

## SERVICE MANUAL REVISIONS MESSENGER 125

### ENGINEERING CHANGES

#### REVISION A

<u>Component Changed</u>	<u>From</u>	<u>To</u>	<u>New Part Number</u>	<u>Reason for Change</u>
C48	Added	0.001 $\mu$ F	510-3002-102	*
R3	5600 $\Omega$	1800 $\Omega$	569-1004-182	Improve AGC
R34	Added	330 $\Omega$	569-1004-331	Increase audio gain
T3	-003	-004	592-5015-004	Broader tuning range

\* Most Revision A changes were incorporated into most sets shipped.

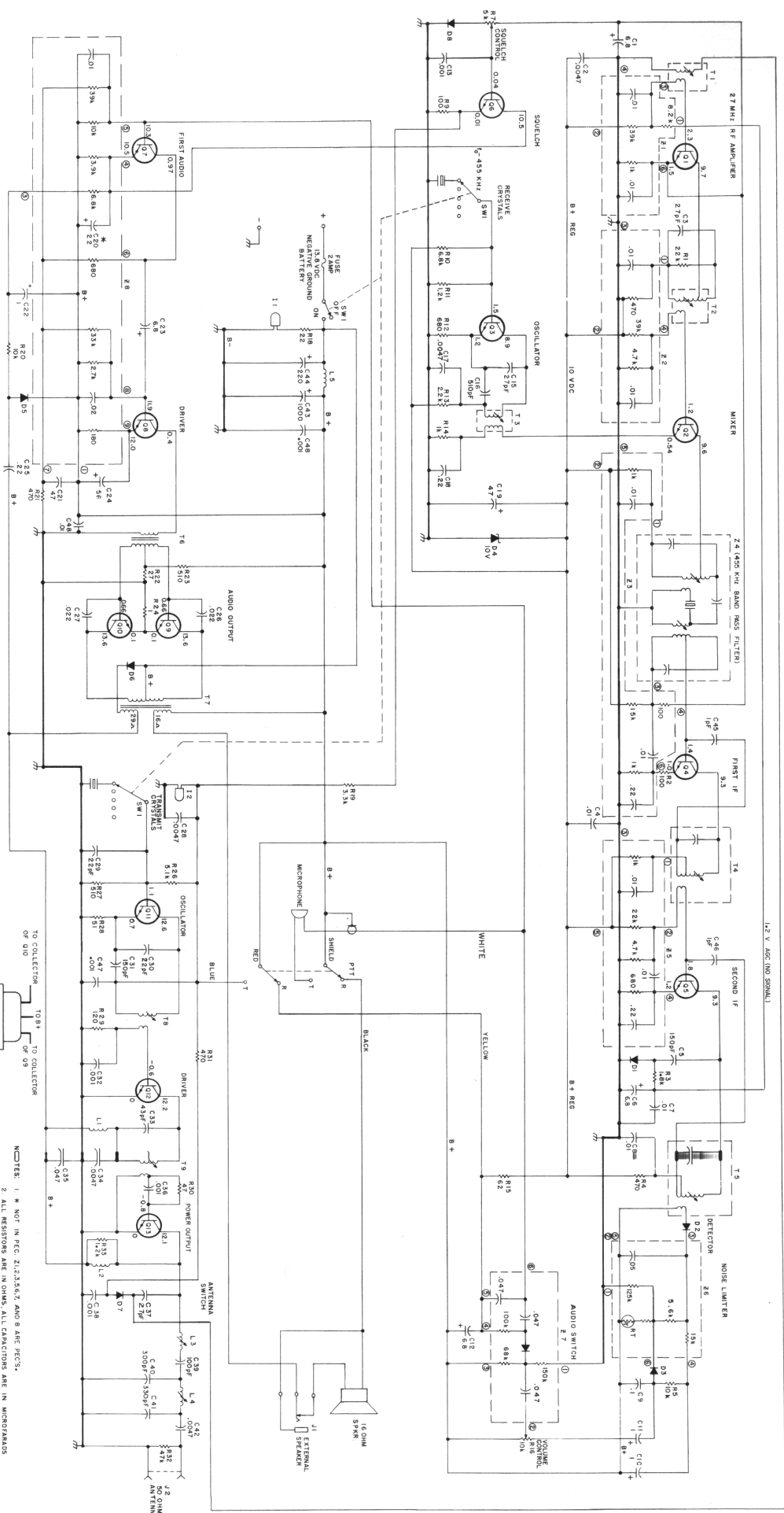
#### REVISION B

C36	0.001 $\mu$ F ceramic	0.001 $\mu$ F mica	510-0001-102	Correct transmitter breakup and increase power output.
C48	0.001	0.01	510-3003-103	Stabilize operation with power pack.
HW	-001	-004	029-0396-004	Improved speaker mounting grommet.
M1	Turner	Johnson	023-2708-005	Changed to Johnson manufactured microphone.
Q13	4011	4005	576-0004-005	Standardization
R12	2200 $\Omega$	1000 $\Omega$	569-1004-102	Improve oscillator starting.
C14	---	deleted	---	These three changes improve oscillator waveform
C16	330 pF	510 pF	510-3020-511	
R12	1000 $\Omega$	680 $\Omega$	569-1004-681	

### SERVICE MANUAL CHANGE

#### TRANSPARENCY

The C21 to the right of Z7 should be labeled C12.  
 C46 (at Q4) should be labeled C45.  
 C45 (at Q5) should be labeled C46.  
 C14 is deleted.  
 C48 is connected between B+ and B- near L5.  
 R34 is connected between Q8 E and B+ above R21.



