

Astor 'Mickey' OZ

Supplementary Information to HRSA Circuit Book 11

Factory Variations 1933 to 1935

Introduction

Please note that further research into the vagaries revealed in many circuits of the Astor OZ has led to the identification of six differing circuits produced by the factory during the production period of the Astor 'Mickey' Model OZ, 1933 – 1935. Through research of a limited number of OZ sets, we have tried to define the sequence of the variants as we found them and have hence numbered the circuits accordingly.

At the time HRSA Circuit Book 11 was produced for the HRSA (May 2019) the research being conducted by Philip Leahy and Jim Easson was incomplete, and analysis of further sets since then has led to the discovery of further technical data which the author has decided to make available as supplementary information to members, especially those who have already purchased a copy of HRSA Book 11.

Which Circuit Likely Applies to Your Particular Set? (Pages 5 – 11)

As a preliminary check to ascertain which circuit is likely to apply to your particular Astor OZ, firstly check that it has a Power Transformer. If it has a power Transformer then it can be either of Circuit Version 2 to 6. Otherwise it is a very rare AC/DC set and is Circuit Version 1.

Next, check whether there is a wire-wound resistor encased in a red phenolic cover and attached to the back of the speaker, and which measures $\pm 550\Omega$, but forms part of the Field Coil. If the wire wound resistor is there your set is likely to be Circuit Version 3 (page 7).

Next, measure the resistance of the Field Coil. If it is $\pm 1200\Omega$ it is likely to be Circuit Version 6 (page 10); if it measures $\pm 1900\Omega$ it is likely to be Circuit Version 2 (page 6); and if it measures $\pm 1350\Omega$ it is likely to be Circuit Version 4, or Version 5 depending on the type of bias used on the 43 valve - (see both circuit 4 and Circuit 5 and check type of bias used on the 43 output valve of your set to determine the circuit version – either page 8 or page 9).

Please note that much of the above identification theory will depend also on what alterations may have been performed on your set over the last 85 years or so with repairs.

HRSA Circuit Book 11 Astor OZ Supplement

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Astor 'Mickey' OZ

Factory Variations to the OZ Cabinet 1933 to 1935

Many owners of the lovely Astor Mickey OZ radio sets from the early 'thirties would probably be amazed to know how much these sets varied over the factory production period of just under 21 months = from September 1933 to June 1935.

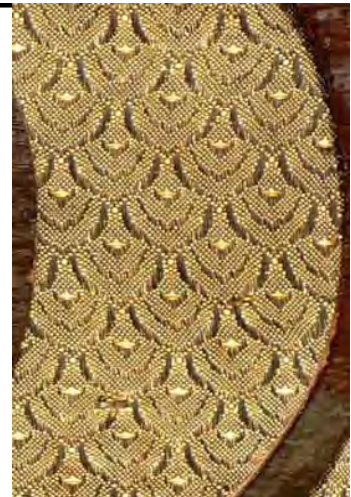
As we all now know, these sets had their origins in America at the Hazeltine Laboratories in 1933 where they were powered by 110V, and the valves were in a series string as were the first Australian Astor OZ AC/DC sets. The cabinets were uniquely Australian, manufactured in polished straight-grained Queensland maple veneer case (top and sides) with curved-top and with attractive figured Queensland maple veneer front, all set on a thick wooden base in black with an attractive moulded front and side edge. The base was undercut centrally to facilitate air flow to the slotted vents through the base. An asbestos sheet was glued to the roof of earlier cabinets over the 'hot' end of the set to protect the finish. Both sides of the cabinet have six parallel vertical slots to assist ventilation. Most sets to 1935 have a 6 mm wide black stripe around both the top front and side of the cabinet with a square finished corner and it was named the Astor 'Mickey'. In advertisements published in January 1934 it was called 'Astor Mickey Mouse'.

All OZ cabinets were fitted with an interesting and unique circular grille design consisting of three black wooden circles, to which is attached two black circular dials 38mm dia. (one each for Volume and Station selection), outlined in brass and with brass lettering and divisions. The grille piece is recessed into the back of the front panel of the cabinet. Early sets were fitted with unique 'bell' pattern cloth, mounted on a rectangular card with a speaker opening, set and stapled to the inside of the cabinet with short-leg staples. Later sets used a unique dark brown grille cloth patterned with numerous gold flecks.

