

The Dassault Mirage III in South African Air Force service



PART 3

SAAF Mirage III external stores and weapons

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.

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1 Hard points

All SAAF Mirage III variants had five weapons hard points – these consisted of a centerline (fuselage) station and two stations per wing (inboard and outboard). These were numbered 1 to 5 from left to right when viewing the aircraft from above. In SAAF service, these were typically used as follows (depending on the actual SAAF version) :

- Outboard wing station (numbers 1 and 5) – for carriage of infra-red guided air to air missiles.
- Inboard wing station (numbers 2 and 4) – carriage of external fuel tanks (with or without bombs) or JL-100 Matra combined rocket / fuel tank pods.
- Centerline station (number 3) – carriage of a single Matra 530 radar guided air to air missile, a single AS30 air to ground missile, an external fuel tank or two bombs in tandem.

However, fitting weapons pylons onto the outboard stations for the BZ and DZ was unlikely – the author could find no images of these versions with outboard stores. The D2Z could carry air-to-air missiles (likely inert training rounds) on the outboard pylon as images elsewhere in this document attest to.

When installed, the outboard wing pylons would replace the elevon actuator aerodynamic fairings.

2 External fuel tanks

The SAAF Mirage IIIs could be fitted with various external fuel tanks to increase ferry or combat range. These were :

- 1,300 liter (285 imp. gallon) RP62 external fuel tank. In SAAF service these were most commonly mounted on the inboard wing stations and were used for ferry purposes and combat missions. These tanks were fitted with horizontal tail fins and endplates. The RP62 could be used for subsonic flight only. Images do exist of SAAF Mirage IIIs with this tank on the centerline station although its regular use in this particular location is questionable.
- 500 liter (110 imp. gallon) RP18R external fuel tank. These were only mounted on the inboard wing stations and were used for ferry and combat missions. These tanks were “clean” i.e. no tail fins and were designed for supersonic flight. They could not be jettisoned in flight.
- 500 liter (110 imp. gallon) 110G external fuel tank. Although of similar diameter to the RP18R, the 110G differed from the RP18R in that it was longer and had three tail fins. The fins were added to allow the tank to be jettisoned in flight. The rear of the RP18R was in line with the elevon hinge plane, whereas the rear of the longer 110G was closer to the elevon trailing edges due to its increased length. The 110G was designed for supersonic flight.
- Version of the 110G tank with two Alkan bomb ejector release units in tandem with the fuel volume remaining at 500 liters. It has been noted in various SAAF discussion forums that this is an RPK10 tank, but the RPK10 was designed for the carriage of four bombs as used by the Australian Air Force. The SAAF did not use this four-bomb RPK10 tank. For the purposes of this e-book, we’ll stick with 110G “with bomb shackles”. With bombs mounted, its use would be limited to subsonic flight.
- 1,100 liter (242 imp. gallon) RP825 external fuel tank. This was carried exclusively on the centerline station only and was used for ferry and combat missions. These tanks had horizontal tail fins and were designed for supersonic flight.

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- 1,700 liter (374 imp. gallon) RP30 external fuel tank. These were mounted on wing inboard pylons only. Although these were carried by Mirage IIIE/D/R variants used by other air forces, the SAAF appeared to have only used these on Mirage III aircraft fitted with 09K50 engines (i.e. R2Z and RZ #836 only). These tanks had downward canted tail fins without end plates and their use was limited to subsonic speeds only.
- Matra JL-100 combined fuel tank / rocket pod. The fuel capacity was 250 liters. The forward rocket pod accommodated eighteen 68mm SNEB folding fin aerial rockets. These would be carried on the inboard wing pylons only and were used by the SAAF for training and combat operations.

2.1.1 500 liter 110G fuel tank



500 liter 110G fuel tank which was carried on the inboard wing pylons only. It is different from the other 500 liter wing tank used by the Mirage III, the RP18R, in that it is longer to allow for two sections to accommodate bomb shackles to carry two Mk. 81 or Mk. 82 bombs in tandem. Two of the three fins at the back are visible. These allowed the 110G tank to be ejected in flight.

2.1.2 1,700 liter RP30 fuel tank



RP30 1,700 liter fuel tank which was carried on the inboard wing pylons only. Unlike other Mirage III operators, the SAAF appeared to have used these only on those Mirage IIIs fitted with 09K50 engines.

2.1.3 1,100 liter RP825 fuel tank



1,100 liter RP825 fuel tank carried on the centerline station only, as demonstrated in this image of RZ #835 at Swartkop. Note the distinct nose down angle of the tank and the flat horizontal tail fin.

2.1.4 500 liter RP18R fuel tank



Detail of a 500 liter RP18R supersonic fuel tank mounted on CZ #813. Note the weathered orange protective coating. It appears that the tank is of combined riveted and welded construction.



Details of 500 liter RP18R fuel tank showing orange protective coating and distinct tank longitudinal and circumferential weld seams.



Fuel filler cap on 500 liter RP18R fuel tank.

2.1.5 1,300 liter RP62 fuel tank



CZ #813 on display with a variety of external stores. These include :

- 1) Mounted on the wings – 500 liter RP18R fuel tanks.
- 2) On the ground beneath the wings are larger diameter 1,300 liter RP62 fuel tanks.
- 3) A single Matra JL-100 combined fuel tank / rocket pod.
- 4) The pylon on the ground is the PM-3 beam for carriage of bombs on the centerline station.
- 5) The white missile at back right of the image is a Matra R530 radar guided air-to-air missile.



CZ #813 with (front to back) red practice V2 (AIM-9B) air-to-air missile, 1,300 liter RP62 fuel tank, 500 liter RP18R fuel tank and Matra JL-100 combined fuel tank / rocket pod. The pink coloured object is the PM-3 bomb beam for use on the centerline station.

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Interesting photo of EZ #833 with two JL-100 pods on the wings and a 1,300 liter RP62 fuel tank on the centerline. Use of the RP62 on the centerline appears to have been an uncommon configuration for SAAF Mirage IIIs.



Low quality image of an R2Z with a 1,300 liter RP62 fuel tank on the centerline.



RZ with 1,300 liter RP62 wing tanks.

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Another interesting image – the front CZ #802 is equipped with what appears to be an RP62 1,300 liter wing tank (with the fins and endplates). However, on closer inspection, this tank is much shorter than the RP62 and is likely to be an early Mirage III fuel tank as used by the French (see image below). Compare these to the RP62 in the image on the previous page. This is the only image the author could source showing a Mirage III in SAAF service with these tanks. The rearmost CZ is #805 and has the more common **RP18R** fuel tanks installed. The middle CZ is #801.



French Air Force Mirage IIIC with small wing tanks.



Two images of either side of a 1,300 liter RP62 fuel tank indicating the main attachment point to the wing pylon and the cover over the access point for the tank pylon mounting coupling.



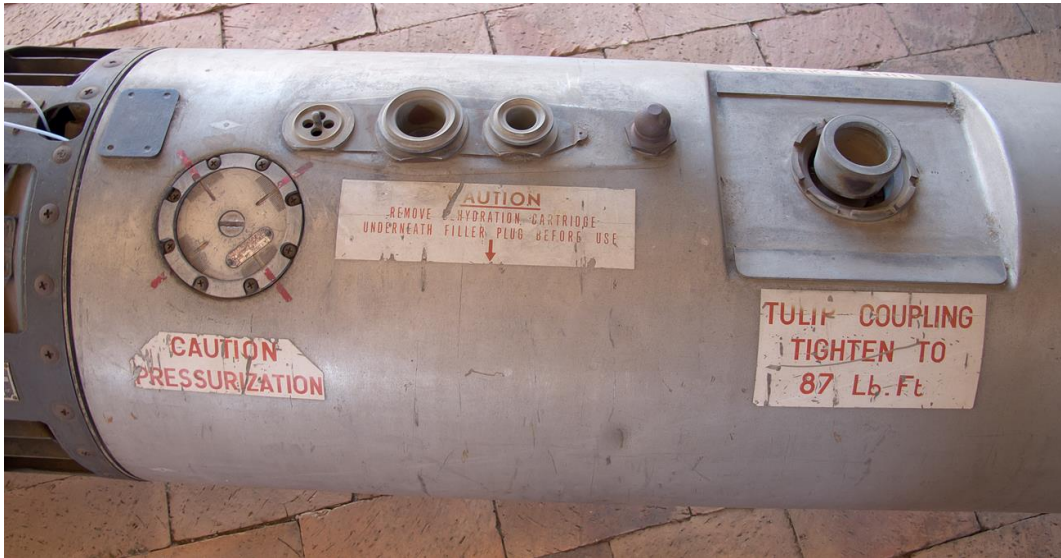
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More details of 1,300 liter RP62 fuel tank. The round plates may be replacement covers in place of the fuel filler caps. Note that, unlike the 500 liter RP18R fuel tank which is of welded construction, the RP62 appears to be of a modular riveted construction.



