REPLACING PAGE ADDENDUM
Filing Instructions:

1. REMOVE FROM THE SECTION THE PAGES NUMBERED THE SAME AS THOSE ATTACHED TO THIS PINK SHEET.
2. INSERT THE ATTACHED PAGES INTO THE SECTION IN THEIR PLACE.
3. PLACE THIS PINK SHEET AHEAD OF PAGE 1 OF THE SECTION.

RELAYS

AL- AND AM-TYPES

MAGNETIC LATCHING WIRE-SPRING

TIMING AND LATCHING FORCE TESTS USING J94735A TEST SET

1. GENERAL

1.001 This addendum supplements Section 040-505-501, Issue 1. The attached pages must be inserted in the section in accordance with the filing instructions above.

1.002 This addendum is issued to revise 4.03 and Table A.

Attached:

Page 3 dated February 1973, revised
Page 4 dated February 1973, reissued

4. AL-TYPE RELAYS TESTS

The following changes apply to Part 4 of the section:

(a) 4.03—revised

(b) Table A—revised

4. AL-TYPE RELAY TESTS

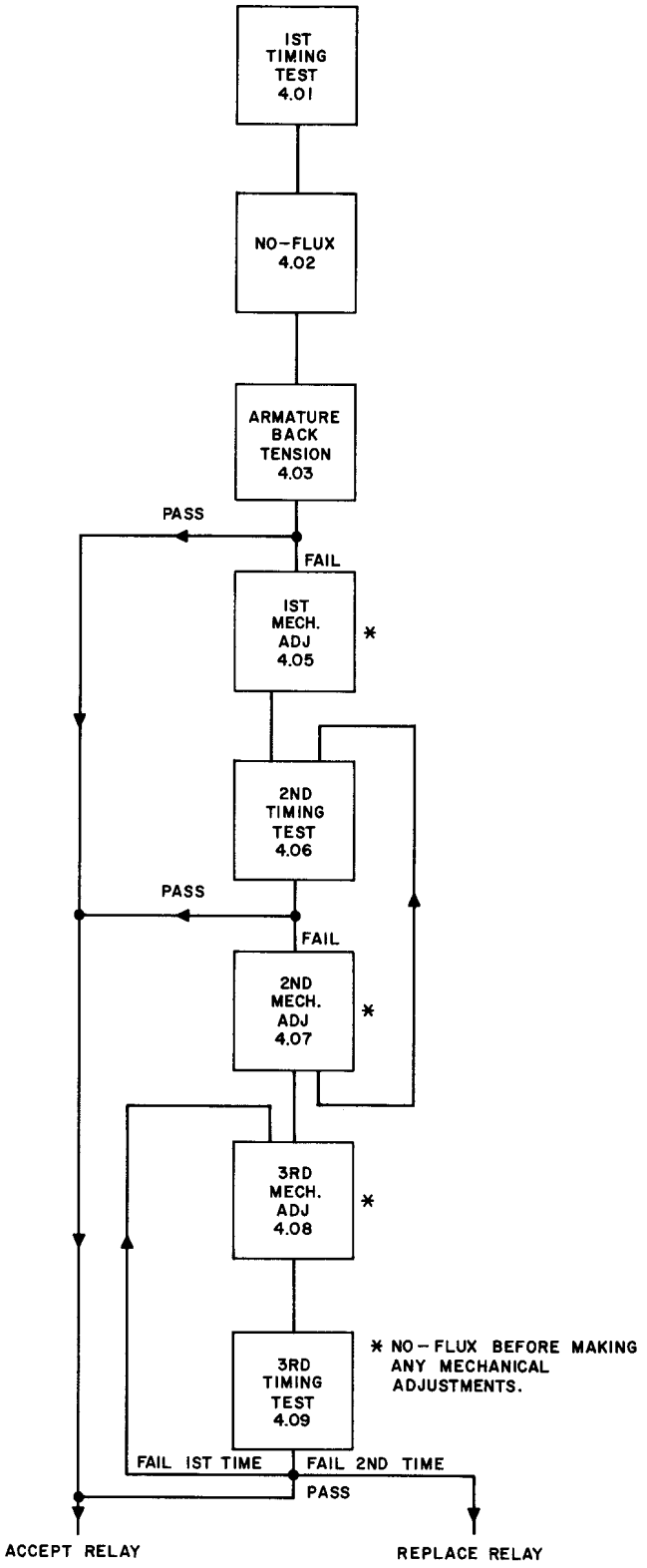

Fig. 4—Flow Diagram AL-Type Relay Timing Test Sequence

4.01 *AL-Type Relay, First Timing Test*

(a) Connect the W3BD cord as follows:

(1) The GRD lead to terminal 1L of the relay under test.

