

The Dassault Mirage III in South African Air Force service



PART 7

SAAF Mirage III RZ and R2Z detail photos

This E-book was compiled by Malcolm Reid
Pretoria May 2022

In the compilation of this document, data has been obtained from various Internet sources and contributors. This data has been cross-referenced where needed to ensure, as much as possible, the consistency and correctness of that data. There have been many contributors to various Internet forums relating to the SAAF Mirage III, and in particular, the Unofficial SAAF Website (saairforce.co.za). Without the efforts by fellow enthusiasts, pilots and crews in providing this written and photographic documentation of the history of the Mirage III in SAAF service, this narrative would not have been possible. Many of the images sourced via Internet searches have been used without the specific permission from the originators as, in many cases, these are unknown. Others have been included with the originators' details retained and unedited as sourced from the Internet. The images have been included in this document on a "fair use" basis for the purposes of historical research and the recording thereof. This document is offered publically as a free E-book and in no way does it provide a source of income for the author or any other party.

As noted in Part 1, the quality of images in many instances is low due to the electronic file size, some less than 50kB. These images have been retained as sourced from the Internet and have not been subject to any adjustments (hue, saturation etc.) and have not been sharpened.

Part 7 - SAAF Mirage III RZ and R2Z detail photos

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Pilot's view would look like this. This is RZ #838.

1 Mirage IIRZ #835 – Walk around



Camera sighting aid which is raised by the pilot and used to align the side looking cameras to the target.
There is one each side of the cockpit.

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Details to note – centerline RP825 fuel tank, grey outer leading edge to intakes, but green on inside. Late antennae configuration.



Doppler antenna. Above this is the black CRWS antenna and the small straight incidence probe above that. The ejection seat triangle is not the same as for other SAAF Mirage III variants. This is how the RZs were delivered.



RZ #835 appears to have been unique in the application of the aircraft number on the main gear doors.



Engine bay looking forward towards the bifurcated intake trunking.

2 Mirage IIRZ #835 – Nose landing gear details

Nose wheel leg with dual landing lights and the black electrical cable.

The nose gear doors comprised 3 sections : two forward opening covers and the main cover which opened laterally to starboard.

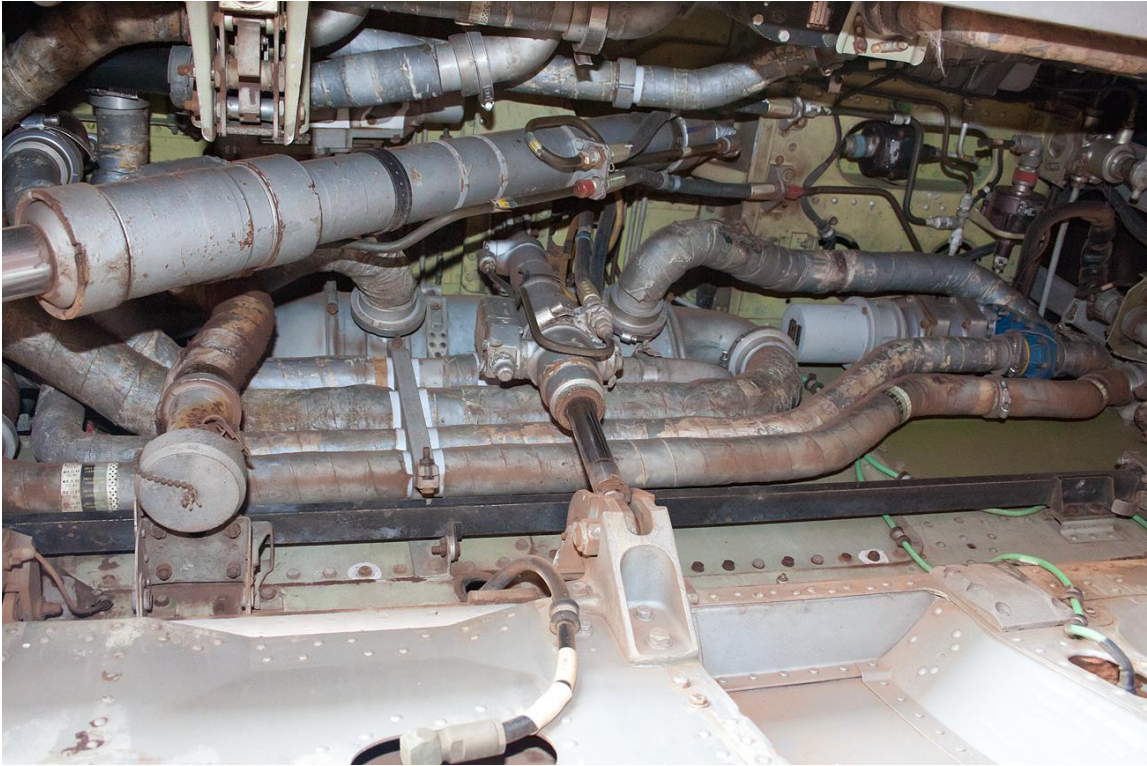
The steering mechanism and hydraulic tubing can also be seen above the tyre.



