

Mackay Radio



MARINE RADIO RECEIVER TYPE 3005-B

INSTRUCTION BOOK

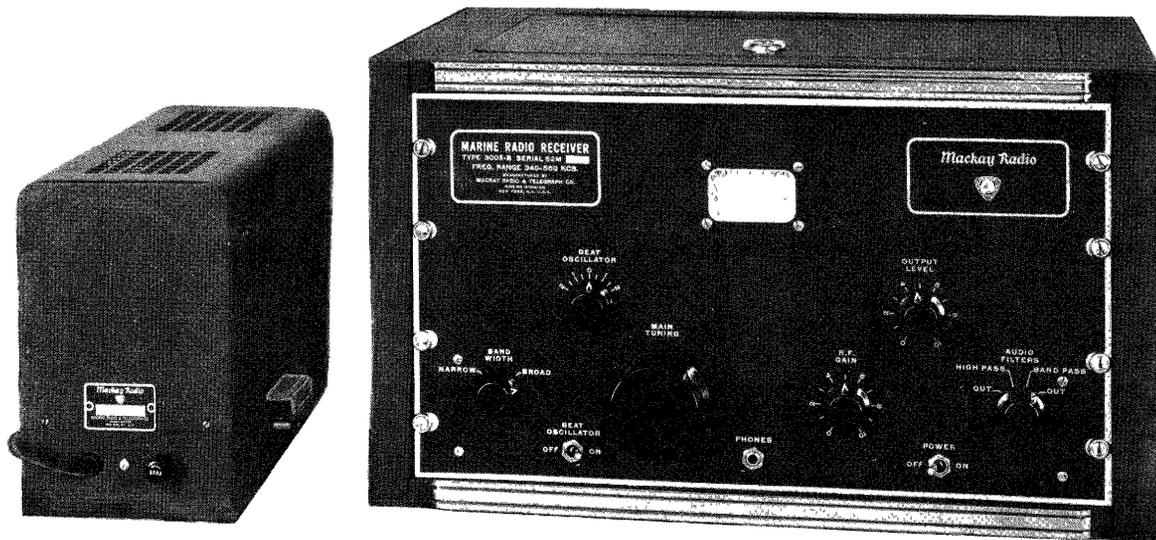
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MARINE DIVISION
MACKAY RADIO AND TELEGRAPH COMPANY
NEW YORK, N.Y., U.S.A.

MACKAY SERVICE STATIONS

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MARINE RADIO RECEIVER

TYPE 3005 - B

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SECTION I DESCRIPTION

1.1 INTRODUCTION

The Mackay Marine Radio Receiver, Type 3005-B, is a highly selective communications receiver designed to receive CW and MCW signals in the frequency range between 330 and 550 Kcs. This receiver is primarily intended for use in coastal stations.

1.2 GENERAL DESCRIPTION

The Marine Receiver consists basically of a super heterodyne circuit. It has one stage of RF, three stages of IF, a BFO, a noise clipper, an audio selectivity switch, and two stages of AF. The receiver is provided with an RF and AF gain control, variable IF selectivity, a BFO pitch control, and a switch giving three positions of AF selectivity. The output of the receiver may either be connected to an external speaker, or taken from the phone jack in the front panel.

The dial is driven by a friction clutch arrangement which makes it impossible for the calibration to be ruined by turning the dial too far. Adequate band spreading is provided by means of the ratio of the diameters of the friction drive clutch and the dial. The seven operating frequencies constantly used by coastal stations are marked off on the dial in red for the convenience of the operator.

The power requirements of this receiver are supplied by an external power supply especially designed for the receiver. If this power supply is used, all that is needed in the way of power is 120 volts of AC. If desired, it would be possible to use any other power supply having the correct voltage and current drains, with this receiver.

D. Overall Selectivity:

1. With the Band Width control in the extreme narrow position, the 4 DB Band Width is 1.5 Kc.
2. With the Band Width control in the extreme wide position, the 4 DB Band Width is 5.5 Kc.
3. With the Band Width control in the narrow position the skirt selectivity curve is so steep that the 3 & 6 DB Band Width are the same.

E. Antenna Requirements:

1. The antenna input circuit of the Marine Receiver has been designed for optimum operation when used with a loop antenna having a resistive impedance of 100 ohms.
2. However, the receiver may be used satisfactorily with a wide range of antenna types and either the balanced or unbalanced type may be used.
3. The antenna should be located as high as possible and should be clear of buildings and other obstructions for best results.
4. The location of the antenna and lead in is more important to performance than the type of antenna used. The lead in should be as short as possible and should avoid noisy routes.

F. Image Rejection:

1. The image frequency is 350 Kc. above the frequency tuned to.
2. Image to signal ratios:

<u>Frequency</u>	<u>Image Frequency</u>	<u>Image/Signal</u>
350 Kc.	700 Kc.	-100 DB
450 Kc.	800 Kc.	- 97 DB
550 Kc.	900 Kc.	- 94 DB

G. Frequency Calibration:

1. The frequency calibration is accurate to \pm 2 Kc.

C. MIXER AND LOCAL OSCILLATOR:

The output of the RF Amplifier is coupled through T2 into grid No. 5 of V2, the mixer stage. V2 utilizes a 6SA7, pentagrid type tube, to beat the incoming signal against the output of V3 the local oscillator stage. The local oscillator consists of a 6J5 triode used in a standard type Hartley oscillator with the output coupled through C34 to grid 8 of the mixer tube. Grid No. 5 of the mixer is tuned to resonate at the frequency of the incoming signal and its tuned circuit tracks with the two resonant circuits ahead of the RF amplifier and the one in the local oscillator. All four of these resonant circuits are provided with variable trimmer capacities for alignment at the high end of the band and slug tuned coils for alignment at the low end of the band. Grids #5 and 8 of the mixer are returned to ground through the same variable biasing network as Grid #4 of the RF amplifier, thereby permitting the RF gain control to control both the RF amplifier and the mixer. The cathodes of both these stages are returned directly to ground. The plate of the mixer stage goes to the primary of the primary of the first IF can which is tuned to the IF frequency of 175 Kcs.

