

**The Dassault Mirage F1  
in South African Air Force service**

**VOLUME 4**

**Mirage F1AZ camouflage and markings**

## **Revision 1**

Revision 0 of this document was published in September 2024. Based on further investigation and comments received from others, this Revision 1 of Volume 4 contains additional and updated data to provide a more complete record.

**South African Air Force Mirage F1 – Volume 4**  
**F1AZ camouflage and markings**

This volume 4 addresses the various camouflage and markings applied to the SAAF Mirage F1AZ fleet.

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Volume 4 has been updated in January 2025 to Revision 1 which includes additional research specifically related to the AZ camouflage schemes which followed the original buff/green delivery scheme.

## Section 4.1 – Mirage F1AZ Colours and Markings - Introduction

There were several camouflage schemes applied to the AZs during their service with the SAAF. These are described below as chronologically applied, from the original delivery camouflage to the final colours when the AZ was retired from SAAF operations.

The reader should note that, as always appears to be the case with SAAF aircraft, there would have been subtle variations to the “standard” colour schemes described below. The discerning modeler may want to select a particular airframe subject which is backed up with actual reference photos.

The progression of camouflage schemes and colours are in chronological order :

- Section 4.2 – Pre-delivery finish as applied to AZ #216 during trials at Dassault in France.
- Section 4.3 – Delivery hard-edge buff/dark green/light admiralty grey camouflage.
- Section 4.4 – Test schemes for application of low visibility blue/grey camouflage as applied only to AZ #243 and #244.
- Section 4.5 – Interim dark earth/green/light blue camouflage scheme.
- Section 4.6 – Final dark earth/green/blue-grey camouflage scheme.

Each section discusses details for each scheme followed by reference images demonstrating these schemes and any identified permutations thereto.

### Section 4.1.1. – Notes on the buff, dark earth and greens used to camouflage the SAAF AZs :

- For the delivery scheme, the buff was referred to as “deep buff”, but in this document reference is made simply to “buff”. The dark green was officially called Olive Drab per Atlas document AD8473, but we simply refer to dark green in this document. Both colours were applied in a satin finish which would fade to a more matte appearance over time. These colours are thus referred to as “*buff/dark green*” in this document.
- For the interim scheme, the dark brown is referred to as “dark earth” in this document. The green applied to this scheme appeared to be lighter than the original olive drab / dark green, but as is explained later in this document, this may well have been the same green, with a matte finish providing a lighter tone. Both colours were applied in a matte finish. These colours are referred to as “*dark earth/green*” in this document.
- For the final camouflage, the assumption is that the upper colours remained the same as for the interim scheme i.e. dark earth and green, both applied in a matte finish. These colours are referred to as “*dark earth/green*” in this document.

### Section 4.1.2 – Notes on the undersurface colours – Light Admiralty Grey versus Pale Blue :

In reviewing the imagery in this document, as well as reference sources, it is apparent to the authors of this document that :

- AZs were delivered with undersides painted a pale grey – this would be the Light Admiralty Grey as per Atlas document AD8473.
- This pale grey was later changed to a pale blue colour. The exact designation of this colour is unknown. This was applied to some (if not all) AZs whilst they were in the initial buff/dark green camouflage.
- Those aircraft which received the interim dark earth/green camouflage scheme also had the undersides repainted a matte pale blue.



Here's a great image of the four Mirage F1 colour schemes. All four are Atlas Aviation aircraft taken in 1996. From left to right – AZ #235 in the interim dark earth/green/pale blue, AZ #233 (note TFDC badge on vertical stabilizer) in the original hard-edge buff/dark green/light grey camouflage (pattern 1), CZ #209 is representative of the 3-colour low-visibility camouflage as carried by #244 and unidentified AZ in the final dark earth/green/blue-grey camouflage

## Section 4.2 - Pre-delivery AZ #216

Two images of AZ #216 during testing in France prior to application of the buff/dark green/light grey delivery camouflage. #216 is unpainted except for the black ranging radar cover and anti-glare panel ahead of the windshield.



Unpainted AZ #216 at the Paris Air Show with a variety of weapons displayed on and beneath it.



#216 performing refueling trials with, most likely, a French Navy Etendard IVP. In this case, the entire nose has been painted black and the SAAF Castle with gold Springbok added to the intakes..



#216, the prototype SAAF AZ, carrying a test AS-30 air to surface missile for trials in France. Note the test camera in a rectangular fairing located just forward of the nose landing gear.

### Section 4.3 – AZ Delivery camouflage scheme

This camouflage scheme and markings were applied to the AZ fleet when delivered to the SAAF.



