L CARRIER SYSTEM — CARRIER AND PILOT SUPPLY — PILOT COMBINING CIRCUITS WITH PIL TST JACK ASSOCIATED WITH PILOT GENERATOR — IN-SERVICE MEASUREMENT AND ADJUSTMENT OF SIX-FREQUENCY OR TWO-FREQUENCY 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, 16, 19.2, 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 a pilot supply causes hits on superimposed telegraph and data service so the number of transfers should be kept to a minimum. This is important.***
1	Calibrate the 37B TMS for termination measurements. The calibration procedure for terminated measurements made at the TRSG HY OUT jack is given in Section 359-035-505.
2	Make patch designated (1). If testing the regular supply, measurements are made at the TRSG HY OUT. If testing spare pilots, measurements are made at the SP HY OUT. Refer to Section 359-035-505 for precautions and procedures that must be followed when measuring at the TRSG HY OUT jack. *Note:* In-service measurements of pilots are always made at the output of a hybrid.
3	Read the 37B TMS measurement. ***Requirement:*** As indicated in Measurement of Pilots at TRSG HY OUT A or B table in Section 359-035-505 for transmitting terminal main repeaters and at all hybrids using locally generated pilots. *Note:* If these requirements are not met, perform the tests outlined in Section 356-076-501, 356-076-502, 356-081-502, or 356-081-503 as applicable before performing Step 4.
4	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) 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. (b) Connect the SPARE HY to the regular pilot source under test, the source just released in Step (a). (c) Connect 37B TMS to output of SPARE HY. (d) For each frequency not meeting the requirement, set the variable control of the pilot combining circuit under test to midrange and strap the fixed pads to give as close as possible to the required pilot output at the hybrid OUT jack. (e) Restore normal patches and repeat Step 4.
5	Remove all patch cords and restore service to normal.