Upper section of nose landing gear with retraction cylinder jack. The two seat BZ, DZ and D2Z had a slightly different arrangement with the jack offset to port.



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Details of the nose gear bay. The RZ and R2Z nose gear bays were characterized by a complex set of plumbing, which included heating ducting routing to the camera bay in the nose. The CZ and EZ had a far less cluttered nose gear bay.

The view in both images is looking to starboard with the main door at the bottom of each image. The door actuator jack, the leg retraction jack and the cable to the IFF antenna on the door are visible.



3 Mirage IIRZ #838 – Cockpit and ejection seat details



Image taken in 2009 before the seat was refurbished.

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Instrument panel and Martin Baker Mk. 4 ejection seat details as seen at the SAAF Museum Swartkop Air Base in 2016.



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Instrument panel of RZ #838

Left instrument cluster for primary flight instrument including (from left to right, top to bottom) :

- Standby Altimeter
- G-meter or accelerometer
- “Bezu Ball” attitude indicator
- Primary altimeter
- Air Speed Indicator (ASI) or mach meter
- Vertical Speed Indicator (VSI)
- Standby artificial horizon

The three yellow striped buttons are for the auxiliary fuel tank jettison. Above and to the left of this is a red square cover over the chaff/flare dispenser button.



Right instrument cluster for navigation and engine control instruments (from left to right, top to bottom) :

- Open square panel – most likely for the Compact Radar Warning System (CRWS) threat indicator
- Intake shock cone position indicator
- Position and Homing Indicator (PHI) (square panel with large round dial)
- Radio altimeter (BZ and CZ did not have this instrument)
- In the yellow surround :
 - Engine RPM
 - Fuel quantity gauge
 - Engine Gas Temperature (EGT) or T4
 - The round instrument with 6 orange lamps is the fuel transfer indicator cluster.

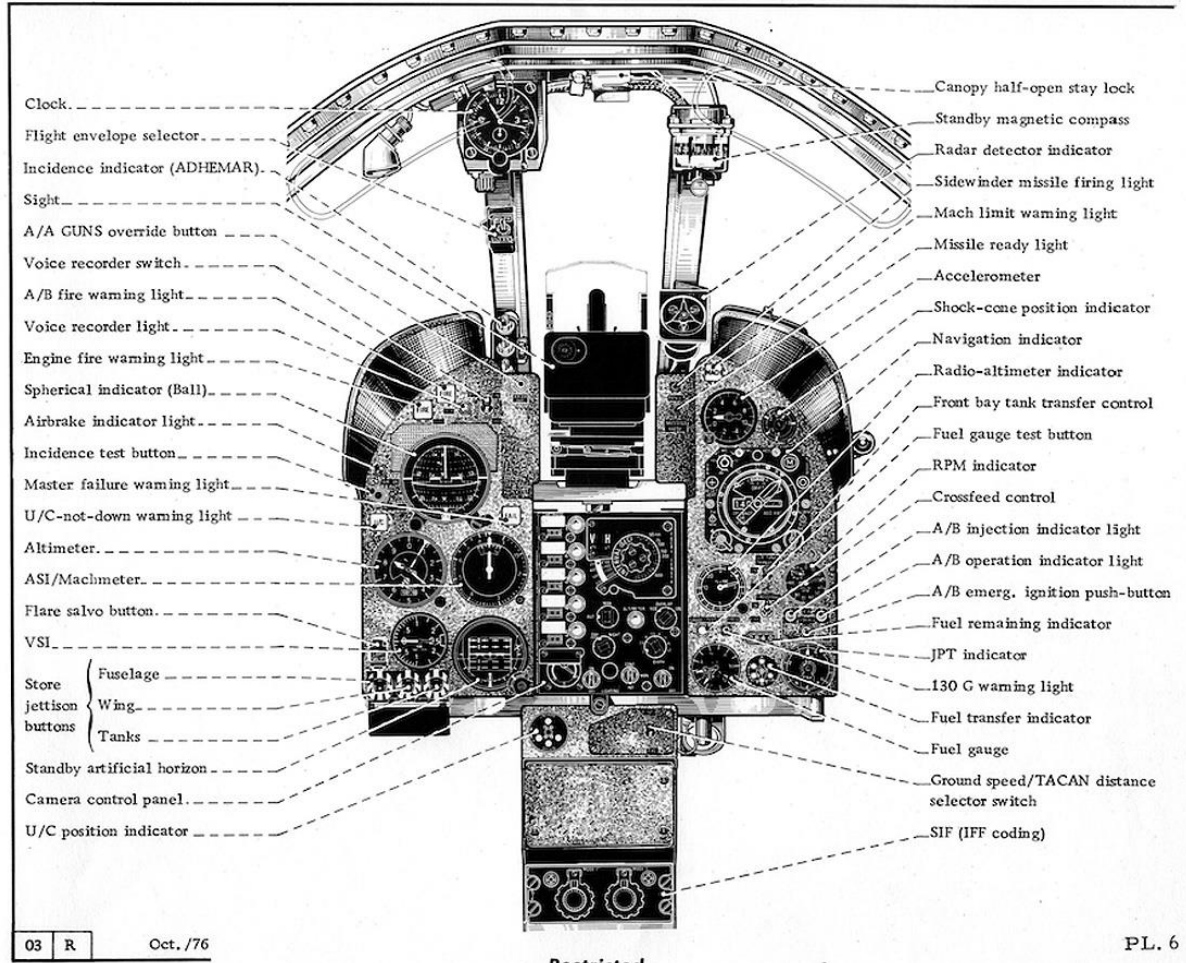
The engine instruments are designated as those within the yellow line.

