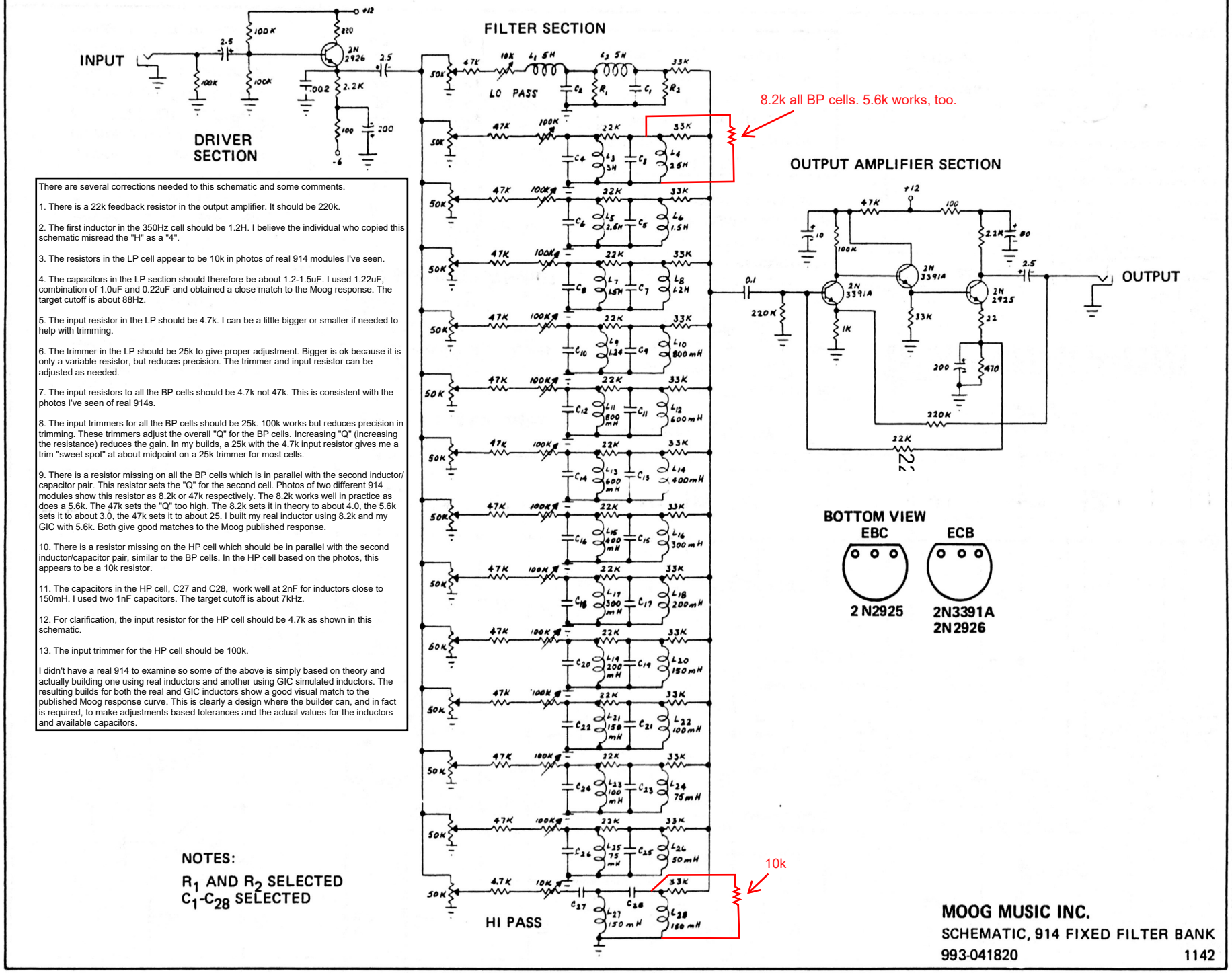


There are several corrections needed to this schematic and some comments.

1. There is a 22k feedback resistor in the output amplifier. It should be 220k.

2. The first inductor in the 350Hz cell should be 1.2H. I believe the individual who copied this schematic misread the "H" as a "4".