D. IF AMPLIFIERS:

The IF Amplifier section consists of three practically identical stages, each of which utilizes a 6SK7 type of pentode in a standard type IF circuit. A 470 ohm resistor by-passed by a .01 mfd. condenser is used to supply the grid bias. It should be noted that the coupling between the primary and secondaries of the IF amplifier is variable by mechanically changing the spacing between these windings. This results in an effective means of varying the selectivity of the receiver. It should also be noted that the secondaries of the IF transformers are tapped down to improve stability. The only differ-

nal goes through both the 1,000 cps filter and the high-pass filter, but in this case the high-pass filter has no effect due to the extremely high selectivity of the 1,000 cps filter.

G. AF SECTION:

The output of the rear deck of the audio selectivity selector switch is fed to the high end of R29 which is the audio output level control. The variable arm of this control goes to grid 2 of V9, which utilizes a 6SQ7 type triode diode in a conventional resistance coupled AF voltage amplifier. The diode section of this tube is not utilized and, therefore, its plates are grounded. Grid bias is supplied by R30 and this resistor is not by-passed, to provide a certain amount of negative feed back, which results in improved audio quality. The output of this stage is coupled through C47 to grid 5 of V10 which utilizes a 6K6-GT type tetrode as an AF power output tube. This tube also utilizes negative feed back to improve the quality, and the output transformer T7 is designed to match the tube into a 500 ohm loud-speaker. The primary of this transformer is shunted with an .01 mfd. condenser to improve the audio quality at the higher audio frequencies and when headphones are used. The jack is wired so that when headphones are inserted, the speaker is automatically cut off.

SECTION IV
INSTALLATION

4.1 DESCRIPTION OF TERMINALS:

(See Fig. 5.3)

In the back of the receiver chassis, there are 2 terminal strips and a 10 prong male power receptacle.

The terminal strip on the left (looking at the back of the panel) of the power receptacle is the speaker connection and it has 2 terminals.

The terminal strip on the right of the power receptacle has 3 terminals and is the antenna connection. The terminal nearest the power plug is marked "gnd" and is connected directly to the chassis. The other 2 terminals go to the antenna input coil (the primary of T1).

4.2 CONNECTIONS TO THE TERMINALS:

To place the receiver in operation, the following steps are necessary:

- A. Remove the receiver and the power supply from the packing and place them on the operating table.
- B. Insert the output plug of the power supply into the receiver power receptacle.
- C. Connect the speaker to the speaker terminal strip.
- D. Connect the antenna to the antenna terminal strip:
 1. If a dipole antenna is used - merely connect the 2 lead wires to the 2 terminals on the right.
 2. If an unbalanced antenna is used - connect the terminal in the center of the strip, both to the shield of the lead in and the ground terminal.
 3. In either case - the ground terminal should be connected to the common ground of all the other station equipment.
- E. Place the power input plug of the power supply in a 120 volt 60 cps receptacle and turn the receiver on.

B. ELECTRICAL

Symptom	Possible Cause	Cure
Set doesn't light up with power switch in "on" position	Improper connection made	Correct connections
	Defective Dial Light	Replace Dial Light
	Fuse in power supply is blown	Replace fuse (if new fuse also blows, look for cause of the overload)
	Other trouble in receiver or power supply	Use standard troubleshooting method to find the trouble
Set lights up but no output	Defective speaker or headset	Replace speaker or headset
	If speaker terminals give no output but phones work, look for failure of phone jack switch to close with phones out	Bend switch arm so that it functions properly
	Shorted phone jack	Remove the short
	Defective tube	Check tubes and replace the defective one
	Other trouble in receiver or power supply	Use standard troubleshooting method to find the trouble
Intermittent Operation	Loose or shorting antenna	tighten antenna connection or remove the short
	Loose connection	Locate and repair
	Defective tube	Test tubes for intermittent shorts and replace the defective one

5.4 ALIGNMENT PROCEDURE:

This receiver has been carefully aligned at the factory and should require no further aligning unless tampered with or involved in some accident or major repair. If the receiver should ever require another aligning, the following steps should be taken:

A. Align the IF section as follows:

1. Turn on the receiver and allow at least 20 minutes for it to warm up.
2. Turn the BFO off and place the Band Width switch in the extreme narrow position. Remove the Local Oscillator Tube (V3).
3. Set the signal generator to a 175 Kc modulated signal & connect it to pin #5 of the Mixer Tube (V2).
4. Insert an output meter in the phone jack.
5. With an insulated aligning tool, peak the response of the IF section and then repeat this step for greater accuracy.
6. Caution - the primary tank circuit of the IF transformer (the lower adjusting screw) has +250 V. on it.

B. Align the RF Section as follows:

1. Align the IF section as above.
2. Set the signal generator to a modulated signal of 350 Kc. and apply to the antenna terminals.
3. Set the receiver dial to 350 Kc.
4. Peak the output by tuning L-2, T-2, L-1 & T-1, in that order.
5. Set the signal generator to 540 Kc.
6. Set receiver dial to 540 Kc.
7. Peak the output by tuning C-31, C-11, C5 & C2, in that order.
8. Repeat steps 2 to 7 in order until the set is tuned both at the high and the low end at the same time.
9. The receiver is then properly aligned.

- e. Check to see that the stop is firm.
 - f. Check to see that in the narrow position, the plungers are all the way out of the IF can and that as soon as the shaft is rotated toward the broad position, the plungers move in with no lag. At the maximum broad position, the cam should have the plungers as far in as it can.
 - g. Check to see that the wiring is so dressed that the operation of the cams and follower do not rub or cut it.
 - h. Check to see that the knob is all the way on and is tight.
5. Power Off-On Switch
- a. Check to see that the switch is firmly mounted so that the armature moves horizontally and so that the Off-On markings are correct.
 - b. Check to see that the terminals are not shorted to the RF cover plate.
6. Beat Oscillator Off-On Switch
- a. Check to see that the switch is firmly mounted so that the armature moves horizontally and so that the Off-On markings are correct.
7. Beat Oscillator Control
- a. Check to see that the coupling is tight and that the control turns freely and continuously in either direction.
 - b. Check to see that the knob is fully seated and tight.
8. RF Gain Control
- a. Check to see that the control turns smoothly.
 - b. Check to see that the pointer on the knob correctly goes from 0 to 10.
 - c. Check to see that the knob is fully seated and tight.
9. Output Level Control
- a. Check to see that the control turns smoothly.
 - b. Check to see that the pointer on the knob correctly goes from 0 to 10.
 - c. Check to see that the knob is fully seated and tight.

d. +250 V on the IF primary rotors.