2.1.6 Matra JL-100 combined fuel tank / rocket pod



Matra JL-100 combined fuel tank / rocket pod showing, left to right, fuel filler cap (assumed), points for fuel lines and wing pylon coupling.



JL-100 wing pylon mounting details.





JL-100 showing rocket exhaust gas vents. Note that a shroud covers the lower vent. The purpose of this was to protect pilot's vision from the flash of rocket exhaust. The round hole appears to house an electrical harness coupling.



JL-100 on display with CZ #813 at the Johannesburg Museum of Military History.

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Data plate detail from the JL-100 combined fuel / rocket pod at the Johannesburg Museum of Military History. The one above is from the dark coloured rocket exhaust section (serial #180 manufactured in 1964) and the one below from the natural metal rocket pod section (serial #618 manufactured in 1967). This would indicate that the JL-100 was of modular assembly with sections being interchangeable. The data plates can be seen on the pod in the bottom image.





JL-100 Combo Rocket Launcher / Fuel Tank

18 x 68mm SNEB Rockets and 250 litre fuel
Length: 4.44m
1/72 = 61.6 mm
1/48 = 92.5 mm



3 Typical Mirage III weapons systems used by the SAAF

The following weapons systems were used on SAAF Mirage IIIs :

- DEFA 552 30mm canon – two fixed forward firing canon located in the central forward lower fuselage with 125 rounds each. The entire gun “pack” could be lowered and removed as a unit from the aircraft. This could be replaced with a fuel tank.
- Matra JL-100 which included eighteen 68mm SNEB folding fin aerial rockets. This would be mounted only on the inboard wing stations (used operationally¹).
- Matra R530 semi-active radar homing missile. A single missile could be mounted on the centerline station using the Matra Launcher Type 14. This was used in conjunction with the Cyrano fire control radar (not used operationally).
- AIM-9B Sidewinder IR² guided air-to-air missile (SAAF designation = V2). A single missile could be mounted on each of the outboard wing pylons using the Aero 3B launcher rail.
- Kentron V3A or V3B Kukri IR guided air-to-air IR missile. The launch rail differed from the Aero 3B. See notes below.
- Mk.81 250lb (125kg) or Mk.82 500 lb (250kg) low drag GP³ bombs :
 - Two each could be mounted in tandem beneath the 110G supersonic wing tanks using Alkan bomb ejector release units. This configuration was used operationally on the Mirage IIICZ.
 - Theoretically, two could be mounted in tandem on the fuselage centerline using the PM-3 bomb beam. The author could not source any images showing this particular configuration.
- 1,000lb (460kg) GP bomb – two under the fuselage on the centerline station in a tandem configuration using the PM-3 bomb beam. Used operationally on Mirage IIICZ.
- AS-20 or AS-30 air to ground laser guided missile – single missile mounted on centerline station. The AS-20/-30 were not used operationally.

As noted, some of the above configurations may be considered to be theoretical or design configurations. During actual SAAF Mirage III combat operations, some of these weapons were not used. The tables in the following pages provides more data on how these stores would have been fitted to which particular Mirage III version and in which combinations with external fuel tanks.

4 Air to air IR guided missiles produced locally in South Africa :

- V2 – this was a local copy of the AIM-9B Sidewinder.
- Kentron V3A – this was based on the AIM-9B body with a similar rear fin configuration. However, the simple cruciform delta shaped forward canard control surfaces of the AIM-9B were replaced by a more complex arrangement of canard surfaces best illustrated in the image on the following page. Only 20 were reported as having been built so they were unlikely to have equipped the Mirage III operationally.
- Kentron V3B – similar to the V3A but with some adjustments to the configuration and plan form of the canard surfaces. 420 have been reported as built. Apart from the AIM-9B, this was the most commonly seen IR missile on the SAAF Mirage III.

¹ The word “Operationally” is used in this narrative to denote operations under combat conditions during the Border War.

² IR = Infra Red

³ “GP” denotes a General Purpose or “dumb” bomb i.e. unguided.

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It is unlikely that the SAAF Mirage IIIs used the Matra R550 IR missile. The R550 was used on the SAAF Mirage F1AZ and CZ, located on the wingtip launcher rails.

The V3A/B can be easily distinguished from the French Matra R550 as follows :

- R550 has a larger diameter than the V3, which presents as a more bulky appearance.
- R550 rear fins present a higher aspect ratio, whereas V3A/B rear fins are similar to AIM-9B.
- R550 has tandem canards both in cruciform configuration i.e. 90 degrees apart.
- On the V3B, the forward canard is located very close to the infrared seeker head.



From bottom to top – AIM-9B Sidewinder, V2, V3A and V3B – note the subtle differences in delta shaped canard locations and configurations between the V3A and V3B. These are on display at the SAAF Museum at Swartkop Air Base



Matra R550 IR missile on Mirage F1CZ #203 at Swartkop. Note the different canard arrangement when compared to the V3A and V3B. Note also the higher aspect ratio on the rear fins as compared to the AM-9B, V3A and V3B. Overall the R550 is larger in diameter.

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The data in the table below illustrates which stores could be theoretically carried by the various Mirage III variants on the particular hard points. This was not always the case in practice.

Station	1 Port wing outboard	2 Port wing inboard	3 Fuselage centerline	4 Starboard wing inboard	5 Starboard wing outboard
External Fuel tanks					
1,300 liter (285 imp. gallon) RP62 external fuel tank	-	All variants	Possible on all variants but not typical	All variants	-
500 liter (110 imp. gallon) RP18R external fuel tank	-	All variants	-	All variants	-
500 liter (110 imp. gallon) 110G external fuel tank	-	All variants	-	All variants	-
1,100 liter (180 imp. gallon) RP825 external fuel tank	-	-	All variants	-	-
1,700 liter (374 imp. gallon) RP30 external fuel tanks	-	R2Z and RZ#836 ⁴	-	R2Z and RZ#836	-
Air to air missiles					
AIM-9B Sidewinder IR missile (with Aero 3B launcher rail)	CZ, EZ, RZ, R2Z, DZ, D2Z ⁵	-	-	-	CZ, EZ, RZ, R2Z, DZ, D2Z
Kentron V3B IR missile	CZ, EZ, RZ, R2Z, DZ, D2Z ⁶	-	-	-	CZ, EZ, RZ, R2Z, DZ, D2Z
Matra R530 SARH missile (with Matra Type 14 launcher)	-	-	CZ, EZ	-	-
Air to ground missiles					
AS-20	-	-	CZ, EZ	-	-
AS-30	-	-	CZ, EZ	-	-
Rocket pods					
Matra JL-100 combined fuel tank / rocket pod	-	BZ, CZ, DZ, D2Z, EZ	-	BZ, CZ, DZ, D2Z, EZ	-
"Dumb" bombs					
Mk.81 or Mk.82 250 lb GP bomb	-	CZ, EZ	-	CZ, EZ	-
Mk.81 or Mk.82 250 lb GP bomb (with PM-3 bomb beam)	-	-	CZ, EZ	-	-
1,000lb GP bomb (with PM- 3 bomb beam)	-	-	CZ, EZ	-	-

The tables in the following section provide more specific typical operational / training stores and weapons configurations for the various SAAF Mirage variants and as demonstrated through the images provided in this document.

⁴ Only once #836 had been equipped with the 09K50 engine

⁵ For DZ and D2Z most likely only captive training rounds

⁶ For DZ and D2Z most likely only captive training rounds

5 Mirage III external stores loads

5.1 Mirage IIICZ - operational weapons load

The following are typical stores configurations that can be seen in photos of Mirage IIICZs under operational conditions during the Bush War :

- Air defense / Combat Air Patrol (CAP) configuration - a centerline RP825 supersonic tank and two wing mounted AIM-9B or V3B missiles.
- Close Air Support (CAS) / Interdiction⁷ configuration - would be either :
 - Two wing mounted **110G supersonic tanks** with two Mk.81/82 bombs fitted in tandem per tank OR
 - Tandem centerline 1,000lb GP bombs with two RP18R supersonic tanks on inboard wing stations OR
 - Two JL-100 combined fuel tank / rocket pod units on inboard wing stations.
 - AIM-9Bs or V3Bs could be fitted to the outboard wing stations.

