

crossownership of AM and FM stations are allowed. Here's a summary of the markets the two companies now have in common:

Market	Cap Cities Station	ABC Station	Likely for sale
New York	WPAT 930 NJ	WABC 770	both WPAT and WABC
	WPATFM 93.1 NJ	WPLJ 95.5	both WPAT-FM and WPLJ
Los Angeles	KLAC 570	KABC 790	both KLAC and KABC
	KZLA 93.9	KLOS 95.5	both KZLA and KLOS
Chicago	--	WLS 890	WLS*
	--	WLS-FM 94.7	WLS-FM*
San Francisco	--	KGO 810	KGO*
	--	--	WJR*
Detroit	WJR 760	WRIF 101.1	both WHYT and WRIF*
	WHYT 96.3	(none.....but see below)	
Providence RI	WPRO 630	KTGS 106.1	anybody's guess
Dallas-Ft Worth	KSCS 96.3	KSRR 96.5	KSRR*
Houston	--	--	WKBW*
Buffalo NY	WKBW 1520	--	

The * indicates sale will probably be needed to comply with the radio-TV crossownership rule. (Presumably, the TV station would be kept, radio sold.) "Anybody's guess" in the "Likely for Sale" column means the two stations have about equal coverage areas so it isn't clear which will be sold. Other factors, such as how much the network's unionized employees cost, will likely be the deciding factors in which stations get the heave-ho. In the case of Providence RI, it's possible that WPRO has a primary coverage area which overlaps the coverage area of WABC 770. The FCC has allowed such overlapping conditions (same owner, same band) to exist in cases before their regional concentration-of-ownership rule was enacted. The FCC is expected to be tighter with the rule book this time and WPRO may have to be sold. Note that this doesn't show all the stations ABC and Cap Cities own, just the ones that might be in conflict. (BC and Monti)

(BC=Broadcasting, RIB=Review of International Broadcasting, MSJ=M Street Journal [published by RadioPhiles], NRC=National Radio Club DX News)

RECENTLY ANNOUNCED (and still pending) STATION SALES:

WETC 540 NC, KFRM 550 KS, WSGN 610 AL, KRKE 610 NM, WEEG 670 GA, KZEY 690 TX, KUET 710 AZ, WRON 710 GA, WOHS 730 NC, KSSS 740 CO, KVFC 740 CO, WCAS 740 MA, WMBG 740 VA, WAKY 790 KY, WJW 850 OH, WPRQ 870 TN, WPRX 880 PR, WFLN 900 PA, WTXN 910 AL, KVAH 910 SD, KIKM 910 TX, WSEV 930 TN, WESA 940 PA, KXLA 990 LA, WNUF 1000 TN, WCST 1010 WV, KTNQ 1020 CA, WWIC 1050 AL, WHGI 1050 GA, WJXY 1050 SC, KWAI 1080 HI, WSLG 1090 LA, WBOZ 1090 PR, WWWE 1100 OH, WNCM 1130 IN, KBAL 1140 TX, KJAN 1220 IA, WEZG 1220 NY, WGGR 1240 MN, WWON 1240 RI, KHOT 1250 CA, WCKM 1250 SC, KIKZ 1250 TX, WEXI 1280 FL, WFYC 1280 MI, WCLG 1300 WV, WDKD 1310 SC, KAVI 1320 CO, WCAI 1350 FL, WLLY 1350 NC, WISV 1360 WI, WYNK 1380 LA, KLIZ 1380 MN, WBBX 1380 NH, WTNL 1390 GA, WHLB 1400 MN, WDXA 1410 GA, WANK 1410 MA, KASI 1420 IA, WBSM 1420 MA, WSUH 1420 MI, WBRB 1430 MI, WBSR 1450 FL, WTHU 1450 MD, KNET 1450 TX, WPLM 1450 VA, WCIN 1480 OH, KOAW 1490 NH, WCRJ 1530 FL, WFRL 1570 IL, WKOL 1570 NY, WJFT 1590 KY, KDEX 1590 MO, WPOH 1600 FL, WRNC 1600 NC, KDAK 1600 ND.

Station sales dismissed: WDRV 550 NC, WXXR 1340 AL, WNVR 1380 CT.

