

PART 1

SECTION 2 — CONTROLS AND INDICATORS

CHAPTER 1 — LAYOUT OF CONTROLS AND INDICATORS
AND MAJOR COMPONENTS

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CONTROLS AND INDICATORS

General

1. The weapon system controls and indicators are briefly discussed below, and their locations shown in Fig 1 (F3 and F6) and Fig 2 (T5). Fuller descriptions are given, as necessary, in subsequent chapters. A summary of functions of the major armament con-

trols and indicators is given at Part 2, Section 1, Chapter 5, Table 1.

Armament Controls and Indicators — General

2. The majority of the armament controls and indicators are on the starboard console in the F3 and F6 and on the main panel A1 in the T5.

Master Armament Selector (MAS)

3. This switch, labelled SELECT ARMT (ARMAMENT SELECT on the T5) has four positions OFF/RB/GW/GUNS. The RB position is no longer used. When moved from OFF the following functions are performed:

- a. Power is supplied to the LFS/CRT switch (para 23) and the light fighter sight (LFS) is run up.
- b. Power is supplied to the AI with the 'type of weapon selected' signal.
- c. The armament circuits, necessary for firing the selected weapon, are switched in.
- d. The LFS sightline is depressed by an appropriate amount when required by a selected weapon.

Firestreak Armed Time Indicator

4. This indicator is an electrically-controlled clock, scaled from 0 to 30 minutes. It must be set to zero manually. The clock indicates the elapsed arming and armed time of the Firestreak missile. Contacts, set to operate at an indicated 15 minutes arming and armed time, cause the ARMED window of the armament indicator panel (para 11) to flash at the time when missile cooling supplies (15 minutes duration) should be exhausted.

Red Top Pure Air Pressure Gauge

5. This gauge is used only with the Red Top missiles and is interchangeable with the Firestreak armed time indicator. The gauge indicates the pressure of the pure air in the Red Top cooling system (Part 1, Section 7, Chapter 2).

ARM/SAFE Switch

6. When selected to ARM (ARMED on T5), circuits necessary for weapon firing are made (Part 1, Section 6), the missile arming sequence is started, and with Firestreak fitted, the armed time indicator is started. The appropriate windows of the armament indicator panel (para 11) also light. The guns can be fired regardless of the position of the ARM/SAFE switch.

PAIRS/SINGLE Switch

7. This switch determines whether one or both missiles fire. (Part 1, Section 7, Chapter 1 and 2).

RESET FIRE CONTROL Button

8. The RESET FIRE CONTROL button (GW FIRE RESET on T5) is used to reset the missile launching sequence after a simulated firing. It must not be used after carrying out a live Red Top firing as it removes any fire/missfire indications from the

armament indicator panel, which are used by ground personnel to assess the degree of danger in any misfire. Additionally, a misfired missile could be brought back 'on-line' and this could interfere with a subsequent attempt to fire the other live missile.

EMERG RETRACT Switch

9. The EMERG RETRACT switch (PULL RETRACT EMERG on T5) is no longer required, being an emergency means of retracting rocket launchers.

MISSILE TELEMETRY Switch

10. This spring-loaded push-switch is for use in switching in the telemetry circuits when Red Top telemetry rounds are carried. An integral light in the switch illuminates with the system switched on.

Armament Indicator Panel

11. The indicators on this panel consist of six windows, marked ARMING, ARMED, EVENT 1, EVENT 2, P GONE and S GONE. Each window is lit by two filaments which can be tested by the PRESS-TO-TEST button only when the undercarriage selector is in the DOWN position or when any window is already illuminated; dimming is by a sliding DIM control. The information given by the windows varies with the weapon in use (Part 1, Section 7, Chapter 1, 2 and 3).