3. The resistors in the LP cell appear to be 10k in photos of real 914 modules I've seen.

4. The capacitors in the LP section should therefore be about 1.2-1.5uF. I used 1.22uF, combination of 1.0uF and 0.22uF and obtained a close match to the Moog response. The target cutoff is about 88Hz.

5. The input resistor in the LP should be 4.7k. I can be a little bigger or smaller if needed to help with trimming.

6. The trimmer in the LP should be 25k to give proper adjustment. Bigger is ok because it is only a variable resistor, but reduces precision. The trimmer and input resistor can be adjusted as needed.

7. The input resistors to all the BP cells should be 4.7k not 47k. This is consistent with the photos I've seen of real 914s.

8. The input trimmers for all the BP cells should be 25k. 100k works but reduces precision in trimming. These trimmers adjust the overall "Q" for the BP cells. Increasing "Q" (increasing the resistance) reduces the gain. In my builds, a 25k with the 4.7k input resistor gives me a trim "sweet spot" at about midpoint on a 25k trimmer for most cells.

9. There is a resistor missing on all the BP cells which is in parallel with the second inductor/capacitor pair. This resistor sets the "Q" for the second cell. Photos of two different 914 modules show this resistor as 8.2k or 47k respectively. The 8.2k works well in practice as does a 5.6k. The 47k sets the "Q" too high. The 8.2k sets it in theory to about 4.0, the 5.6k sets it to about 3.0, the 47k sets it to about 25. I built my real inductor using 8.2k and my GIC with 5.6k. Both give good matches to the Moog published response.

10. There is a resistor missing on the HP cell which should be in parallel with the second inductor/capacitor pair, similar to the BP cells. In the HP cell based on the photos, this appears to be a 10k resistor.

11. The capacitors in the HP cell, C27 and C28, work well at 2nF for inductors close to 150mH. I used two 1nF capacitors. The target cutoff is about 7kHz.

12. For clarification, the input resistor for the HP cell should be 4.7k as shown in this schematic.

13. The input trimmer for the HP cell should be 100k.

I didn't have a real 914 to examine so some of the above is simply based on theory and actually building one using real inductors and another using GIC simulated inductors. The resulting builds for both the real and GIC inductors show a good visual match to the published Moog response curve. This is clearly a design where the builder can, and in fact is required, to make adjustments based tolerances and the actual values for the inductors and available capacitors.