The same would in theory apply to the Mirage IIIEZ :

Station	1	2	3	4	5
Air defense / Combat Air Patrol	AIM-9B or V3B	-	RP825 (1,100 l tank)	-	AIM-9B or V3B
Air defense / Combat Air Patrol	AIM-9B or V3B	RP18R (500 l tank)	-	RP18R (500 l tank)	AIM-9B or V3B
Close air support	(note 1)	110G (500 l tank) and 2 x Mk.81/ Mk.82	RP825 (1,100 l tank)	110G (500 l tank) and 2 x Mk.81/ Mk.82	(note 1)
Close air support	(note 1)	RP18R (500 l tank)	2 x 1,000lb GP bombs	RP18R (500 l tank)	(note 1)
Close air support	(note 1)	JL-100	-	JL-100	(note 1)
Ferry (1) – note 2	-	RP18R or 100G (500 l tank)	RP825 (1,100 l tank)	RP18R or 100G (500 l tank)	-
Ferry (2)	-	RP62 (1,300 l tank)	-	RP62 (1,300 l tank)	-

Note 1 – could also have either AIM-9B or V3B fitted

Note 2 – Ferry (1) above could be a) as noted (3 tanks) or b) a single RP825 on centerline or c) two wing mounted RP18R / 110G.

The following theoretical (non-operational) weapons loads could have been carried by the CZ and EZ :

Station	1	2	3	4	5
Air defense / Combat Air Patrol	(note 1)	RP18R or 110G (500 l tank)	Matra R530	RP18R or 110G (500 l tank)	(note 1)
Air defense / Combat Air		RP62	Matra R530	RP62	

⁷ CAS/Interdiction basically refers to ground attack

Patrol		(1,300 l tank)		(1,300 l tank)	
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Note 1 – could also have either AIM-9B or V3B fitted

5.2 Mirage IIIEZ – training configuration

The Mirage IIIEZ was used on a very limited basis for combat operations. It was generally relegated to the training role and the large portion of combat offensive operations were performed by the CZ and DZ/D2Z.

A standard training weapons load for the Mirage IIIEZs would have been :

- Two JL-100 combined fuel tank / rocket pod units on inboard wing stations OR
- A single RP825 centerline tank with two AIM-9 Sidewinder or V3B IR guided missiles on the outboard wing pylons OR
- Two wing mounted RP62 1,300 liter subsonic fuel tanks on the inboard wing pylons OR
- A single Matra R530 missile on the centerline station with two RP62 1,300 liter subsonic fuel tanks on inboard wing pylons OR
- Two RP18R 500 liter supersonic fuel tanks on the inboard wing pylons.

5.3 Mirage IIIBZ – training configuration

The Mirage IIIBZ was generally not used operationally on the Border but rather for training in South Africa. It is unlikely that the IIIBZ was equipped with any external stores apart from the RP18R 500 liter or RP62 1,300 liter external fuel tanks. It is possible that the IIBZ could have used the JL-100 pod but the author could find no photographic evidence of this configuration.

5.4 Mirage IIIDZ and D2Z – training / combat configuration

Whilst several images exist of D2Zs being used for operational missions on the Border, it is unlikely that the DZ was so used. A typical combat load would be two wing mounted Matra JL-100 combined fuel / rocket pods. Similarly, the standard training load for the DZ and D2Z would also be two JL-100 pods.

There are images showing AIM-9B captive air-to-air IR guided missiles fitted to a D2Z. “Captive” refers to a training missile with a functioning seeker head but which can not be launched and is used for purposes of realistic air combat maneuver (ACM) training.

5.5 Mirage IIIRZ – operational weapons / stores configuration

Operational RZs on Border duty were typically equipped with two wing mounted RP62 1,300 liter fuel tanks on the inboard wing pylons and two V3B or AIM-9B missiles on the outboard pylons for self defence whilst on reconnaissance missions.

A typical ferry configuration for the RZ would be various combinations of :

- two wing mounted RP18R or 110G supersonic fuel tanks and one fuselage mounted RP825 fuel tank OR
- two wing mounted RP62 fuel tanks and one fuselage mounted RP825 fuel tank.

5.6 Mirage IIIR2Z – operational weapons load

Standard external stores configuration for the Mirage R2Zs on border operations were two wing mounted 1,700 litre tanks on the inboard wing pylons. It is unlikely that the R2Zs were fitted with air-to-air missiles rather using speed as their best defence.

A typical ferry configuration for the R2Z would consist of two wing mounted RP62 fuel tanks and one fuselage mounted RP825 fuel tank.



This is probably a V2 (locally produced version of the AIM-9B Sidewinder missile – note CSIR logo in image below). The red also probably denotes a captive training article. It is on display at the Johannesburg Museum of Military History alongside CZ #813.



5.7 30mm DEFA Cannon

All SAAF Mirage III variants could be equipped with the dual 30mm DEFA 553 canon pack. These were located in a removable pallet located in the lower central fuselage. This gun pack could be replaced with a 327 liter fuel tank. The cannon muzzles exited the fuselage through a long trough located beneath each intake. A prominent assembly consisting of four hollow circular frames was located ahead of the muzzle. It is assumed this was some form of aerodynamic muzzle brake.



Starboard 30mm cannon barrel with muzzle brake on CZ #813. Note how far forward the canon barrel protrudes.



Port 30mm cannon muzzle brake on RZ #838. The canon barrel is missing.

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The large rectangular bay is the gun pallet on R2Z #857. The green symbol on this pallet symbolizes a bullet which is the standard NATO symbol indicating location of gun ammunition. The two 30mm canon and the ammunition tray were mounted on the removable pallet. The forward (to the right) facing vent is an intake scoop for fresh air to purge the cannon bay. Purged air would exit via the slots on either side and to the rear of the pallet. This scoop would be absent if the gun bay fuel tank was installed.



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Port 30mm cannon muzzle trough on BZ #818. Note that the BZ does not have the muzzle brake assembly. The fact that no gun barrels protrude and that the gun palette does not have the forward facing air scoop indicates that the gun pack is not fitted.



Underside view of CZ #805 looking rearward. The forward facing scoop is the gas purge inlet for the gun bay.

5.8 Mirage IIICZ – typical loads



CZ #803 with single centerline RP825 supersonic fuel tank.



CZ #804 with single centerline RP825 supersonic fuel tank and two V3B IR air-to-air missiles on the outboard wing pylons.



CZ #804 with two subsonic RP62 1,300 liter tanks on the inboard wing stations.



Unidentified CZ with similar stores configuration to the aircraft pictured above. Both are in soft edge matt camouflage but note the differences in markings.

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Unidentified CZ with what appears to be a captive AIM-9B round on the port outboard wing pylon (note lack of forward fins on missile). Aircraft carries an RP825 fuel tank on the centerline pylon.



CZ #800 with V3B air-to-air missiles on the outboard wing pylons.



CZ #806 with centerline RP825 and two wing mounted **110G** tanks.



CZ #810 with RP62 1,300 liter wing tanks.

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CZ #805 at Yseterplaat, nicely polished for an airshow. On the ground, from closest to furthest in the photo are : outboard wing pylon without missile rail; JL-100 with wing pylon; AS-30 air to ground laser guided missile; Matra R530 Semi-Active Radar homing missiles. The gun packs with ammunition belts is beneath the nose of the aircraft