E. Check AF Section

1. Set AF signal generator to an output frequency of 400 CPS and connect an output meter and phones to the phone jack. (output meter Z must be 500 ohms)
2. Go from the phones backward toward the 2nd detector and check to see that the signal gets through and the AF amplification is working.
 - A.F. check points:
 1. Phone Jack
 2. Pin No. 5 on V-10
 3. Pin No. 2 on V-9
 4. Center Lug of output level Pot.
 5. Pin No. 1 on V-8
 6. Pin No. 3 on V-7
3. When the AF signal is applied to pin 3 of V-7:
 - a. Check to see that the output level control operates properly ie:
 1. controls AF gain
 2. markings are in the correct direction
 - b. Check operation of AF filter switch.
 1. at 400 CPS:
 - a. the first out position of the switch should pass the signal with no attenuation
 - b. the high pass position should attenuate 400 CPS
 - c. the band pass position should greatly attenuate 400 CPS
 - d. the second out position should be the same as the first
 2. at 1000 CPS:
 - All positions of the switch should pass the signal without attenuation
4. Check to see that the AF Limiter tube prevents the output from going up with the input beyond a certain point by increasing the AF input and observing the output meter.

F. Check Detector

1. Replace the AF signal generator with an RF signal generator with a modulated output of 175 Kc.
2. Connect the signal generator to Pin #1 of V-7 and set the output at a high level.
3. See that the detector demodulates the signal and that the AF output gets through.

