L CARRIER SYSTEM — CARRIER AND PILOT SUPPLY — PILOT COMBINING CIRCUITS WITH PIL TST JACK ASSOCIATED WITH PILOT GENERATOR — OUT-OF-SERVICE MEASUREMENT OF SIX-FREQUENCY OR TWO-FREQUENCY PILOT COMBINING CIRCUIT OUTPUT

Six-Frequency Pilot Combining Circuit: Pilot frequencies 308, 556, 2064, 3096, 7266, and 8320 kc are connected from the pilot distributing circuits to the pilot combining circuit for transmission over a high-frequency line. The input path for each pilot frequency contains an adjustable pad which provides attenuation from 4.5 to 23 db. Coarse adjustment is provided by combinations of solder-in strapping provided in optional steps of 0.5, 1, 2, 4, or 10 db. In addition to the strapping adjustment, the pad contains a potentiometer section adjustable between 4.5 and 5.5 db. The six frequencies are combined in an additional 15.5-db fixed pad and are fed through the pilot jack to the transmitting hybrid circuit.

Two-Frequency Pilot Combining Circuit: This circuit is used at certain TV dropping and bridging points. Pilot frequencies 7266 and 8320 kc are fed from the pilot distributing circuit to the two-frequency pilot combining circuit for transmission to the high-frequency line-connecting equipment in television circuits. In each of the two input legs there is a strapping pad adjustable in steps of 0, 1, 2, or 3 db and a potentiometer with a range of ± 0.8 db for adjustment of the output of each pilot frequency to the proper level. In addition to these losses there is a fixed loss of 18 db provided by the combining pad and the midrange loss of the potentiometer circuit.

The purpose of this test is to measure the output level of the transmitted pilot frequencies and, if necessary, adjust the pads of the combining network to give the desired output to the high-frequency line equipment.

This section is reissued to incorporate the latest testing information available and to include information on the redesigned six-frequency pilot combining circuit. Since this issue constitutes a general revision, arrows normally used to indicate changes have been omitted.

APPARATUS:

1 — J68827A Sending Console
1 — J68827B Receiving Console
1 — P2BJ Cord
KS-14655 Pads — 10, 12.2, 16, 20, 30.8 db

STEP	PROCEDURE
	Note: This procedure is similar for both the six-frequency and two-frequency pilot combining circuits. See Fig. 1 for six-frequency and Fig. 2 for two-frequency pilot combining circuits. ***Caution: The transfer of pilot supplies causes hits on superimposed telegraph and data service so the number of transfers should be kept to a minimum. This is important.***
1	At the transmitting repeater bay, supply pilots from the SPARE PIL jack to release the regular PIL jack for test. Refer to Section 356-052-501 to transfer service.
2	Where both regular and emergency pilot generators are provided, set the MAN CON switch on all pilot and control panels to REG.
3	Use the calibration method and values given in Section 359-035-505 for six-frequency pilot measurements. Use the calibration method given in Section 359-035-505 and the values in Table A of this section for two-frequency pilot measurements.
4	Make patch designated (1).
5	Read the 37B TMS measurement. ***Requirement:*** ±0.12 db (use expanded scale on 27B console). *Note:* If these requirements are not met, perform the test in accordance with Section 356-078-501 before proceeding with Step 6.
6	Adjust the proper variable control of the pilot combining circuit to give the required pilot output. If the continuously variable control cannot be set to the exact required output, proceed with Steps (a) through (c) below. (a) For each frequency not meeting the requirement, set the associated variable control of the pilot combining circuit to midrange. (b) Restrap the pilot combining circuit pad involved to bring the power output level as close as possible to the required output level of Step 5. *Note:* The power levels shall be read with all panel covers in place. (c) Repeat Step 6.
7	If both regular and emergency pilot generators are provided, turn all pilot frequency MAN CON switches to EM.
8	Adjust the OUTPUT controls on the various emergency pilot generators until the power output levels are within ±0.01 db of the values measured in Step 5. *Note:* If the output of any pilot generator is changed, it will be necessary to check all pilot combining circuits working from that pilot generator.

STEP	PROCEDURE
9	Turn the pilot frequency MAN CON switches to NORM.
10	At the transmitting repeater bay, remove the patch cord and restore service to normal.