To the left of this cluster is the camera control panel. The large round silver knob is the camera focal length selector.



MIRAGE

INSTRUMENT PANEL AND WINDSHIELD

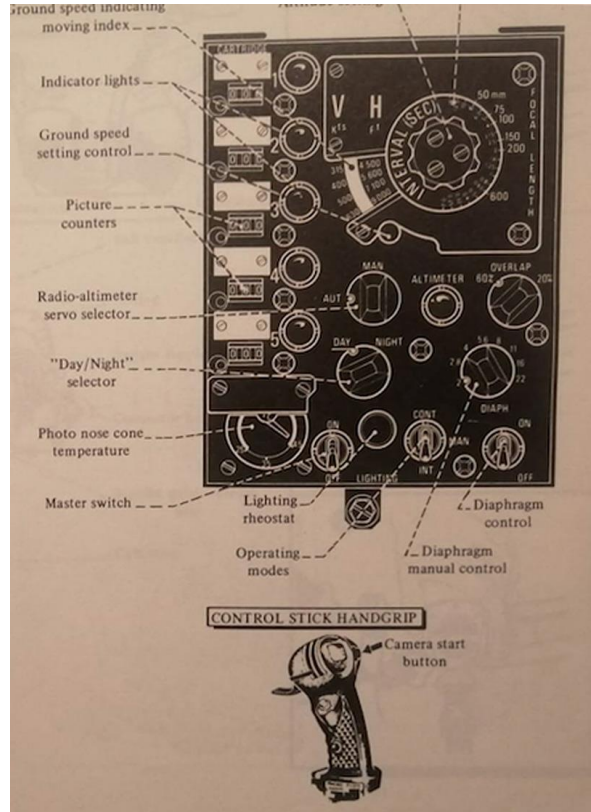


Page from the SAAF RZ Flight Manual dated October 1976. Note the differences in instrument panel layout compared to the images from RZ #838. The RZ instrument panel was significantly changed post delivery.

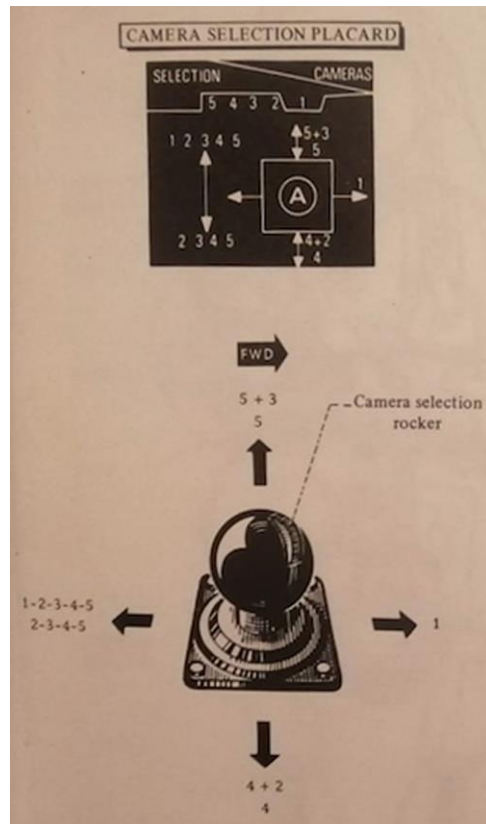


Clock (upper left) and standby compass mounted to windshield frame.

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Camera control panel at the center of the instrument panel



Camera selector on the left cockpit sill. Pushing the knob forward, left or back would select, respectively, the forward, left or vertical camera (no right hand camera).