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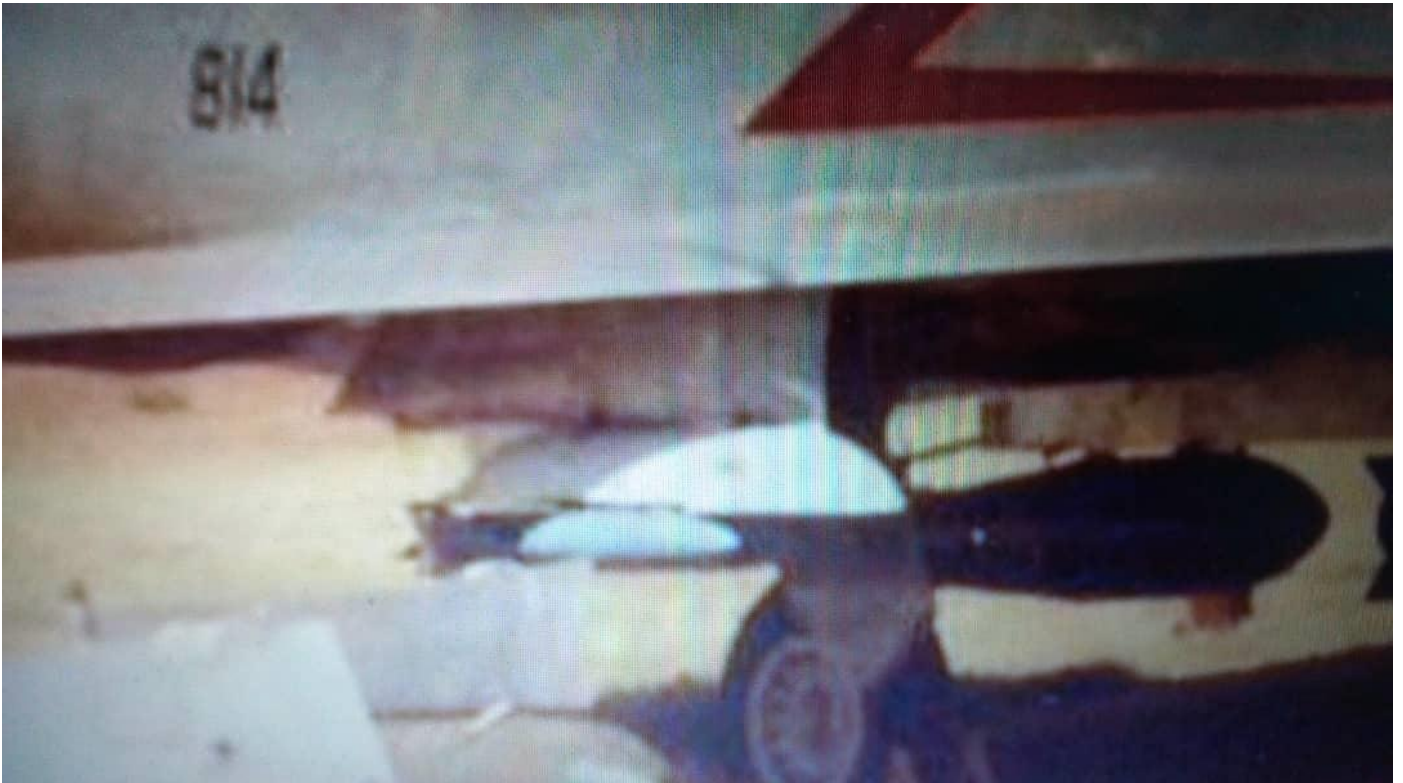
Photo: Via Paul Dubois

CZ #814 on display with a variety of external stores including a white Matra AS30 air to ground laser guided missile and a JL-100 combined rocket / fuel tank pod. Behind the AS-30 is a Matra R530 SARH air-to-air missile. The PM-3 bomb beam is fitted to the centerline station with two 1,000lb bombs hung in tandem. The object on the inboard wing station is a practice bomb dispenser. The removable gun pack and 30mm ammunition belt is to the right of the photo.



Another view of CZ #814 on display.

Visible stores are : two JL-100 pods on the ground and the gun pack to the left of the photo; PM-3 bomb beam on centerline station with two 1,000lb bombs in tandem. A practice bomb can be seen on the practice bomb dispenser mounted on the inboard wing station.



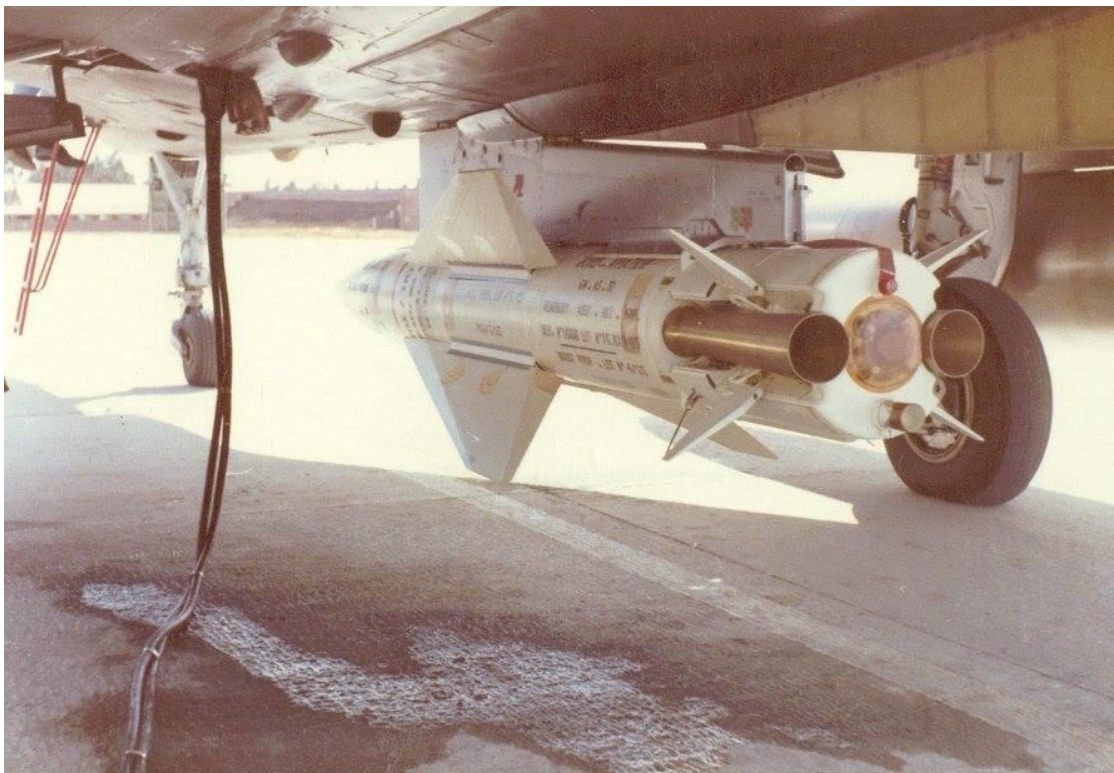
Not the best images, but they do provide a bit more detail of the practice bomb dispenser on the inboard wing station of CZ #814. Two 1,000lb bombs are on the centerline PM-3 pylon.



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CZ with Matra R530 on the centerline pylon and two wing mounted **RP18R** 500 liter fuel tanks..



AS-30 air-to-surface missile on centerline pylon of CZ (apparently #802 in April 1967 at Langebaan).

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CZ #804 with centerline RP825 fuel tank and two wing mounted **110G** wing tanks carrying practice (blue colour) Mk81 or Mk82 GP bombs in tandem.
The outboard wing missile pylons are fitted, but the missile launch rails are not.

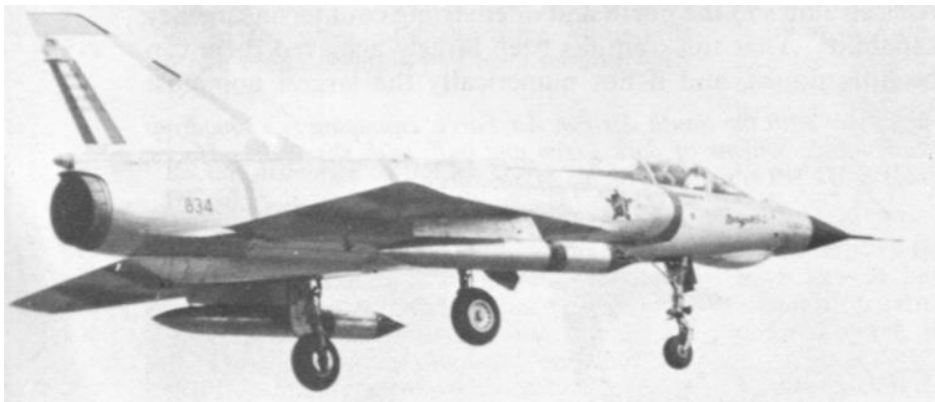


Two CZs each carrying **110G fuel tanks** with tandem bombs on the wings and RP825 fuel tank on centerline. Both are painted in the soft edge buff/green camouflage (revised pattern).



CZ with ferry configuration including a centerline RP825 and two wing mounted **110G tanks** (note fins).
Outboard wing pylons are present complete with **Aero 3B missile launch rails** for AIM-9B Sidewinder missiles.

5.9 Mirage IIIEZ – typical loads



EZ #834 with two wing mounted JL-100 combined rocket / fuel tank pods.



EZ with centerline RP825 fuel tank and two wing mounted V3B IR missiles.



EZ #842 with two wing mounted RP62 1,300 liter subsonic fuel tanks.



EZ #822 with two wing mounted **RP18R 500** liter supersonic fuel tanks.

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EZ #828 with two wing mounted RP62 1,300 liter subsonic fuel tanks. Red AIM-9B Sidewinder Aero 3B launch rail is fitted to the outboard wing pylon.
3 Squadron badge on vertical stabilizer



EZ with two wing mounted JL-100 combined rocket / fuel tank pods.



