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Chapter 1-0

SERVICING SCHEDULES (RAF ONLY)
(E.M. release units, No 1 Mk 1 and No 3 Mk 1)

CONTENTS

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1 General instructions
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General instructions

1 The general instructions for servicing together with a list of tools and materials required to complete the servicing are given in Topic-1.

Servicing notes

2 The term 'examine for serviceability' as used in this schedule means an examination to ascertain that the value or usefulness of the item has not been impaired by any of the following:

2.1 Insecurity of attachment.

2.2 Cracks, fractures or wear.

2.3 Corrosion or contamination.

2.4 Any form of distortion.

2.5 Loose rivets.

2.6 Burrs, chafing or scoring.

2.7 Broken locking devices.

2.8 Deterioration of insulation.

3 Where the operations of a servicing schedule do not call for dismantling the 'examination for serviceability' is to be done as far as possible without dismantling.

4 If, as a result of the examination of the release unit or its components as detailed in this schedule, any item is found to be unserviceable, the Armament NCO is to be informed. This NCO is to investigate and, if necessary, detail and supervise the rectification.

5 The term 'before use servicing' means that servicing carried out before flight or before the release unit is issued for use from the servicing bay.

6 The term 'after use servicing' means that servicing carried out on the release unit after flight or on receipt into the servicing bay after usage, for servicing and/or storage.

7. The term 'held in reserve' as used in this servicing schedule means 'held in store not in a pre-packaged state'.

BEFORE USE/FLIGHT SERVICING

Item No.	Item	Operation
1	EM release unit	Examine for serviceability.
2	EM release unit No.1 Mk.1 when fitted to a pylon carrier with a fuel tank in position	Test for correct cocking on bombing panel, or cocking test indicator, as appropriate.
3	EM release unit No.1 Mk.1 when fitted to a ventral tank installation with a fuel tank in position	Test for correct cocking on bombing panel, or cocking test indicator, as appropriate.

AFTER USE/FLIGHT SERVICING

Item No.	Item	Operation
1	General	Obtain report from aircrew, or ascertain details on Bay transit label (F4932) on return to servicing bay.
2	EM release unit	(1) Clean, using a clean, dry cloth. (2) Examine for serviceability.

BAY SERVICING

Operation as follows:

(a) When called for by the Aircraft Servicing Manual or by the carrier or housing servicing schedule.

(b) Every six months when in general use and when sub-para (a) is not applicable.

(c) Every two years when held in reserve. Transfer to 'In Use' will automatically qualify the item for a further bay servicing, unless this has been carried out within the preceding six months.

(d) After heavy landing.

Item No.	Item	Operation
1	EM release unit	(1) Dismantle as detailed in AP 110G-0312-1. (2) Clean all components

(continued)

BAY SERVICING (continued)

Item No	Item	Operation
2	Case	(1) Examine for serviceability
	(1) Pole pieces (2) Spring switch contacts (3) Contact strips (4) Nylon inserts (5) Pivot holes (6) Securing screws (7) Bomb hook journals	(2) Coat the pole pieces with PX-1 as detailed in Topic-1 (3) Examine contact strips and spring contacts for signs of burning, and clean with crocus paper (4) Check the internal cocking switch contacts as detailed in Topic-1
3	Bomb hooks	
	(1) Springs (2) Suspension pin	(1) Examine for serviceability (2) Check the free length of springs as detailed in AP 110G-0312-1 (3) Check the identification colour, which should be blue (4) Ensure that the larger diameter of the springs is inserted into the bomb hooks, and that the springs retain the bomb hooks in the open position with the unit released
4	Rotor and linkage assembly	
	(1) Rotor (2) Axis pin (3) Contact bridge (4) Coil (5) Springs (6) Rotor link (7) Connecting link (8) Toggle link (9) H-link (10) Fixed pivot pin (11) Roller axis pin (12) H-link pivot pin (13) Roller	(1) Examine for serviceability (2) Examine the coil insulation and contact bridge for signs of overheating (3) Clean the contact bridge with crocus paper (4) Examine the fixed pivot pin: it is important that this pin is undamaged and has a highly polished finish (5) Examine the roller for freedom of rotation and for scoring or deterioration of surface finish, using a magnifying aid (6) Examine the H-link pivot pin for scoring and deterioration of surface finish, using a magnifying aid. (7) Examine the H-link, paying particular attention to the pivot pin bores

(continued)

BAY SERVICING (continued)

Item No	Item	Operation
		Note ... If any defects are found during operations (6) and (7) the unit must be categorised RD and returned to the appropriate Maintenance Unit
5	Buffer	Examine for serviceability
6	Tumbler	
7	Manual release slide Spring and plate	(1) Examine for serviceability (2) Test for freedom of movement within its housing and ensure there is no tendency to stick
8	E.M. release unit	(1) Assemble as detailed in AP110G-0312-1. During assembling ensure that the inner coils of the rotor spring are centrally positioned around the axis pin, that they lie perfectly flat in the recesses, and that the copper bridge is on the lower side, that is towards the hooks (2) Ensure that the mechanical release slide is correctly fitted and, when pressed flush with the case, does not touch the rotor (3) Carry out the full range of tests as detailed in Chap.1-1 or 1-2
9	Servicing record forms	(1) Attach a serviceable label (F4932) (2) Sign as having completed bay servicing

Chapter 1-1

TEST SCHEDULE (RAF ONLY)
(E.M. Release Unit No 1 Mk 1)

CONTENTS

Para.
1 General instructions
2 Test equipment required
Testing
3 Cocking
4 Using the tester, release units and housings
Using the test rig (transportable) for E.M. release units
5 Vibration test
6 Functioning

General instructions

1 The tests detailed in this schedule are to be carried out during the servicing detailed in Chap.1-0. If any defects are found during the tests, the Armament NCO is to be informed. This NCO is to investigate and, if necessary, detail and supervise the rectification. Any illustrations referred to in this schedule are contained in Topic -1.