In early sets, overheating became a problem within the small cabinet, due mainly to the close proximity of the rectifier and 43 output valve and the transformer clustered together at one end of the set with little space around them. In an attempt to overcome the heating issues, the factory implemented changes in the ventilation slots on the



'Flecked' Cloth



'Bell' Cloth



'Ogee' Front Edge



'Square' Front Edge

cabinet base board as well as changing some circuitry. Firstly a wide slot of 22mm was cut at the front of the cabinet to a length of 100mm, and the original three narrow slots 4.8 mm wide were reduced to two evenly spaced slots. Three narrow slots were used on early sets until about February 1934, 2 narrow and one wide slot of about 100 mm were used to about Mid 1934 when three narrow and one wide slot of from 100 to 150 mm length were used to provide increased ventilation.

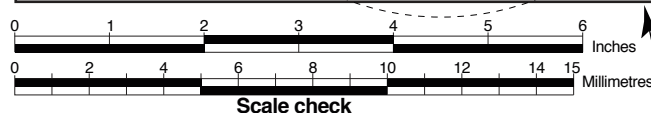
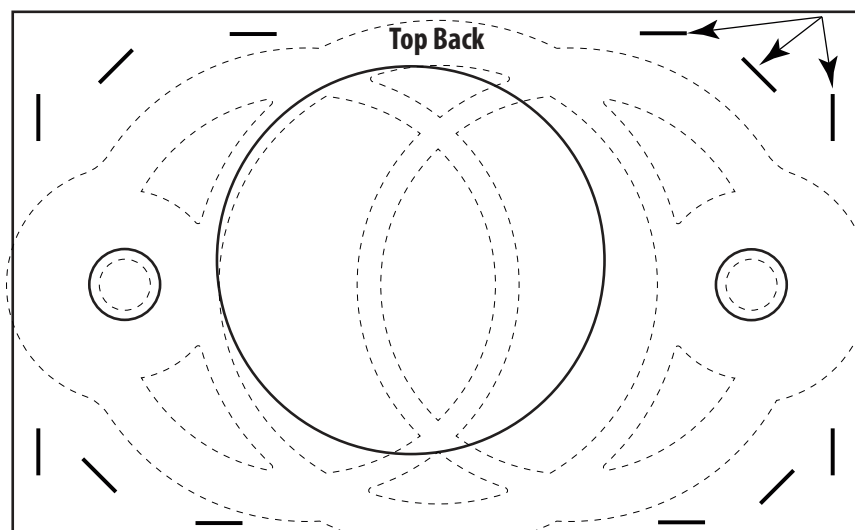
As the 'bell pattern' grille-cloth was also used on the much larger grille of the associated Astor Minnie extension speaker, and as supplies of that cloth diminished in about mid 1934, the radio cabinets were fitted with a dark brown cloth patterned and flecked with numerous gold flecks from about chassis 4000, 'Flecked' cloth, as illustrated above.

In 1935 the cabinets were fitted with a wooden heat shield to the 'hot end' of the cabinet, with a narrow air gap between the shield and cabinet. The previously square front top and side edge of the cabinet was then routed in a reverse curve 'Ogee' shape, and finished in black, as illustrated above. These cabinets with the 'Ogee' front edge were thought to contain the chassis of sets which had previously been returned to the factory because of failed componentry such as transformers and speakers, and had by then been refurbished with new components and returned to service with new cabinets. It is thought that this procedure by the factory accounts for the later style cabinets containing refurbished chassis often with earlier chassis numbers.

For those who have lost dial components, details of the original dial assembly are detailed below and can be copied when brought to full scale, as shown below. (To bring it to full scale, try enlarging the lower part of this page by photocopying at 203 per-cent, then check scale shown on the copy and adjust enlargement accordingly.)

Guide for Astor OZ Grille assembly:
 Circle Grille with metal Station scale and metal Volume scale attached is assembled into recess inside front of cabinet, next grille cloth attached to 2mm thick cardboard cloth support, stapled as shown below.

Location of short staples viewed from back and located to avoid grille piece (shown in outline).
 Short leg staples 12.4mm x 4.0mm (max^m).



Astor OZ Grille
 Cut cloth-support from stiff card 2mm thick
 Philip Leahy
 October 2020