- The AZs were delivered / initially painted in a buff/dark green upper surface camouflage with light grey lower surfaces. There was a hard-edge demarcation between all of the colours and the finish was close to a satin sheen. The upper surface colours wrapped around onto the undersides of the leading edges of the wings and horizontal stabilizers. The ventral fins were painted in the buff colour on the outer surfaces and light grey on the inner surfaces.
- These colours are described as “Deep Buff No 360”, “Olive Drab No. 298” and “Light Admiralty Grey No. 697” per official Atlas drawing AD8473.
- The light grey undersurfaces were later repainted in a pale blue colour (as can be seen in the image above).
- Full colour markings were applied consisting of:
  - SAAF Castles in 6 positions (upper and lower wings and on intakes), Castles with **Gold** Springbok. Castles were all 24” diameter measured as the diameter of a circle passing through the extremities of the Castle. The Springbok faced forward on the fuselage and towards the fuselage on the wings (with legs towards the wing trailing edges).
  - The entire rudder was painted in orange/white/blue – orange towards the front. Superimposed over the lower portion of the rudder were the words “AVIONS” and “M’DASSAULT” in two lines.
  - The 1 Squadron badge was located on both sides of the vertical stabilizer.
  - The three digit aircraft number was located on the rear fuselage in black 8” high numerals. The last two digits were applied in small numerals on the lower part of the forward facing nose gear door.
  - The small ranging radar cover at the tip of the nose was painted black.
  - A black anti-glare panel was painted ahead of the windscreen and extended to the tip of the nose.
  - Prominent red walkway stripes were applied to the upper surfaces of the wings and horizontal stabilizer as well as along the main wing / fuselage junction. Refer to images in this document for specific details.

- The conformal UHF/VHF antennas on the vertical stabilizer were painted pale grey with white leading edges.
- Similarly, the horizontal VOR/ILS blade antennas located on the upper vertical stabilizer were pale grey with white edging.
- Standard NATO airframe servicing symbology was applied.
- Red and white ejection seat warning triangles with stylized canopy symbols were located on both sides of the fuselage beneath the canopy. These had English and Afrikaans text variably applied – refer to images.
- Warning markings were applied aft of the cockpit around the canopy emergency release handles. A yellow Rescue arrow was also present.
- *Mirage F1AZ* was applied to each side of the forward fuselage beneath the windshield.
- The upper and lower IFF antennas were painted yellow.

All 32 AZs were delivered in this colour scheme. However, unlike the CZ, there were two distinct camouflage patterns applied to the AZs. For the purposes of this document, these are referred to as “pattern 1” and “pattern 2”. Pattern 1 is similar to that applied to the F1CZ fleet. The differences between these two patterns are demonstrated in the images which follow in this document.

### **Gloss, satin or matte finish ?**

Atlas drawing AD8473 on the following page notes : “camouflage : paint as per Spec MIL-C-83286A matte with max. specular gloss of 1 at 60°”.

MIL-C-83286 specifies the requirements for a high-performance coating material used extensively in the aerospace and defense industries. Specular gloss, also known as specular reflection, is a measure of how much light a material's surface reflects in a mirror-like way. It's a key aspect of surface finish quality in manufacturing and production<sup>1</sup>. Specular reflection reflects all light which arrives from a given direction at the same angle, whereas diffuse reflection reflects light in a broad range of directions. The distinction may be illustrated with surfaces coated with glossy and matte paint. Matte paints exhibit essentially complete diffuse reflection, while glossy paints show a larger component of specular behavior.

It is not the intention to further analyze what AD8473 / MIL-C-83286A actually calls for in terms of matte finish, but it is clear from the many images of AZs in SAAF service that the finish would vary from a semi-gloss/satin sheen to a more matte weathered finish.