Test equipment required

2 Test equipment required to complete the testing is as follows:

Ref No	Nomenclature
5G/4486966	Tester, release unit and housing (AP120G-0206-1)
11A/4486905	Test rig (transportable) for E.M. release units (AP110T-0604-125F)
11A/4489717	Pulse unit
11A/	Ancillary set No 1
5G/560	Indicator, cocking test, 7-way
1B/9105202	Gauges, feeler

TESTING

Cocking

3 Proceed as follows:

3.1 Cock the unit

Note ...

In all servicing and testing operations where the unit is to be manually released when it is out of its housing, a No 6 drift is to be used to depress the manual release slide.

3.2 Using the cocking test indictor, test for correct cocking between the contact strip marked COCKING and the case.

Using the tester, release units and housings

4 Press the PRESS TO TEST VOLTS UNDER LOAD switch and adjust the supply voltage until 16 volts is indicated on the voltmeter.

4.1 Screw in the No 1 size studs into the No 1 position on the mounting platform.

4.2 Fit the No 1 housing.

4.3 Fit the No 1 shackle to loading mechanism.

4.4 Cock the release unit, and fit it into the housing. Insert the suspension pin, and then release the unit by depressing the dial-gauge lever.

4.5 Cock the unit on to the load journal, by pulling the loading lever, then return the lever to the free position after operating it; the release and cocking lamps should light.

4.6 Depress the dial-gauge lever until all back lash is taken up. Set the dial to zero. Carefully depress the dial-gauge lever, and when the lever has been depressed between 0.002in and 0.0045in, the cocking lamps should go out.

4.7 Should the cocking lamp fail to light, or remain alight when the lever is depressed in excess of 0.0045in, dismantle the release unit, adjust and check the cocking contact spring, and assemble the unit, as detailed in Topic-1. Then test the unit as detailed in sub-para 4.4 to 4.6.

4.8 Operate the release unit by depressing the release switch. The unit should operate the release, the cocking lamp should go out, and the interlock lamp should light.

4.9 Repeat the test detailed in sub-para 4.5 to 4.8 three times.

4.10 Cock the unit, and release it using the manual release.

USING THE TEST RIG (TRANSPORTABLE) FOR E.M. RELEASE UNITS

Vibration test

5 Prepare the test rig as detailed in AP

5.1 Switch ON.

5.2 Adjust SET FULL SCALE control fully counter clockwise.

5.3 Select SLIP COIL RESISTANCE.

5.4 Adjust SET FULL SCALE control for 40V on the voltmeter.

5.5 Insert the release unit into the housing of the vibration unit, ensuring that the unit cocking and release contactor is on the left, and secure the unit with the quick-release pin.

5.6 Note the reading on the ohms sector of the voltmeter; it should not exceed 6 ohms.

5.7 Switch ON the vibrator, and note the ohmmeter reading; if the reading exceeds 7 ohms the release unit is unserviceable.

5.8 Switch OFF the vibrator.

5.9 Remove the release unit.

Note ...

If no further testing is to be carried out, switch OFF the pulse unit.

Functioning

6 Proceed as follows:

6.1 Adjust SET FULL SCALE control fully counter-clockwise.

6.2 Select INT TIMER CALIBRATE.

6.3 Select BEAM UP, open the gauge valve, and operate the pump. Insert the tension bar into the test rig, pass the bottom beam pin through the bottom beam and the bar, and secure the pin.

6.4 Insert the test housing into the test rig, secure with the top beam pin, and secure the pin. Fit the cocking and release contactor lead (red) or (green) and the interlock contactor lead (mustard) to the housing, and secure with the pins.

6.5 Insert the release unit into the housing and secure with the suspension pin.

6.6 Operate the manual release, select BEAM DOWN and operate the pump until the bomb hooks close around the journal; the RELEASE UNIT COCKING lamp should light.

6.7 Select BEAM UP, operate the pump until the gauge indicates 400lb/in^2, and close the gauge valve.

6.8 Set INTERNAL TIMER to 15 milliseconds.

6.9 Depress OPERATE button; 15 milliseconds should be indicated on the meter. Release the button. If 15 milliseconds is not indicated, adjust INTERNAL TIMER and repeat this operation.

6.10 With the ADJ D.C. VOLTS control, set 16V on the voltmeter.

6.11 Select INT TIMER RELEASE.

6.12 Depress OPERATE button; the release unit should operate and the RELEASE UNIT COCKING lamp should go out and no more than 20 milliseconds should be indicated on the meter. Release the button.

6.13 Switch OFF the pulse unit.

6.14 If the release and interlock operates satisfactorily, that is, 20 milliseconds is not exceeded, slowly open the gauge valve to release the pressure, and remove the unit.

6.15 If the release and interlock does not operate satisfactorily, select BEAM DOWN, slowly open the gauge valve, and operate the manual release. Select BEAM UP, operate the pump, and remove the release unit. The release unit is then to be examined for the cause of failure.