Armament Trigger

12. The trigger is on the control control. To eliminate side loads which could prevent full depression of the trigger, pressure must be applied with the crook of the finger. The trigger must be pressed before any weapon can be fired and, to maintain the firing circuits complete, must be held. When the trigger is pressed, circuits are also made which achieve the following:

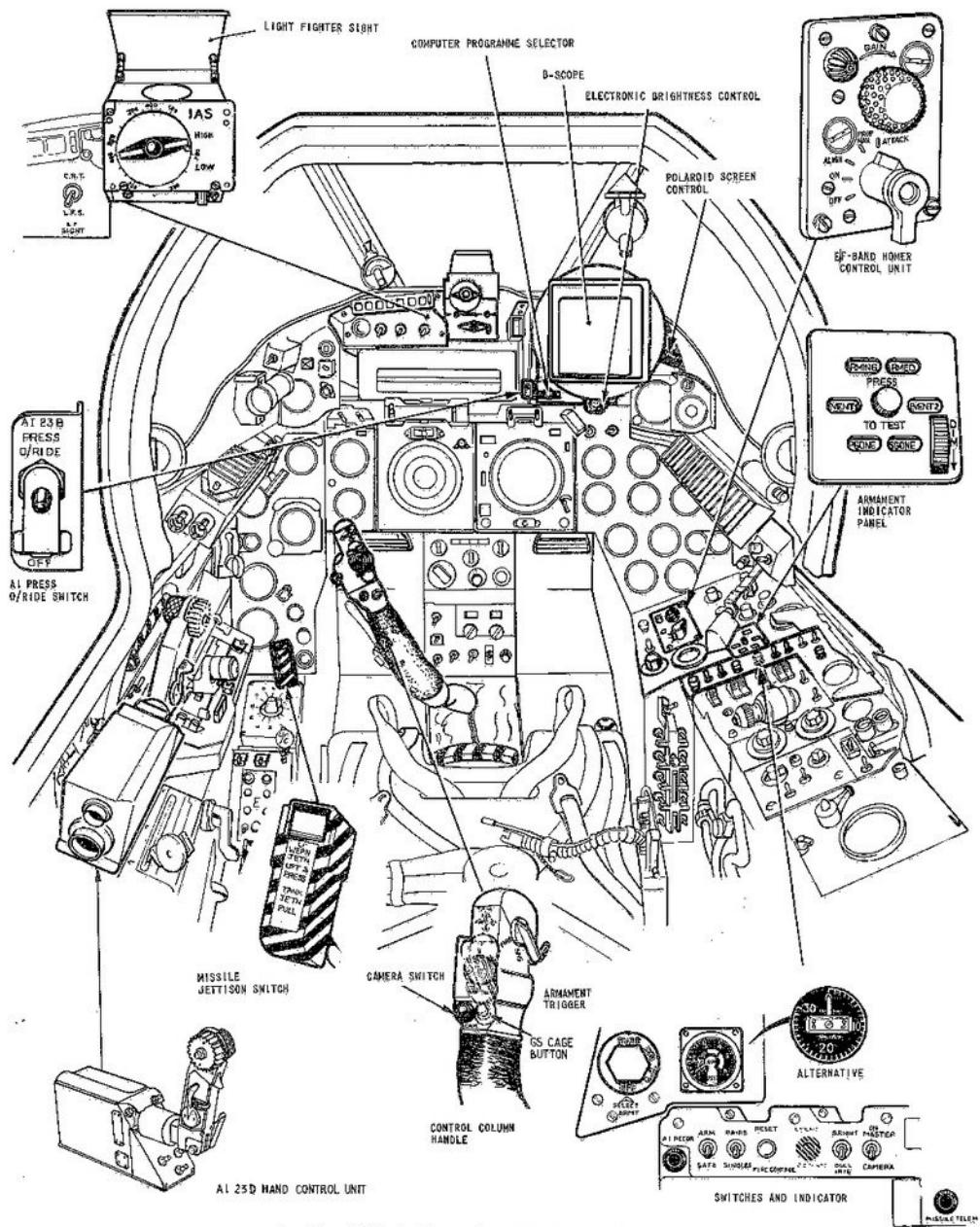
- a. Allow the Fire Signal to reach the weapon pack in a radar attack.
- b. Connect a DC supply to the weapon pack for firing purposes and to relays which operate the G90 and Telford Recorder Camera in an LFS attack.
- c. Start the relight sequence on both engines, to guard against engine flame-out due to the induction of weapon exhaust.