G. Align the IF as recommended in Paragraph 5.4

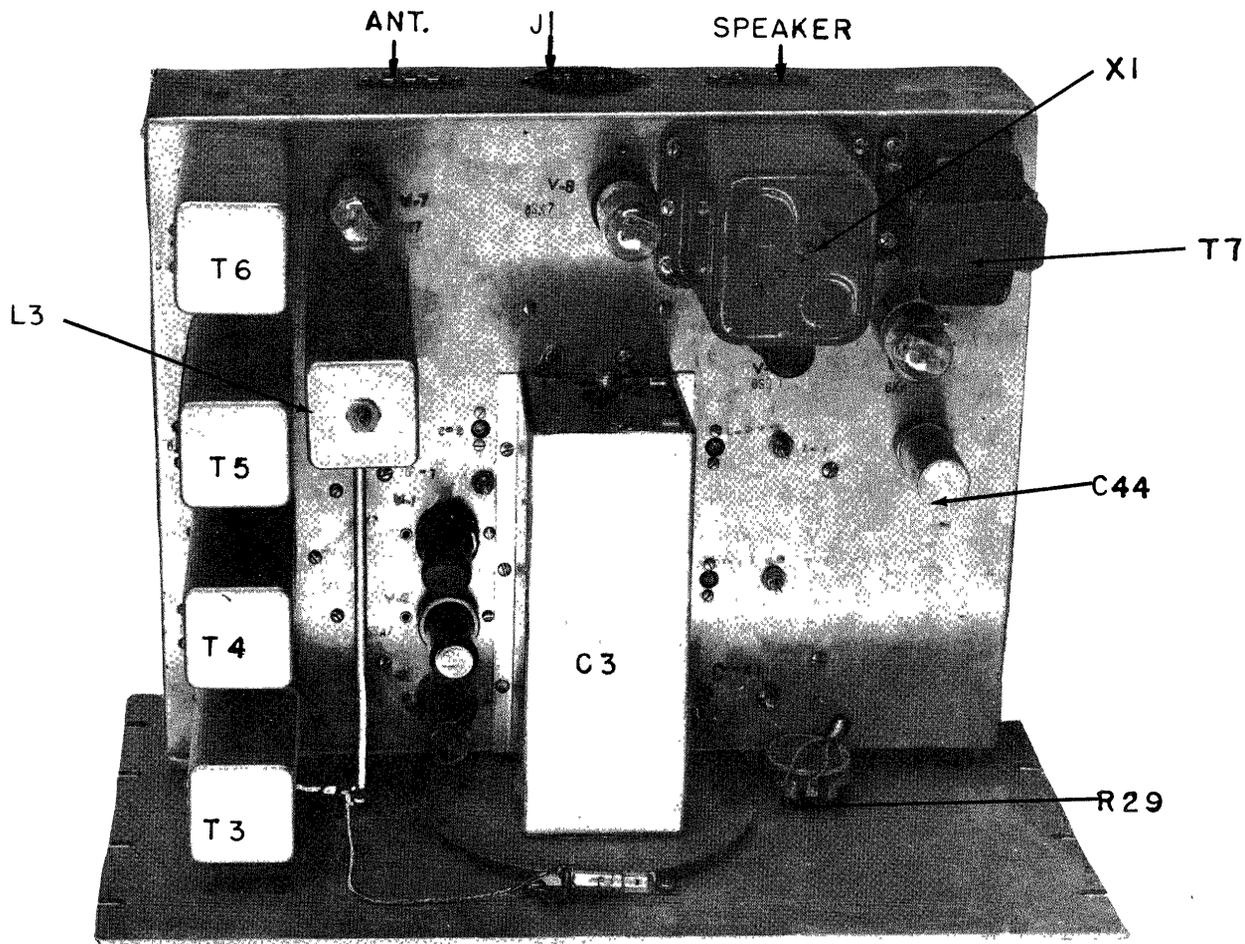


FIG.5.1 TOP VIEW OF CHASSIS

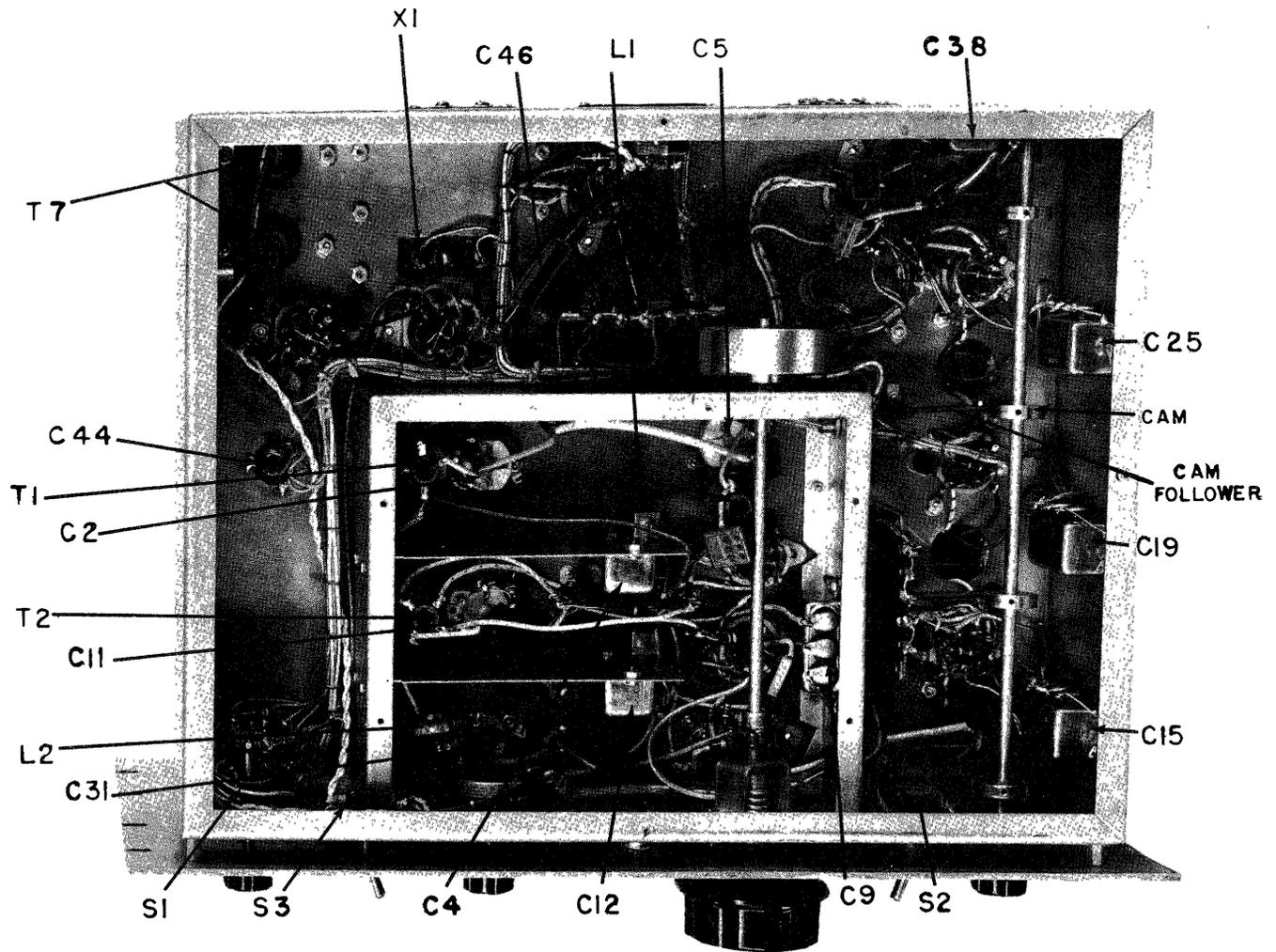
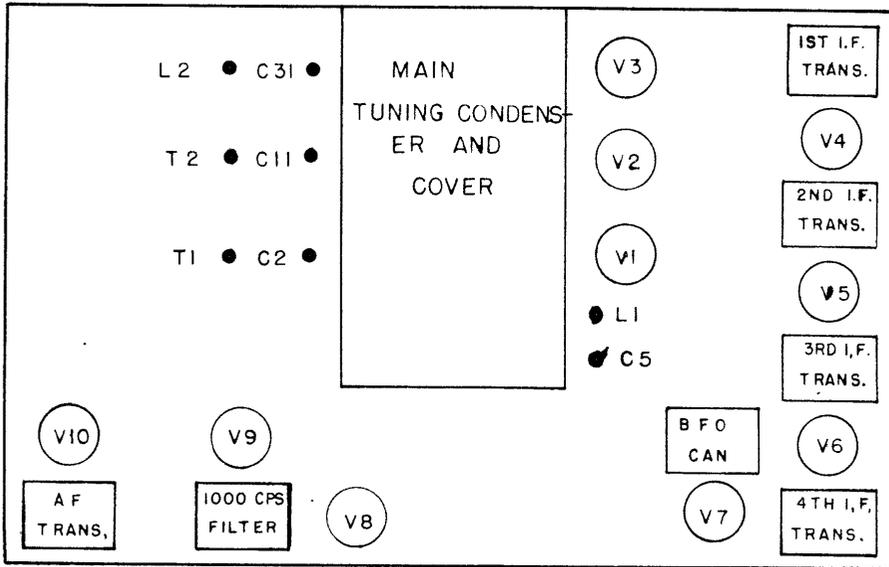


FIG.5.2 BOTTOM VIEW OF CHASSIS

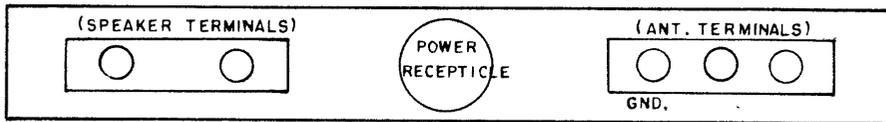
ALL SCREW THREADS TO BE 2 FIT (AMERICAN STANDARDS) UNLESS OTHERWISE SPECIFIED

FRONT



PLAN VIEW OF CHASSIS

NOTE - FOR SCHEMATIC DIAGRAM
SEE DWG. M-3615-14



REAR ELEVATION OF CHASSIS

FIG. 5.3

MATERIAL			TOLERANCES (UNLESS OTHERWISE SPECIFIED)		
			DECIMAL: ± .005 FRACTIONAL: ± 1/64		
FINISH			REMOVE ALL BURRS AND BREAK ALL SHARP CORNERS		
			MACKAY RADIO & TELEGRAPH CO. MARINE DIVISION NEW YORK		
USED WITH	ASSEMBLY DWG.	ISSUE A 12-8-52	TUBE LAYOUT		
3005-B COASTAL REC.					
SCALE			APP'D	ENG.	DRAWN
			<i>dwB</i>		FWK
					M-3950-1 A

