

DATE 2 February 1965

SHEET COVER OF

TMC SPECIFICATION NO. S 889



*DM*  
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*JCE*  
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TITLE:

*JCE*

APPROVED

*[Signature]* 7/15/65  
S\*

RTTD  
TEST PROCEDURE

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I. EQUIPMENT REQUIRED

- A. 1 RTTD Test Set
- B. 1 Multimeter, Simpson Model 260
- C. 1 RTTD Manual Programmer

II. INSPECTION

The RTTD has been inspected by the Inspection Department, therefore, extensive inspection is not necessary. However, before applying power to the unit it should be visually checked for broken components, broken wires and correct fuses.

III. RESISTANCE MEASUREMENTS

With the AC Power Cable DISCONNECTED, turn on the DECODER READY switch on the Decoder. All resistance measurements are made with the switch in this position.

- A. C 4010 + to Ground 33 ohms
- B. C 4010 + to S 4001-7-18 0 ohms
- C. + 4001-1 to Ground Inf.
- D. + 4001-1 to + 4001-3 B 1 ohm
- E. T 4001-5 to Ground 50 ohms

IV. CONNECT THE TEST SET AND PROGRAMMER TO THE RTTD

- A. The plug numbers on the Test Set Cables mate with the jack numbers on the Decoder.
- B. The plug numbers on the Programmer Cable mates with the jack number on the Decoder.
- C. Connect the AC Power Cable to J 4008 on the Decoder.

V. ENERGIZE THE DECODER

- A. Turn OFF the DECODER READY switch on the Decoder and turn ON the DECODER READY switch on the Programmer. The DECODER READY indicator will light. Turn the TIME DELAY OVER-RIDE switch to ON.
- B. Press the DECODER ENERGIZE switch on the Programmer. The PROCESS indicator will light. The TAPE ADVANCE indicator will flash every time K 4008 in the Decoder de-energizes.

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## VI. ADJUST THE TIME DELAY CIRCUIT

- A. Turn the TIME DELAY OVER-RIDE switch on the Programmer to OFF. Adjust R 4024 in the Decoder for a 30 second time delay.
- B. Turn the TIME DELAY OVER-RIDE switch to ON after making the adjustment, this will keep the Decoder energized after the Time Delay Relay activates. Turn on the DE-ENERGIZE OVER-RIDE switch, this will keep the Decoder energized when the Master Ledex passes the stop position (Bit #1 - E Code) these switches must be on to permit uninterrupted testing of the Decoder.

## VII. OPERATION OF PROGRAM SWITCH

The Program switch consists of 7 push button switches. The first five, marked 1 through 5, are the Bit switches -1 through 5 respectively. The green switch is the Program Read switch. This switch feeds the selected bits into the Decoder. The Program Read indicator will light when this switch is activated. The Red switch is the cancel switch. This switch cancels any information on the Program Bit switches without feeding the information into the Decoder.

## VIII. CHECK THE ADVANCE AND TONE COMPLETE CIRCUITS

- A. The TUNE COMPLETE #2 indicator will light when the Decoder is energized, and will remain on as long as K 4006 is energized.
- B. The TUNE COMPLETE #1 indicator will light when the Decoder is de-energized automatically with Bit #1, with the DECODER DE-ENERGIZE switch ON.
- C. The ADVANCE #1 indicator will light when K 4008 de-energizes.
- D. The ADVANCE #2 indicator will light when K 4008 energizes.

## IX. CHART FOR MANUAL PROGRAMMING OF DECODER

The following chart is used to check the Ledex Drive output circuits and the additional functions that start in the Decoder during the tuning sequence

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<u>CODE</u>	<u>FUNCTION</u>	<u>MC</u>	<u>SELECTOR</u>	<u>KC</u>
1-2-5	MC-2-16		R	
2-5	↑ ↓	2	↑ ↓	
2		3		
3		4*		
2-3		5		
2-4		6*		
2-3-4		7		
2-3-5		8*		
2-3-4-5		9*		
3-4		10		
3-4-5		11		
2-4-5		12*		
4-5		13*		
3-5		14		
5		15		
4		MC-2-16		16*
1-5	MC-17-31			
2-5	↑ ↓	17*	R	
2		18*		
3		19		
2-3		20		
2-4		21		
2-3-4		22		
2-3-5		23		
		MC-17-31		R

\* K4018 in Decoder will activate on MC positions marked with an asterick.

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CODE	FUNCTION	MC	SELECTOR	KC	
2-3-4-5	MC-17-31	24*	R		
3-4		25*			
3-4-5		26*			
2-4-5		27*			
4-5		28			
3-5		29			
5		30			Turn B.S. motor switch OFF.
4	MC-17-31	31	R		
1-4-5	100 KC		C		Indicator 3 on Test Set will light.
2				1	
3				2	
4				3	
2-5				4	
2-3				5	
3-4				6	
2-4-5				7	
2-3-5				8	
2-3-4				9	
3-4-5	100 KC		C		
1-4	10 KC		D		
2				1	
3				2	
4				3	Indicator 3 on Test Set will light
2-5	10 KC		D	4	

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CODE	FUNCTION	MC	SELECTOR	KC	
2-3	10 KC		D	5	Turn B.S. motor switch to ON.  Indicators 1-2-3 on Test Set will light.
3-4				6	
2-4-5				7	
2-3-5				8	
2-3-4				9	
3-4-5				10	
1-3-4-5	1 KC		E		
2				1	
3				2	
4				3	
2-5				4	Indicators 1-2-3 on Test Set will light. Press switch #1 to turn OFF indicators 1-2-3
2-3				5	
3-4				6	
2-4-5				7	
2-3-5				8	
2-3-4				9	
3-4-5	1 KC		E	10	
1-3-5	.1 KC		F		
2				1	
3				2	
4				3	
2-5				4	
2-3				5	
3-4	.1 KC		F	6	