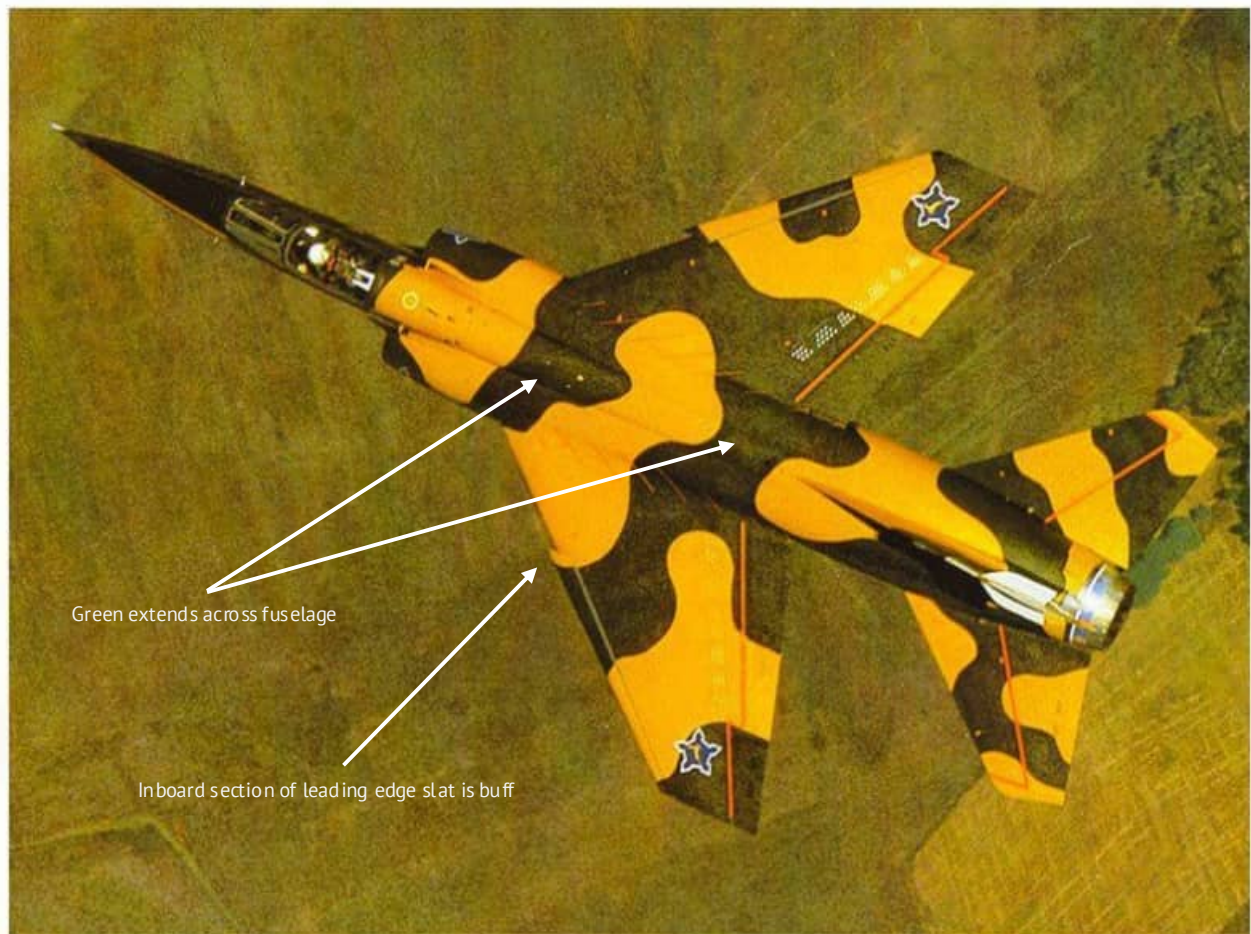
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<sup>1</sup> Wikipedia





Comparison of the two camouflage patterns for the Mirage F1AZ painted in the gloss hard edge buff/green scheme - "pattern 1" above and "pattern 2" below. Pattern 2 provides overall more coverage of the dark green colour with a larger portion of dark green across the fuselage connecting the green areas on both wings. The patterns on the horizontal stabilizers, the rear fuselage and the vertical stabilizer are similar. A minor detail to note is that the port inboard portion of the wing leading edge slat on the aircraft below is buff unlike that on the aircraft above. Both aircraft display the prominent red walkway lines. The light grey horizontal VOR/ILS antennae are clearly visible on the vertical stabilizer in both images. The Springbok faces inwards on both wings. The small off white dots on the wings in the image below are the perforations in the wing spoilers, showing the underlying wing aluminium surface.





Two AZs in company of two CZs. The AZs appear to be in the Pattern 2 scheme - note how the dark green paint on the fuselage spine ahead of the vertical stabilizer wraps over to the starboard side of the fuselage. However, there are some subtle differences in the AZ patterns; for example, look at the slightly different application of dark green along the rear fuselage. All other markings are similar for all four aircraft with the exception that the AZs have no squadron badge on the vertical stabilizer.



AZ #229 with pattern 1. Red warning stripes are visible on wings, horizontal stabilizers and wing/fuselage junction. This aircraft has had the locally developed Radar Warning System (RWS) antennas installed (refer to Volume 1 for details of the AZ RWS). Note the black antennas on the lower nose aft of the laser designator. It also has had the Eagle replacing the Springbok inside the Castle. The spoiler on the left wing is deployed turning the aircraft left.



Beautiful image of the business end of an AZ. This AZ is finished in pattern 1. The underside colour is pale blue (not grey). The outboard leading-edge slat is extended and the inboard leading-edge flap is in the lowered position. Note the yellowish sealant around the edges of the canopy and windshield. The antiglare panel and the buff colour extend to the tip of the nose and the nose cone for the ranging radar appears not to be present. This could indicate that a ballast nose has been installed. The wingtip missile rail is light grey (typical for both the AZ and CZ). Note the standard NATO airframe servicing stenciling on the nose in bright orange.



AZs in the hard-edge satin buff/dark green camouflage. The aircraft in the foreground is finished in pattern 2 whilst the next couple of AZs are in pattern 1. The fourth aircraft is a CZ. The AZ in the foreground has no squadron badge on the vertical stabilizer.