Missile Jettison Control

13. A yellow and black striped handle on the port instrument panel (panel A4 on T5) labelled WEPP JETN LIFT & PRESS (on some aircraft) enables the missiles and their shoes to be jettisoned laterally.

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Layout of Controls and Indicators
and Major Components

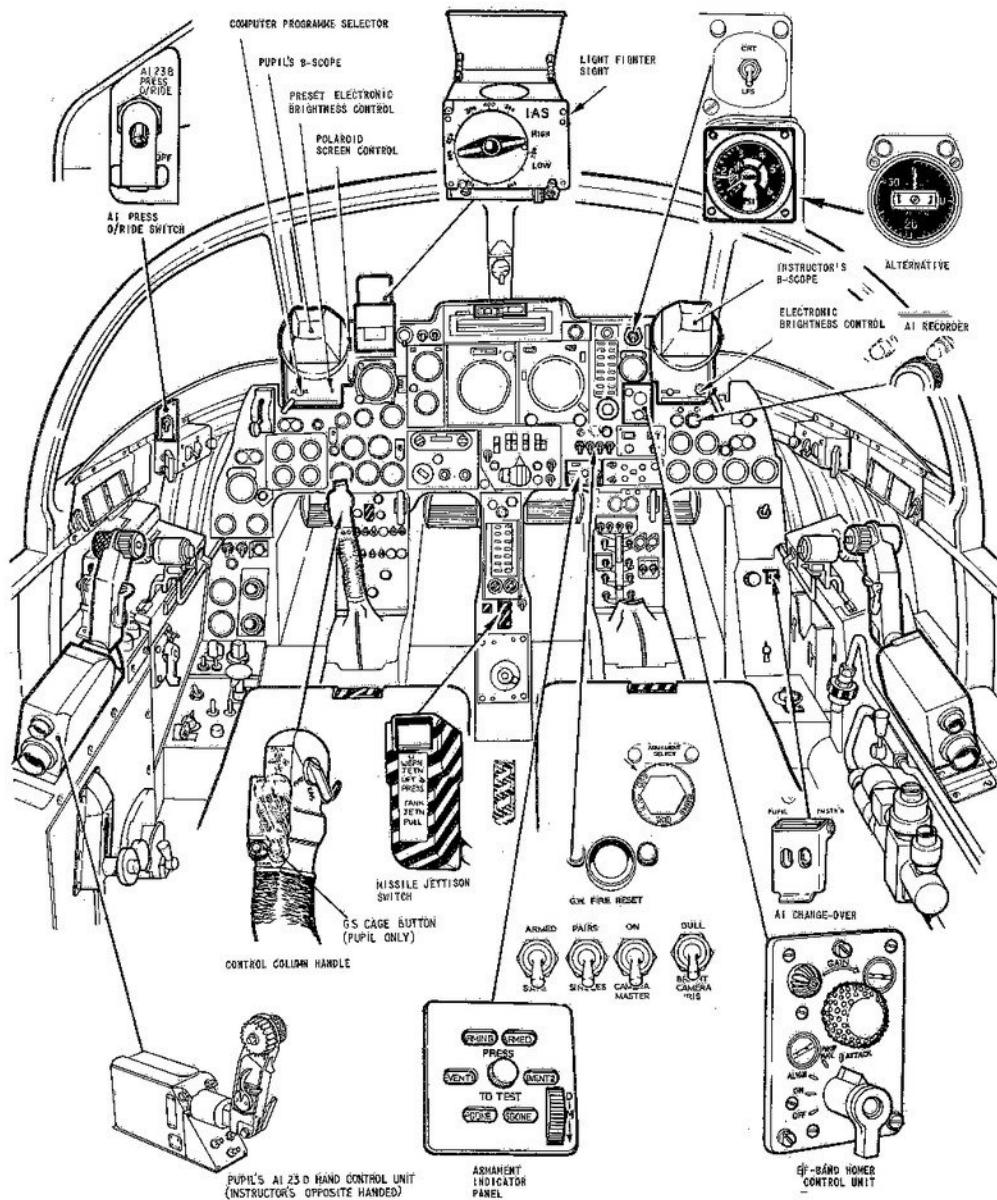


1 - 2 - 1 Fig 1 Controls and Indicators, F3 and F6
«(Minor Hand Controller Amendments)»

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1 - 2 - 1 Fig 2 Controls and Indicators, T5 ◀(Minor Amendments)▶

The flap on top of the handle must be lifted and the exposed button pressed. Cartridges are not normally fitted.

14. On F3 and T5 aircraft, the handle is also the control used for jettisoning the ventral tank; on labelled switches on these aircraft, an additional legend TANK JETN PULL appears. The handle should not be pulled unless the ventral tank also has to be jettisoned.

External Controls and Indicators

15. A key operated armament safety break (Part 1, Section 6) is in the starboard wheel well. When the key is inserted and turned, the armament and missile and overwing tanks jettison circuits are isolated from aircraft DC power.

16. The armament circuits pass through a safety relay which is energised to the firing position when the undercarriage selector is in its UP position. For servicing purposes, the relay can be energised on the ground by a ground arming link fitted to the armament safety break panel. The arming link key carries a red warning pennant.

17. The missiles and their packs are made safe by the removal of firing links and ejector release unit safety plugs respectively (Part 1, Section 7, Chapter 1 and 2).

18. Two misfire indicators, one for each missile, are visible through inspection windows forward of the port and starboard pylons. A dangerous condition of a misfired missile is shown by the extension of the associated indicator.