VARIATIONS IN THE LIFE OF THE ASTOR MICKEY OZ - Fifth Draft

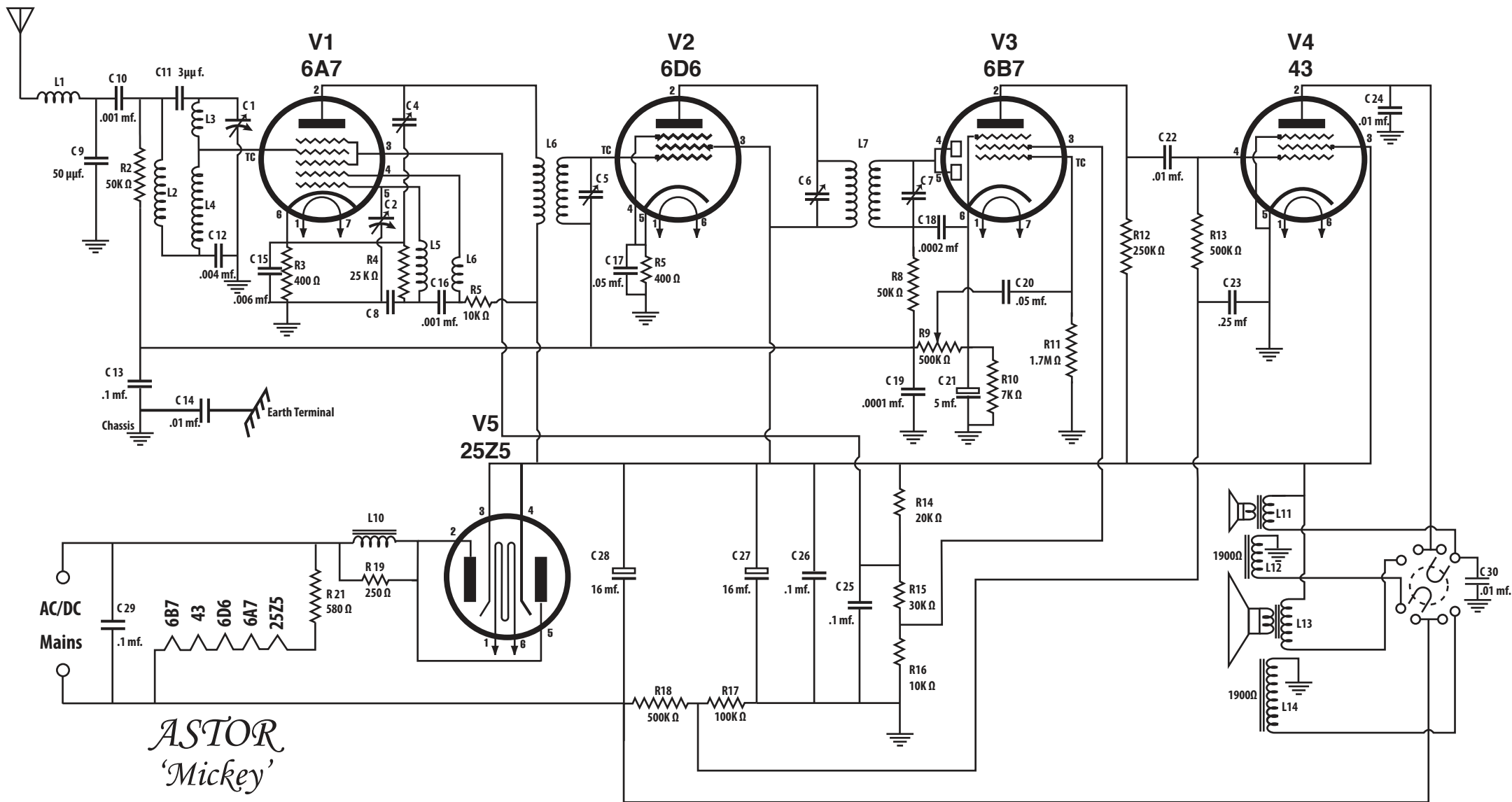
Cabinet

Month Time line	Typical Chassis Number	Nominal Chassis Numbers	Front Edge	Heat Shield	Cloth	Label	Vents						
Sep-33	1	1	Square Front Cabinet Edge	Unknown	Bell Pattern	Nil	Unknown						
Oct-33													
Nov-33	460	460											
Dec-33	461	461											
Jan-34		<4000				Asbestos Heat Shield	Fleck Pattern	Nil	3 Narrow 16.3 sq.cm.				
Feb-34													
Mar-34	3381												
Apr-34	1011												
May-34	2828, 3034										2 Narrow 1 Large 32.9 sq.cm.		
Jun-34	4572												
Jul-34	5609												
Aug-34	7522			>4000							A ARTS&P Label	2 Narrow 1 Large 34.2 sq.cm.	
Sep-34	7600 7736												
Oct-34													
Nov-34													
Dec-34		<8000											
Jan-35	5070 5669	Various	Ogee-moulded Front Cabinet Edge	Wooden Heat Shield	Fleck Pattern	B ARTS&P Label	3 Narrow 1 Large 55.7 sq.cm						
Feb-35	5717												
Mar-35	7466												
Apr-35	7721												
May-35													