Replacing the R70's PBT Filter

Gerry Thomas

As has been widely proclaimed, the ICOM R70/R71 family of communications receivers is a potentially outstanding breed. A recurring complaint about these receivers, however, centers around ICOM's choice of filter in the passband tuning (PBT) circuit when receiving in the AM mode. The R70 (and I assume, the R71/A) uses a muRata CFW455HT ceramic filter in this mode, a relatively inexpensive filter with the following specs---6kHz at -6dB, 18kHz at -50dB and a maximum stopband attenuation of 35 dB. The last figure is of particular interest in that nearby signals of even moderate strength can find their way under the skirts of this filter and produce audible (occasionally intelligible) interference. This state of affairs is in stark contrast to the outstanding performance of the FL44/A, an optional (and expensive---\$159.95) filter available for the SSB PBT circuit.

The obvious solution to the PBT-AM problem is filter substitution. Unfortunately, space limitations are such that very few high quality

filters are available which will fit and no quality filters (to my knowledge) have the same (strange) terminal lay-out as the stock CFW455HT. So, early attempts at correcting the PBT-AM problem revolved around mounting filters on the underside of the circuit board and bending filter leads to fit. This method, as well as the one whereby a filter was mounted nearby and connected to the solder points via heavily shielded cable, did not succeed because signal leakage at one point or other negated the improved specs of the more expensive filter. (Similar difficulties had been encountered in the past when trying to substitute high quality filters in certain brands of portables (i.e., Panasonic).) It became obvious that a more drastic solution was needed---a small, high quality filter would have to be found and the tracings on the circuit board reworked.

Finally, I did locate a ceramic filter of much higher quality than the stock filter, and of nearly identical size. Installation is not that difficult but is really not for the faint-hearted because new mounting holes must be drilled in the circuit board and copper tracings must be removed. Nonetheless, selectivity is improved and leakage is nil. In fact, I've modified my R70 so that the super FL44A can be used in the AM PBT mode and I can detect no difference in leakage between the FL44A and the substituted filter. Incidentally, the filter used in this mod is the muRata CFG455I with the following specs---4kHz at -6dB; 10kHz at -60dB; and a stopband attenuation of 70dB.

Before performing this mod, make sure that your warranty has expired because the procedure described below will undoubtedly terminate it.

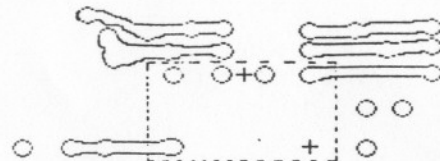
What you will need--

- (1) muRata CFG455I filter
- (1) hand or power drill
- (1) #60 drill bit
- (1) soldering iron and solder
- (1) desoldering tool or wick
- (1) Phillips head screwdriver
- (1) razor blade or X-acto knife
(a Dremel tool with a small grinding bit is much preferred, however).
- (1) length (<2") of hook-up wire

Procedure

1. Remove top cover of R70 as per manual instructions.
2. Locate on top of the circuit board the AM PBT filter. It's labeled F15 on the schematic and is at the left rear of the board.
3. Follow instructions in the manual for accessing the bottom of the main circuit board. These are the same instructions in the manual for installing the FL44 crystal filter in the SSB PBT circuit; but, obviously, you won't be installing an FL44 so don't remove the SSB filter, resistors, etc. You just want to get at the bottom of the circuit board.
4. Locate the solder points of the stock ceramic filter on the underside of the board (see illustration).

REAR OF BOARD ↑



+ = NEW HOLES TO BE DRILLED

STOCK CERAMIC FILTER TRACINGS

5. Using your desoldering tool, remove the solder from the five (5) solder points and remove the filter from the board.
6. Now, take the new CFG455I filter and bend the ground tab on the filter so that you can press the filter against the copper tracings on

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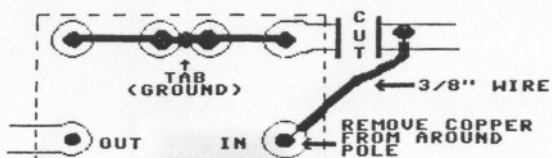
the bottom of the board and thereby create indentations to mark the places to drill the new mounting holes. You will have to drill two new holes (one for the input terminal and one to accommodate the ground tab) and you will have to enlarge the existing mounting holes (in the three remaining corners) to accommodate the slightly larger terminals of the new filter.

7. Drill/enlarge the holes as illustrated; drill from the copper tracing side of the board (to avoid ripping the tracings from the board).

8. Take your razor blade/X-acto knife or Dremel tool and carefully cut or grind away the circuit board coating that surrounds the hole which you drilled for the tab of the new filter (you want to get to bare copper):

9. Now remove the coating as well as a small circle of copper that surrounds the new hole you drilled for the input pole of the new filter. When you insert the new filter, you don't want this pole touching any of the surrounding copper.