19. Pressure of the cooling air in the Firestreak pack is indicated on a gauge below the starboard pylon.

Hand Control Unit

20. On the F3 and F6 aircraft an AI23D hand control unit is on the port console. On the T5 aircraft both the pupil and the instructor have a control unit, mounted on the port and starboard consoles respectively. The instructor's control unit does not carry a main on/off switch nor a ground test switch (Part 1, Section 3, Chapter 1); changeover from one control unit to the other is by an AI CHANGE-OVER — PUPIL/INSTRUCTOR switch on panel A6.

Indicator Unit (B-Scope)

21. A B-scope is above the main instrument panel

on the F3 and F6 aircraft and one is fitted forward of each pilot's station on the T5. In addition to the displays discussed in Part 1, Section 3, Chapter 1, the B-scope comprises the following:

- a. An AI pressure failure warning on the port side of the chassis assembly.
- b. A COMPUTER switch with selections 1 to 6 to select the different computer programmes. (See Part 1, Section 3, Chapter 6 and Part 2, Section 1, Chapter 5).
- c. A BRIGHTNESS control which adjusts the brightness of the range time-base on the display.
- d. A polarised light screen, fitted between the cathode ray tube (CRT) and the vizor, adjusts the overall brightness of the display and is controlled by a knob at the right of the CRT.

AI PRESS O RIDE Switch

22. This guarded switch, identified as AI23B in the cockpit, is located below the LFS (on the port instrument coaming on the T5). If pressure in the radar bullet fails, a pressure switch causes the AI transmitter to be switched off and a failure warning on the port side of the B-scope chassis lights. The transmitter is brought back into use by selecting the switch to O RIDE and setting the transmitter switch to off and then on again. This should be done only if operational necessity demands since damage to the equipment is likely to occur.