**MESSENGER 125 SCHEMATIC DIAGRAM**  
 (FOR UNITS WITH "B" MODEL DESIGNATOR  
 ON SERIAL NUMBER STICKER)

REFERENCE SCHEMATIC PART NO. F 025-0770-001  
 PRINTED IN U.S.A. 1289 FJ PART NO. 564-3001-12 5

- NOTES: 1 \* NOT IN REC. 21,23,25,27, AND 8 ARE P.C.S.  
 2 ALL RESISTORS ARE IN OHMS. ALL CAPACITORS ARE IN MICROFARADS  
 UNLESS OTHERWISE SPECIFIED.  
 3 VOLTAGES ARE MEASURED WITH VOLUME CONTROL AT MAXIMUM, SIGNAL AT MINIMUM.  
 A 50 OHM LOAD CONNECTED TO J2 POWER SUPPLY AT 1.35 VDC. ALL VOLTAGES  
 MEASURED WITH H.R. A.C. VOLTAGES REFERRED TO B-.  
 4 POWER INPUT TO Q1A, VCE X 1-(1-(21 X .415) + 5 WATTS)  
 5 IF PERFORMANCE -455 KHZ.

# MESSENGER 125

## SERVICE MANUAL REVISIONS

### REVISION C

<u>Component Changed</u>	<u>Schematic Location</u>	<u>From</u>	<u>To</u>	<u>New Part Number</u>	<u>Reason For Change</u>
R2	A6	100 $\Omega$	270 $\Omega$	569-1002-271	Improved AGC
R3	A7	1.8K	12K	569-1004-122	AGC overload
C36	C8	0.001 $\mu$ F Y5U	0.001 $\mu$ F Y5S	510-3061-102	Improved cold weather performance
<u>Component Deleted</u>					
R4	A8				AGC overload

### REVISION D

<u>Component Changed</u>	<u>Schematic Location</u>	<u>From</u>	<u>To</u>	<u>New Part Number</u>	<u>Reason For Change</u>
Speaker, 8 $\Omega$	C10	3001	3004	589-1003-004	Improved sound quality
Z6	A9	2025	2015	544-0002-015	Improved sound quality
C9	A10	0.1 $\mu$ F	0.047 $\mu$ F	510-3010-473	Improved sound quality
Q7	D2	1003	1014	576-0001-014	Low noise transistor
<u>Component Added</u>					
		<u>Description</u>			
C49	These Discrete Components Replace Z7	B9	Capacitor, 1 $\mu$ F $\pm$ 20%	510-2005-109	Improved sound quality
C50		B10	Capacitor, 1 $\mu$ F $\pm$ 20%	510-2005-109	Improved sound quality
D9		B9	Diode, 1N881	523-1000-881	Improved sound quality
R35		B9	Resistor, 150K $\pm$ 10%	569-1002-154	Improved sound quality
R36		B9	Resistor, 78K $\pm$ 10%	569-1002-683	Improved sound quality
R37		B9	Resistor, 100K $\pm$ 10%	569-1002-104	Improved sound quality
E4	C10	Speaker shield		032-0246-001	Component to speaker shorts
<u>Component Deleted</u>					
Z7	B9				Improved sound quality

#### NOTES:

- PEC Z6, Part No. 544-0002-025, can be used by adding a 180 K $\Omega$  resistor, Part No. 569-1002-184, between pins 1 and 6 on the bottom of PC board.
- Production run of 100 D Model transceivers - July, 1970.

The following is a list of parts and part numbers that have changed from A to F Models listing the old part number.

<u>PART</u>	<u>PART DESCRIPTION</u>	<u>PART NUMBER</u>	<u>MODEL</u>
BKT	Bracket, control mounting	017-1570-001	A
R3	1800 ohms $\pm 10\%$ , 1/2 W	569-1004-182	A
T3	27 MHz oscillator	592-5015-003	A
C14	6.8 pF $\pm 5\%$ , N150	510-3020-689	B
C16	330 pF $\pm 5\%$ , N750, ceramic	510-3020-331	B
C36	0.001 $\mu$ F $\pm 20\%$ , 50V, Y5U	510-3002-102	B
M1	Microphone	589-0201-001	B
Q13	Transmitter final, 4011	576-0004-011	B
R12	2200 ohms $\pm 10\%$ , 1/2 W	569-1004-222	B
R13	Same as R12		B
R2	100 ohms $\pm 10\%$ , 1/4 W	569-1002-101	C
C9	0.1 $\mu$ F 16V, Y5S $\pm 20\%$	510-3010-104	D
LS	Speaker, (16 $\Omega$ )	589-1003-001	D
Q7	Audio preamp, 1003	576-0001-003	D
Z6	Noise limiter	544-0002-025	D
Q8	Audio driver, 1009	576-0001-009	E
R7	Potentiometer, 5000 ohms Squelch	562-0025-002	E
R16	Potentiometer, 10K ohms Volume	562-0025-001	E
C2	0.0047 $\mu$ F +80/-20%, 500V, Y5U, ceramic disc	510-3005-472	F
C17	0.0047 $\mu$ F +80/-20%, 500V, Y5U, ceramic disc	510-3005-472	F
C28	0.0047 $\mu$ F +80/-20%, 500V, Y5U, ceramic disc	510-3005-472	F
C34	0.0047 $\mu$ F +80/-20%, 500V, Y5U, ceramic disc	510-3005-472	F
C35	0.0047 $\mu$ F +80/-20%, 500V, Y5U, ceramic disc	510-3005-472	F
	Upper overlay, dummy	559-2048-001	F
	Lower overlay	559-2049-001	F
R4	470 ohms $\pm 10\%$ , 1/2 W	569-1004-471	F
Z3	1st IF	544-0003-033	F
Z4	IF, passband	532-2002-001	F