VARIATIONS IN THE LIFE OF THE ASTOR MICKEY OZ - Final Draft 3

Chassis

Date of Change	Circuit Versions	Month Time line	Typical Chassis Number	Nominal Chassis Numbers	Power	Power Entry	Field	Progressive Production Modifications to Circuit	Tx Type			
07-Sep-33												
	V1	Sep-33	1	1	AC/DC		1900	Back Bias on 43 only R17/R18 500KΩ/100KΩ then 750KΩ/250KΩ4/1/35	Nil			
		Oct-33										
01-Dec-33		Nov-33	460	460								
	V2	Dec-33	461	1	AC With Transformer	2 Pin Plug	1350	Cathode bias all valves	Angled			
		Jan-34		1300								
04-Jan-34		Feb-34	1506 1695	1301								
	V3	Mar-34	2828 3496							1350 + 550 WW		Cap
		Apr-34	3034 3321	3500								
16-Apr-34		May-34	4572	3501								
	V4	Jun-34	4872	5300								Cap with Lowered secondary rectifier voltage after 17/4/34
		Jul-34	5609	5301								
01-Jul-34		Aug-34	5070									
	V5	Sep-34	5660								Back Bias on 43 R17/R18 500KΩ/750KΩ	
01-Sep-34		Oct-34										
		Nov-34		±7100								
15-Dec-34		Dec-34	7466 7490	±7101								
	V6	Jan-35	7522 7672									
		Feb-35	7721 7736									
Feb 16 1935		Mar-35	5980 6323			Grommet	1200	6B7 changed to Back bias; variable resister to 6A7 cathode; 400Ω resister added on B+ to R5; C7 from 0.006μF to 0.01μF R17/R18/R19 25KΩ/500KΩ/750KΩ	220V 240 V Splayed top corners			
		Apr-35	6556 6968									
01-Jun-35	MZ	May-35	7059	8000?								



ASTOR
'Mickey'

Model OZ

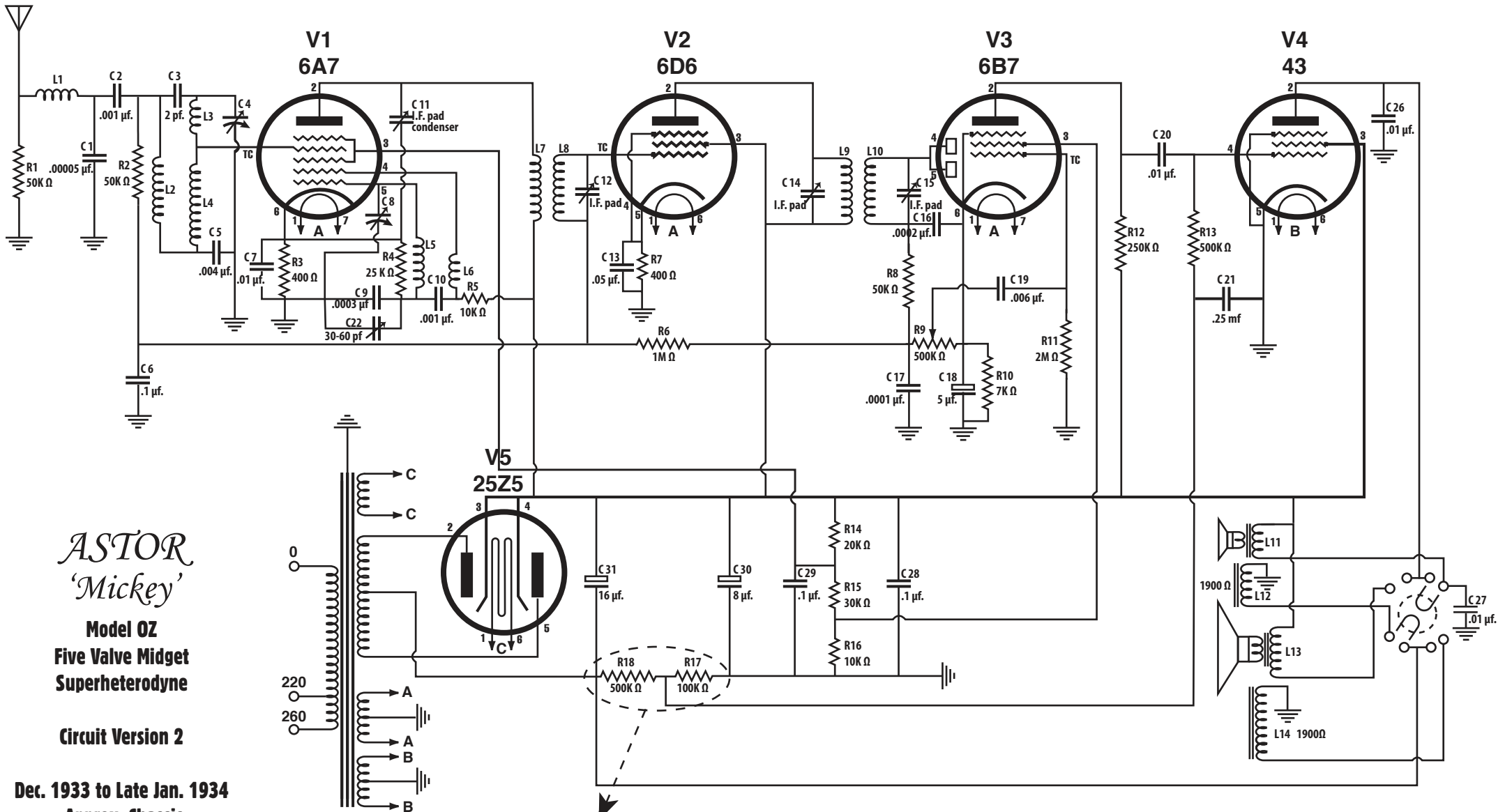
**Five Valve AC/DC Midget
Superheterodyne**