SHEET ISSUE	1	2	3	4	5	6	7	8	9	10	ELECTRICAL PARTS LIST FOR				Schematic Diagram		PART 1 M-3615-14		PART 3	
											Coastal Receiver 3005-B				PART 2		PART 4			
USED ON ASSEMBLY DWG. NO.	ITEMS REQUIRED				STOCK NO.	CIRCUIT REF. NO.	FUNCTION	COMPONENT NAME & DESCRIPTION	DWG. OR CAT. NO.											
	PART 4	PART 3	PART 2	PART 1																
					1	C1	RF Tuning Condenser	Capacitor, Mica, 68 mmf, 500 WVDC	*C-D #22R5Q68											
					1	C2	Trimmer	Capacitor, Variable, Air, 15 mmf	*Hammarlund #DL825-2											
					1	C3	Main Tuning Condenser	Capacitor, Variable, Air, 4 sections 260 mmf	Radio Conden- ser Co #65292											
					1	C4	Coupling & By Pass Con- denser	Capacitor, Oil Paper, 2X .05 mfd, 600 WVDC, Type #630	Aerovox*											
					1	C5	Trimmer	Capacitor, Variable, Air, 15 mmf	Hammarlund #DL826-2											
					1	C6	RF Tuning Condenser	Capacitor, Mica, 56 mmf, 500 WVDC	C-D #22R5Q56											
					1	C7	Coupling Condenser	Capacitor, Mica, .001 mfd, 500 WVDC	C-D #1W5D1											
					1	C8	By Pass Condenser	Capacitor, Ceramic disc, .01mfd 500 WVDC	C-D #TM551											
					1	C9	By Pass Condenser	Capacitor, Oil Paper, 2X .05 mfd, 600 WVDC, Type 630	Aerovox*											
					1	C10	RF Tuning Condenser	Capacitor, Mica, 56 mmf, 500 WVDC	C-D #22R5Q56											
					1	C11	Trimmer	Capacitor, Variable, Air, 15 mmf	Hammarlund #DL826-2											
					1	C12	By Pass Condenser	Capacitor, Oil Paper, 2X .05 mfd, 600 WVDC, Type 630	Aerovox*											

* or equivalent

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Figure 5.4

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SHEET ISSUE	1	2	3	4	5	6	7	8	9	10	ELECTRICAL PARTS LIST FOR Coastal Receiver 3005-B				SCHMATIC DIAGRAM	PART 1 M-3615-14 PART 2	PART 3 PART 4
											USED ON ASSEMBLY DWG. NO.	ITEMS REQUIRED				STOCK NO.	CIRCUIT REF. NO.
						PART 4	PART 3	PART 2	PART 1								
									1				C13	IF Tuning Condenser	Capacitor, Mica, 100 mmf, 500 WVDC	*C-D 5W5T1	
									1				C14	IF Trimmer	Capacitor, Variable, Air, 100 mmf	*Hammerlund	
									1				C15	By Pass Condenser	Capacitor, Oil Paper, 2 X .05 mfd, 600 WVDC, Type 630	Aerovox*	
									1				C16	IF Tuning Condenser	Capacitor, Mica, 100 mmf, 500 WVDC	C-D 5W5T1	
									1				C17	IF Trimmer	Capacitor, Variable Air, 100 mmf	Hammerlund	
									1				C18	By Pass Condenser	Capacitor, Ceramic disc, .01 mfd 500 WVDC	C-D TM551	
									1				C19	By Pass Condenser	Capacitor, Oil Paper, 2 X .05 mfd 600 WVDC, Type 630	Aerovox *	
									1				C20	IF tuning Condenser	Capacitor, Mica, 100 mmf, 500 WVDC	C-D 5W5T1	
									1				C21	IF Trimmer	Capacitor, Variable Air, 100 mmf	Hammerlund	
									1				C22	IF Trimmer	Capacitor, Variable Air, 100 mmf	Hammerlund	
									1				C23	IF Tuning Condenser	Capacitor, Mica, 100 mmf, 500 WVDC	C-D 5W5T1	
									1				C24	By Pass Condenser	Capacitor, Ceramic disc, .01, 500 WVDC	C-D TM551	
																* or equivalent	

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LIST NO. M-3615-1A

ELECTRICAL PARTS LIST FOR Coastal Receiver 3005-B										SCHEMATIC DIAGRAM		PART 1 M-3615-14		PART 3 PART 4	
USED ON ASSEMBLY DWG. NO.		ITEMS REQUIRED				STOCK NO.	CIRCUIT REF. NO.	FUNCTION	COMPONENT NAME & DESCRIPTION	DWG. OR CAT. NO.					
		PART 4	PART 3	PART 2	PART 1										
SHEET 1	2				1	C25	By Pass Condenser	Capacitor, Oil Paper, 2 X .05 mfd, 600 WVDC, Type #630	Aerovox *						
SHEET 11	12				1	C26	IF Tuning Condenser	Capacitor, Mica, 100 mmf, 500 WVDC	C-D* 5W5T1						
SHEET 11	12				1	C27	IF Trimmer	Capacitor, Variable Air, 100 mmf	Hammerlund						
SHEET 11	12				1	C28	IF Trimmer	Capacitor, Variable Air, 100 mmf	Hammerlund						
SHEET 11	12				1	C29	IF Tuning Condenser	Capacitor, Mica, 100 mmf, 500 WVDC	C-D 5W5T1						
SHEET 11	12				1	C30	Grid Bias Condenser	Capacitor, Mica, 270 mmf, 500 WVDC	C-D 22R5T27						
SHEET 11	12				1	C31	L.O. Trimmer	Capacitor, Variable Air, 15 mmf	Hammerlund D1828-2						
SHEET 11	12				1	C32	L.O. Tuning Condenser	Capacitor, Mica, 56 mmf, 500 WVDC	C-D 22R5Q56						
SHEET 11	12				1	C33	L.O. Tuning Condenser	Capacitor, Mica, 470 mmf, 500 WVDC	C-D 22R3T47						
SHEET 11	12				1	C34	Coupling Condenser	Capacitor, Mica, 500 mmf, 500 WVDC	C-D 5W5T5						
SHEET 11	12				1	C35	By Pass Condenser	Capacitor, Ceramic disc, .01 mfd, 500 WVDC	C-D TM551						
SHEET 11	12				1	C36	IF Tuning Condenser	Capacitor, Mica, 100 mmf, 500 WVDC	C-D 5W5T1						