Photo: Paul Dubouis

This aircraft has two wing mounted RP62 1,300 liter fuel tanks and a Matra R530 air to air missile displayed beneath the aircraft. This is actually RZ #838 going by the two digits on the nose door – the RZ would not have carried the R530.

The Dassault Mirage III in South African Air Force service – Part 3



EZ #834 demonstrating theoretical weapons and stores. V3B air-to-air missile is on the outboard wing pylon. On the ground, from left to right, is a four-finned store (unidentified), a practice bomb dispenser with practice bombs, what looks like the front end of a JL-100 rocket pod, a 1,000lb GP bomb and a Mk. 81 250lb GP bomb.

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Different view of the same scene as on the previous page, now with a front view of EZ #834. The stores are, working from the center outwards, Mk.81 250lb GP bombs, 1,000lb GP bombs, the rocket section of the JL-100 combined fuel tank/rocket pod with rockets, a practice bomb dispenser (with grey practice bombs) and an unidentified store which could possibly be a napalm bomb. The author could find no images of SAAF Mirage IIIs in operation carrying with either of the latter two stores.



EZ #824 with two wing mounted **RP18R** 500 liter supersonic fuel tanks and a single AIM-9B Sidewinder missile on the port outboard wing station. The lack of rear fins leads one to deduce that this is a "captive" training item. Note the location of the Castle on the upper port wing.

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EZ #833 with two **RP18R supersonic** wing tanks and a Matra R530 air to air missile on the centerline.

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EZ with two RP18R supersonic wing tanks and a single AIM-9B air-to-air missile on the starboard outer pylon.
Note that there is no pylon on the port outboard harp point. The elevon aerodynamic fairing is in place.



Unidentified EZ with an unidentified stores configuration on the centerline. A large antenna or camera fairing has also been installed beneath the Doppler fairing. The author could not obtain any information on the purpose of this configuration. The port outboard missile pylon is installed.

5.10 Mirage IIIBZ – typical loads



BZ #818 with two wing mounted **RP18R** 500 liter supersonic fuel tanks.



Another view of BZ #818 with **RP18R** fuel tanks.



BZ #817 at Ysterplaat with two RP62 1,300 liter fuel tanks.



Different view of BZ #817 with two wing mounted RP62 1,300 liter fuel tanks.

Photo © D Wingrin

5.11 Mirage IIIBZ and DZ – typical loads



Photo © Paul Dubois

BZ #817 with two 110G fuel tanks. The tanks have been camouflaged in a similar fashion to the rest of the aircraft.



DZ with two JL-100 combined rocket / fuel tank pods.



Photo © Paul Dubois

DZ with two 110G fuel tanks.



DZ #840 with two RP18R 500 liter supersonic fuel tanks as seen at Waterkloof Airshow in 1980.

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DZ #839 used in the H2 bomb trails. The H2 bomb was used by Buccaneers in the battle of Cuito Cuanavale in attempts to destroy the bridge over the river. Note that the doppler fairing has been used to mount a camera and the usual cream colour is now black to prevent unwanted reflections into the camera lens. H2 test article is front left of the image with teeth !

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Mirage IIID2Z – typical loads



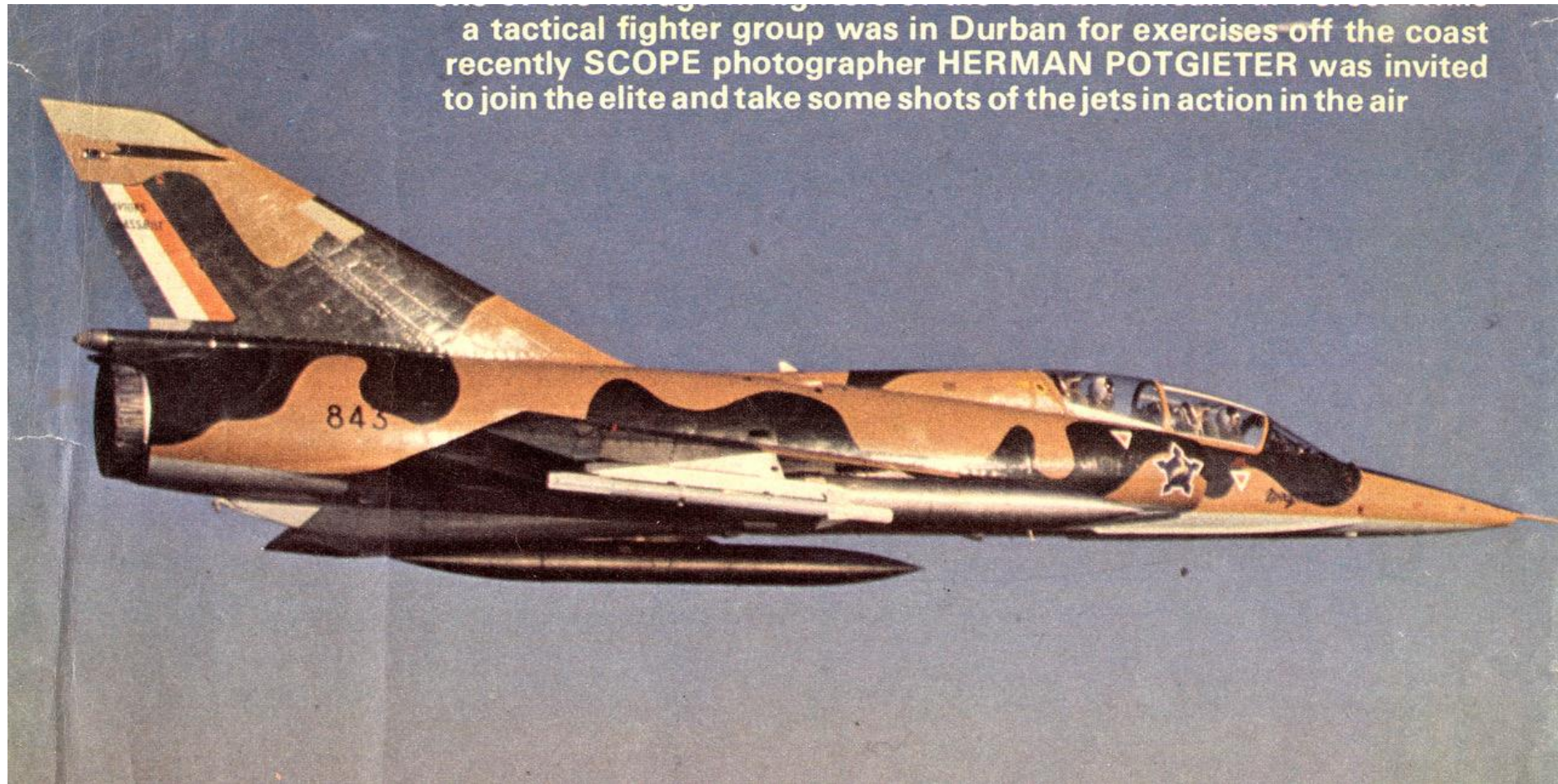
D2Z with two wing mounted JL-100 combined rocket/fuel tank pods.



D2Z #851 with two wing mounted **RP18R** fuel tanks.



D2Z #844 with two wing mounted **110G fuel** tanks. Note the weathered orange coating on the fuel tanks.



D2Z #843 with wing mounted RP18 supersonic fuel tanks and what looks to be a “captive” AIM-9B training round on the starboard outboard wing pylon.

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D2Zs (#843 above and #848) with wing mounted JL-100 pods taking off from Pietersberg Air Base.



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D2Z with wing mounted JL-100 combined fuel tank / rocket pod. The air brake is slightly open which was characteristic of the Mirage III with power off. This photo gives an idea of how sleek the twin seat Mirages were.

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D2Z #843 providing a different perspective of the JL-100 pod. This would be a typical training and combat load for the D2Z. The yellow sections of the nose cone of the JL-100 are frangible covers over the rockets. Note the buff painted canopy frame and the white forward canopy strengthening strips. The cable ducting on the lower forward fuselage is also visible. The airbrakes are fully closed and the auxiliary air intake door is open.

5.12 Mirage IIRZ – typical loads



RZ with two wing mounted RP18R 500 liter supersonic fuel tanks.



RZ #835 with centerline RP825 fuel tank.



RZ #835 with two wing mounted RP62 1,300 liter subsonic fuel tank



No. 836 was one of four Mirage IIRZ's delivered to the SAAF in 1967 for tactical reconnaissance and were the first Mirage variants to wear camouflage. (Photo: SAAF.)

RZ with two wing mounted RP62 1,300 liter fuel tanks.