TABLE A

CALIBRATION OF TMS FOR TERMINATED MEASUREMENTS OF TRANSMITTED TWO-FREQUENCY PILOTS AT PIL TST JACK

PILOT FREQ (KC)	KS-14655 ATTENUATORS	SETTING OF TMS CONTROLS		CAL SENS (DBM)
		SENS 1	SENS 2	
7266	30.8, 12.2	—40	—3	—43.00
8320	30.8, 12.2, 10	—50	—3	—53.00

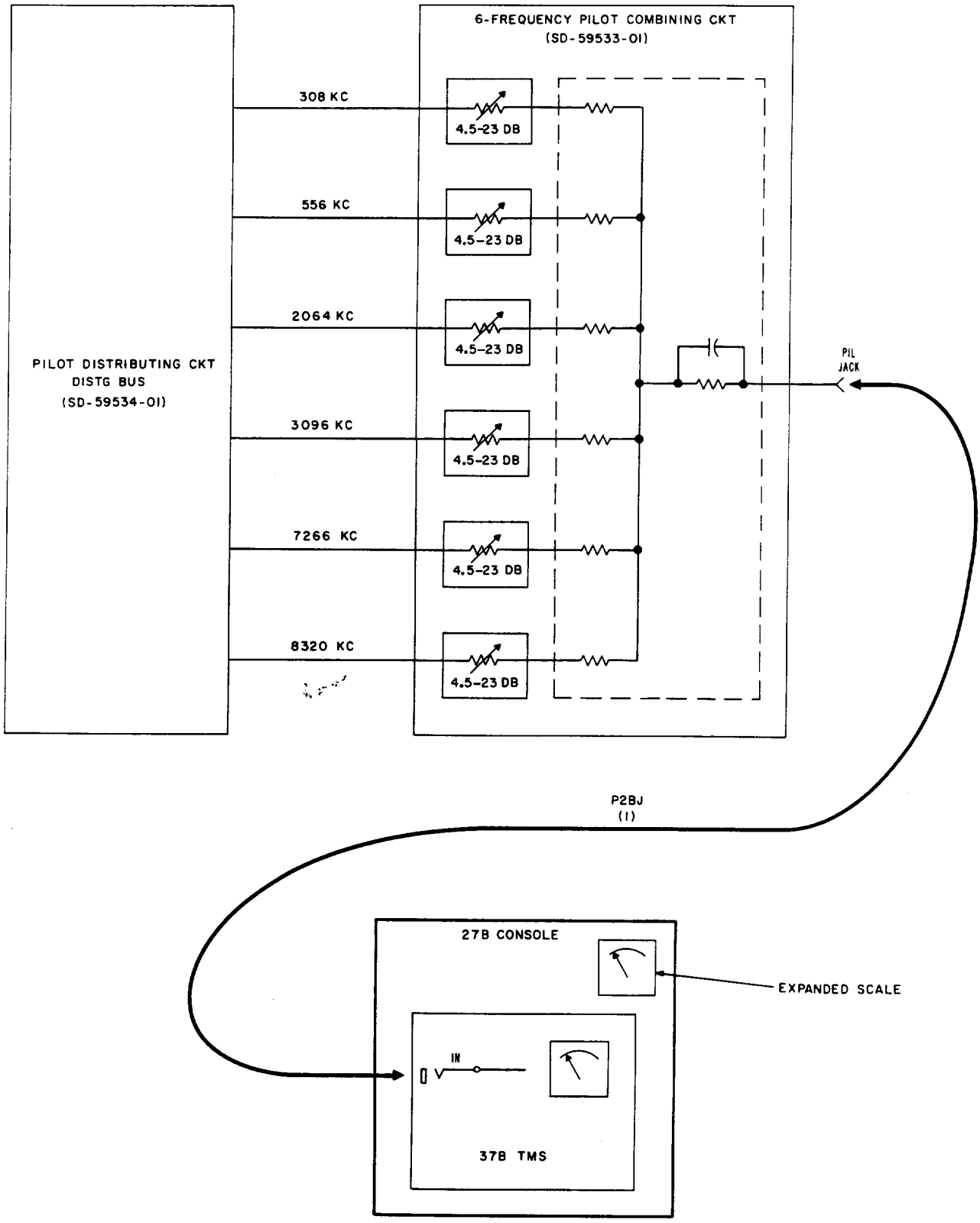

Fig. 1 — Pilot Combining Circuit — Measurement of Six-Frequency Combining Circuit Output