Beautifully turned-out AZ at an airshow. Standard high visibility markings are present. The wing external stores pylons have been installed. The interior of the main landing gear bays are painted silver.



AZ vertical stabilizer detail. This is the original hard-edge buff/dark green camouflage scheme. Note the partially weathered "AVIONS M.DASSAULT" text on the rudder in the image above. The starboard rear RWS antenna can be seen at the top trailing edge of the vertical stabilizer. The drag chute cover is missing.



AZ nose area in detail. The elongated intake cone or "mouse" which was fitted to the SAAF Mirage F1s is visible in these images. This necessitated the very front portion of the cone to be hinged to allow the panel behind to be opened.





Got to love this one !!! "Berefoto" indeed. AZ #219. Of interest in this photo is the difference in paint hue between the rear fuselage and the exhaust cone section.



AZ #239 looking very neat. The highly polished external fuel tank is the RP35 of 1,200 liter capacity. The underside colour is clearly pale blue as opposed to light grey.



Two images of AZs #233 above and #229 below. #233 has the TFDC badge on the vertical stabilizer and the Castle with SAAF Eagle on the intake. #229 has the 1 Squadron badge on the vertical stabilizer and the original Castle and Springbok on the intake. Both aircraft have had the RWS installed, but #233 above has two non-standard black antennas located on the leading edge of the vertical stabilizer (as is indicated in other images provided elsewhere in this document). Note how the original camouflage on #229 has faded and weathered.





Two more images of #229. In the image below, the round laser designator can be seen in the housing beneath the nose. Note how the camouflage wraps around the underside of the wing and horizontal stabilizer leading edges.





AZ #233 was one of the TFDC (Test Flight and Development Center) aircraft based at Bredasdorp in the Southern Cape. Note the TFDC badge on the vertical stabilizer. #233 is painted in the standard pattern 1 hard edge buff/dark green camouflage scheme with high visibility markings. However, the Springbok has been replaced by the SAAF Eagle in the Castles. The red markings on the wings and fuselage appear to have either faded or have been painted in white. Those on the horizontal stabilizer are in bright red. Note that there appear to be two RWR antennas on the leading edge of the vertical stabilizer. The larger one is of a different shape to the original conical configuration.





Two images or AZs in the buff/dark green camouflage. There are distinct differences between the two schemes. On the aircraft above, the green on the intake trunk near the airbrake extends down to the underside pale blue. This is not the case for #229 in the image below. The inboard portion of the wing leading edge slat near the dog tooth on the aircraft above is buff whereas on the #229 below the green appears to extend further inboard. #229 does not have the orange/white/blue rudder.





AZs in a combination of pattern 1 and pattern 2 buff/dark green camouflage. The second and third aircraft are likely in pattern 2 - note the buff inner portion of leading-edge slat on the second and third aircraft. The first aircraft appears to be in pattern 1 - the green extends much further aft of the ILS antenna on the fuselage spine in comparison to the second and third aircraft.

The AZs are all finished with high visibility markings including orange/white/blue rudders and 1 Squadron badges. These aircraft are all pre-RWS mod state. Red engine intake covers are installed on the aircraft. The main UHF antennas aft of the canopy also have covers on them.



Two images of AZ #229 taken at different stages in its service with the SAAF and painted in pattern 1 camouflage. In the image above, #229 presents the complete set of high visibility markings with Springbok Castles. The pale blue underside colour is clearly visible.

In the image below, the orange/white/blue colours have been removed from the rudder, but the rest of the high visibility markings remain. The Springbok has been replaced by the SAAF Eagle. The underside appears to be a paler blue, but this is more likely to do with processing oversaturation of the image above.





Two images of AZ #223. Note the faded appearance of the buff/dark green camouflage. The yellow marking on the wing in the image below is the standard NATO symbol for lifting point. This appears to be pattern 1 – green inboard section of leading-edge slat.





Details of the front area of the AZ. The aircraft above is pre-RWS mod state. The flat rectangular Doppler antenna can be seen on the underside just aft of the laser designator fairing. The yellow antenna in the fuselage spine is the main UHF antenna.



Yet another image of #229 – quite a popular photography subject, most probably due to its existence as a test and solo air display airframe. There are several service panels opened - note the high visibility orange colouring to the panels. The rudder is camouflaged and the SAAF Eagle is present. #229 remained in this colour scheme until its retirement and appeared to be immaculately maintained with a nice satin finish.



Details to note – yellow/black striped access door. The yellow blade antenna on the nose gear door is the lower IFF antenna. There was another located on the fuselage spine. Leading edge flaps are in the lowered position. The small probe near the nose is a pitot probe and is present on both sides of the nose. The other probe just ahead of the "Mirage F1AZ" text is the temperature probe. The large blade antenna on the spine aft of the canopy is the main UHF antenna. Aft of that is a red navigation light.