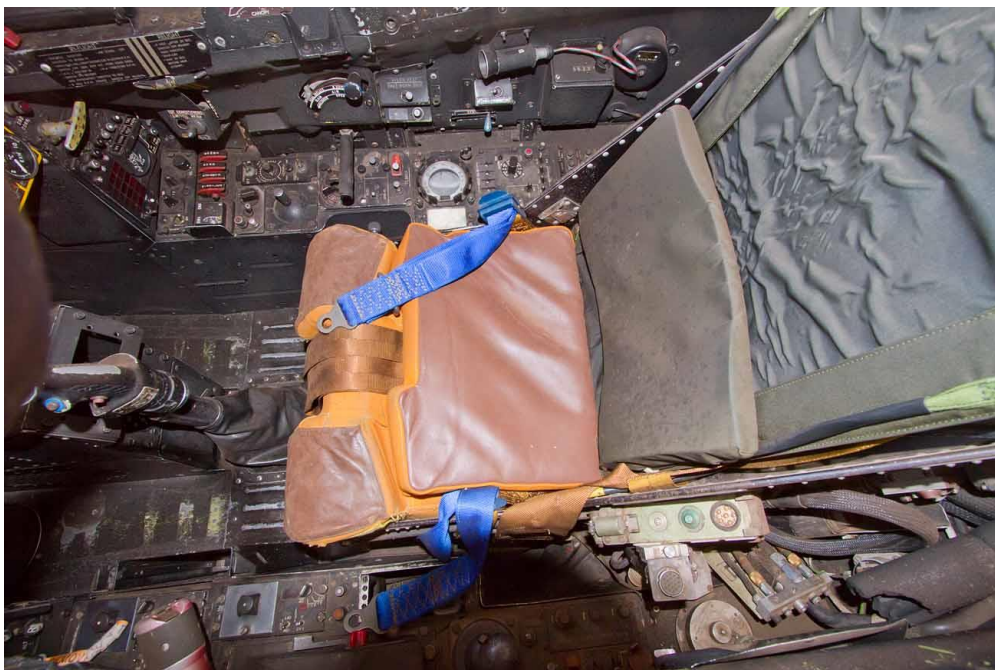
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Control column. The square object to the left is the roll and pitch trim switch, the round red button is the camera start button, the red square is the trigger. The yellow stripes are the spin recovery marks.



The panel with red rectangles is the systems warning panel. The four red switches are for the stores selector switches.



MB. Mk. 4 ejection seat and right hand console.

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Gyro gun sight assembly and Head Up Display (HUD) details – the oblique mounted glass is the Combining Glass or HUD reflector and the round glass is part of the projector.



Gyro gun sight. The square box is the gun camera.



