

## HF transceiver

I have been a reader of your admirable magazine since the *Wireless Weekly* days, and I have made up many of the projects without serious problems. But recently I tackled your HF transceiver (October 1985) and found one that stumped me.

I wonder if there might be some errata still to come. Take Q18, for example, the voltage table indicates 9 Volts on the collector, but it derives its potential from an 8 Volt rail! Also the bias should be 0.8V, but the bias resistors are 180k and 10k. (I have changed the 180k for a 150k, did I do wrong?)

Also Q32: the table shows 5.0V on the emitter; my measurement is 0.4V (Battery 12.78V).

But this is the one the Serviceman might appreciate. The Q5 and 6 drivers and the Q7 and 8 power amplifiers have 12.78V on the collectors, and 0.82V on the bases, but the quiescent current for the drivers is only 23mA (it should be 50mA), and only 34mA for the PA (it should be 100mA). A thorough check has been made of the circuit and the transistors have been checked with an ohmmeter. No decrease in the Vcc can be noticed when the transmitter is energised. All seems to be operating normally in the receiver and in the transmitter up to and including the RF pre-drivers. (Fr. A.T., Vanimo, PGN).

• ***This design originated from Dick Smith Electronics, as you probably realise, and we can only offer limited help. You noted that Q18 derives its collector voltage from a 8V rail, although the voltage table indicates 9V. You are right, of course; this is not possible. However, on page 11 of the kit manual, you will see that the supply voltage is specified as 8.00 — 9.00V. The voltage table is based on a 9.00V supply, and not on 8.00V.***

***With regard to the values of the bias resistors for Q18, it might help to know that the 10k and 180k are not the original values as published in EA. These were 10k and 82k. From your findings, we expect that 180k is too high, and your 150k gets closer to what it should be. You could even try 120k or 100k.***

***The voltage table shows for Q32 an***

emitter voltage of 5.00V and a base voltage of 1.0V. This must be wrong: if the emitter voltage is higher than the base voltage, then the transistor would not conduct. Your measurement of 0.4V makes a lot more sense, so perhaps the original should have read 0.5V.

As far as the difference in the quiescent current of the drivers and the power amplifier is concerned, we don't think the circuit diagram is wrong. The differences in current are not likely to influence the performance of the transmitter significantly.