AZ #243 appears to be in painted in pattern 2. The large yellow blade antenna on the spine is the main UHF antenna and the smaller one aft of this is the upper IFF antenna. The yellow antenna on the rear underside between the ventral strakes is the AS30 air to ground missile communication antenna. #243 is in pre-RWS mod state.



AZ with the Mozambique Air Force Mig-17 which was flown to South Africa by a defector.

## Section 4.4 – Low visibility 2-colour / 3-colour blue/grey camouflage development (research by Martin Strümpfer<sup>2</sup>)

Only two AZs were painted in a low visibility grey camouflage. Neither of these schemes were adopted as standard for the rest of the AZ fleet. These AZs were :

- #244 – this was the only AZ painted in the three-colour blue/grey low visibility camouflage similar to that applied to the F1CZs. It had a white false canopy painted on the underside of the nose (unlike the CZs, which had a black false canopy). Markings were low visibility, (almost indistinct in some images) having been over sprayed with the base camouflage grey. National markings consisted of the SAAF Castle/Springbok.
- #243 was the only AZ painted in a two-colour low visibility grey camouflage scheme and had a black false canopy painted on the underside of the nose. Markings were low visibility, having been over sprayed with the base camouflage grey. National markings consisted of the SAAF Castle/Springbok.

### Section 4.4.1 – Early low visibility camouflage trials

During the 1980s, several projects were undertaken to develop new camouflage schemes better suited to the operational conditions experienced over Angola during the border war. Following the successful project to develop a new air-superiority-oriented paint scheme for the F1CZ in 1981, Ron Belling (renowned South African aviation artist) continued building on the CZ low visibility colour groundwork done by Geoff Timms<sup>3</sup> by developing new shades of blue and grey. As with the three colours of the CZ scheme, these new colours were local formulations using SABS colour codes. There are no direct equivalents from the US FS (Federal Standard) or UK BSC (British Standard Colour) paint colour systems<sup>4</sup>.



Various blue and grey shades as developed over the years by Ron Belling. At the top are the three colours of the F1CZ camouflage (dated 1981). At bottom, from left to right: Shadow Grey, Pale Shadow Grey, Mirage Grey (same as above) Dark Coastal Blue Grey, Berg Blue, Vaal Grey  
(Photo: Nick Scheltema)

Experimental work to develop a new paint scheme for the AZ fleet began around 1983/4. AZ #244 was the first aircraft to be repainted with the 3-colour air-superiority colour scheme adopted for the CZ to investigate the feasibility of using the existing scheme and colours on the AZ fleet. A false canopy was applied in white. The motivation for using white was the colour contrast, rather than the colour itself, which was responsible for creating the illusion of a canopy in an attempt to disorient any enemy during air combat. The colours applied to #244 have been described (from light to dark) as “Highveld Grey”, “PE Blue” and “Mirage Grey”.

Early tests, however, were not very satisfactory. While well suited to helping the CZ blend into the background at high altitudes, the Highveld Grey extremities were considered too bright and easily visible from above when the AZ was flying at its typical low-level operational altitude.

<sup>2</sup> Additional input relating to the AZ camouflage development was sourced by Martin from Louis Kriel who was involved in the painting of F1s as part of Base Aircraft Servicing Section (BASS) at AFB Hoedspruit.

<sup>3</sup> Refer to Volume 2, Section 2.4, of this series for the story of how the F1CZ camouflage scheme was developed.

<sup>4</sup> The exact colours are thus very difficult to determine. For the scale modeller, it is advised to choose a particular reference photo they believe most accurately depicts the subject and base colour formulations.

Based on these initial observations, a second AZ, #243, was repainted shortly thereafter for further investigation, adopting a simpler two-colour scheme. This scheme was darker in appearance than that applied to #244, with the PE Blue and Highveld Grey areas replaced by a medium grey – reportedly Highveld Grey darkened by mixing in some PE Blue. This would have made the colour a precursor to the final Dark Coastal Blue Grey adopted by the AZ fleet<sup>5</sup>. The Mirage Grey pattern was altered in shape, but the colour was retained. A false canopy was applied again, this time in black.

Besides the visual downsides of the lighter 3-colour camouflage scheme on #244 that led to the testing of a darker two-colour camouflage scheme on #243, a second key motivation, evident in most other SAAF camouflage scheme developments at the time, was simplicity and cost. Using one less colour reduced material expenses but, more importantly, required fewer man-hours during application and allowed for a quicker turnaround time when a repaint was needed.

Both #244 and #243 were used in combat operations during 1987 while in their respective experimental low visibility camouflage schemes. In particular, #244 with its upgraded RWS, saw extensive use during the final months of the war. Ultimately, neither of the two paint schemes trialed would be judged optimal to the AZ's low-level operating environment. However, some observations from their operational use informed the development of the final camouflage scheme eventually applied to the AZ fleet (see section 4.6).

#243 and #244 carried their experimental schemes into the early 1990s and would eventually be repainted into the final camouflage scheme as carried by the AZ fleet.