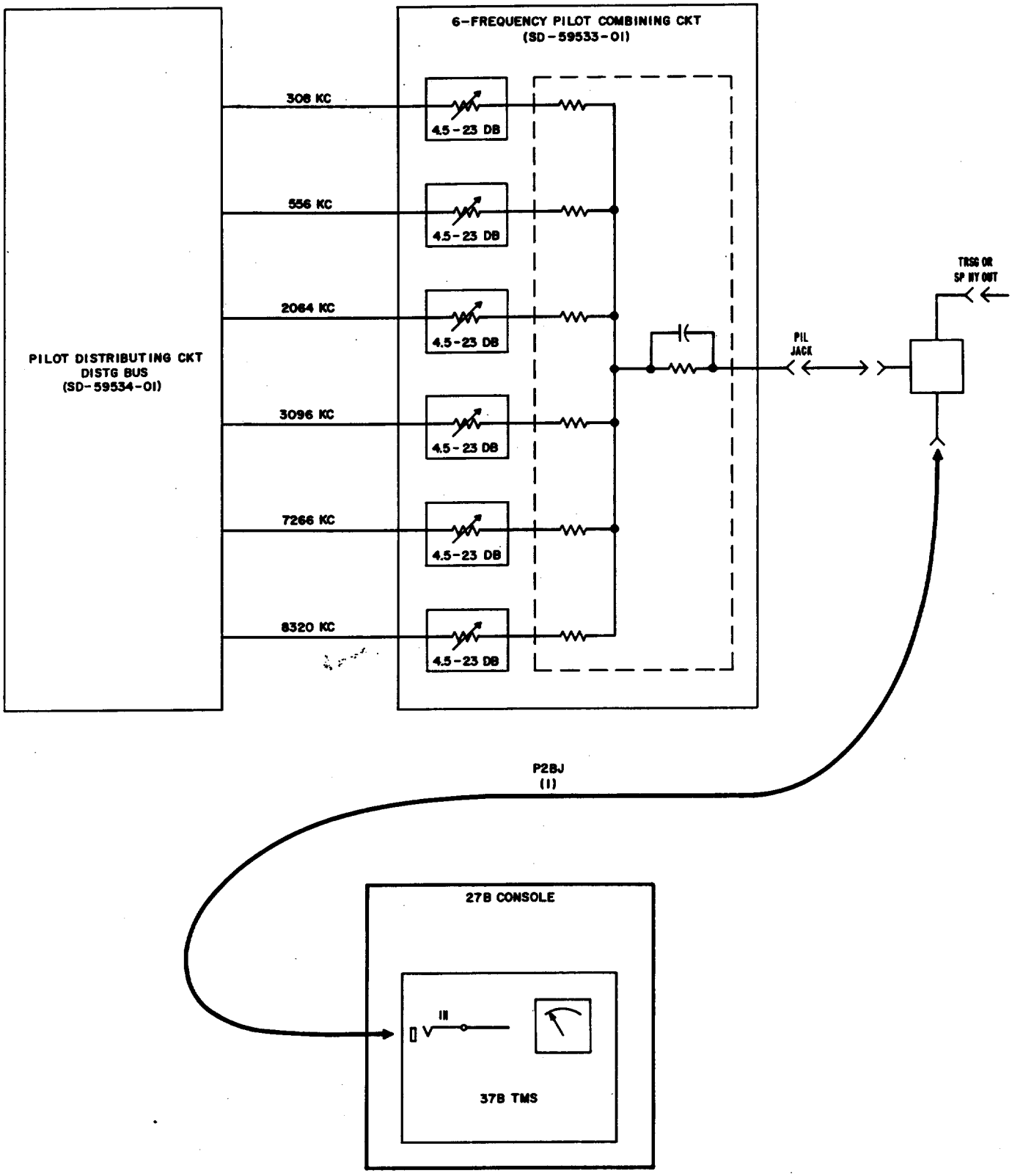

Fig. 1 — Pilot Combining Circuit — Measurement of Six-Frequency Combining Circuit Output

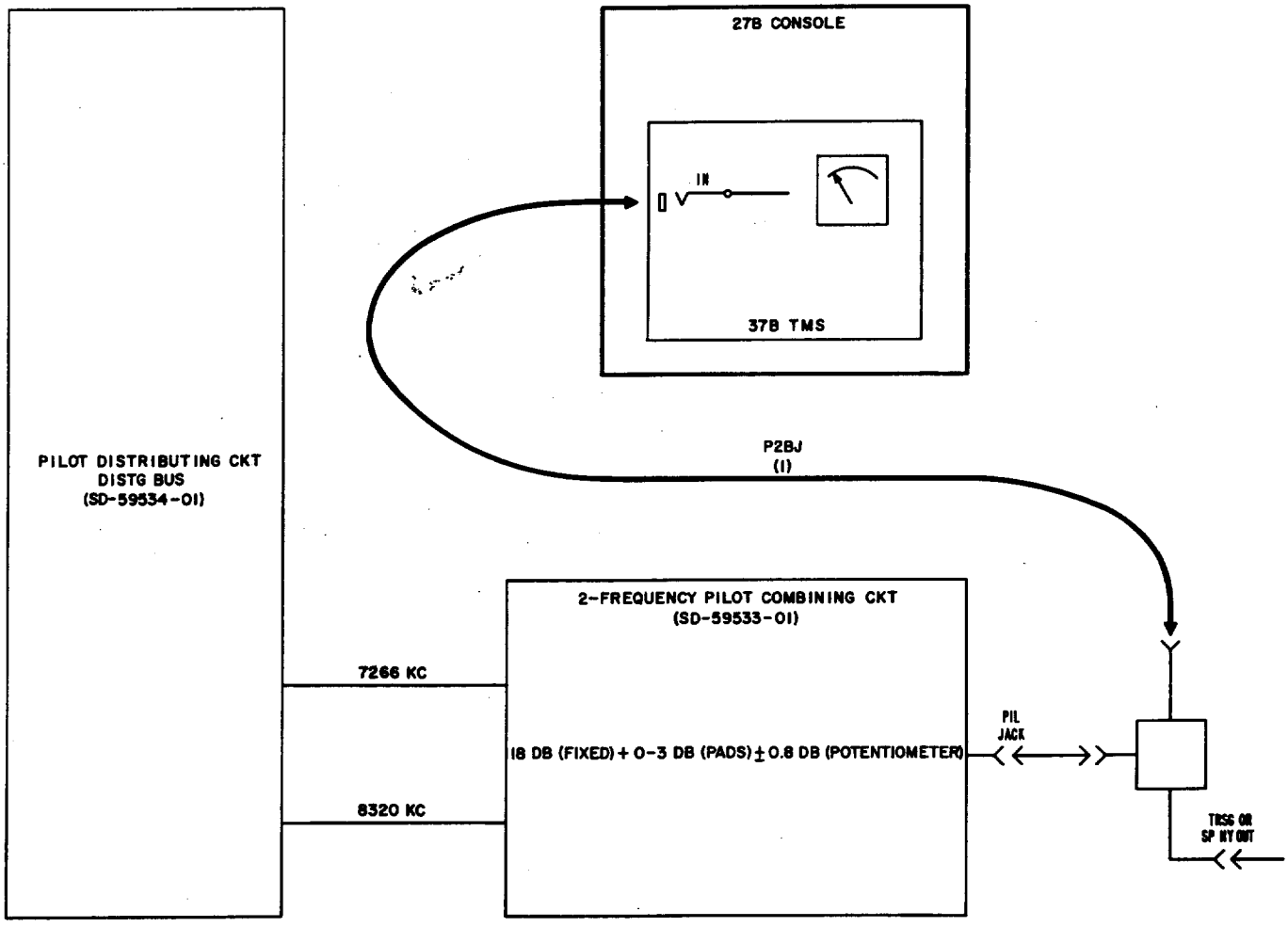

Fig. 2 — Pilot Combining Circuit — Measurement of Two-Frequency Combining Circuit Output