*FIGURE 20. FIXED FILTER MODEL 914*

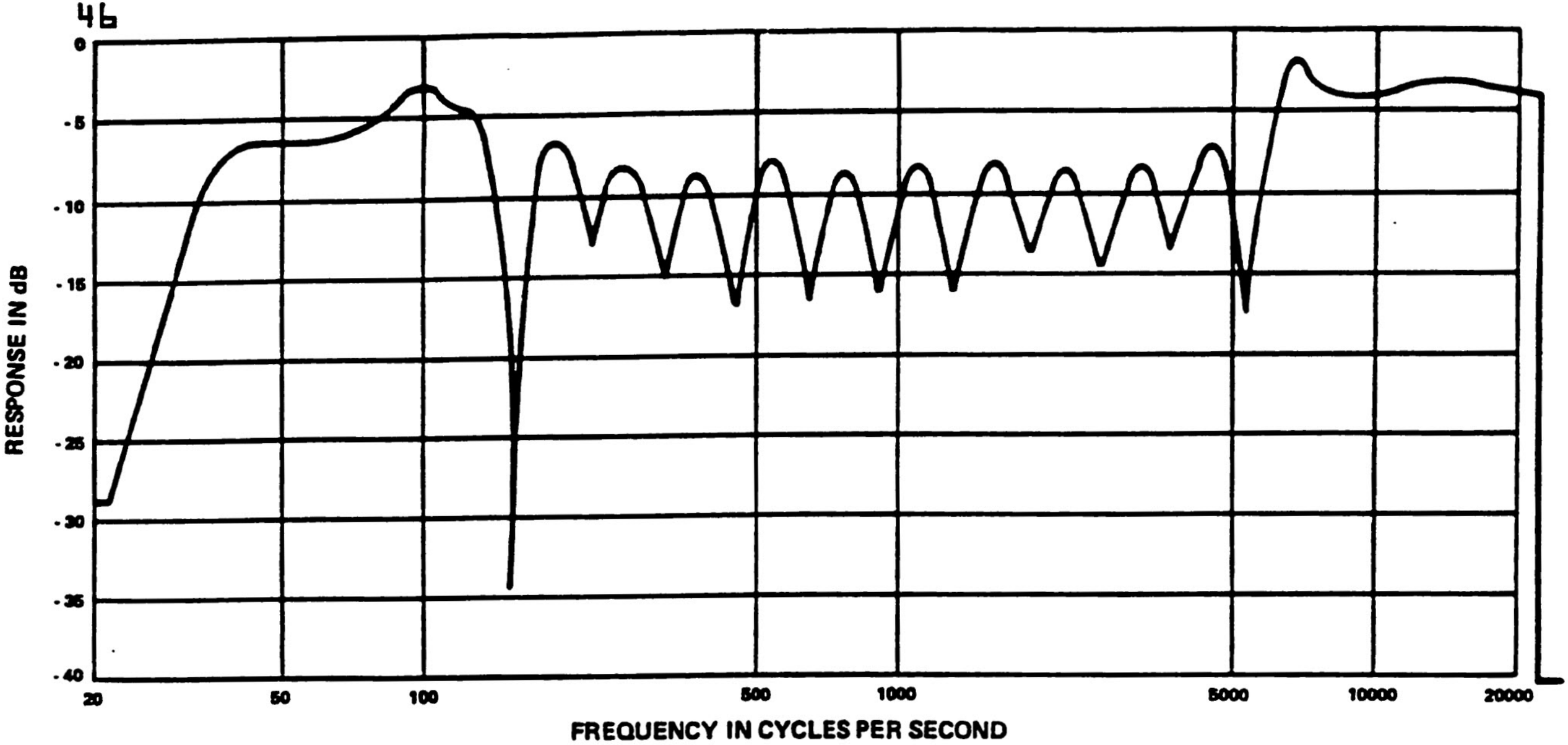


FIGURE 6 - 914 FILTER ALL POTS OPEN

SF990 Wednesday 01:15 AM 06-03-2020

File View Reset Calibrate Help

Gain Impedance

Reference CH1 1X CH2 1X

Coupling DC AC

X Axis Log Linear

Y Axis Log Linear

Define Signal Start 20 Hz Stop 20 KHz Increment % Steps 0.25

Amplitude Define 50Ω 2 VPP Offset 0 V Resolution 10 ppm Settling Time 10 ms

Analog Arts Blackboard

# Inductor Response

10.0dB 0.0dB -10.0dB -20.0dB -30.0dB -40.0dB -50.0dB -60.0dB -70.0dB -80.0dB -90.0dB

225.0° 180.0° 135.0° 90.0° 45.0° 0.0° -45.0° -90.0° -135.0° -180.0° -225.0°

100.0 Hz 1.0 KHz 10.0 KHz

Notify Faults Run History Pause Stop 20 Hz Markers F Zoom In G Zoom Out Zoom In P Zoom Out

SF990 Wednesday 01:31 AM 06-03-2020

File View Reset Calibrate Help

Gain Impedance

Reference CH1 1X CH2 1X

Coupling DC AC

X Axis Log Linear

Y Axis Log Linear

Define Signal Start 20 Hz Stop 20 KHz Increment % Steps 0.25

Amplitude Define 50Ω 2 VPP Offset 0 V Resolution 10 ppm Settling Time 10 ms

Analog Arts Blackboard

# GIC Response

10.0dB 0.0dB -10.0dB -20.0dB -30.0dB -40.0dB -50.0dB -60.0dB -70.0dB -80.0dB -90.0dB

225.0° 180.0° 135.0° 90.0° 45.0° 0.0° -45.0° -90.0° -135.0° -180.0° -225.0°

100.0 Hz 1.0 KHz 10.0 KHz

Notify Faults Run History Pause Stop 20 Hz Markers F Zoom In G Zoom Out Zoom In P Zoom Out