(2) The UPPER lead to terminal 1U.

(3) Do not connect LOWER lead.

(b) Set TEST switch to AL.

(c) Set VOLT CHECK switch to NOR.

(d) Set LATCH/CYCLE switch to CYCLE.

(e) Rotate the TEST ADV switch in one-position steps.

(f) Read time on the meter located on the control panel. The limits for each test are given in Table A.

(g) Repeat Steps (e) and (f) until all four tests are completed.

(h) Set LATCH/CYCLE switch to OFF.

4.02 ***AL-Type Relay, No-Fluxing the Relay:*** Before any measurements or mechanical adjustments can be made on the armature back spring, the relay core must be placed in a no-flux condition. With the relay connected as in 4.01, proceed as follows:

(a) Set TEST switch to AL.

(b) Set VOLT CHECK switch to NOR.

(c) Set LATCH/CYCLE switch to OFF.

(d) Depress the AL/NO FLUX button momentarily but no longer than 5 seconds.

4.03 ***AL-Type Relay, Armature Back Tension Test:*** After no-fluxing the relay, measure the armature back tension by applying the 70D gauge to the tip of the armature as described in Section 040-505-701. The armature shall bear against the armature backstop with a force of ▶approximately 100 grams.◀

TABLE A

TIMING LIMITS

AL-TYPE RELAYS

A AND B (UPPER AND LOWER) AM-TYPE RELAYS

CHECKS	TEST ADV SW POSITION	INDICATOR	TOLERANCE	
			TEST	READJUST
OPERATE	RIGHT	LAMP NO.1	Max operate time 11.0 Milliseconds	Max operate time 10.5 Milliseconds
	LEFT	LAMP NO. 2	Min operate time 4.5 Milliseconds	Min operate time 5.0 Milliseconds
RELEASE	RIGHT	LAMP NO. 3	Max release time 9.0 Milliseconds	Max release time 8.5 Milliseconds
	LEFT	LAMP NO. 4	Min release time 4.0 Milliseconds	Min release time 4.5 Milliseconds

If the AL-type relay passed the first timing test and the armature back tension is within limits, it is considered acceptable. No further tests are necessary.

4.04 ***AL-Type Relay Latching Force Test:*** Not required.

4.05 ***AL-Type Relay, First Mechanical Adjustment:*** This adjustment shall be performed if the relay fails either the first timing test or the armature back tension is out of requirements. To make it possible for the relay to meet these requirements the armature back tension is corrected using tools and methods described in Section 040-505-701. Generally, an increase in armature back tension will increase the operate time and decrease the release time, while a decrease in armature back tension will decrease the operate time and increase the release time.

4.06 ***AL-Type Relay, Second Timing Test:*** This test is similar to the first timing test (4.01). If the first test fails, readjust the armature back tension as described in 4.05. If the relay passes the second timing test recheck (4.05). If the relay passes both tests, it may be rated acceptable.

4.07 ***AL-Type Relay, Second Mechanical Adjustment:*** No-flux the relay as covered in 4.03. If the armature back tension is less than the maximum allowed, increase the tension slightly. If the armature back tension is more than the minimum allowed decrease the tension slightly. Proceed to third timing test, if the tension is at the maximum value allowed and the relay fails the second timing test proceed to the third mechanical adjustment, (4.08).

4.08 ***AL-Type Relay Third Mechanical Adjustment:*** No-flux the relay (4.02). With the relay released, insert a 0.010-inch gauge into the armature gap. Operate the relay manually by means of a toothpick or KS-6320 orange stick taking care that the armature does not lift from the springs. Adjust the operating lug so the motion is just perceptible. Care should be exercised so the edge of the operating lug does not dig into the card. Proceed to 4.09.

4.09 ***AL-Type Relay, Third Timing Test:*** This test is the same as the second timing test except for the action required when the relay fails the test. If a relay fails the third timing test, adjust the buffer spring using 0.013-inch gauge. The adjustment procedure is the same as in 4.08 except the gauge is different. If a relay that has been adjusted with the 0.013-inch gauge fails the third timing test, replace the relay. If the relay passes the third timing test, the relay is acceptable.