

REV. NO. 0 P24B-AL-4839 CONT ON SHEET 2 SH NO. 1	TITLE TESTING THE INTERCEPT VALVE AMPLIFIER CIRCUIT BOARD FIRST MADE FOR Dwg. 872D446 G4
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GENERAL DESCRIPTION

This board sums the speed error signal, the load reference signal, and an input bias to produce a d-c signal at the output for the intercept valve position loops. Zero volts or less drives the valves to the closed position; +5 volts call for the valves to go wide open. A biasing network limits the output to +5 volts if a higher voltage is called for, and drives the output negative (via a relay contact opening) on an emergency trip.

The transistor circuit is used only for current amplification so the base to emitter drop may be neglected.

The intercept valves will be biased fully open (+5 volts output) during startup and loading by -5 volts at TP5.

If an overspeed occurs, the resulting speed error will act to cancel the bias voltage and load reference signal. The intercept valves have a regulation of 2%, therefore, the speed error resulting from a 2% overspeed will cancel 5 volts at the output. At 40% load (load reference of -2 volts) the intercept valves will start to close at 104% of rated speed, and will be fully closed (0 volts output at 106%).

The overspeed required to start the valves closing is due to the fact that more than 5 volts must be cancelled at the output.

The gain seen by the speed error input (equal to 5 in the steady state) increases to 25 during a transient change through the resistor-capacitor input path.

REVISIONS

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REV NO. 0

TITLE

P24B-AL-4839

TESTING THE INTERCEPT VALVE AMPLIFIER CIRCUIT BOARD

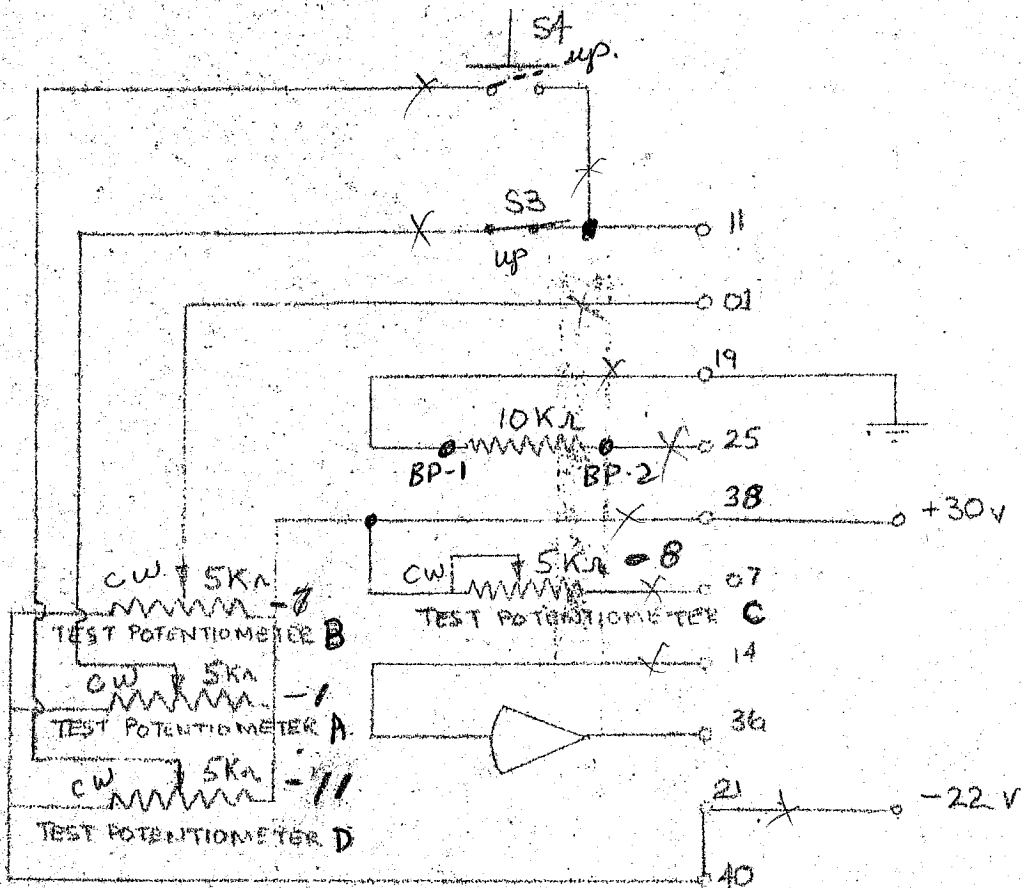
CONT ON SHEET 3

SH NO. 2

FIRST MADE FOR Dwg. 872D446 G4

REVISIONS

TEST SET UP



+ MEMORY TYPE OSCILLOSCOPE

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P24B-AL-4839

ISSUED APR 10 1968

Schenectady, N. Y.

