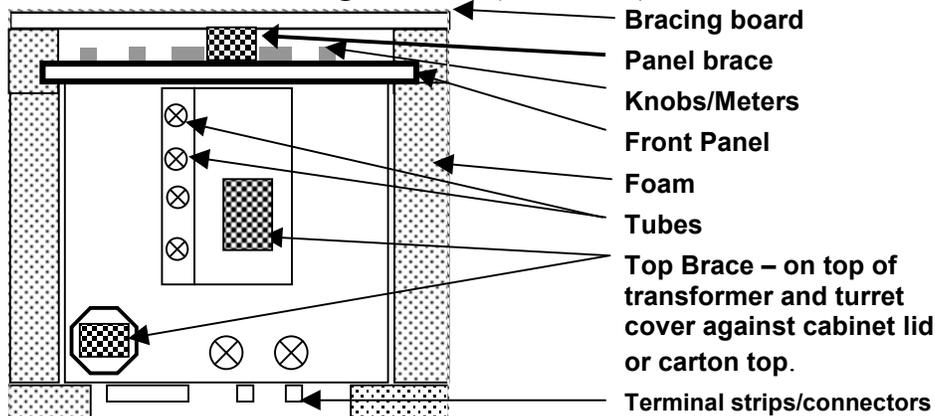


With this type of rig, take advantage of the strong handles and bridge the front panel with several layers of corrugated or a ¼ inch plywood backed with cardboard or foam. (Be sure to tighten those handles.) You can brace a strong point or two in the middle of the panel. The thin sheet metal top of the R-390’s benefits from some cardboard or foam shims to protect the louvers from crushing, if they weren’t already crushed in a previous tour of duty. In addition, sharp edges and corners should be wrapped with some corrugated cardboard to keep the radio from tearing into the inner carton or foam board.

Obviously, how you pack depends on the unit. Is it in a cabinet or “raw”? The cabinet is good and bad news. The good news is that it affords some protection. The bad news is that it needs special protection of its own, because you are shipping a lot of sheet metal. For example, inside bracing can be done against the cabinet top, i.e. by wedging foam block or cardboard between the top of heavy transformers, chokes, etc. and the inside top surface or hatch. However, the cabinet itself may be subject to dents and twisting, so needs adequate protection against those slings and arrows of outrageous fortune.

An “H” chassis or mainframe such as the R-390x’s is a hybrid situation. These are pretty sturdy, except perhaps for the corners of the front and rear panels. Top and bottom covers help, but are very thin and need some protection. A “raw” or rack-mount conventional chassis may need some bracing from top to bottom to keep it solid in place. The “horns” on an SP-600 help serve this purpose, but beware – the rear aprons of these rigs are vulnerable and bendable if not properly packed. Don’t ask me how I know this.

**Conventional Chassis, e.g. SP-600: (no handles)**



If the unit is of the conventional box chassis design and there is no bottom cover or its not in a cabinet such that the components and wiring are exposed, it should rest directly on a piece of thin plywood, masonite, or one or two layers of heavy cardboard. If the inner carton is double-wall or better, that might suffice. If not, line it with more cardboard and rest the unit directly on it.

DO NOT bubble-wrap the bottom or allow any stuffing to get in there. Small components can get damaged, and lead dress gets messed up and “rewired” with a few random shorts for good (read bad) measure. If using a bed of styrofoam, or other foam sheet, put cardboard on top of it. The sharp edges of the chassis will cut into the foam.

### Cartons, boxing and other pugilistic arts:



Ideally, a radio of more than about 35 pounds should be double boxed. The outer carton should be sturdy double-wall corrugated or better in good shape. I have even seen triple and quadruple layer corrugated, but that is rare. The bad news is that it is difficult to find good new cartons. Even the carton catalogs list only a few and you have to buy by the bundle and the larger sizes go truck freight. However, there are some sources of new cartons such as U-Haul and some UPS depots. Be careful with the U-Haul cartons. There are different types and grades. Some of the words printed on their sides will blow an insurance claim if you are foolish enough to use them. A few UPS depots also do in-place foam (“Versa-Pak” or Instapak”). I have heard of several cases where the box with in-place foam cost about \$15 for a large, heavy piece. By all means, check with your local facility to see if they offer it – a bargain, and since UPS will be doing the packing, that reduces the likelihood of difficulty with an insurance claim. Do not bother calling their 800 number about it, as the reps are apparently unaware of this packing service. I would still advise pre-boxing the unit in a close-fitting inner carton with bracing in place, but you may need to open it to show UPS when you bring it in.