LFS/CRT Switch

23. A 2-position, LF SIGHT-LFS/CRT switch is fitted at the port coaming (to the left of the instructor's B-scope on the T5). When selected to CRT, the system operates in the radar mode. In an automatic (AI23D) radar attack the full display appears on the B-scope and range brackets and breakaway signals are given. With LFS selected, the light fighter sight is brought into use for LFS attacks and the radar is switched into its radar ranging mode.

E/F-Band Homer Control Unit

24. This control unit, on the starboard console (on panel A1 on T5), is used with the HDG selector on the navigation display, and if required, the autopilot to home on to an E/F-band jamming aircraft. The control unit is described in Part 1, Section 3, Chapter 1 and information relating to E/F-band jamming is given in Part 1, Section 3, Chapter 5.

Light Fighter Sight

25. The LFS is directly forward of the pilot (pupil only on the T5). With the exception of the LFS/CRT switch described at para 23, all the controls

and indicators associated with the LFS are mounted on the sighting head; these are:

- a. A display reflector.
- b. An airspeed setting control (not functional).
- c. Event markers displayed on the reflector.
- d. A brightness control on the underside of the sighting head.

For a full description of the LFS, see Part 1, Section 4, Chapter 1.

G90 Camera

26. The camera controls consist of the CAMERA MASTER switch, an IRIS, BRIGHT/DULL switch on the starboard console (on panel A1 on T5) and the CAMera operating button on the control column. With the CAMERA MASTER switch ON, the IRIS-BRIGHT/DULL switch sets the camera aperture and the camera runs in the following circumstances:

- a. When Launch Warning is received in a GW radar attack, whether the trigger is pressed or not, provided that ARM has been selected.
- b. When the trigger is pressed (except in a GW radar attack).
- c. When the CAMera button is pressed.

Telford Recorder Camera

27. The camera controls consist of the CAMERA

MASTER switch, a manually adjustable iris, and the CAMera button on the control column. With the CAMERA MASTER switch ON, the camera runs in the following circumstances:

- a. When the trigger is pressed (except in a GW radar attack).
- b. When the CAMera button is pressed.

AI Visual Recorder

28. The visual recorder is controlled by the AI RECDR push/pull switch on the starboard console (labelled AI RECORDER on panel A1 on the T5). The recorder runs when the switch is pulled up. An integral light in the switch illuminates whenever recording is taking place.

GS CAGE Button

29. A GS CAGE button, on the control column, provides gunsight caging in an LFS GUNS attack, and parallels the reject out function of the reject lever when the MAS is at GW.

