From: **mcduffie@actcom.net**

Sent: **Friday, March 22, 2002 8:57 PM**

To: **k0to@arrl.org**

Subject: **KT34XA Bible**

In response to Joe Humet's message Tyler Stewart provided his methodology for rebuilding KT34XA's

****

Joe Humet wrote:

OK all you antenna experts out there..

This is where I'm at with this thing. I have replaced the balun (made no change) and cleaned all the joints and connections, checked and cleaned all of the cap tubes, reset all dimensions to factory spec. With it 25 feet in the air the VSWR sucks. On 20 the VSWR goes from 1.7:1 @ 14.000 to at best 1.5:1 at 14.300 and seems to be flat @ 14.277, too high in the band. On 15 it is flat at 20.603 (a bit out of the band) and the VSWR goes from 1.7:1 @ 21.000 to 2.0:1 @ 21.200 then back to 1.8:1 @ 21.300. This is the biggest problem. On 10 it is 2.6:1 @ 28.000 drops to 1.5:1 @ 28.500 and goes back up to 1.8:1 @ 29.000.

I have tried everything I can think of. I know we have some real sharp people on here and some have the same antenna. Please H E L P, before I cut this thing up and put up a g5rv (ugh).

Thanks a bunch.
Joe

****

Tyler wrote:

Since there are a few guys out there having troubles with KT34XA's at the moment, I thought I'd take the time to pass along my experience with this antenna in hopes that it may shine some light on the problems that guys are having with it.

Joe, I've rebuilt 3 of them now from used antennas in various condition, and by being very meticulous and replacing questionable parts, etc., all 3 have come out very close to the same and very close to the published specs.

First off, make sure you have the blue capacitor tube end caps and that the tubes you have do not have drain holes on the outside. The holes should be on the top side of the inner 3/8" tubes. If either of these conditions have not been met, you should purchase the "capacitor tube update kit" for an XA. It's about $45 US I think. This includes the latest dimension sheet, modification instructions, new cap tubes and blue end caps, and some new conductive grease, 10 meter element extensions (in case you have a really old one), and a couple of worm clamps for the element extensions.

Other things I'd look at replacing are the clamps that go over the cap tubes, examine the element to boom mounting blocks for cracks and replace as needed or just replace them all if you feel like ... they've recently been redesigned out of a little different material that should hold up better. Replace the no-doubt rusted balun clip. Replace the plastic standoff for the dual-driven crossover feed.

You know those black plastic spacer things they put out on the element to preserve spacing? Slide them all the way to the center and put a few wraps of electrical tape behind them so they can't move out toward the tip, where they won't support the element as well.

Although I haven't had any trouble yet, I didn't like the loose fit of the old shorting clamps all over the place, so once I cleaned them all up, I ran a #6 SS sheet metal screw through all of those joints on each element on the last one I rebuilt. Note that you DON'T want to do that into the cap tube joint. That's why I recommend replacing THOSE straps with new ones to make sure you get a tight connection without screws.

Do everything exactly as they tell you on the dimensions, and that means checking EVERYTHING, such as position of the cap tubes along the 3/8" inner tube ... when you replace the cap tubes, check to make sure they are exactly the right length as listed in the manual, and that the are positioned correctly. Mark the "top" of the inner tubing with the vent holes to make sure they are facing up after you slide the cap tubes over them. I use a fine line permanent marker pen to draw a little line on the top side of that tube right at the end, so that I can double check it later (and I've messed that up several times and had to go back and correct that!). I also mark the tube where the 2 cap tube assemblies are supposed to butt together (and note that that position is different for different elements).

When you are rebuilding the elements make sure you note which part of the element goes forward, and again when you mount them on the boom. Certain elements get mounted with the cap tubes "trailing" (towards the rear) and others go to the front.

When you make your A, B, C, And D measurements, they should be made from the OUTSIDE edge of the straps involved (i.e., the longest length you could measure from those two "points"). So take your tape measure, hang the hook on the appropriate cap tube strap and then measure to the far edge of the shorting strap that's involved. You'll have to eyeball these carefully as the inner straps aren't on the same plane. Also make sure you get them perfectly perpendicular. This is easier to see if you take the black plastic spacer and push it right up against the strap. Well, I've probably forgotten half of the other things to check, but it all boils down to complete and thorough rebuilding and at least double checking every single dimension that they give you, both in the dimension sheet and in the assembly instructions and the modification sheet.
It'll take "forever", but if you do all that, I can guarantee you the thing will play at least very close to the published specs.

That said, I think if I have to rebuild one more KIM tri-bander I think I'll go insane!! It'll be F12's next time ... if there is a next time! I'm sorry I can't provide any insight into your specific problem, but I've never had to deal with any myself. They all worked perfectly the first time....and now you know why! hi!

73, Tyler K3MM