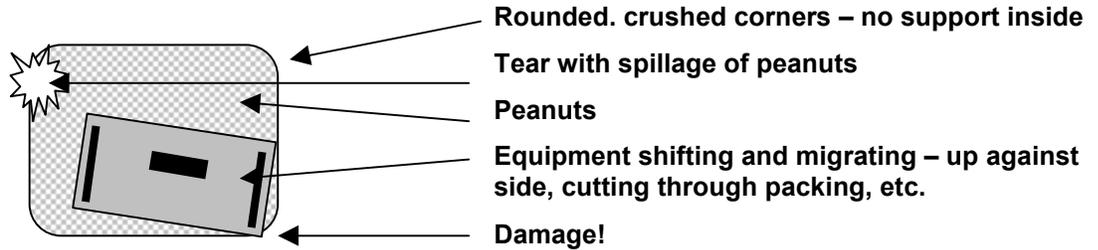
Good used cartons usually offer the best choice. With the popularity of bundled computer systems and larger monitors, there are plenty of good double-wall used cartons around. Check with a computer or appliance dealer. They are always tossing the boxes for demo units – at least they never seem to have the carton when you want to buy a demo. The inner carton should be close-fitting and allow for at bare minimum 2 inches and preferably 3 or 4 inches of sheet foam lining all around between it and the outer carton. It is often difficult to find the right sizes that fit the radio and each other. So, it is OK to cut down and modify the inner carton, starting with one that is too big in one or two directions. If you use a single-wall inner carton, line the bottom with some more cardboard, set the unit in it and place the bracing. Do not use flimsy cartons. They tear and lose their corners.

### Some thoughts on “droppage”:

Ever notice how you pick up a large heavy carton? You grab it by the corners. I always hear complaints about UPS and postal “gorillas” – and, true, there must be some (or perhaps many). However, it does not help when the shipper “cuts corners”. How do you do that? By first using a flimsy carton that’s too thin or too soft and then failing to reinforce it properly from the inside. How do you do that? Just use peanuts or other soft stuffing, or bubblewrap, or anything else that does not buttress the outer carton to the very edges. The corners almost immediately crush and the package becomes unwieldy to handle. You pick it up, feel like you are losing your grip and start looking to set it down right away – making sure it will not hit your feet. Best way to do that – drop it and step back. In addition to fostering “droppage” – from 2-3 feet instead of six inches – such packaging also is subject to “rollage”, or tumbling. These things take conveyor rides down steep inclines. A nice, crisp, square carton has a good chance of riding the conveyor unscathed. A rounded, “roly-poly” or beanbag package will tumble, and may even drop off the conveyor altogether. So, do not be surprised if your shipment takes a few extra drops from heights, if you have programmed it that way.

A special tip about many Hallicrafters: Several share the same cabinet design, with three screws that go through a raised section of the bottom of the cabinet into the rear chassis. They are often missing and, if so, the chassis can bounce and/or the front panel may bend if the radio is upside-down. Make sure they are in place and tight.

### Bad news boxing:



### A few words about foam:

Popular and easy to find is the “builder’s board” or styrofoam insulation that is available at home improvement places such as Home Depot and Lowes, as well as lumber yards. The fairly fluffy lightweight type is OK and typically comes in ¾”, 1” and 2” thicknesses. The denser type is better, but usually thinner and more costly, and you will have to build up more layers. One or both sides may be covered with a thin plastic “vapor barrier”.

The styrofoam is usually adequate, but does not have much rebound/recovery. Once it crushes, it crushes. It does provide structural integrity to the carton assembly, will absorb shock and, even if it cracks in a few places, it continues to work. However, you should protect the foam from sharp edges, like exposed panel edges, by lining with some strips of cardboard where it makes sense, such as around protruding rack panel edges.