Both #243 (furthest from camera) and #244 (closest to camera) can be seen on the AFB Grootfontein flight line during 1987 in their respective low visibility camouflage. Note the slight difference in colour between #244's PE Blue and #243's darkened grey on the vertical stabilizers. (Photo: Piet Van Schalkwyk)

<sup>5</sup> While mention has been made online and elsewhere that #243 had the highveld grey extremities deleted, being replaced with PE Blue, direct photo comparison between the two aircraft shows #243 having a distinct grey shade as opposed to blue on #244. The Plascon supplied polyurethane acrylic enamel tended to fade very fast under the harsh African sun, soon distorting and changing the original paint's colour appearance. Colour studies are further complicated by variances in film/negatives storage and wet film processing all impacting a subject's appearance. Without official documentation, the exact colours used are likely lost to history.



AZ #244 viewed from above. This aircraft carried an unmodified version of the air-superiority scheme developed for the CZ. While very effective at altitude where the CZ typically operated, it wasn't as effective at lower altitude where the AZ typically operated. #244 has been modified with the RWS as witnessed by the small RWR antennas on the nose and the upper vertical stabilizer. (Photo: Digby Holdsworth)



AZ #243 when viewed from above in the simplified 2-colour camouflage. The darker overall appearance of the scheme is very apparent. Also note the change in shape of the dark Mirage Grey diamond. The additional "half-moon" shape on the port wing leading edge is the result of an accidental spillage during painting as noted by Digby Holdsworth, SAAF Project officer. Note that, unlike #244, #243 has not yet been fitted with the upgraded RWS. (Photo: Digby Holdsworth)

#### Section 4.4.2 – #243 two-colour low visibility camouflage



Topside view of AZ #243. She was painted after 244 when it was realized the AZ needed a slightly darker camouflage scheme than the air-superiority camouflage scheme from the F1CZ. The Highveld Grey extremities and PE Blue colours were replaced by what appears to be a darkened version of Highveld Grey.



#243 giving a display at a Hoedspruit open day 31 January 1986. The aircraft has not been upgraded with RWS nor the RIMS ventral fins. All antennas on the vertical stabilizer have been overpainted



#243 had a false canopy applied in black. She is seen here during a bombing camp at AFB Bloemspruit in 1986/7. (Photo: Gareth Hazell)



Another forward view of #243. Note the last two digits of the aircraft tail number applied in white. The aircraft is in a pre RWS and RIMS mod state.



#243 at Upington in March 1987 during Exercise Golden Eagle.



Another view of #243 with the old RWR BF antennas clearly visible on the vertical stabilizer, pre-RWS upgrade, as well as the AS-30 command guidance antenna visible just ahead of the ventral fins.



#243 was later upgraded with RWS and RIMS ventral fins while still in the experimental camouflage scheme. By this time the colours were very faded. Note the paint spill on the port wing has by this time been corrected. (Photo: Nick Scheltema)



#243 during an Air-to-air gunnery camp at AFB Langebaanweg in February / March 1991. She is in the post RWS and RIMS mod state. (Photo: Vernon Vice)

### Section 4.4.3 – #244 – three-colour low visibility camouflage



244 was painted in the air-superiority scheme of the F1CZ to evaluate the suitability of the scheme in the AZ's theatre of operations. The aircraft is equipped with the upgraded RWS, but not with the RIMS ventral fins. In comparison to the photo below, note how much images of the same subject can vary.



*(Photo: Piet van Schalkwyk)*



#244 armed with an AS-30 missile at Upington in December 1987.



A false canopy painted in white was applied to #244. The reasoning being that the colour contrast rather than the colour itself is responsible for creating the illusion. (Photo: Digby Holdsworth)



#244 was extensively used during the last months of the border war between August 1987 and March 1988. #244 is seen here at AFB Grootfontein taxiing out for a strike with four Mk. 82 bombs on the CLB.4 MER and an ACS pod on the port station 2 pylon.



244 at AFB Grootfontein loaded with four Mk. 82 bombs.



A well faded 244 at AFB Langebaanweg in February / March 1991 during an Air-to-Air gunnery camp. It is unclear if the aircraft has been equipped with RIMS ventral fins. (Photo: Vernon Vice)

## Section 4.5 – Interim camouflage scheme

This camouflage scheme was applied to a limited number of aircraft based on combat experience and the realization that the buff stood out too starkly against the southern Angola terrain. At least two aircraft were initially crudely painted in a test scheme wherein the buff was crudely oversprayed in nutria brown for evaluation purposes in the period 25 February to 2 March 1988 at AFB Grootfontein. Once this was proven to be effective, several other AZs were painted in a more controlled manner once back in South Africa using a colour closer to dark earth. The pattern was mostly consistent with the original hard-edge buff/dark green pattern 2 as described elsewhere in this document.



