The Hammond 1630SEA you mentioned, is a nice example for discussion.

It is a 3500 Ohm primary to 4, 8, 16 Ohm secondary SE transformer, when one secondary tap is loaded by a resistor = secondary tap rating.

Unloaded:
Unloaded secondary, at 1kHz, the primary impedance, Z, is mostly from the 15H primary inductance.
Z = 2 x pi x f x L
Z = 2 x 3.14 x 1kHz x 15H = 94k Ohms (secondaries unloaded).
The chart says primary is 92k Ohms.
The difference of 94k and 92k is probably from the impedance of the distributed capacitance of the primary that is in parallel with the primary inductance.
Note: the chart is using W instead of writing ‘Ohms’, or using the Ohm symbol.
Of course, we do not use the transformer with it unloaded.

Loaded:
The frequency response curve is when the primary is driven with signal impedance of 3.5k (the same driving impedance as the rated primary impedance, 3.5k), and with an 8 Ohm load resistor on the 8 Ohm tap.
(low frequency roll off of -1 dB @ 28Hz)

Pentode drives the primary:
A pentode with a 15k plate impedance, rp, drives the primary inductance of 15H.
At 20Hz, 15H has an impedance of:
Z = 2 x pi x 20 x 15 = 1,885 Ohms
15k plate impedance, rp, driving 1,885 has to have global negative feedback in order to prevent a very large low frequency roll off at 20Hz.

Triode Wired Pentode:
A Triode Wired pentode has plate impedance, rp, of 1700 Ohms, that is the rp of a triode wired EL84. And that is one reason a triode wired EL84 does not have to use global negative feedback to keep the 20Hz response from rolling off severely.