More ideal, if you can find it, is polypropylene, polyethylene, or very dense polyurethane foam. The first one is usually light colored, made from recycled bottles, etc. It is tougher and springier than styrofoam. The polyurethane is usually dark gray, with the consistency of a sponge. The antistatic variety is usually pink. Most of it is too soft and will simply bottom out. However there are stiffer varieties – if you can find them. The original IBM AT came in an oversized box in a fitted shell of the stuff. It weighed about 55 lbs. and was the boatanchor of PC’s. This is the same material you will find in some fitted transit cases.

You may also have some odd stuff on hand from old military spec packing, such as blocks of straw-like material, honeycomb board, etc. If you’ve got it, use it. If you have trouble fitting the lining of the inner and outer boxes and need to fill voids, go with the old standard, well-crumpled newspaper. Whatever you do, forget about peanuts.

### Bubblewrap:

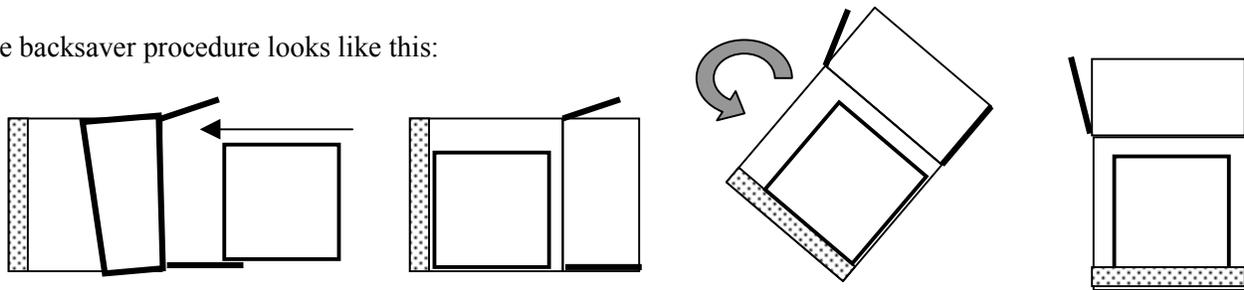
There are several sizes and grades. Most have limited application in shipping heavy boatanchors, however the small bubble style is excellent for wrapping tubes, plugs, etc. as well as lightly stuffing the tops of chassis as described above. There is a very tough large bubble style, but it is difficult to find. Some lighter weight gear can be cocooned in bubble-wrap, then placed in a foam-lined carton. I would say about 30-35 lbs. is the limit. Heavier pieces will tend to burst the bubbles, and when they pop, that’s it. If there are no sharp edges, the gear can be bubble-wrapped within the inner carton of a double box setup, however, it tends to interfere with bracing the strong points. If the package is dropped face down, the impact on knobs, shafts, glass, etc. can still be substantial.

### Preparing the outer carton and foam:

OK, you have packed the gear in the smaller box with plenty of bracing in the right places. You have a sturdy larger outer carton, some sheets of foam board and scrap cardboard. First, line the bottom with preferably three or four inches of foam board wall-to-wall. It should be cut close so it takes some force to press into place.

It is very awkward -- and potentially injurious to back and boatanchor -- to lift an 80-pound radio and lower it into a 2-foot high carton with flaps sticking out. Instead, put the outer carton on its side with flaps propped open – temporarily secured with some tape so they will not close up on you. Place the smaller carton with the radio also on its side with the bottom “aimed” at the large carton. Set it over the edge of the flap on the floor (of the large carton). Then slide it in flush with the bottom, rotate the whole business upright and center the inner carton. You may now proceed to line the side walls with foam board.

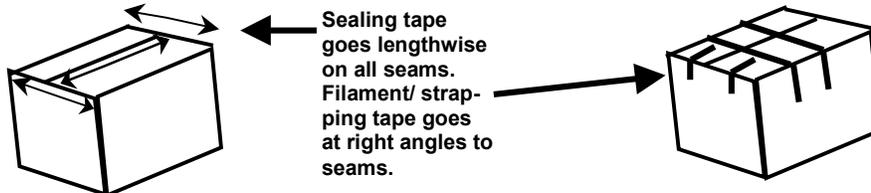
The backsaver procedure looks like this:



Line the side walls with foam, cut to be close-fitting and even with the top of the inner carton. Shim with sheets of corrugated to make a snug fit. Place the corrugated shimming sheets between the foam and the outer carton walls – this provides additional puncture/tear protection. Finish by fitting the top foam sheets, which should go corner to corner, overlapping the edges of the side foam. Fill any gap at the top with layers of cardboard. Don't spoil things by using peanuts to fill gaps and voids.