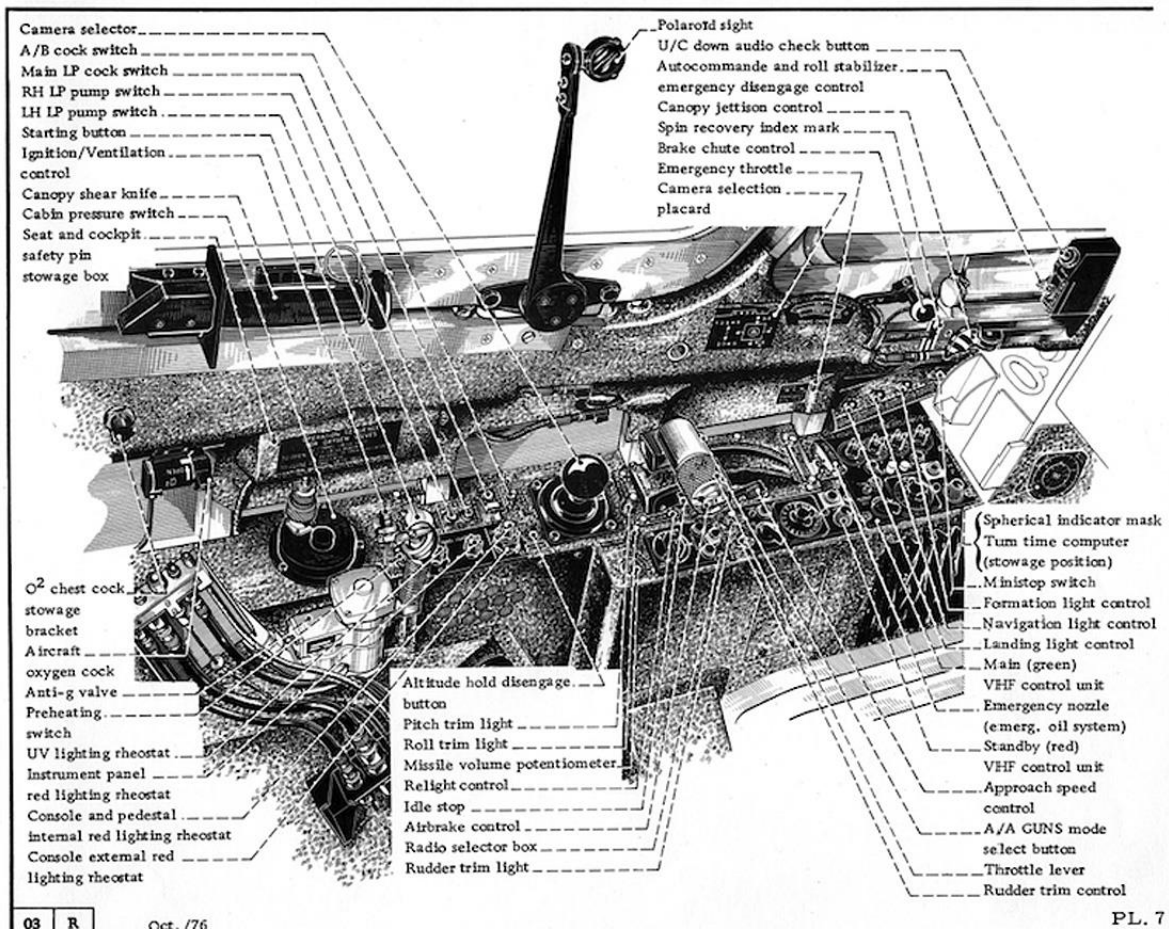


The two long black objects on either side of the canopy are the camera polaroid sights which are raised by the pilot and used to align the side looking cameras to the target.

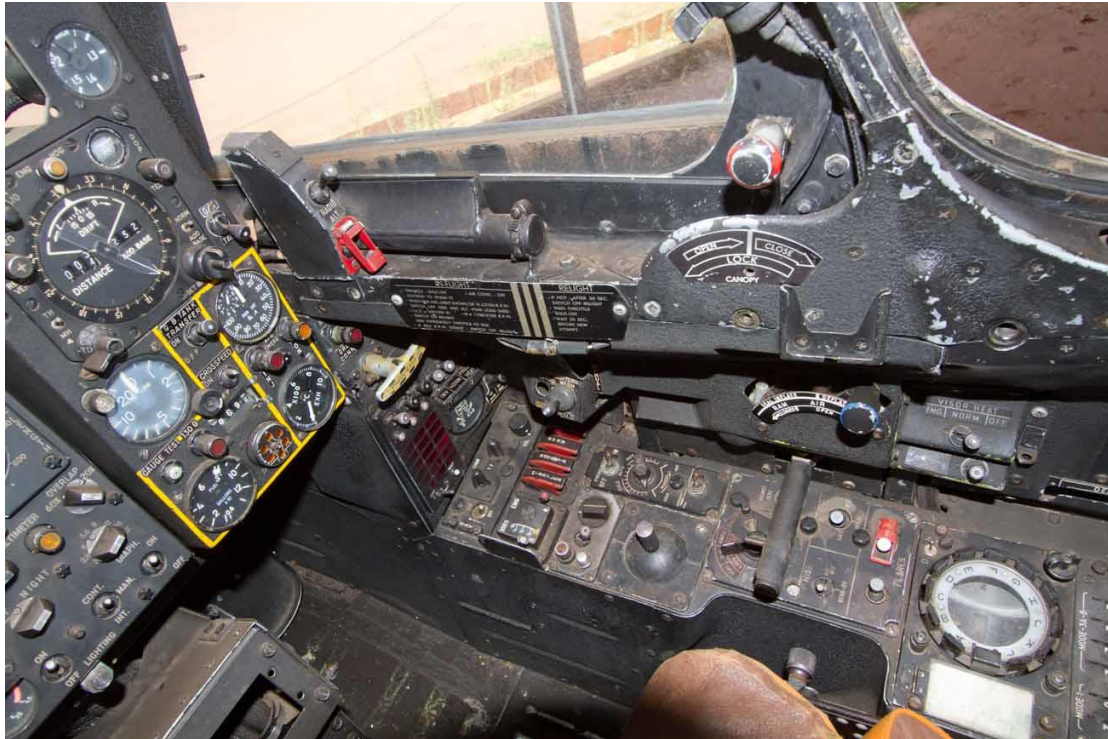
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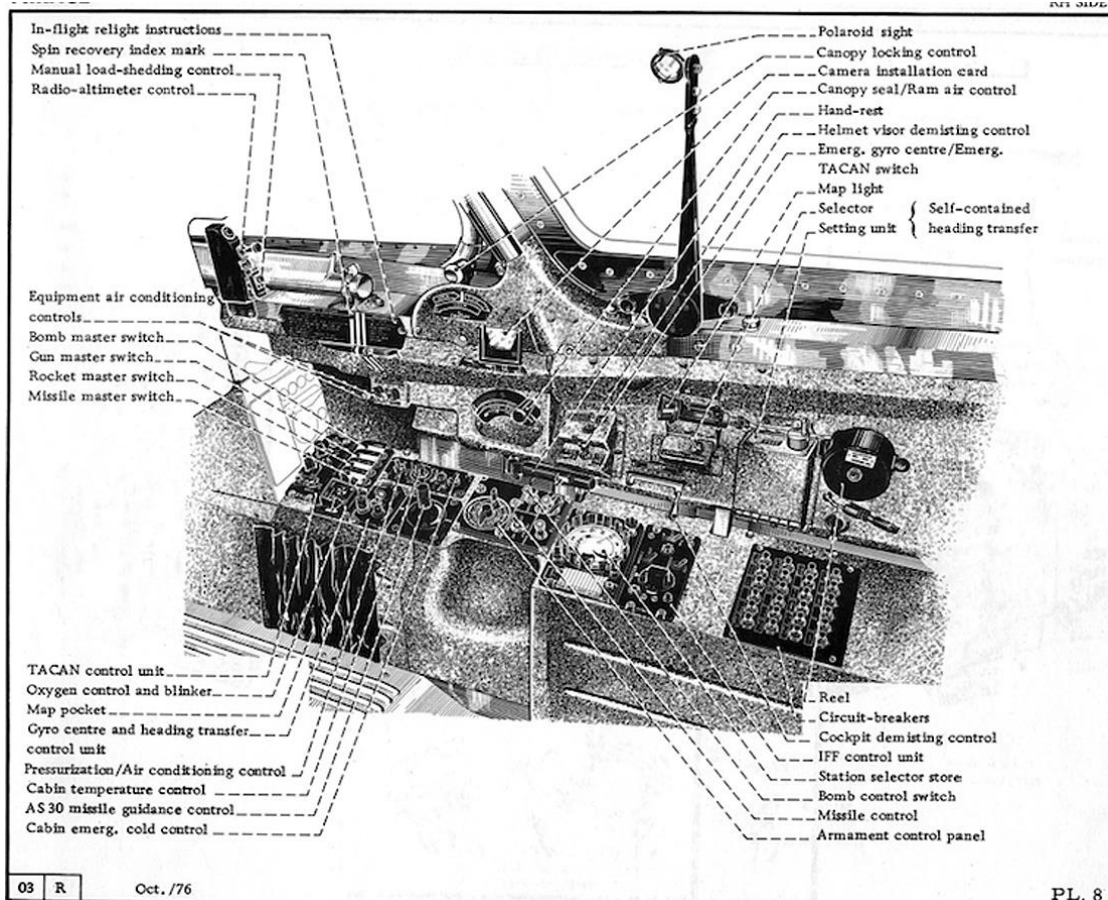
Left side of the cockpit. The red cylindrical object is the throttle lever. The round black control knob at bottom left is the camera selector knob.