MAJOR COMPONENTS

Location of Major Components

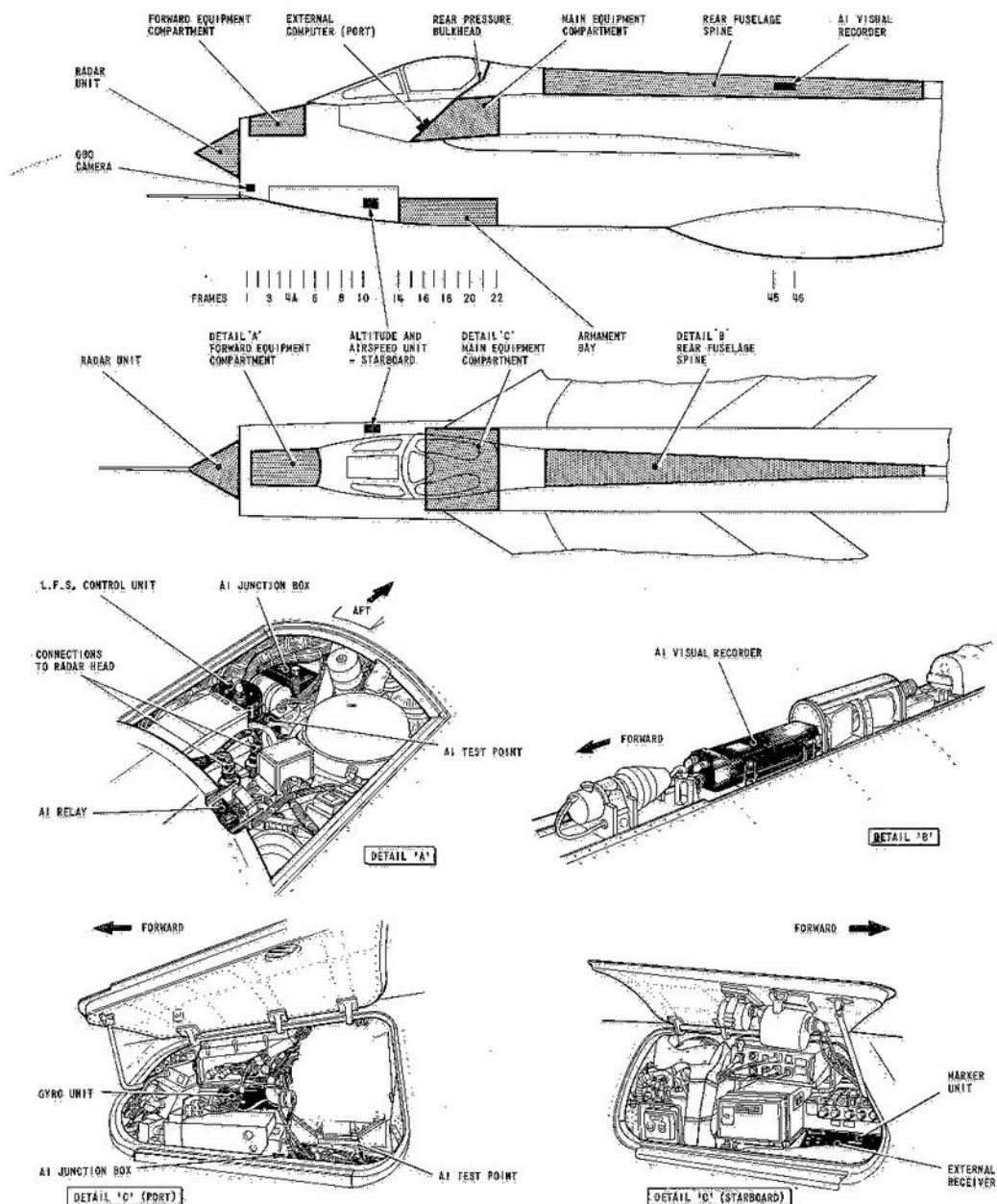
30. The major components of the weapon system are listed in Table 1. Their location in the aircraft is shown in Fig 3 (F3 and F6) and Fig 4 (T5).

Table 1 — Major Components

| Component | Location | Part, Section, Chapter |
|------------------------------|-------------------------------|------------------------|
| <i>Weapons</i> | | |
| Firestreak pack | Armament bay | 1—7—1 |
| Red Top pack | Forward end of ventral pack | 1—7—2 |
| Gun Pack (F6) | | 1—7—3 |
| <i>AI23D</i> | | |
| Radar unit | Radome, air intake duct | 1—3—2 to 6 |
| Marker unit | Main equipment compartment | 1—3—2 |
| Gyroscope unit | Main equipment compartment | 1—3—2 |
| Altitude and airspeed unit | Frame 10 — starboard | 1—3—2 |
| External receiver | Main equipment compartment | 1—3—5 |
| External computer | Rear pressure bulkhead, port | 1—3—6 |
| <i>Light fighter sight</i> | | |
| LFS control unit | Forward equipment compartment | 1—4—1 |
| <i>Cameras and recorders</i> | | |
| G90 camera | Radome support strut | 1—5—1 |
| Telford recorder camera | Above the LFS | 1—5—2 |
| AI visual recorder | Rear fuselage spine | 1—5—1 |