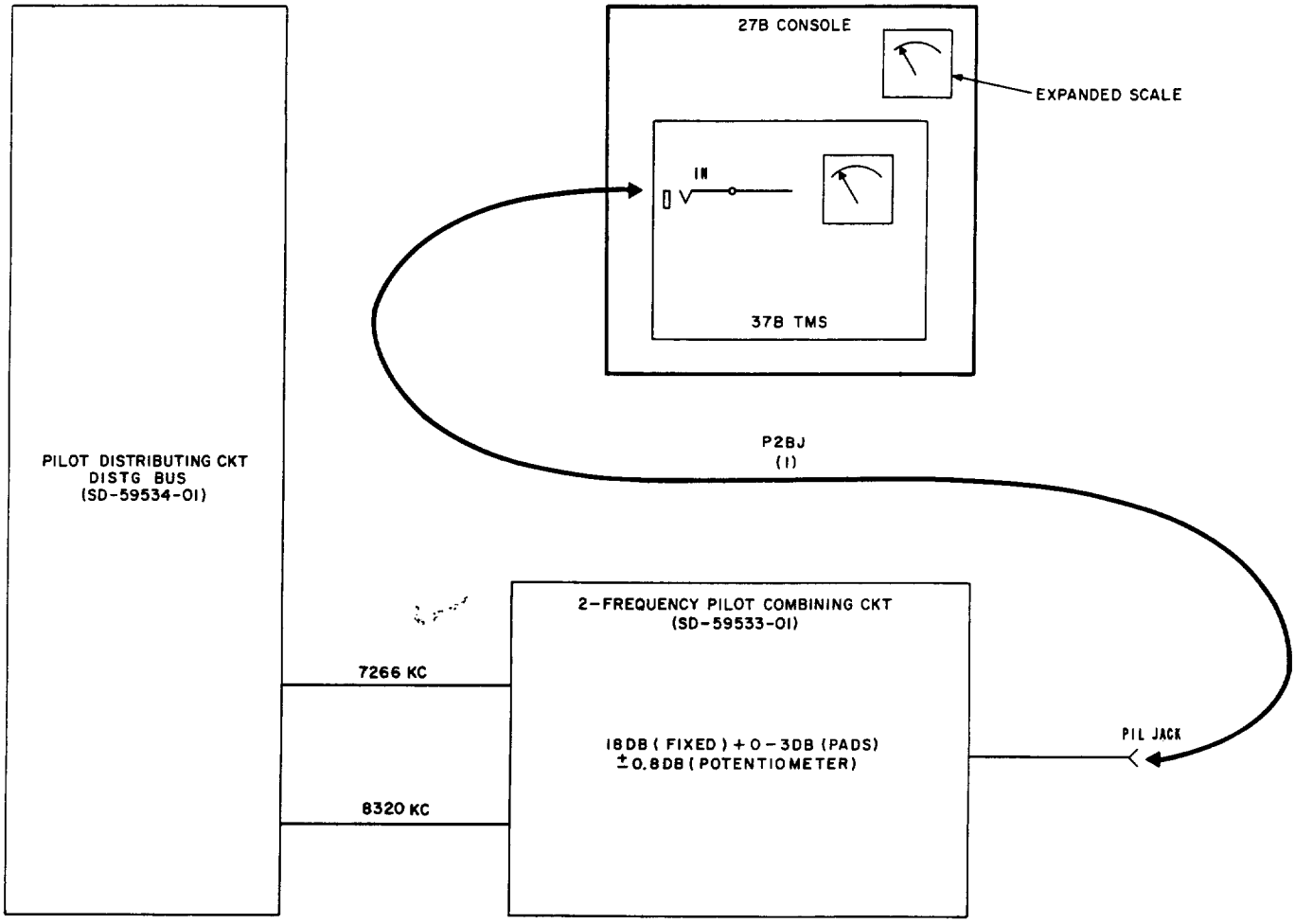

Fig. 2 — Pilot Combining Circuit — Measurement of Two-Frequency Combining Circuit Output