From RZ Flight Manual.



Right side of the cockpit. The red knob at top right is the canopy open/close/lock handle. The round black knob beneath this is the canopy seal/RAM air lever.



From RZ Flight Manual

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The small dial just ahead of the control column is the cabin altimeter.



Upper right side of Martin Baker MB.MK.4 ejection seat and rear bulkhead.

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Martin Baker MB.MK.4 ejection seat.



Cluttered rear right hand bulkhead with electrical harness lines and what appears to be a fuse panel.



Upper left hand side of ejection seat.



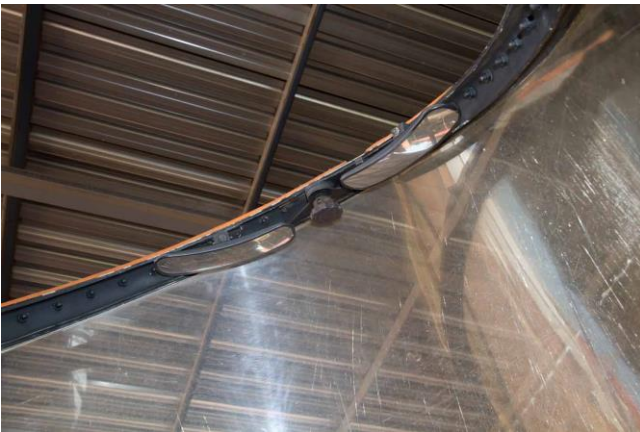
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Left side of canopy.



Right side of canopy with manual camera aiming sight in stowed position.



Rear view mirrors on forward frame of canopy.