- The original satin buff colour was replaced with matte dark earth and the original satin dark green was replaced with matte dark green.<sup>6</sup> The colours were applied with soft edges between the dark earth and green upper surface colours.
- The application of dark earth and green on the nose section of those AZ's thus painted appeared to be applied in two ways :
  - a. Port nose – dark earth; starboard nose – green; a black antiglare panel separated these colours.
  - b. Port nose – dark earth with a green section near the nose; starboard nose – green with a dark earth patch carrying over from the port nose; no anti-glare panel. This variation is shown in the image above.
- Regarding the undersides, it would appear that these were repainted in a matte pale blue with a hard-edge demarcation between the upper and lower colours. The upper surface colours wrapped around onto the undersides of the leading edges of the wings and horizontal stabilizers. The ventral fins were painted in the dark earth camouflage colour on the outer surfaces and pale blue on the inner surfaces.
- The white/orange/blue rudder was removed from the rudder.
- Full colour markings were retained and included :

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<sup>6</sup> According to Louis Kriel from BASS, the olive drab colour was retained for this scheme but appeared lighter due to the matte finish. Matte tends to weather and fade quicker than gloss. This has unfortunately not been confirmed via any official SAAF drawings.

- SAAF Castles in 4 positions (upper wings and on intakes), blue Castles with white surround and **Gold** Springbok. Castles were all 24” diameter measured as the diameter of a circle passing through the extremities of the Castle. The exception was #235 which later had the Springbok replaced with the SAAF Eagle.
- An image is provided later in this document wherein an AZ in this colour scheme is clearly not carrying SAAF Castles on the lower wings – the assumption therefore is that when the undersides were repainted, the Castles were not re-applied.
- 1 Squadron badge located on both sides of the vertical stabilizer.
- Three-digit aircraft number in black 8” numerals on the rear fuselage. The last two digits were applied in small numerals on the lower part of the forward-facing nose gear door.
- Small black ranging radar cover.
- The back anti-glare panel was variably applied ahead of windscreen and, when applied, extended to the tip of the nose. Refer to note on previous page.
- The conformal UHF/VHF antennas on the vertical stabilizer remained in pale grey with white leading edges.
- Similarly, the horizontal VOR/ILS blade antennas on the vertical stabilizer remained in pale grey with white edging.
- Standard NATO airframe servicing symbology were retained.
- Red and white ejection seat warning triangles with stylized canopy were applied to both sides of the fuselage beneath the canopy.
- The rescue and warning markings were retained around the canopy emergency release handles aft of the cockpit.
- The last two digits of the aircraft number were applied in large black numerals on the intake upper surfaces facing forward (note the “41” numerals above the intakes in the image of AZ #241 on the previous page).
- *Mirage F1AZ* was removed from the forward fuselage.
- The red walkway stripes on the upper surfaces of the wings, horizontal stabilizer and wing / fuselage junction were removed.

These aircraft were all post RWS and RIMS mod state.

### Section 4.5.1 – initial development of this scheme (research by Martin Strümpfer)

The interim camouflage scheme applied to some AZs originated during the final phases of the Border War. In late February 1988, 1 Squadron, which was conducting strike missions from AFB Grootfontein at the time, was deployed to AFB Rundu to provide top cover against MiGs harassing SADF forces attacking the Tumpo Triangle. SAAF AZs and FAPA/DAA MiG-23MLs engaged in dogfights twice on 25 February 1988, although neither side achieved success. Intercepted radio transmissions from both encounters revealed that when the MiGs spotted the AZ flight at low altitude beneath them, they described seeing the “yellow and green” Mirages. It was concluded that the yellow-coloured buff stood out particularly prominently against the dark, rainy-season swamps.



Notice how much the yellow buff stands out over the white Angolan sands. The colourful fin flash does not help the situation. (Photo: C. Skinner)

The 1 Sqn OC, Johan Rankin, made the decision to address the problem of the high visibility camouflage with some level of urgency. Having returned to AFB Grootfontein in South West Africa (Namibia), one AZ was pulled into the Grootfontein hangar to serve as the prototype for a new camouflage scheme. Pilots and ground crew worked together during the night and using standard SADF (South African Defence Force) nutria brown paint over sprayed the buff surfaces of the aircraft<sup>7</sup>.

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<sup>7</sup> Nutria brown was available on base as there was a requirement that all SAAF ground vehicles be painted in nutria for lower visibility when on the apron.

Without a formal and approved Engineering Change Proposal (ECP) having been issued to repaint the aircraft, this could have had serious consequences, but with the very positive results from flight trials, sense prevailed at SAAF HQ. Although camouflage development for the AZ was initially viewed as a low priority, virtually overnight, a formal and high-priority ECP was raised to develop a new paint scheme for the aircraft. In the interim, while the Squadron was still at AFB Grootfontein, permission was granted to repaint four aircraft. Photo evidence shows at least two AZs were repainted at AFB Grootfontein before the Squadron was temporarily stood down on 2 March 1988. These aircraft can be identified in the following images by the having the entire rudder painted in nutria brown.