LOCATION

CONT ON SHEET 3

SH NO. 2

REV. NO. 0	TITLE TESTING THE INTERCEPT VALVE AMPLIFIER CIRCUIT BOARD	CONT. ON SHEET 4	SH. NO. 3
P24B-AL-4839	FIRST MADE FOR Dwg. 872D446 G4		

REVISIONS

TEST PROCEDURE

1. Hook up card as per Test Set Up.
2. Adjust R29 for -5.00 volts at TP5.
3. Adjust 5K test potentiometer A for -2.00 volts as measured at pin 11.
4. Adjust 5K test potentiometer B for 0.00 volts as measured at pin 01.
5. Adjust 5K test potentiometer C for +5.00 volts as measured at TP8.
6. Adjust 5K test potentiometer B for +4.00 volts as measured at pin 01.
7. The voltage as measured at TP8 should be 0.00 \pm .1 volt.
8. Adjust the 5K test potentiometer B for 0.00 volts as measured at pin 01.
9. Adjust the 5K test potentiometer A for +1.00 volts as measured at pin 11.
The voltage as measured at TP8 should then equal 0.00 \pm 0.1 volts.
10. Adjust the 5K test potentiometer B for 1.870 volts as measured at pin 01.
11. Open S3. Adjust the 5K potentiometer D for 0.200 volts at pin 11.
12. Open S4. Hook up the memory type oscilloscope to read the voltage at TP8.
13. Open S2. Push S4. The oscilloscope trace should be as shown on Page 4. Remove the scope probe from TP8. S4 may now be released.

FAILURES

Any values that are not obtained, or any adjustments that cannot be reached is a condition for rejection and Control Engineering should be notified.

Jumper B3 NOT USED ON G10

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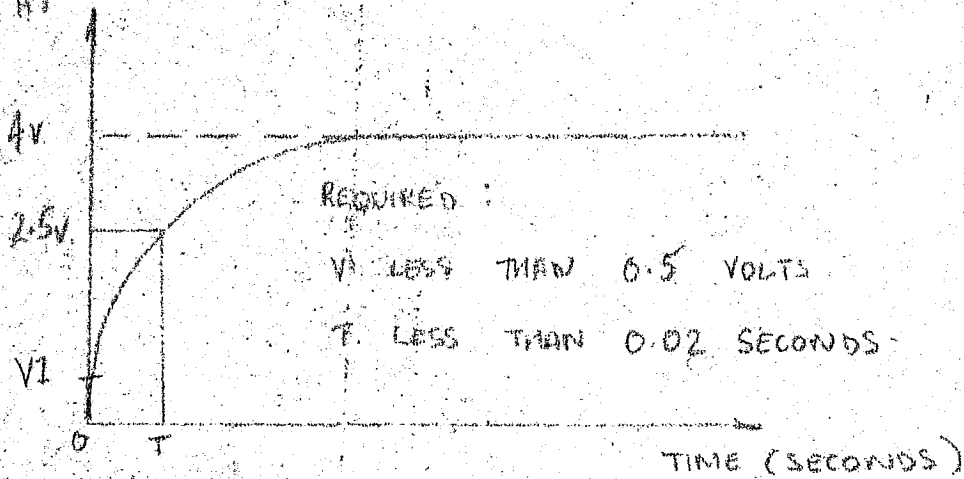
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REVISIONS

VOLTAGE AT
TP8



PREPARED BY: R. J. Dickenson DATE 4/12/68
 R. J. Dickenson
 Turbine Control Engineering

APPROVED BY: L. H. Johnson DATE 4/12/68
 L. H. Johnson, Manager
 Turbine Control Engineering

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