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This is a very interesting photograph which shows the three variants of the reconnaissance Mirage III used by the SAAF:

On the left is an R2Z in gloss hard edged camouflage and fitted with two wing mounted RP30 1,700 liter fuel tanks.

In the middle is RZ #835 in the two tone blue/grey camouflage with a centerline RP825 fuel tank and two wing mounted RP62 1,300 liter fuel tanks. Note that the wing tanks have been painted in blue-grey whilst the centerline tank is in natural metal.

On the right is RZ #836 (note the doppler fairing beneath the nose) fitted with two wing mounted RP30 1,700 liter fuel tanks. #836 was the only Mirage III RZ fitted with the Atar 09K50 engine in place of the 09C and thus was the only RZ which was permitted to carry the 1,700 liter tanks. The scalloped (curved) intake splitter plates, which indicate a 09K50 engine is installed, are visible.

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RZ (possibly #836 or 837 going by the lack of the anti-glare panel ahead of windshield) with centerline RP825 1,100 liter and two wing mounted RP62 1,300 liter fuel tanks

5.13 Mirage IIIR2Z – typical loads



R2Z #857 with a single RP62 1,300 liter fuel tank mounted on the centerline. This was not a common configuration



R2Z #857 with two wing mounted RP62 1,300 liter fuel tanks

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Great shot (even if low quality) of an R2Z with two of the large RP30 1,700 liter fuel tanks. The aircraft has been painted in the **matt soft edge camouflage** and all markings have been removed



Demonstrating that anything was possible in the SAAF, here's an unidentified R2Z (note camera window on forward fuselage and lack of doppler antenna) with a non-typical (for the reconnaissance Mirage) offensive load of two JL-100 combined fuel tank / rocket pods.

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R2Z #857 carrying RP825 fuel tank on center station and two wing mounted RP62 fuel tanks.

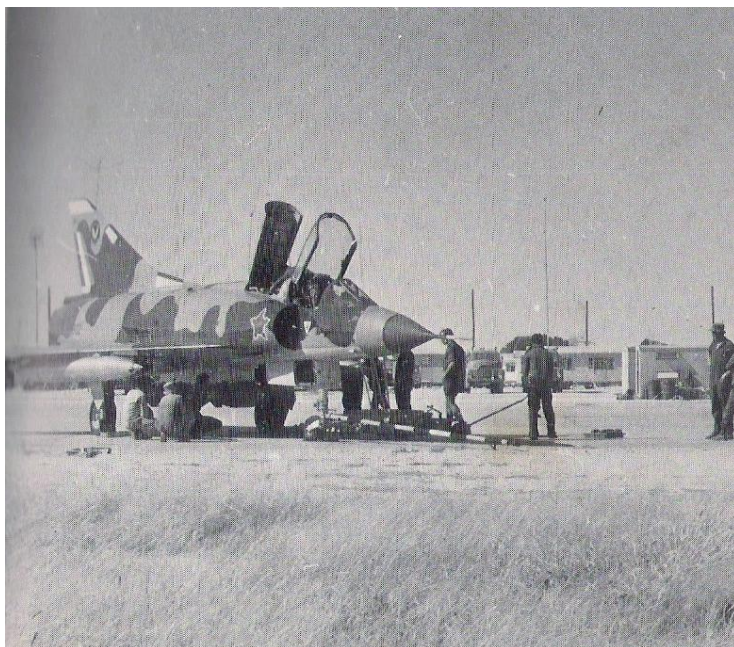


R2Z with two wing mounted 110G fuel tanks.

5.14 SAAF Mirage III in combat

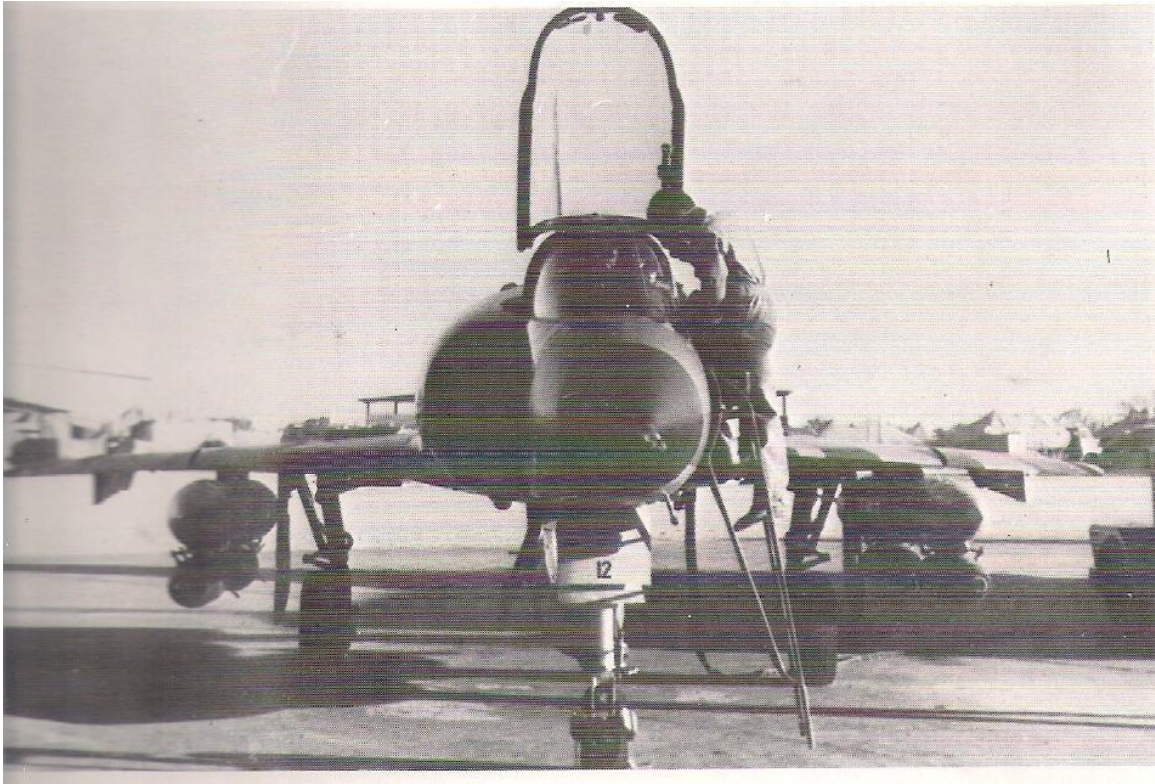


CZ #804 in the Operational Area (most likely Ondangwa) being prepared for a combat mission. **RP18R** fuel tanks are on the wings. An AIM-9B Sidewinder is on the ground to the left. Just to the right of the AIM-9B looks like the PM-3 bomb beam which will be installed on the centerline station to carry two bombs in tandem. #804 has been painted in the soft edge buff/green camouflage whereas the second CZ appears to still be in the original gloss hard edge camouflage.

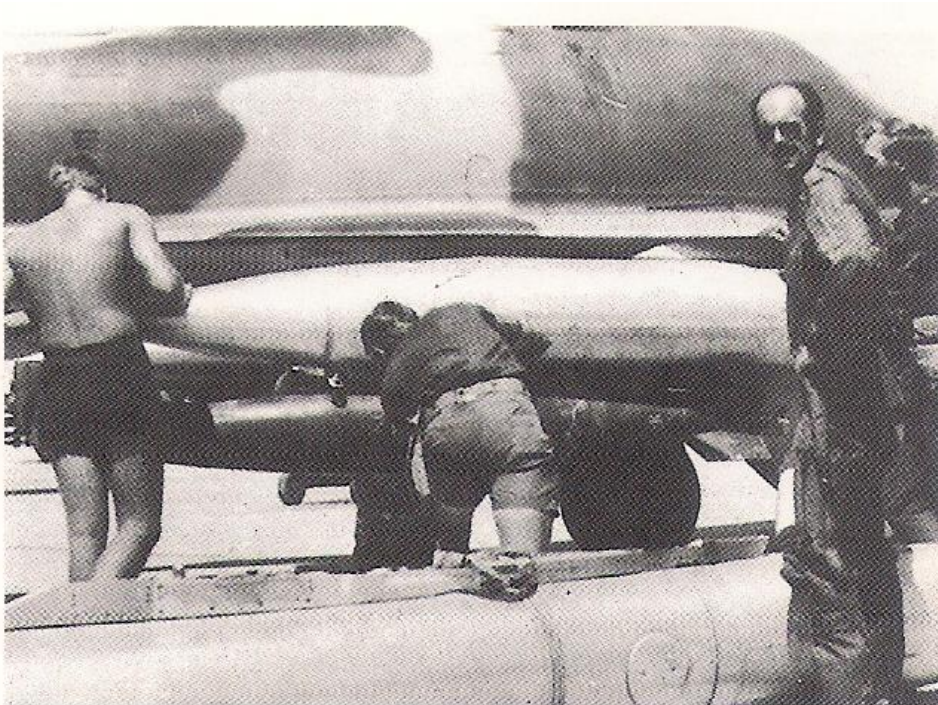


Another CZ being prepared for a combat mission. Two 1,000 lb GP bombs have been installed in tandem on the centerline PM-3 bomb beam. Two **RP18R or 100G** wing tanks are also fitted.