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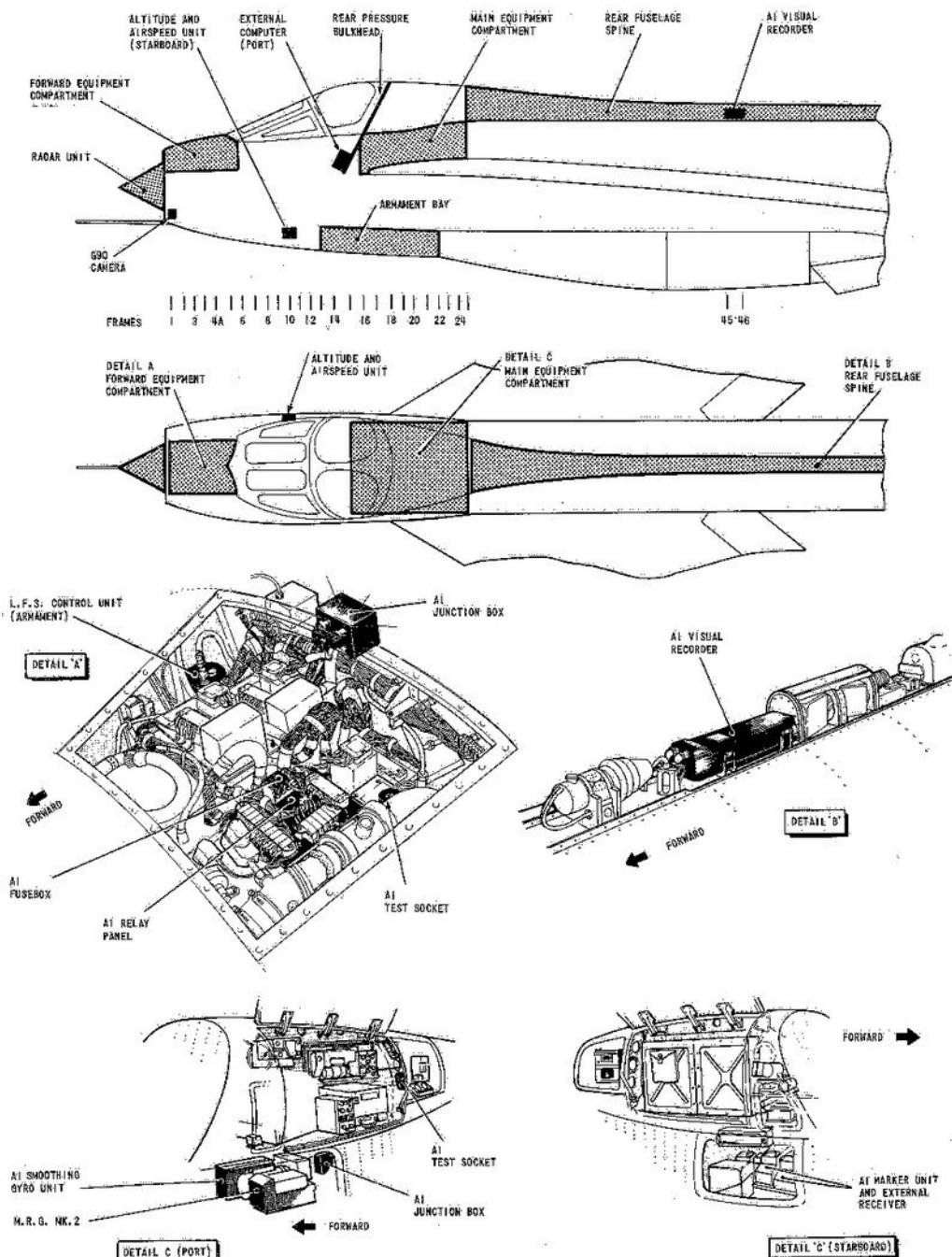


1 - 2 - 1 Fig 3 Layout of Major Components, F3 and F6
◀ (Detail 'C' Port Amended) ▶

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1 - 2 - 1 Fig 4 Layout of Major Components, T5
(Detail 'C' Port Amended) ▶

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