1933

Circuit Version 1 to Chassis 460

Drawn and traced by J Easson Feb 2019
from hand drawn circuit by R Burke 7/9/1933
Valid 7/9/1933 to 6/12/1933
Chassis No. 1 to Chassis No. 460

Redrawn Philip Leahy
February 2019



ASTOR
'Mickey'

Model OZ
Five Valve Midget
Superheterodyne

Circuit Version 2

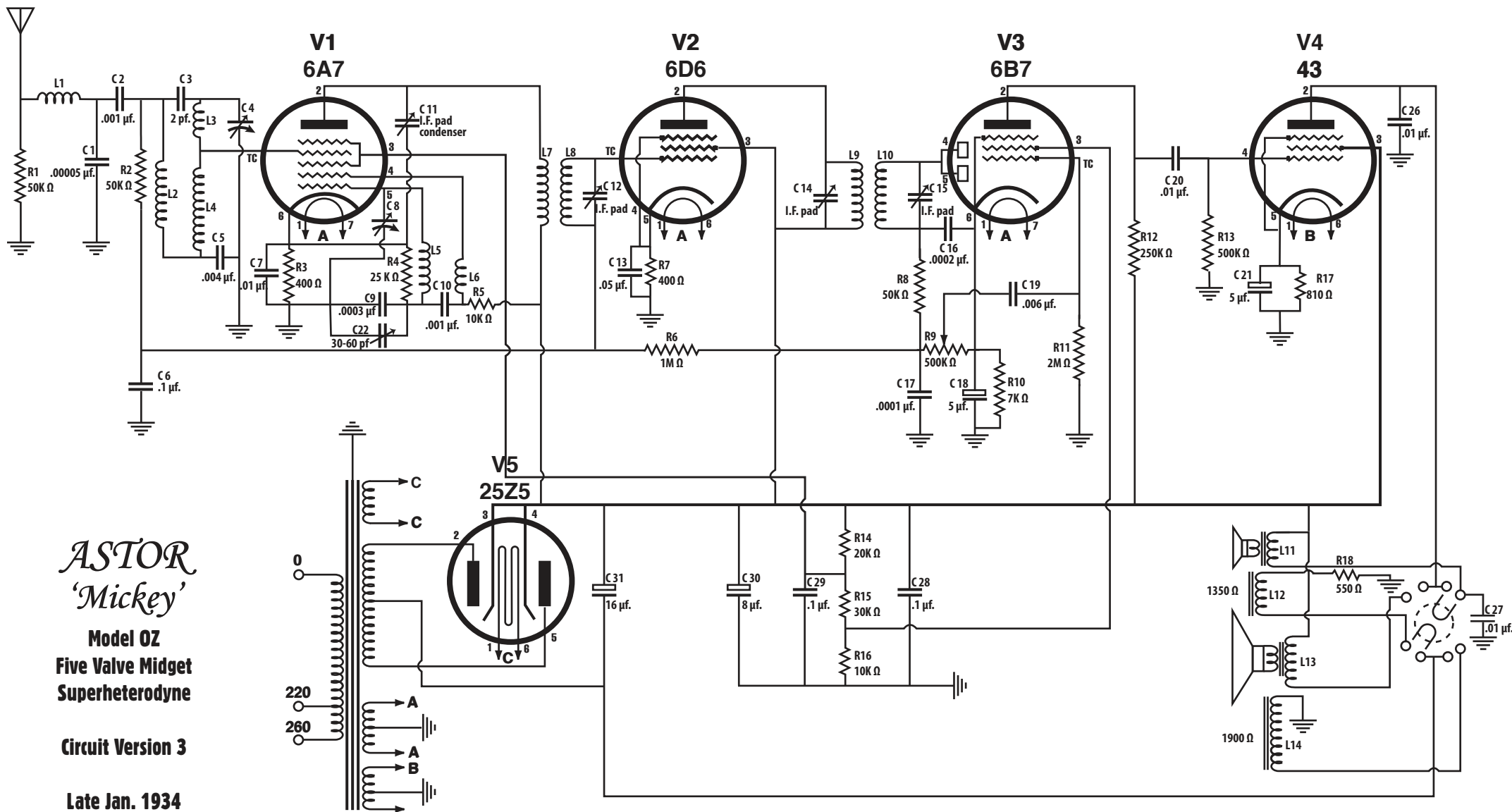
Dec. 1933 to Late Jan. 1934
Approx. Chassis
461 - ±1300