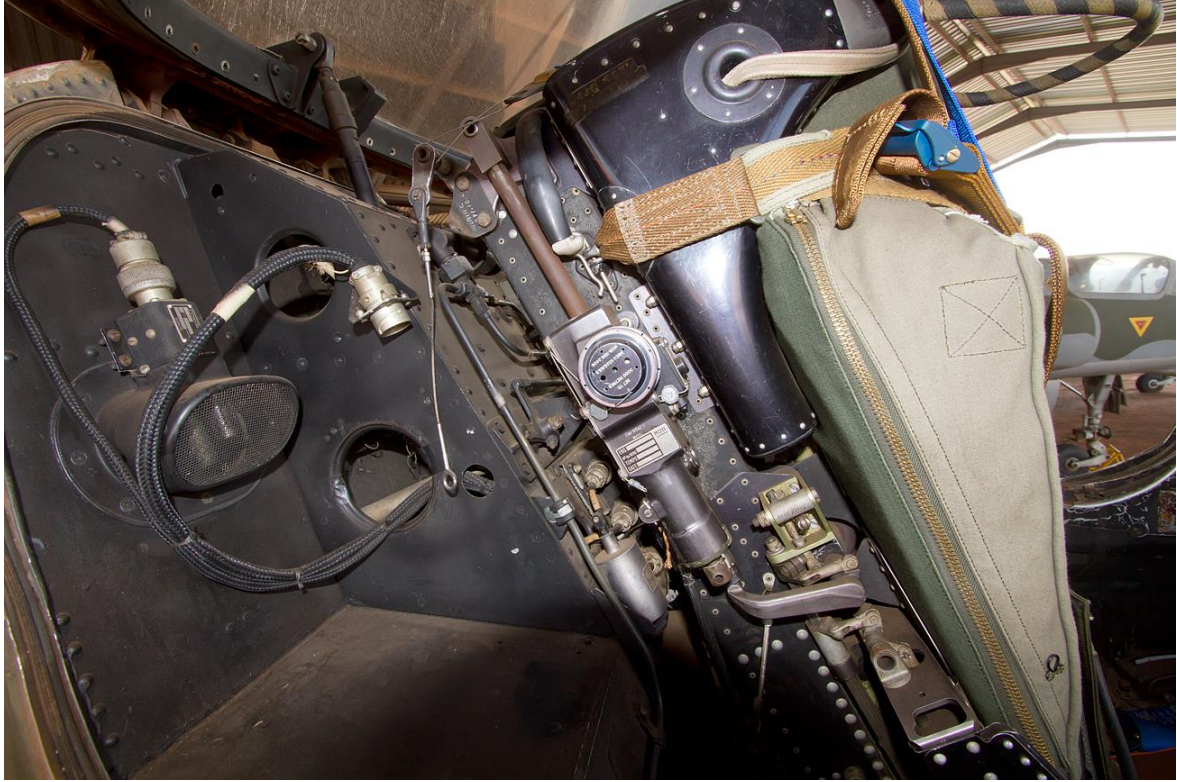
Manual aiming sight in stowed position.



Canopy actuator piston at cockpit rear bulkhead.



Canopy locking mechanism on right side of cockpit.



Upper right hand rear bulkhead and ejection seat. The round object on the seat is the barostatic timer release unit.



Upper left hand rear bulkhead and ejection seat.

4 Mirage IIRZ #838 – Avionics bay details



The equipment bay aft of the cockpit as seen on RZ #838. Included in this bay are IFF transponder, gyro platform, DC electrical box, battery, air data computer, TACAN receiver / transmitter, primary UHF radio set, oxygen cylinders and negative G accumulator fuel tank (the spherical object in the image below).



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Avionics hatch aft of cockpit – RZ #838



CRWS (black antennae) and original pancake shaped radar warning receiver (RWR).

5 Mirage IIIRZ #838 – Nose and camera details



600mm focal length cameras in RZ #838s nose.







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The camera bay window release latch is in the open position. The cameras were mounted on a frame which could drop down supported by cables for access to the camera.



6 Mirage IIRZ #838 – Landing gear details



Nose wheel on RZ #838. The right hand landing light and the two front opening doors with their linkages can be seen. The main nose gear door is in the closed position. The steering mechanism is located above the nose wheel.





Details of the main wheel well including hydraulic hoses and electrical wiring and connectors. The silver piston to the bottom left in the image above is for the undercarriage door retraction arm. The rust coloured mechanism at the top center of the image is the undercarriage retraction lock. This locks onto a lug located on the lower undercarriage leg.

The silver piston in the image below is the undercarriage leg retraction piston.



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Whilst the wheel well is painted in chromate yellow, the landing gear leg well is painted in a primer green.
For the D2Z and R2Z it would appear that the entire undercarriage bay was painted silver.



Main gear door painted silver.



Left side main undercarriage leg details. The wheel brakes and leg forward stabilization arm are as for the EZ but different to the BZ/CZ as explained in Part 4.



Detail view of outboard portion of landing gear on the left wing. The cylindrical object at top left is the leg stabilization arm. The empty lug for the C and B undercarriage stabilizing arm can clearly be seen (as described in Part 4).

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Intake detail on RZ #838. This would be typical for the DZ, D2Z, EZ and RZ. The R2Z has a more prominent scalloped intake splitter plate – see next page. Note the two support rods between the intake and the fuselage. This is different to the BZ and CZ which had a plate strengthening plate (refer to Part 4).



Upper fuselage detail. The blade antenna is for TACAN. The engine bay cooling intakes are symmetrical. The slot on the leading edge of the wing can be seen at the top right of the image. The round objects are the fuel tank filler caps (symmetrically located either side of the fuselage)



7 Mirage III R2Z 857 – Walk around

The following photos are of R2Z # 857 as it is as a static exhibit at the SAAF Museum at Ysterplaat Air Base in Cape Town.



Scalloped intake splitter plate indicative of an Atar 09K50 powered Mirage.

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Nose gear door markings



Ejection seat warning triangle, displayed both sides of the fuselage. Note yellow surround to the emergency canopy release window aft of cockpit.

