

W7ZFB Mods to stock Elmac AF-67 updated as of 7/02
 Both my AF-67's aka AF-67 QSK have all mods here.
 The AF-67 QRO is NOT the same as the AF-67 QSK's.

Resire key jack to OPEN CKT.

R/R both charred terminal strips next to PR 6146.

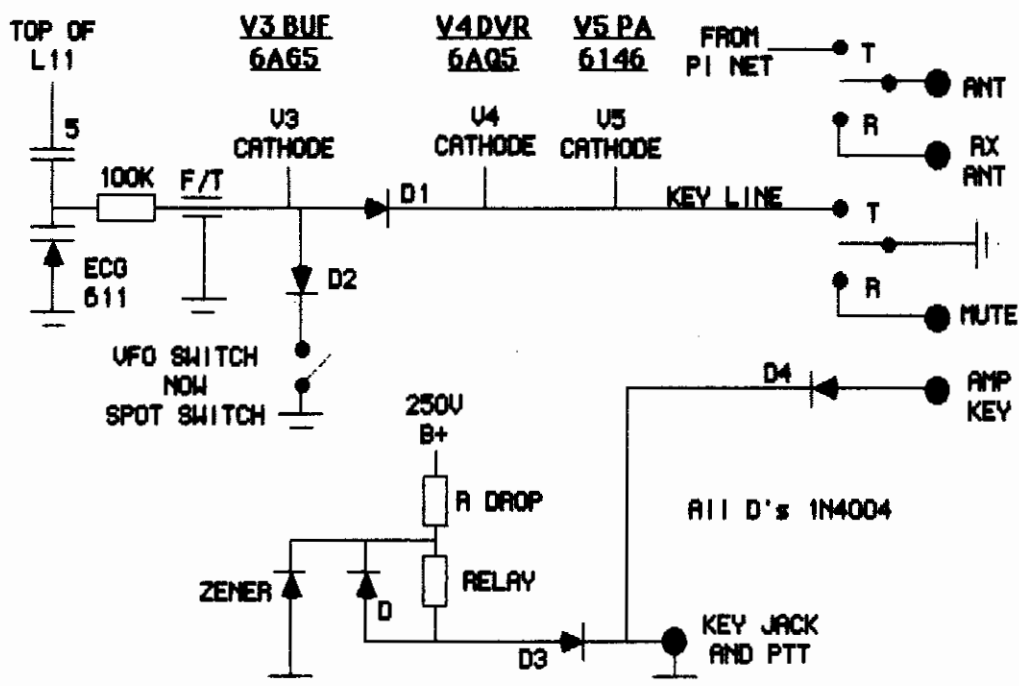
R/R R55/R89 at meter, add 1N4004 protect diode across meter.

Blank meter position now reads LV. Drop B+ thru 750K to switch.

Add new 36K/1W from B+ to 6A05 screen as too much drive.

Add QSK/SPOT/KEYING MOD to fix the following:

1. Keying 200ma tough on key and bug contacts.
2. Spot too weak.
3. No internal ant relay.
4. No QSK.
5. For stability UFO should stay on but leaks into rcvr, so add RIT.



QSK/SPOT/KEYING MOD NOTES

D1 isolates V3 so V4 and V5 won't key with SPOT SW ON.
 In spot, D2 holds cathode of V3 at same voltage as D1 does keydown, so voltage on varicap and UFO freq same in spot and keydown.
 D3/D4 isolates +V on relay and amp key lines. Set amp for +V keying, not -V.

RIT ckt left of V3 cathode moves UFO signal in Rx so no UFO feedthru to Rx.
 Values shown shift UFO about 5-10KHz on 160-80M and 15KHz+ on 40M and up.
 For more shift, use 7pF vs 5pF and/or use bigger varicap.

Wire B+ direct to UR tube so UFO on all the time.

Relay - any small 9 to 36V DPDT up to 10ma MAX.

Size R DROP = B+ - Urelay/Irelay. Urelay appears at key.

Size Zener 5-8U above Urelay for fast closure. For 12V relay, use 18U zener.
 Example: I use 20V/5ma relay, 27U zener, R DROP 43K/2W. On keydown, 27U pulses relay closed PDQ then Urelay drops quickly to around 20U.

Best - Put RegDC on UFO fil, put fil and 105UReg into UFO thru feedthru caps.

PI NET MODS

The AF-67 PI NET was designed to match a typical 36Ω mobile antenna. 160M and 15M PI NET values were especially poor for 50Ω antennas. This mod will give full output on all bands with flat 50Ω antenna.

Remove jumper from SW51B arm to 20-15M taps on SW51C.

Remove 160-80M jumper at SW51A. Add delta Cin 240pF from 160M tap to ground.

Modify L54 to 12.3uH = 23T for 80M, 12.6uH = 24T for 160M.

Remove all wires except arm on SW51C. Hardwire both sections of C58 to output.

At SW51C, add delta CoutS to ground. Try 430pF for 80M, 820pF for 160M.

AM MODS

Remove the Class B 5881s and battery. Add Zero Bias Class B 6AG7s.

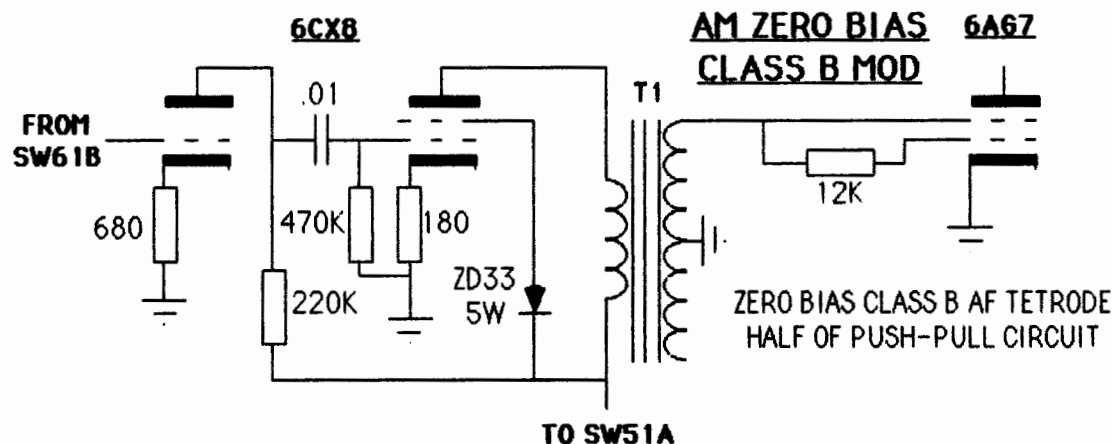
Add 0.5A fuse in PS HV line in event wimpy 6AG7 shorts internally.

Stock 12AU7 can't drive both 6AG7 grids to full output. Change to 6CX8,

hardwire all filis for 6.3U, wire as triode AF amp into pentode driver.

Clamp 6CX8 screen at about 220U with 33U/5W zener from bottom of T1 primary.

6BM8 and 6CX8 only ones I found with high power pentodes. Maybe others?



Now more than enough for 100% AM with 5145 loaded to 60W DC input.

end