### Let's go to the tape ...

Most popular tape nowadays is clear or brown plastic sealing tape. This comes in various thicknesses, from wimpy "economy" to fairly thick. The thicker stuff is preferred, however it is important to bear in mind that this goes lengthwise over *all* the seams, not just down the center ones. It does little good crosswise. A better tape is a bit more trouble – reinforced gummed paper tape. This resists splitting, however, if you have a used carton that already has plastic tape on it, the dry gum will not stick properly, and it is usually not a good idea to try to remove the plastic tape. (Be sure to freshen up the bottom seams before packing.) If using the reinforced paper tape, be sure to moisten the dry gum adequately, without wiping the glue off. Pat with a wet sponge or use one of those applicators with the water reservoir and roller. Duct tape is another good alternative, has reinforcement and may be applied over old plastic tape.



You can supplement with filament/strapping tape – the clear plastic tape with the fiber strings running lengthwise through it giving a white or cream colored appearance. This tape goes at *right angles* to the seams and may be used to strap the whole carton. It adds a good deal of bursting strength, however be aware that there is a problem. It has a tendency to come loose on the ends, forming a tough rope tail that can catch on parcel handling equipment. Some UPS depots and other carriers might not accept a carton with the strapping tape exposed. If you use it, put some clear tape over it to prevent it from lifting. Another option is actual strapping, steel or plastic. This can be good or bad. It is very strong, but some guys will try to pick up the package by these convenient "handles". They may give way or cut into the carton and weaken it. As the carton compresses a bit, they can come loose. They are only suitable on very stiff cardboard cartons and which should be further protected by some scraps of corrugated where the straps would otherwise cut into the corners. Not a bad idea to put some clear sealing tape over the straps as well, just in case they loosen up in transit. If you have a used carton, make sure you re-do the bottom before you start. The tape on the bottom has already been through the mill once and is probably already weakened or split in spots or abraded. The manufacturer of whatever came in the box did not necessarily tape all the seams.

### Unwrapping Considerations:

When packing the gear, take a minute to consider how the guy on the receiving end is apt to unpack. If you have plastic or bubble-wrapped the unit itself, it may not be obvious as to which end is which and there is the risk it will be lifted out the wrong way, with pressure applied to glass or some other delicate part. If necessary, put a label or note

inside indicating “front panel →” or similar. Also, another risky proposition is having a too close-fitting inner carton whereby the finish on top of a cabinet can get gouged by the box cutter or knife used to open the middle seam of the carton. Write a warning in felt tip marker and/or put some additional cardboard under the top, if the fit has to be that close. Ideally, there should be about an inch or at least a half-inch spacer minimum between the top of the unit and the top of the inner carton.

### **Choice of Carrier:**

Some complain about UPS, others about the Postal Service. Some rave about FEDEX ground. My take is that more depends on the quality of the packing job than the relative safety of the major carriers. Lately, the word is that UPS is becoming more finicky about electronic goods, requiring in-place foam, original manufacturer’s packing, etc. I heard one case where the depot lady refused to insure a vintage radio altogether. I have somewhat more concern about parcel post. Large packages are delivered in the same tiny propane-powered minivans along with the letters. There is no standing headroom and heavy packages are difficult to maneuver. Also, the post office in my suburban area has no package handling gear at all. Many of the postal carriers are not big and strong enough to handle this stuff. In addition, parcel post can be awfully slow, particularly over long distances. Coast to coast can take two weeks. One package took nearly a full month from Texas to New York. There is no true, in-route tracking and they will not initiate a trace until the trail is cold. Insurance tends to cost more and none is included. While Priority Mail can be a good deal on lighter weight packages, parcel post is a bit too iffy for my preference. However, some swear by it and others have little choice with no UPS or Fedex depot nearby. Some like the services provided by long haul bus lines, however, you have to go to the depot for drop-off and pickup. Incidentally, UPS offers next day pickup in many areas, and the base rate is actually lower than “customer counter” in most cases, however there is a one stop charge of \$3 to \$5. If you can be home all day, and make out a check (they don’t take cash), it sure beats lugging the package down to the depot.