Traced J Easson

Original Drawn R Burke
6/12/1933

Variations	R18	R17
6/12/1933	500KΩ	100KΩ
4/1/1934	750KΩ	500KΩ

Redrawn Philip Leahy
October 2010
Amended October 2020



ASTOR
'Mickey'

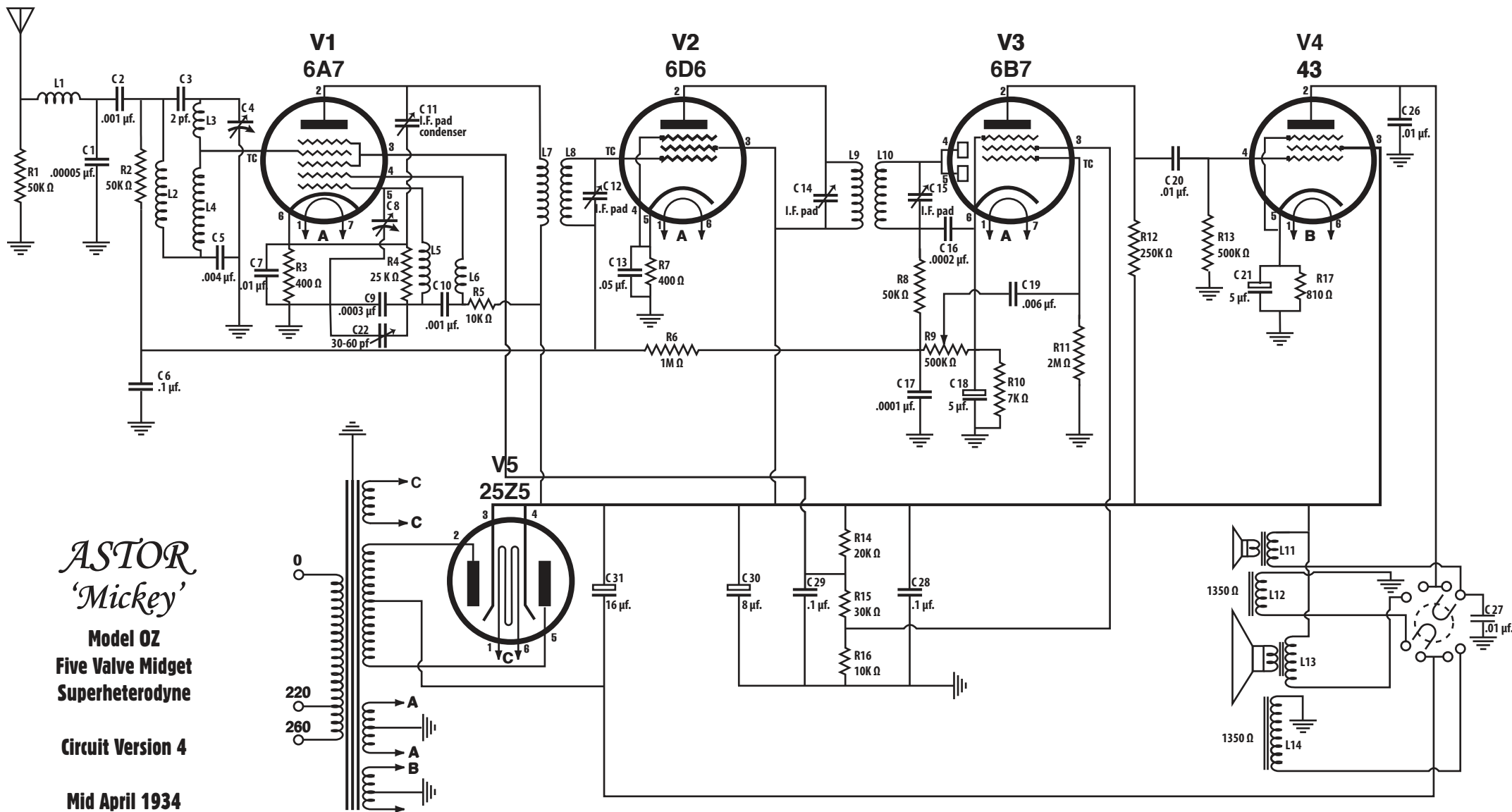
Model OZ
Five Valve Midget
Superheterodyne

