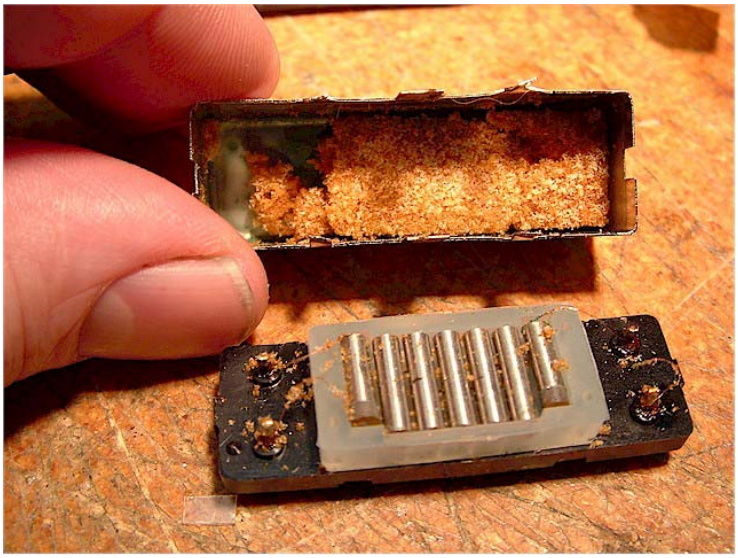
IC-730 2ND IF FILTER FAILURE

Bill Leahy, K0ZL/April 12, 2005

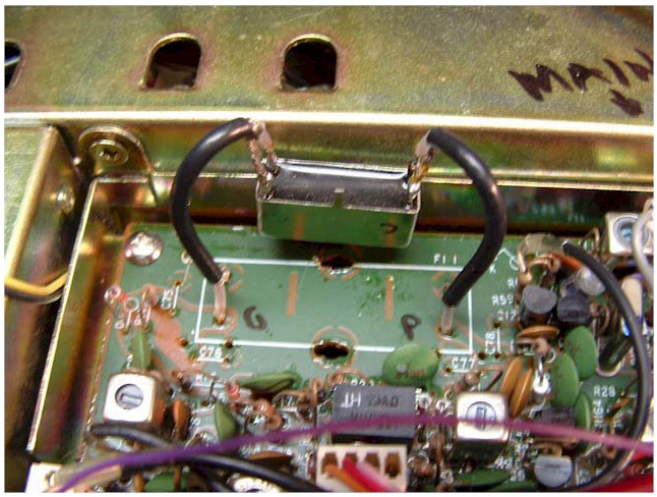
I received an IC-730 that would not transmit nor receive in SSB or CW modes. AM was OK.

I traced the problem to a bad 2nd IF mechanical filter. The filter has KE on it as the manufacturer, and the model number MF-455-11GZ.



Upon dismantling the filter, I found a row of 7 small cylinders, lined up parallel to each other, comprising the mechanical filter elements. The wires connecting the input and output elements or transducers to the I/O pins are very fine. One set had corroded off of one of the transducers at one end. There was also some foam-looking stuff that had degraded over the years and was falling apart. Evidently the foam was to hold the little resonator and transducer elements in place in a plastic form but the ensuing degradation of the foam left the filter elements with no vertical support. The end result was a failure, probably due to being bumped in shipment. It would not have taken much for this to occur; the radio itself was very well packed upon receipt.

I had a smaller, crystal filter of the correct bandwidth to put in place of the bad filter; it was a CFJ455K5 which is inexpensive compared to the Icom/Collins mechanical filters that are available.



To confirm filter failure mode and to facilitate installation of the new filter, I removed the MAIN unit; removed the old filter and fitted two pieces of

RG-174 type coax to the filter input and output connections on the PC board. I then connected the input to the output circuit of the filter, bypassing it; the radio then worked normally (with acceptable bandwidth on SSB, due to the first IF filter which was still operable). I then tack-soldered the replacement filter on the ends of the coax connections, and again checked bandwidth; SSB bandwidth was a little sharper but with much steeper "sides". This confirmed that the replacement filter was of the correct bandwidth, and was working. I then secured the smaller filter, pin side up, on the MAIN UNIT pc board with "Shoe Goop", which is like silicone sealant but a little "stickier" and faster set-up.

The conclusion is that owners of older Icom equipment that uses this particular type of filter should be wary of shipping their rig, as filter failure may occur. Be prepared to replace it, either with one of the little Kiwa CFJ455K5 or one of the other 455's that will work with this rig, perhaps from Icom or from another source. I have checked International Radio's web page, http://www.qth.com/inrad/ and they do have these filters in 3 different bandwidths at $155.00 USD.

Removal of the filter prior to shipping is not feasible, as it would interfere with any needed repairs if the filter is not installed; and, in any case, the filter itself would have to be shipped separately, subjecting it to the same stresses as if it were still in the rig!