*or equivalent

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APP'D BY:
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SHEET ISSUE	1	2	3	4	5	6	7	8	9	10	ELECTRICAL PARTS LIST FOR Coastal Receiver 3005-B				CIRCUIT REF. NO.	FUNCTION	COMPONENT NAME & DESCRIPTION	DWG. OR CAT. NO.
											USED ON ASSEMBLY DWG. NO.	ITEMS REQUIRED						
SHEET ISSUE	11	12	13	14	15	16	17	18	19	20	PART 4	PART 3	PART 2	PART 1				
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														1	C48	Load Matching Condenser	Capacitor, Ceramic disc, .01 mfd, 500 WVDC	*C-D TM551
														1	C49	Coupling Condenser	Capacitor, Mica, 10 mmf, 500 WVDC	C-D 5W5Q1
														1	C50	Blocking Condenser	Capacitor, Mica, 500 mmf, 500 WVDC	C-D 5W5T5
														1	C51	Filter Condenser	Capacitor, Paper, .1 mfd, 600 WVDC	C-D PJ6P1
														1	C52	Grid Bias Condenser	Capacitor, Mica, 270 mmf, 500 WVDC	C-D 22R5T27
														1	C53	BFO Tuning Condenser	Capacitor, Mica, 175 mmf, 500 WVDC	C-D 22R5T18
														1	C54	BFO Frequency Condenser	Capacitor, Variable Air, 15 mmf	*Hammerlund D1828-2
														1	C55 & C56	Power Supply & Filter Con- denser	Capacitor, Electrolytic, 2 X 8 mfd, 450 WVDC	C-D type EH
														1	C57	RF Gain Con- trol By Pass Condenser	Capacitor, Dry Electrolytic, 25 mmf, 50 WVDC	C-D BR255A * or equivalent

SHEET	1
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SHEET	3
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SHEET	4
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SHEET	7
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SHEET	8
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SHEET	9
ISSUE	
SHEET	10
ISSUE	

ELECTRICAL PARTS LIST FOR Coastal Receiver 3005-B

SCHEMATIC
DIAGRAM

PART 1 M-3615-14
PART 2

PART 3
PART 4

USED ON ASSEMBLY DWG. NO.	ITEMS REQUIRED				STOCK NO.	CIRCUIT REF. NO.	FUNCTION	COMPONENT NAME & DESCRIPTION	DWG. OR CAT. NO.
	PART 4	PART 3	PART 2	PART 1					
				1		V1	R.F. Amp.	Electron Tube, Pentode	Type 6SK7
				1		V2	Mixer	Electron Tube, Pentagrid	Type 6SA7
				1		V3	L.O.	Electron Tube, Triode	Type 6J5
				1		V4	I.F. Amp.	Electron Tube, Pentode	Type 6SK7
				1		V5	I.F. Amp.	Electron Tube, Pentode	Type 6SK7
				1		V6	I.F. Amp.	Electron Tube, Pentode	Type 6SK7
				1		V7	2nd Detec- tor & BFO	Electron Tube, Twin Triode	Type 6SN7 GT
				1		V8	Noise Clip- per	Electron Tube, Twin Triode	Type 6SN7 GT
				1		V9	A.F. Amp.	Electron Tube, Triode-Diode	Type 6SQ7
				1		V10	A.F. Output	Electron Tube, Tetrode	Type 6K6-GT
				1		V11	P.S. Recti- fier	Electron Tube, Diode	Type 5W4G

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SHEET ISSUE	1	2	3	4	5	6	7	8	9	10	ELECTRICAL PARTS LIST FOR Coastal Receiver 3005-B				STOCK NO.	CIRCUIT REF. NO.	FUNCTION	COMPONENT NAME & DESCRIPTION	DWG. OR CAT. NO.
											USED ON ASSEMBLY DWG. NO.	ITEMS REQUIRED							
SHEET ISSUE	11	12	13	14	15	16	17	18	19	20									
SHEET ISSUE	21	22	23	24	25	26	27	28	29	30									
ISSUE: A-1-13-53													1	R10	Plate De-coupling Resistor	Resistor, Carbon, 2.7 K, 1 W, 10%	A.B.*		
													1	R11	Grid Bias Resistor	Resistor, Carbon, 470 ohms, $\frac{1}{2}$ W, 10%	A.B.		
													1	R12	Screen Dropping Resistor	Resistor, Carbon, 2.7 K, $\frac{1}{2}$ W, 10%	A.B.		
													1	R13	Plate De-coupling Resistor	Resistor, Carbon, 2.7 K, 1 W, 10%	A.B.		
													1	R14	Plate De-coupling Resistor	Resistor, Carbon, 12 K, 2 W, 10%	A.B.		
													1	R15	Grid Leak Resistor	Resistor, Carbon, 47 K, $\frac{1}{2}$ W, 10%	A.B.		
													1	R16	Grid Bias Resistor	Resistor, Carbon, 470 ohms, $\frac{1}{2}$ W, 10%	A.B.		
													1	R17	Screen Dropping Resistor	Resistor, Carbon, 2.7 K, $\frac{1}{2}$ W, 10%	A.B.		
													1	R18	Plate De-coupling Resistor	Resistor, Carbon, 2.7 K, 1 W, 10%	A.B.		

* or equivalent

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 LIST NO. M-3961-1A
 MAGKAY RADIO & TELEGRAPH CO.
 MARINE DIVISION
 NEW YORK, N. Y., U. S. A.

SHEET	1	2	3	4	5	6	7	8	9	10
ISSUE										
SHEET	11	12	13	14	15	16	17	18	19	20
ISSUE										
SHEET	21	22	23	24	25	26	27	28	29	30
ISSUE										

ISSUE: A-1-13-53

ELECTRICAL PARTS LIST FOR Coastal Receiver 3005-B

SCHEMATIC PART 1 M-3615-14 PART 3
 DIAGRAM PART 2 PART 4

USED ON ASSEMBLY DWG. NO.	ITEMS REQUIRED				STOCK NO.	CIRCUIT REF. NO.	FUNCTION	COMPONENT NAME & DESCRIPTION	DWG. OR CAT. NO.
	PART 4	PART 3	PART 2	PART 1					
				1		R19	Plate Filter Resistor	Resistor, Carbon, 49 K, $\frac{1}{2}$ W, 10%	A.B. *
				1		R20	Cathode Bias Resistor	Resistor, Carbon, 100 K, $\frac{1}{2}$ W, 10%	A.B.
				1		R21	Voltage Divider Resistor	Resistor, Carbon, 1 Megohm, $\frac{1}{2}$ W, 10%	A.B.
				1		R22	Filter Resistor	Resistor, Carbon, 270 K, $\frac{1}{2}$ W, 10%	A.B.
				1		R23	Grid Resistor	Resistor, Carbon, 820 K, $\frac{1}{2}$ W, 10%	A.B.
				1		R24	Equalizing Resistor	Resistor, Carbon, 22 K, 1 W, 10%	A.B.
				1		R25	Filter Resistor	Resistor, Carbon, 47 K, 1 W, 10%	A.B.
				1		R26	Plate Dropping Resistor	Resistor, Carbon, 33 K, $\frac{1}{2}$ W, 10%	A.B.
				1		R27	Cathode Load Resistor	Resistor, Carbon, 10 K, $\frac{1}{2}$ W, 10%	A.B.
				1		R28	Voltage Divider Resistor	Resistor, Carbon, 56 K, $\frac{1}{2}$ W, 10%	A.B.