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<u>CODE</u>	<u>FUNCTION</u>	<u>MC</u>	<u>SELECTOR</u>	<u>KC</u>
2-4-5	.1 KC		F	7
2-3-5	↕		↕	8
2-3-4				9
3-4-5	.1 KC		F	10
1-2-3-4-5	Ch A IFBW Bandwidth		G	
2	↕		↕	1
3		2		
4		3		
2-5		4		
2-3		5		
3-4		6		
2-4-5		7		
2-3-5		8		
2-3-4		9		
3-4-5		Ch A IFBW Bandwidth		
1-2-4-5	Ch A Detection		H	
2	↕		↕	1
3		2		
4		3		
2-5		4		
2-3		5		
3-4		6		
2-4-5		7		
2-3-5		Ch A Detection		

Turn on Servo switch, measure 28 V DC - J4006 Pin #17+ J4006 Pin #5-

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CODE	FUNCTION	MC	SELECTOR	KC	
2-3-4	Ch A Detection		H	9	
3-4-5	Ch A Detection		H	10	Turn off Servo Switch.
1-3-4	Ch B IF Bandwidth		I		
2				1	Energize and de-energize K4011 with switches 2 and 3.
3				2	
4				3	
2-5				4	
2-3				5	
3-4				6	
2-4-5				7	
2-3-5				8	
2-3-4				9	
3-4-5	Ch B IF Bandwidth		I	10	
1-2-3-4	Ch B Detection		J		
2				1	
3				2	
4				3	
2-5				4	
2-3				5	
3-4				6	
2-4-5				7	
2-3-5				8	
2-3-4				9	
3-5	Ch B Detection		J	10	



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CODE	FUNCTION	MC	SELECTOR	KC
1-2-3	AFC ON-OFF		K	
2			K	1
4	AFC ON-OFF		K	3
1-2-3-5	RF GAIN		L	
2				1
3				2
4				3
2-5				4
2-3				5
3-4				6
2-4-5				7
2-3-5				8
2-3-4				9
3-4-5				10
4-5				11
5	RF GAIN		L	12
1-2	SPARE #1		M	
2				1
3				2
4				3
2-5				4
2-3				5
3-4				6
2-4-5	SPARE #1		M	7



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CODE	FUNCTION	MC	SELECTOR	KC
2-3-5	SPARE #1		M	8
2-3-4				9
3-4-5				10
4-5				11
5	SPARE #1		M	12
1-2-4	SPARE #2		N	
2				1
3				2
4				3
2-5				4
2-3				5
3-4				6
2-4-5				7
2-3-5				8
2-3-4				9
3-4-5				10
4-5				11
5	SPARE #2		N	12
1-3	SPARE #3		0	
2				1
3				2
4				3
2-5				4
2-3	SPARE #3		0	5

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<u>CODE</u>	<u>FUNCTION</u>	<u>MC</u>	<u>SELECTOR</u>	<u>KC</u>	
3-4	SPARE #3		0	6	
2-4-5	↑ ↓		↑ ↓	7	
2-3-5		8			
2-3-4		9			
3-4-5		10			
4-5		11			
5	SPARE #3		0	12	Tune Comp. #1. Indicator will light.
1			0	12	Turn off Decoder, de-energize switch Decoder will turn off.

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## TEST DATA SHEET

Serial No. \_\_\_\_\_

Mfg. No. \_\_\_\_\_

### 1. Preliminary

- 1. Resistance Measurements \_\_\_\_\_ OK
- 2. Mechanical Insp. \_\_\_\_\_ OK

### 11. Procedure

- 1. Tape Adv. \_\_\_\_\_ OK
- 2. Time Delay Adj. \_\_\_\_\_ sec. time \_\_\_\_\_ OK
- 3. Tune Complete #2 \_\_\_\_\_ OK
- 4. Tune Complete #1 \_\_\_\_\_ OK
- 5. Advance #1 \_\_\_\_\_ OK
- 6. Advance #2 \_\_\_\_\_ OK
- 7. Functions \_\_\_\_\_ OK

- A. 2-16 MC \_\_\_\_\_ OK
- B. 17-32 MC \_\_\_\_\_ OK
- C. 100 KC \_\_\_\_\_ OK
- D. Band Switch Motor \_\_\_\_\_ OK
- E. 10 KC \_\_\_\_\_ OK
- F. 1 KC \_\_\_\_\_ OK
- G. 1 KC \_\_\_\_\_ OK
- H. CH A 1FBW \_\_\_\_\_ OK
- I. Servo Amp. \_\_\_\_\_ Volts DC \_\_\_\_\_ OK
- J. CH A Det. \_\_\_\_\_ OK
- K. CH B 1FBW \_\_\_\_\_ OK
- L. CH B Det. \_\_\_\_\_ OK
- M. K4011 \_\_\_\_\_ OK
- N. AFC On-Off \_\_\_\_\_ OK
- O. RF Gain \_\_\_\_\_ OK
- P. Spare #1 \_\_\_\_\_ OK
- Q. Spare #2 \_\_\_\_\_ OK
- R. Spare #3 \_\_\_\_\_ OK

Tester \_\_\_\_\_

Date \_\_\_\_\_