10. Finally, cut or grind away the copper tracing as illustrated below.



CFG-455I CONNECTIONS

11. Now insert the CFG455I on the component side of the board (the space formerly occupied by the stock filter) and press down firmly so that the new filter is seated snugly against the circuit board.

12. Fold the ground poles of the new filter toward each other so that they meet at the ground tab of the filter.

13. Bend the tab against the board tightly and solder the poles and tabs to each other and to the circuit board.

14. Take a 3/8" piece of ordinary 18-20 gauge hook-up wire (I tried shielded wire and ferrite beads with no discernable improvement over the hook-up wire) and solder one end to the pole marked 'IN' on the illustration.

15. Scrape away the plastic coating on the illustrated copper tracing and solder the other end of the 3/8" wire. Route the wire away from other solder points and press against the circuit board.

16. Replace the circuit board and top cover of the R70.

You have now completed the filter substitution mod.

Turn on the R70 and notice that the travel of the PBT knob is much tighter than before. That is, intelligibility on moderately strong stations is lost at about the 9:00 and 3:00 o'clock positions (instead of 7:00 and 5:00, if at all). Most importantly, if you performed the mod correctly, you should be able to detect no difference in levels of audible splatter between the PBT 'on' and 'off' positions when tuned a few kHz away from a strong station.

If you are interested in this mod but can't find the muRata CFG455I, I'll mail you one for \$19 (ppd) or I'll perform the mod for you for \$30 (plus return shipping). Please send inquiries or questions to: Gerry Thomas, 3635 Chastain Way, Pensacola, FL 32503.

Finally, I have not tried the preceding mod on the R71/A but I assume the procedure is identical. I would be very interested in hearing from anyone who tries the mod on these later models.

73's---GT

the irca technical column

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In recent years, use of the cassette recorder for taping DX has become widespread. Reasonably good cassette machines are cheaper than reel to reel recorders and easier to use. Their main disadvantages are the limited amount of recording time dictated by the size of the cassette (though slower speed recorders exist, see below), and lengthy cassette tapes seem to be improving in quality, and the restricted input/output on some of the cheaper machines.

The cheapest cassette recorders include a playback amplifier and speaker and are intended for recording speech only, i.e. audio reproduction is not so good. Their brand name is usually something stamped on before it's put out in the drugstore or five and dime. Some do not even have an external microphone input, let alone an auxiliary audio input intended for recording from a radio, and are thus virtually useless for taping DX from a receiver. One can, at a pinch, put the machine near the radio and record direct from the speaker into the internal microphone, but that method can introduce a lot of extraneous noise, and your DX audio is probably not all that clean to start with. In *A DXer's Technical Guide* (page 49 or see IRCA reprint M-12), Gerry Thomas shows a method for connecting a receiver tape output to a microphone input of a recorder which has no auxiliary input jack. In Gerry's design, one should experiment with resistor values for best results with the equipment one is using. Besides the lack of an auxiliary input, disadvantages of the cheaper cassette recorders may include a lack of a tape counter (useful for finding IDs), lack of manual control of recording level together with a decent recording level indicator, and questionable quality control. Companies like Sony and Panasonic make simple cassette recorders with higher prices--the question here is whether you're paying for quality or for the name. Obviously, the better known companies can't afford to put out junk, but I've not had enough experience with a variety of recorders to say whether a Sony recorder will last longer and have better recording quality than an "el cheapo" or (ahem) a Realistic. However, if you're only occasionally recording from an inexpensive portable, it probably isn't worth it to pay top dollar for a recorder.

But if you have a reasonable DX receiver, you're likely to want a good recorder. For many of us, a stereo recorder would only be necessary for DX taping while you sleep (WWV time signal goes on the second channel), or for putting a voice commentary concerning the DX on the second channel. Also, many stereo recorders are decks and require an amplifier for playback. For those who are considering a good mono recorder, read the following:

The Superscope C-202LP

by Dennis Kibbe

I call the Superscope C-202LP a "DX recorder" because it has many features ideal for DXing. Here is my catalog of minimum features for DXing:

- 1) Good overall quality and ruggedness
- 2) Stable speed
- 3) Good audio
- 4) Doesn't load down receiver, robbing signal from phones or speaker
- 5) Cue and Review functions, to find ID's fast, and repeat them quickly
- 6) Auto power off in all modes
- 7) Ability to monitor incoming signal, for radios without recording output jack.

The C-202LP has all these and more! Construction is above average; large, well-placed controls; power is from a built in transformer, 120 volts only, or, 6 VDC external, 4 C batteries or a Nicad pack that will charge automatically. Input jacks include both mike and an