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CZ #812 with two Mk.81 bombs mounted in tandem beneath the 110G wing fuel tanks. The outboard missile pylons are in place but without launch rails or missiles.



Another CZ with Mk.81 or Mk.82 bombs mounted in tandem beneath the 110G wing fuel tanks. The object in the foreground is a 500 liter wing tank.

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An excellent image of a flight of four Mirage IIICZs at Ondangwa during Operation Protea in 1981. They are equipped as follows : First CZ has a centerline RP825 fuel tank and wing mounted JL-100 combined tank / rocket pods; Second CZ has a centerline RP825 fuel tank and V3B air-to-air missiles on the outboard pylons (as can be seen beneath the nose of the first CZ); Third CZ has a centerline RP825 fuel tank and JL-100 combined tank / rocket. It also has what appears to be and AIM-9B air-to-air missile on the outboard pylon (missile nose just visible behind the ladder on the second aircraft.

The AIM-9B has a longer nose forward of the control canards than the V3B does); forth CZ has a centerline RP825 fuel tank and wing mounted JL-100 combined tank / rocket pods. Note the white protective caps over the front of the JL-100 pods. These will be removed before flight. The four aircraft at the rear are likely to be D2Z identifiable by the horizontal blade antennae near the top of the vertical stabilizers. The CZ on the right is finished in the later soft edge buff/green camouflage (revised pattern) whereas the others remain in the original hard edge camouflage with full markings.

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This is most probably the same scene as that on the previous page. Note the closest CZ is painted in soft edge camouflage (revised pattern). It has no orange/white/blue fin flash or 2 squadron badge on the vertical stabilizer. It is has an AIM-9B air-to-air missile on the outboard wing pylon, JL-100 combined rocket/fuel tank pod on the inboard wing pylon and an RP825 fuel tank on the centerline station. There are four CZs and four two-seat Mirages. The latter are most likely to have been DZZs. Note the fifth **two seat Mirage III** and Puma helicopters in the background.

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These two CZs are both painted in the soft edge buff/green camouflage (revised pattern). The one on the left has the solid buff nose cone whereas the one on the right has the buff/grey nose cone. Both appear to be fitted with **110G fuel tanks for carriage of bombs** on the inboard wing pylons and **air-to-air missiles** on the outboard wing pylons.



Not the best quality image of a CZ at Ondangwa but it provides lots of detail. The aircraft is totally devoid of markings and has been painted in the soft edge matt camouflage scheme (revised pattern) with a solid buff nose cone. It is not clear from the image if the black radome is present. Unpainted natural metal 500 liter RP18R wing tanks are fitted. V3B missiles are mounted on the outboard wing pylons.

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CZ #804 at Ondangwa painted in soft edge buff/green camouflage (original pattern). #804 is fitted with an PR825 fuel tank on the centerline and missile pylons on the outboard wing station.

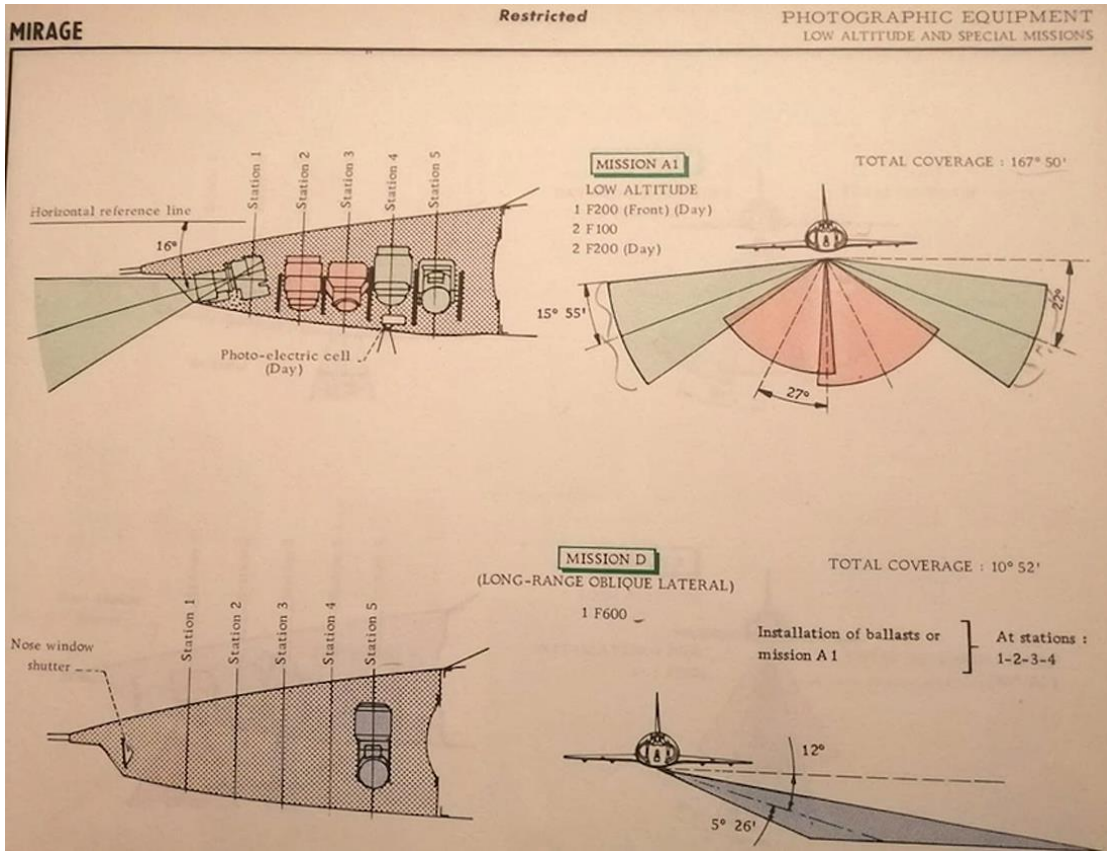


Unidentified BZ on the Border, likely to be Ondangwa. BZ is painted in the early hard edge gloss camouflage with full markings including orange/white/blue rudder and 2 Squadron badge. Natural metal 1,300 liter RP62 wing tanks are installed. The aircraft in the background is a CZ.