Circuit Version 3

Late Jan. 1934
to Mid April 1934
Approx. Chassis
± 1300 - ± 3500

Traced J Easson

Redrawn Philip Leahy
February 1919
Amended 2020



ASTOR
'Mickey'

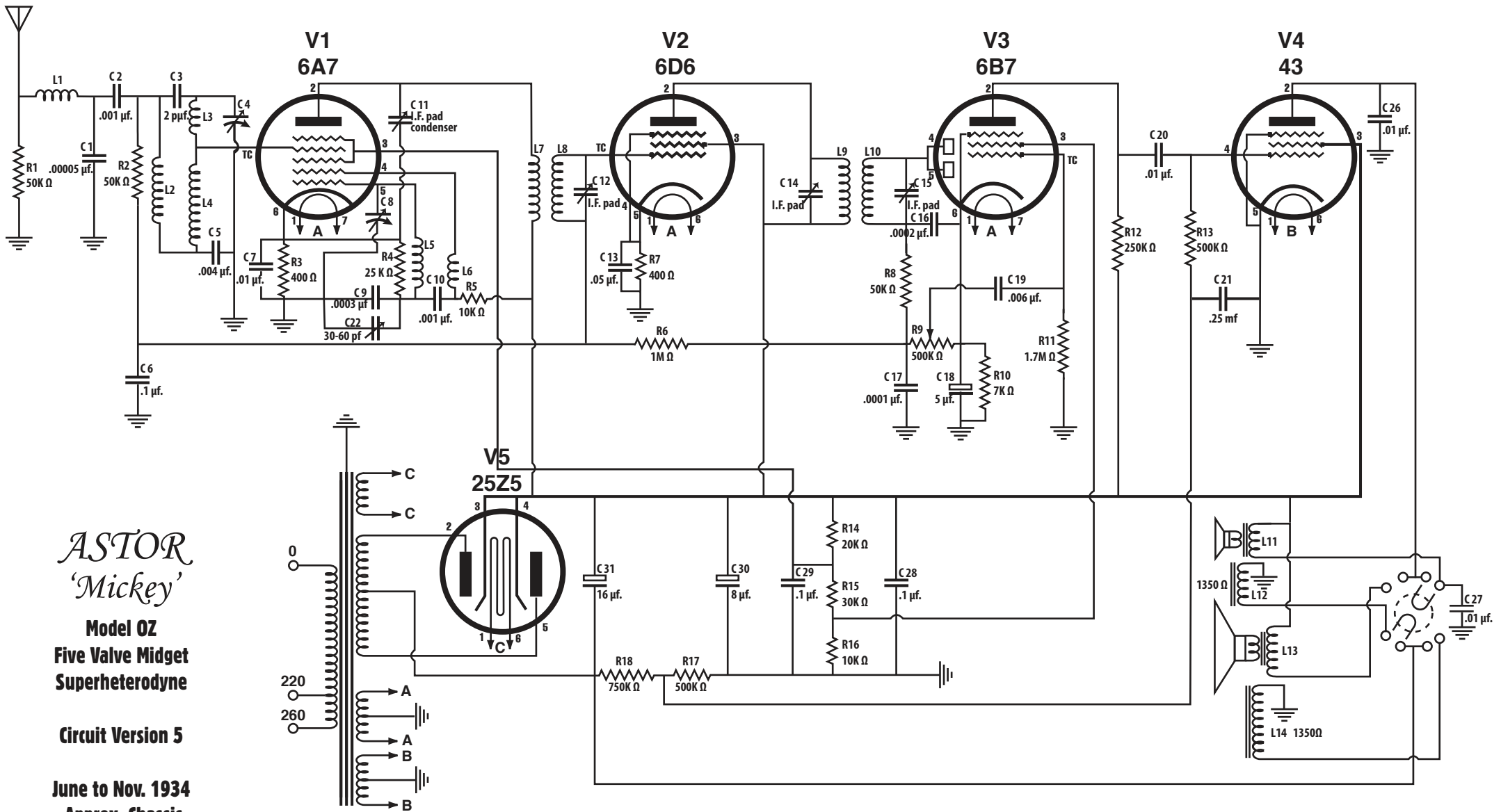
Model OZ
Five Valve Midget
Superheterodyne