* or equivalent

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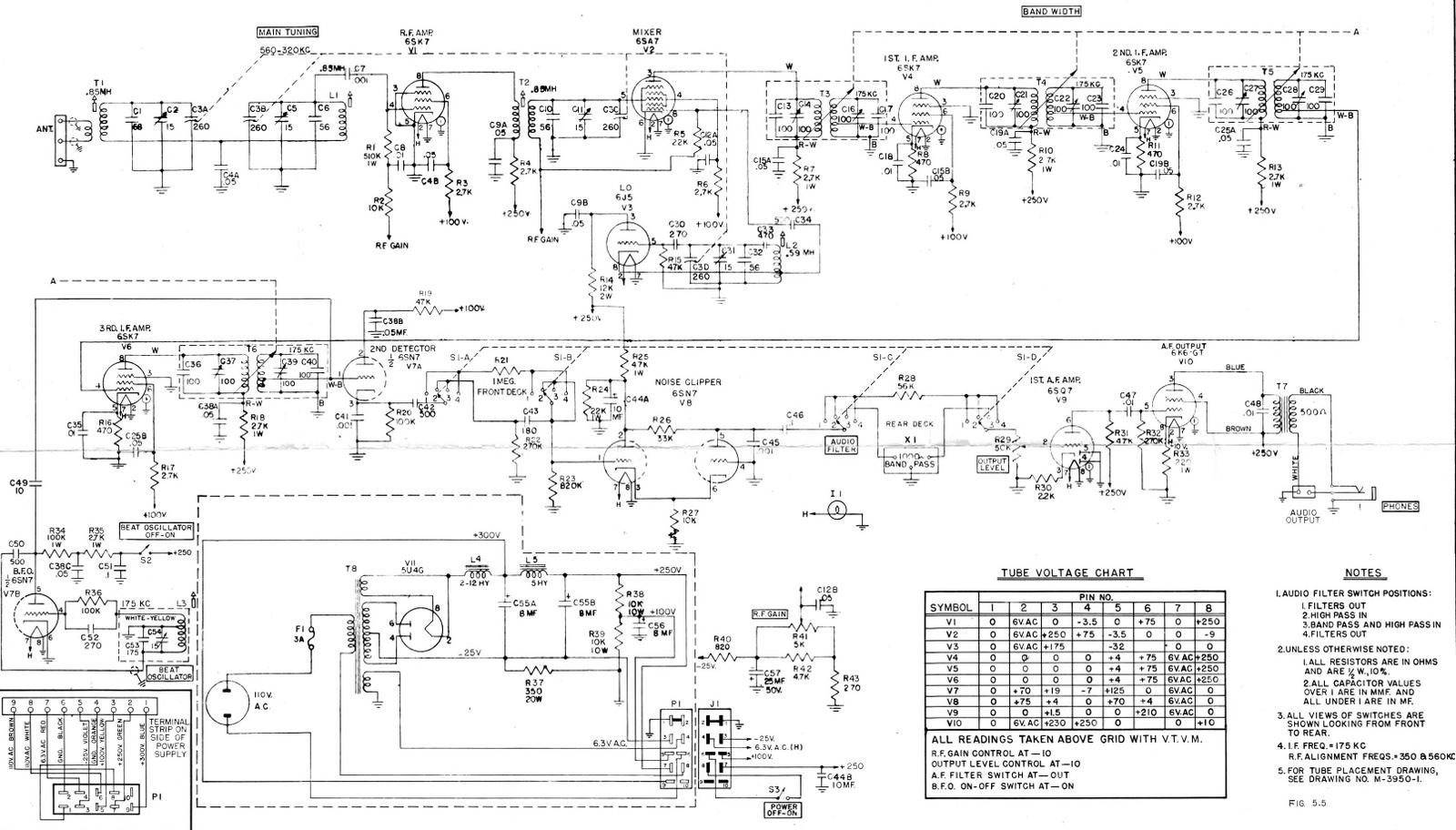
APPROVED BY *[Signature]*
 LIST NO. M-3961-1A

SHEET ISSUE	1	2	3	4	5	6	7	8	9	10	ELECTRICAL PARTS LIST FOR Coastal Receiver 3005-B												SCHEMATIC DIAGRAM		PART 1 M-3615-14		PART 3 PART 4						
											USED ON ASSEMBLY DWG. NO.	ITEMS REQUIRED				STOCK NO.	CIRCUIT REF. NO.	FUNCTION	COMPONENT NAME & DESCRIPTION	DWG. OR CAT. NO.													
												PART 4	PART 3	PART 2	PART 1																		
															1	R29	AF Gain Control	Resistor, Variable, 50 K 3/8" bushing 7/16" shaft		Clarostat 58-50K													
															1	R30	Cathode Bias Resistor	Resistor, Carbon, 22 K, 1/2 W, 10%		A.B.*													
															1	R31	Plate Load Resistor	Resistor, Carbon, 27 K, 1/2 W, 10%		A.B.													
															1	R32	Grid Resis- tor	Resistor, Carbon, 270 K, 1/2 W, 10%		A.B.													
															1	R33	Cathode Bias Resistor	Resistor, Carbon, 220 ohms, 1 W, 10%		A.B.													
															1	R34	Plate Filter Resistor	Resistor, Carbon, 100 K, 1 W, 10%		A.B.													
															1	R35	Plate Filter Resistor	Resistor, Carbon, 2.7 K, 1 W, 10%		A.B.													
															1	R36	Grid Lead Resistor	Resistor, Carbon, 100 K, 1/2 W, 10%		A.B.													
															1	R37	P.S. Voltage Divider	Resistor, Wire Wound, 350 ohms, 20 W, 10%		Omite Brown* Devil BD20													
															1	R38	P.S. Voltage Divider	Resistor, Wire Wound, 10 K, 10 W, 10%		Omite Brown Devil BD10													
															1	R39	P.S. Voltage Divider	Resistor, Wire Wound, 10 K, 10 W, 10%		Omite Brown Devil BD10 * or equivalent													