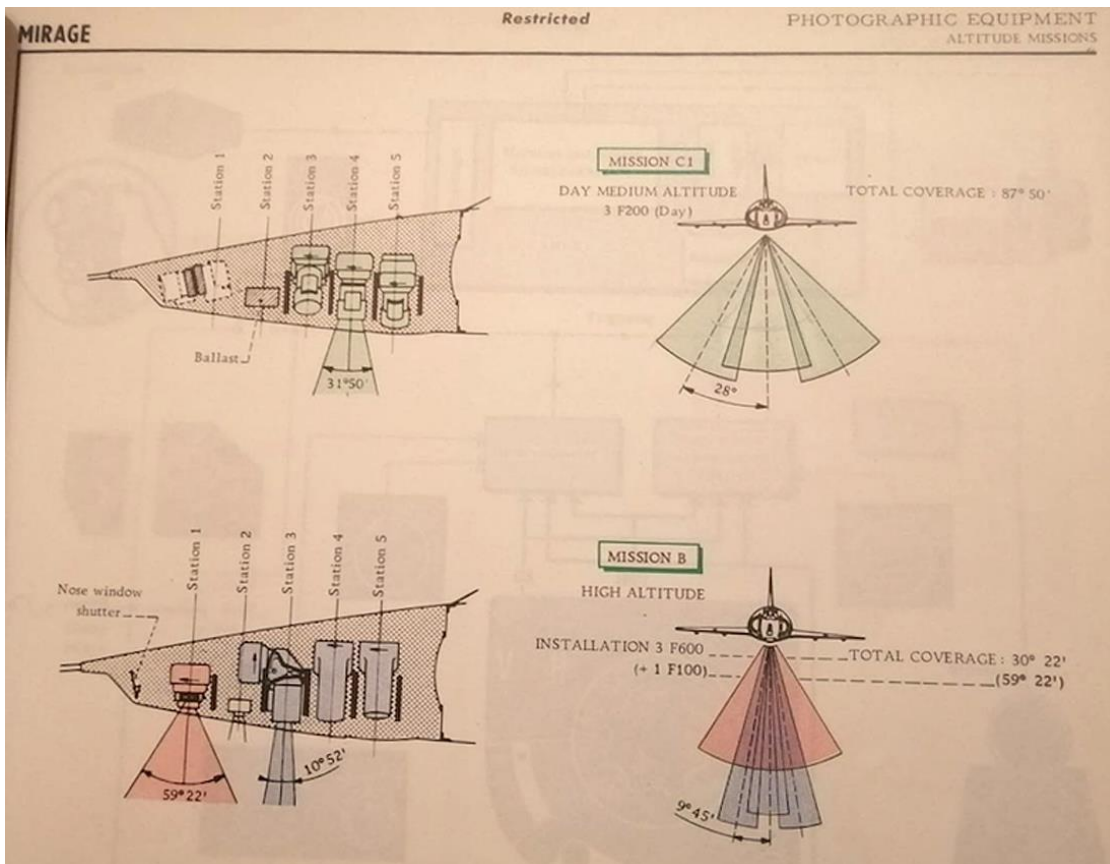


Fantastic image (even if low quality) showing from bottom to top of the image are four Mirage **IIICZs**, a buff/green **IIIR2Z** and a grey **IIIRZ** at Ondangwa all in varying camouflage schemes.

The Dassault Mirage III in South African Air Force service – Part 3



Two schematics from the RZ Flight Manual showing typical reconnaissance mission details.



The Dassault Mirage III in South African Air Force service – Part 3



Image of the same group of Mirages as depicted on the previous page taken from another angle. Note the shade covers over the aircraft shelters in the background.

Specific details are as follows - from right to left:

- 1) **CZ** in Buff/green camouflage (original pattern), Castles in six positions, radar nose with full buff nose cone.
- 2) **CZ** in buff/green camouflage (original pattern), Castles in six positions, ballast nose. Carries orange/white/blue rudder flash and 2 squadron badge.
- 3) **CZ** in buff/green camouflage (revised pattern), **devoid of all markings**, ballast nose.
- 4) **CZ** in buff/green camouflage (revised pattern), **devoid of all markings**, radar nose with full buff nose cone.
- 5) **R2Z** in buff/green camouflage (original pattern), devoid of all markings.
- 6) **RZ** (#835) in low visibility blue/grey camouflage.

All of the buff/green aircraft have the prominent red/yellow air brakes.

The CZs are all fitted with either RP18R of 110G wing tanks and V3B air-to-air missiles. The RZ and R2Z are carrying RP62 tanks on the inboard wing stations.

The Dassault Mirage III in South African Air Force service – Part 3



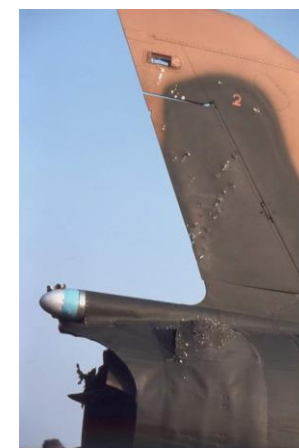
This is possibly RZ #835 still in the matt soft edge buff/green camouflage. There is no black anti-glare panel on the upper nose. The antennae on the vertical stabilizer remain in the original white/pale grey. 2 Squadron badge is on the vertical stabilizer. A typical RZ reconnaissance mission load is represented with **AIM-9B Sidewinder** air-to-air missiles on the outboard pylons and RP62 1,300 liter fuel tanks on the wing inboard pylons.

The Dassault Mirage III in South African Air Force service – Part 3



Squadron personnel celebrating some milestone.

The aircraft is a CZ in the soft edge buff/green camouflage (revised pattern). Although the Castle appears on the intake, the vertical stabilizer is devoid of any markings.



CZ #811 with AIM-9B air-to-air missile at Ondangwa. Note the damaged tail pipe care of a SAM-7 Strella air to ground manpad missile. #811 was flown by Captain Rynier Keet on this sortie.

6 ACM weapons camp

The following pages include a collection of images of Mirage IIIs from some of the Air Combat Maneuvers (ACM) weapons camps held regularly by the SAAF in the '80s and early '90s.



CZ at weapons camp at Durban. The air-to-air missile in the image above is the Kentron V3B. The second aircraft is in a three-tone air superiority colour scheme and thus is most likely RZ 837. It also carries V3B missiles. Both aircraft carry the RP825 fuel tank on the centerline station.



Most likely RZ #838 in the matt soft edge buff/green camouflage with black anti-glare panel on upper nose and 2 Squadron badge on the vertical stabilizer. Conformal antennae panels on the vertical stabilizer have been painted over. This aircraft carries V3B air-to-air missiles on the wing outboard pylons and a centerline RP825 fuel tank.

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CZ with single centerline RP825 supersonic fuel tank and wing mounted V3B IR missile. Weapons Camp, Durban. Note the Cheetahs at the far end near the warehouse.



Great photograph of a number of CZs lined up at Durban for the weapons camp. The first three are in low visibility blue/grey camouflage. The remainder appear to have the buff/blue painted ballast noses. Note the oversprayed markings on the first and second CZ. The 2 Squadron badge is clearly visible on the vertical stabilizer of the second CZ. Note also that the blue/grey CZs have been equipped with the "cat's balls" CRWS antennae – the semi-spherical black antenna just above the pitot probe – more on this in Book 5.

The Dassault Mirage III in South African Air Force service – Part 3



CZ #807 in two-tone grey/blue camouflage at weapons camp in Durban. This image clearly demonstrates the toned down aircraft number, castles and 2 Squadron badge. Note the pattern of darker blue on upper wing surfaces. This was not applied in a “diamond” shape as was done for the later Mirage F1s and Cheetahs. This aircraft has been equipped with the Compact Radar Warning System (CRWS) antennae on the nose and upper vertical stabilizer



Probably CZ #807 again showing the centerline RP825 fuel tanks and wing mounted V3B missiles.

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CZ #811 with single centerline RP825 supersonic fuel tank and two wing mounted V3B IR missiles. Camouflage is soft edge buff/green (revised pattern) with Castles on the intakes. *Mirage III*CZ is absent from the forward fuselage.



CZ #804 with single centerline RP825 supersonic fuel tank and two wing mounted V3B IR missiles. Compare #084 with #811 above : #804 is painted in the soft edge buff/green camouflage (original pattern) with the Castles on the intakes and *Mirage III*CZ can be seen on the forward fuselage.

The Dassault Mirage III in South African Air Force service – Part 3



Two images of possibly the same CZ (soft edge buff/green camouflage (original pattern), radar nose with buff/grey nose cone, 2 squadron badge on the vertical stabilizer), likely seen at Durban. It would appear that the standard layout for ACM camps was a centerline RP825 fuel tank and two wingtip mounted V3B missiles.





7 QRA (Quick Reaction Alert)

The Mirage IIICZ was used for Quick Reaction Alert (QRA) duties at some of the airbases. They would typically be located in QRA shelters at either end of the runway with the intention to be able to, as rapidly as possible, move directly from the shelter onto the runway.



Not the best image, but an interesting one showing two mirage IIICZs at the Quick Reaction Alert (QRA) shelter. Both aircraft are fitted with two wing mounted 500 liter RP18R supersonic wing tanks. This may be at Waterkloof Air Base.

The Dassault Mirage III in South African Air Force service – Part 3



Two images of two different CZs on Quick Reaction Alert (QRA).
In both cases they are painted in the early hard-edge gloss camouflage but the one above has the buff/grey nose cone whereas the one below has the unpainted natural metal nose cone. They are both equipped with two AIM-9B Sidewinder and a Matra R530 air-to-air missiles.





The Dassault Mirage III in South African Air Force service – Part 3



CZ #801 in its Hardened Air Shelter (HAS) with what appear to be two V3B air-to-air missiles on the outboard wing pylons and a centerline RP825 fuel tank. #801 is painted in the low visibility blue/grey camouflage scheme.

8 Aerial targets

The Mirage III could also carry towed aerial targets as shown in the images below.



CZ #813 (above) and #810 (below) with towed aerial target including the winch pod mounted on the centerline. The target kite is mounted on the outboard wing station and tethered to the winch pod. RP18R fuel tanks are carried on the wings.





CZ #813 with towed aerial target pod mounted on the centerline and the target kite on the starboard outer wing pylon.

9 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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On Wings of Eagles – South Africa's Military Aviation History, D. Becker, ISBN 0947478477

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