Circuit Version 4

Mid April 1934
to June 1934
Approx. Chassis
± 3500 - ± 5300

Traced J Easson

Redrawn Philip Leahy
February 1919
Amended 2020



ASTOR
'Mickey'

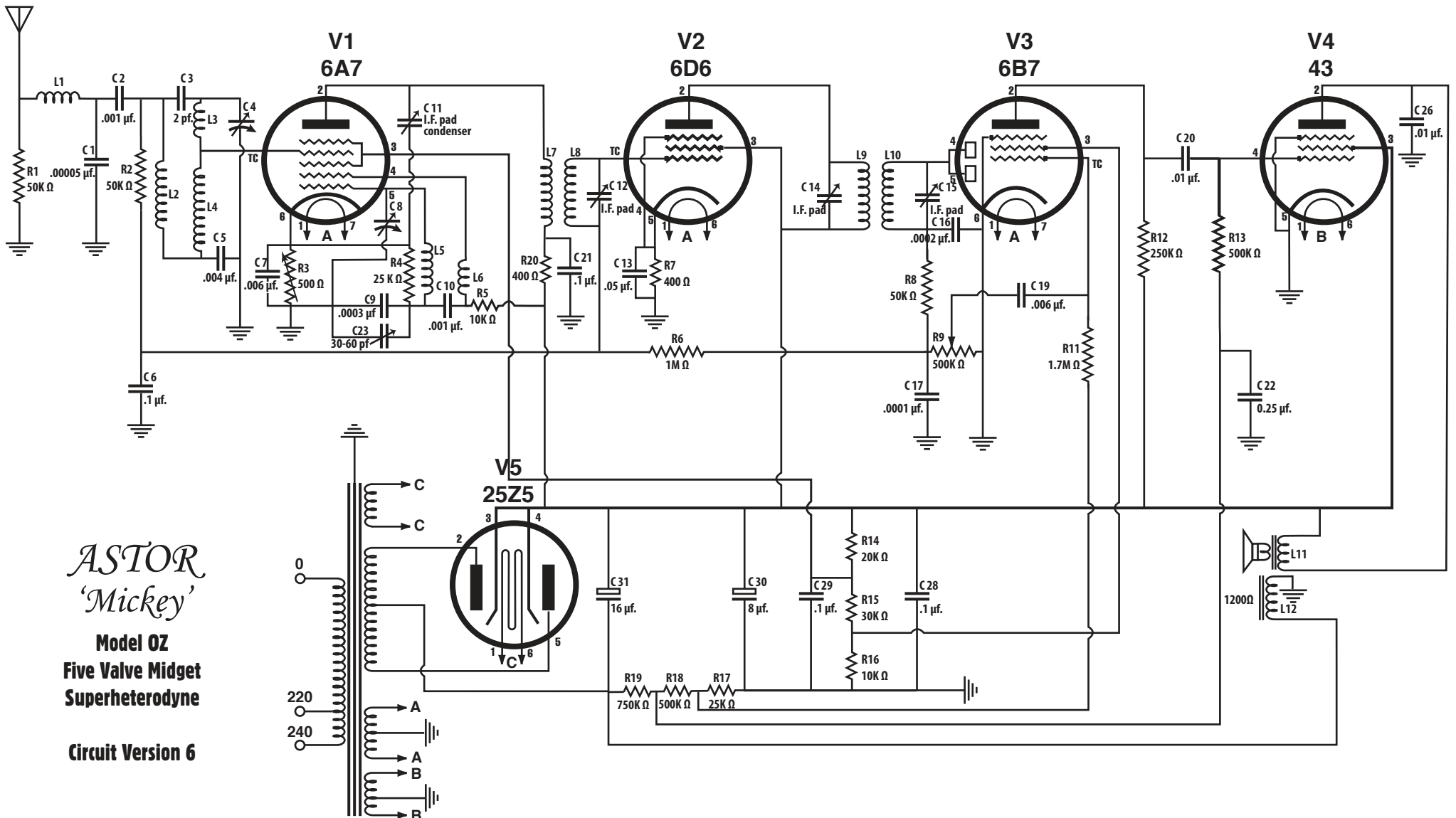
Model OZ
Five Valve Midget
Superheterodyne

Circuit Version 5

June to Nov. 1934
Approx. Chassis
± 5300 - ± 7100

Traced J Easson

Redrawn Philip Leahy
October 2010
Amended October 2020



ASTOR
'Mickey'

Model OZ
Five Valve Midget
Superheterodyne

Circuit Version 6

Dec.1934 - Feb.1935
Approx. Chassis > ±7100

Traced J Easson

Transformer *
for this circuit has
Splayed top corners

Drawn Philip Leahy
November 1918
Amended October 2020