### **A word about “Mailbox” Joints:**

Prudence prohibits going into much detail here. Suffice to say, I have direct experience with 100’s of these, both franchised and independent. 99.9% of them have no ability to properly pack boatanchors. They sell large, flimsy cartons for about \$8 apiece, charge quite a bit for bubble-wrap and peanuts (often used), plus labor and they mark up the freight by anywhere from 10 to 100%.

### **Transit Cases and Crating:**

If you have a transit case that fits, by all means, consider it, however bear in mind that UPS does not particularly care for these, though they will take them, sometimes with a \$5 surcharge. Be sure to tape the clasps to protect them and discourage fiddling. The downside is that return shipping the empty case can be costly. Even though it is lightweight, you will be charged dimensional weight rates, as if it weighed 70 lbs. This is also the downside consideration for the perfect, reusable boatanchor container – when it comes to selling them empty or returning them to the shipper.

Forget about crating unless you know what you are doing. It is NOT the same as cabinet making. A poorly constructed crate will break apart and may do so in such a way as to create more damage. Then, too, the common carriers, like UPS and the postal service are not particularly equipped to handle them. Crates work best when going by truck freight, palletized or built with integral skids so that they can be moved right-side up with forklifts and pallet jacks, not hand-lifted and given a roller coaster ride on conveyor systems.

### **Some “Particulars” about other specific equipment:**

#### **“Green Radios”:**

Mobile, portable and vehicular military radios are more rugged than rack mount and table models, and it would seem that they require less in the way of packing. To a large extent, that is true. However, some have weak points. For example, an R-392 can travel well in a relatively small, strong carton stuffed with crumpled newspaper. However, GRC-106 units, like the RT-667/834 have delicate cast metal protrusions that are prone to breakage. The R-1051’s

have rack handles up front, but the connectors exposed in the back. R-174-AN/GRR-5's have sheet metal cabinets that can dent. Don't let that rugged look give you a false sense of security. Look over the design, and if in doubt, provide extra bracing and padding.

### **Hallicrafters:**

A common design feature of many Hallicrafters units is a long bandswitch that goes from front to back of the chassis. If there is any serious impact on the band change knob, it can do damage to many of the wafers. There are usually some wobbly tubes involved as well, big glass expanse on SX-62's, etc.

### **BC-312's, 342's, 348's, etc.:**

These usually pack easily and travel well. Internal construction is robust. Of course, the BC-348 is lighter, at about 40 lbs. and has a rather thin sheet metal case.

### **Unpacking and Pre-Power-up Tips:**

Some damage can occur after an otherwise safe trip. Be careful how you open the cartons. Use a sharp box cutter and slit the tape with minimum depth on the blade – just in case. Do not try to lift the inner carton out of the outer one straight up if it is a big one – too much strain. Try the reverse of my backsaver loading procedure. Watch what you are grabbing onto. If you are removing the unit from the inner wrappings and you cannot see the panel, control or connector details, cut away some plastic or edge the unit out of the carton on its side. Very annoying is a broken meter or dial glass, damaged knobs or shafts as a result of picking up the radio the wrong way. Even if the radio has been powered up recently, hold off until you give it a “close eyeball inspection”. Construction methods vary. If it has conventional point-to-point wiring, look carefully for any shorts that may have occurred due to shifting components. Make sure all the plug-ins are plugged in. I generally recommend testing all tubes after a trip. Some are prone to developing shorts from jostling. No matter how well packed, there is always vibration in transit. The shipper may not have braced the front panel well, so check the knobs to make sure they have not been pushed up against the front panel, *before* you start knob twisting. I cannot tell you how many I have found jammed against a panel, when there were no circles scribed behind them. Get out the Bristol wrenches or allen keys and back 'em off as needed.

### **Request for Contributions: \*\*\* Desperately Seeking Contributing Authors \*\*\***

If you would like to contribute an article, please contact me at [barry@hausernet.com](mailto:barry@hausernet.com) or the postal address on the masthead

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