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SHEET	ISSUE	SHEET	ISSUE	SHEET	ISSUE	SHEET	ISSUE	SHEET	ISSUE	SHEET	ISSUE	SHEET	ISSUE	SHEET	ISSUE	SHEET	ISSUE	ELECTRICAL PARTS LIST FOR				SCHEMATIC		PART 1		PART 3	
																		Coastal Receiver 3005-B				DIAGRAM		M-3615-14		PART 2	
USED ON ASSEMBLY DWG. NO.	ITEMS REQUIRED				STOCK NO.	CIRCUIT REF. NO.	FUNCTION	COMPONENT NAME & DESCRIPTION	DWG. OR CAT. NO.																		
	PART 4	PART 3	PART 2	PART 1																							
				1		L1	RF Tuning Coil	Coil, RF	M-3624-1																		
				1		L2	L.O. Tuning Coil	Coil, L.O.	M-3626-1																		
				1		L3	BFO Tuning Coil	Coil, BFO	M-3593-1																		
				1		L4	P.S. Filter	Choke, 2-12 H, 175 ma	Stancor C1400																		
				1		L5	P.S. Filter	Choke, 5 H, 100 ma	Stancor C2305																		
				1		T1	Ant. Input Transformer	Transformer, Ant.	M-3633-1																		
				1		T2	Mixer Input Transformer	Transformer, Mixer	M-3625-1																		
				1		T3	IF Trans- former	Transformer, IF	M-3703-1 M-3704-1																		
				1		T4	IF Trans- former	Transformer, IF	M-3704-1 M-3703-1																		
				1		T5	IF Trans- former	Transformer, IF	M-3703-1 M-3704-1																		
				1		T6	IF Trans- former	Transformer, IF	M-3703-1 M-3702-1																		
				1		T7	AF Output Transformer	Transformer, Audio	Thordarson Elect. T-22568																		
				1		T8	Power Trans- former	Transformer, Power	Stancor P-4081																		

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TUBE VOLTAGE CHART

SYMBOL	1	2	3	4	5	6	7	8
V1	0	6VAC	0	-3.5	0	+75	0	+250
V2	0	6VAC+250	+75	-3.5	0	0	0	-9
V3	0	6VAC+175	-32	-32	0	0	0	0
V4	0	0	0	0	+4	+75	6VAC+250	0
V5	0	0	0	0	+4	+75	6VAC+250	0
V6	0	0	0	0	+4	+75	6VAC+250	0
V7	0	+70	+19	-7	+125	0	6VAC	0
V8	0	+75	+4	0	+70	+4	6VAC	0
V9	0	0	+15	0	0	+210	6VAC	0
V10	0	6VAC	+250	+250	0	0	0	+10

ALL READINGS TAKEN ABOVE GRID WITH V.T.V.M.
 R.F. GAIN CONTROL AT -10
 OUTPUT LEVEL CONTROL AT -10
 A.F. FILTER SWITCH AT -OUT
 B.F.O. ON-OFF SWITCH AT -ON

- NOTES**
- AUDIO FILTER SWITCH POSITIONS:
 1. FILTERS OUT
 2. HIGH PASS IN
 3. BAND PASS AND HIGH PASS IN
 4. FILTERS OUT
 - UNLESS OTHERWISE NOTED:
 1. ALL RESISTORS ARE IN OHMS AND ARE 1/2 W. 10%
 2. ALL CAPACITOR VALUES OVER 1 ARE IN MF. AND ALL UNDER 1 ARE IN MF.
 - ALL VIEWS OF SWITCHES ARE SHOWN LOOKING FROM FRONT TO REAR.
 - I.F. FREQ. = 175 KC
 R.F. ALIGNMENT FREQ. = 350 & 560 KC
 - FOR TUBE PLACEMENT DRAWING, SEE DRAWING NO. M-3950-1.
- FIG. 5.5

TOLERANCES

BASIC DIMENSIONS	FRACTIONAL DIMENSIONS	DECIMAL DIMENSIONS
UP TO .125	± 1/16	± .006
ABOVE .125 TO .250	± 1/32	± .010
ABOVE .250	± 1/16	± .015

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS IN INCHES
 REMOVE ALL BURRS AND BREAK ALL SHARP CORNERS

PART NO.	QTY.	DESCRIPTION	REV.
3005-9	1	COASTAL RECEIVER	1

MACKAY RADIO & TELEGRAPH CO.
 3005-B
 COASTAL RECEIVER

SCHEMATIC
 3005-B
 COASTAL RECEIVER

SCALE: 1/8" = 1"

DATE: 4-21-44
 DRAWN: J.C.C.
 CHECKED: J.C.C.
 APPROVED: J.C.C.

TERMINAL STRIP ON SIDE OF POWER SUPPLY

TERMINAL	WIRE COLOR	FUNCTION
1	RED	110V AC
2	WHITE	0
3	BLACK	0
4	BLACK	0
5	BLACK	0
6	BLACK	0
7	BLACK	0
8	BLACK	0
9	BLACK	0
10	BLACK	0
11	BLACK	0
12	BLACK	0
13	BLACK	0
14	BLACK	0
15	BLACK	0
16	BLACK	0
17	BLACK	0
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19	BLACK	0
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22	BLACK	0
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25	BLACK	0
26	BLACK	0
27	BLACK	0
28	BLACK	0
29	BLACK	0
30	BLACK	0
31	BLACK	0
32	BLACK	0
33	BLACK	0
34	BLACK	0
35	BLACK	0
36	BLACK	0
37	BLACK	0
38	BLACK	0
39	BLACK	0
40	BLACK	0
41	BLACK	0
42	BLACK	0
43	BLACK	0
44	BLACK	0
45	BLACK	0
46	BLACK	0
47	BLACK	0
48	BLACK	0
49	BLACK	0
50	BLACK	0