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Examples of standard NATO aircraft servicing stenciling – similar for all SAAF Mirage III variants.



Port upper wing air brake



Starboard lower wing air brake

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More standard NATO aircraft servicing stenciling typical of Mirage IIIs



Starboard lower wing – note wrap around of upper surface camouflage colour – typical of all SAAF Mirage III versions.

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Red warning line ahead of elevons



Position of the inboard pitch control surface relative to the elevon. There were two elevons on each wing which operated in unison. As was typical for all Mirage III variants, all control surfaces on the wing drooped with hydraulic power off.



Brake chute cover.



Rear ventral fuel tank with inspection window. Several small fuel dump / overflow pipes are located at the junction of the wing trailing edge to the fuselage.

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Note the various intake and vents and standard NATO aircraft servicing symbols on the underside of R2Z #857.



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All SAAF Mirage IIIs had a number of distinct intakes and vents on the fuselage and wing undersurfaces. The forward facing vent on the right is the inlet for the gun bay. Note that the BZ and CZ did not have the vent which, in the image above, is adjacent to the gun trough. See image of BZ #818 below.



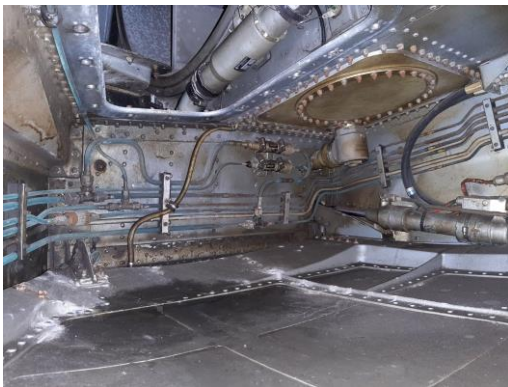
8 Mirage IIR2Z #857 – Landing gear details



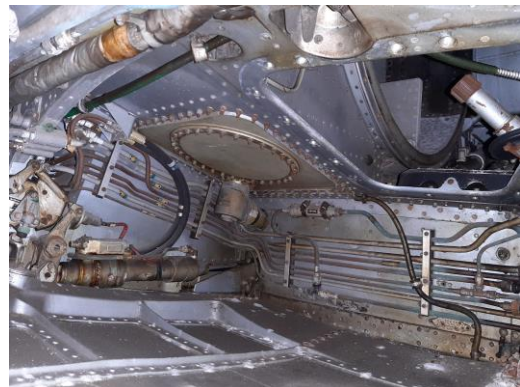
Nose landing gear. Interior of gear bay is silver. Landing light body is painted black.



Port (left) landing gear leg and cover.



Interior of main wheel bay on R2Z #857 – overall lacquered silver finish on both the gear bay and gear door



Retraction piston on right wing of R2Z #857.

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Sleek nose of the R2Z – the black round object is one of the CRWS forward looking “cat balls” antennae.



Note dual pitot probes ahead of windshield. The small rod sticking out to the right in the photo is the angle of attack or incidence probe.



Underside of port wing. Note wrap around of upper surface colours (characteristic of all camouflaged SAAF Mirages). The wing curves towards the tip. The ejection seat is covered with an aerodynamic fairing. This would be removed and replaced with a weapon pylon when the air-to-air missiles were fitted.



Instrument panel shroud details.



The rust coloured assembly is the muzzle brake for the port 30mm cannon.

9 Mirage IIR2Z #857 – Cockpit and ejection seat details



Cockpit of R2Z #857. The gun camera beneath the HUD glass appears to have been removed. The large dial immediately beneath this is the camera focal length control panel. The central panel contains camera controls.



Martin Baker Mk.IV ejection seat.





Left side of cockpit showing the throttle lever and the camera selector knob. Note the camera selector chart above the throttle lever.

10 Mirage IIR2Z #857 – Nose and camera details



Dual landing lights characteristic of all SAAF Mirage III variants with the exception of the BZ and CZ

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Ducting for heating air to keep windows clear is apparent in the image above.

The box shaped object in the image below appears to be the forward facing camera.



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Head-on images of R2Z #857 (above) and RZ #818 (below). Note the distinct angles of the main landing gear legs. Wing anhedral is apparent as is the curvature of the leading edges.





11 References

The Unofficial SAAF Website – www.saairforce.co.za - both reference section and discussion forums including the following contributors – Dean Wingrin, Piet van Schalkwyk (SAAFColours), Greg Swart (GregAir), Alan Taylor (FlyingSpringbok), Vernon Vice (Spice), Joker, Brent Best (Kremlin), Sean Thackray (Madmax).

Other fine folks who shared their Mirage III information with me : Daan Conradie, Martin Strümpfer, Jon Durant (Battlebirds Models), John Weideman (ScaleWorx), Marc Conti, Herman Penderis.

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Mirage IIIEO flight manual – this is the Australian version which was essentially similar in terms of systems to the SAAF Mirage IIIEZ.