Not quite your typical clean room paint shop. An AZ is being prepared for colour modification in the Grootfontein hangar.



One of the Grootfontein-repainted AZs is seen on the flight line after repainting. Note the rough overspray covering all buff surfaces, even obscuring the tail number. The high-visibility national markings on the aircraft's rudder have also been overpainted. (Photo: Jacques Bruwer).



"A little rough" as remarked in the Squadron diary is an appropriate description of the first paint jobs, but it got the job done. Note the partial overspray of nutria brown on the ejection seat warning triangle and the slightly oversprayed "rescue" arrow aft of the canopy. In this area the hard edge between the original buff and dark green colours is clearly visible.



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C. Hugo Collection

This is an interesting image. These are all AZs as can be identified by the 1 Squadron badge on the vertical stabilizer. The colours of the first two aircraft are darker than the last aircraft and are likely painted in the interim nutria/green camouflage and have had the orange/white/blue rudders over sprayed in nutria - the remnants of these colours are still visible beneath the nutria. The last aircraft is painted in the original buff/dark green camouflage scheme. The left most AZ has a yellow V3B IR missile on the wingtip. (Photo: Charles Hugo).



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Possibly the same three aircraft as in the first image on this page. Compare the duller nutria brown to the buff applied to the two AZs on the right with the lighter buff as applied to AZ #235 on the left. (Photo: Charles Hugo).



AZ camouflage scheme comparison between the nutria brown/green (top) and the standard buff/dark green (lower) colour schemes. Notice the satin sheen of the standard buff/dark green paint scheme. On the nutria brown painted aircraft, the original untouched dark green has a satin sheen whereas the nutria brown is a matte finish. (Photo: Dick Lord)



Another view of the comparison flight. It is evident how much the nutria brown on the lower aircraft shows less contrast with its surroundings than the standard buff on the other AZ.



AZ in the matte soft edge dark earth/green camouflage with a hard-edge demarcation between the upper and lower colours – note that the whole rudder is painted in dark earth indicating this to be one of the initial aircraft trialed with the dark earth replacing the buff. It has a black anti-glare panel ahead of the windshield. Some of the original high visibility markings were retained including the blue Castle with gold Springbok and 1 Squadron badge. Other markings such as the "Mirage F1AZ" on the forward fuselage and the rescue arrow aft of the canopy have been over sprayed with dark earth.

## Section 4.5.2 – Approved application of the interim camouflage scheme

By 8 March 1988, with the squadron now back at AFB Hoedspruit, the formal repainting of some AZs in a matte dark earth and green finish (similar to that applied to the Impala Mk..2), replacing the satin buff and dark green of the delivery scheme, began. The original hard-edge demarcation between the upper surface buff/dark green colours was replaced with a feathered edge between the dark earth/green colours. The demarcation with the underside pale blue remained a hard edge. The upper colours were applied in a similar manner to the original AZ pattern 2.

Eventually, at least eight aircraft were formally repainted in this scheme. The tail numbers identified are: 217, 224, 231, 234, 235, 240, 241, and 242. They are shown in the photos on the following pages.



AZ #217 at Langebaanweg. Aircraft has both RWS and RIMS systems installed. (Photo: Vernon Vice)



AZ #224 seen at Langebaanweg in 1991. #224 has both RWS and RIMS systems installed. Note the dark earth patch on the starboard nose which can also be seen on #235, #241 and #242 in later images in this section. This is once again proof of how variably the camouflage could be applied.

(Photo: Vernon Vice)



AZ #234 (foreground) and #231 seen at AFB Bloemspruit in March 1989. Both are finished in the factory applied dark earth/green/pale blue camouflage scheme. Both aircraft have the black anti-glare panel painted on the noses. Note the subtle differences in markings - #234 has the yellow rescue arrow marking present aft of the canopy, whereas #231 does not. The IFF antenna on the spine of #234 is painted white, whereas on #231 it is a darker colour. Note the differences in the dark earth/green demarcation lines on the noses of the two aircraft. There also appears to be a tonal variation in the brown colours between the two aircraft.



Closer view of #231. The green on the rudder appears somewhat darker, possibly indicating a later touch up. The rescue arrow aft of the canopy has been overpainted with nutria brown or dark earth. The red "keep-off" lines of the wing-fuselage fairings are vaguely visible on the green painted wing to fuselage fairings but are not on those that were overpainted in brown. These are possible indicators that this may be one of the initial AZs to have been painted in the nutria brown with later touch ups added such as the green on the rudder.



AZ #234, also at AFB Bloemspruit in July 1989. In this case the rescue arrow is clearly visible aft of the canopy.



AZ #234 resplendent in a fresh coat of dark earth/green and pale blue undersides grey. Full colour markings have all been retained in this scheme.



AZ #235 landing at AFB Grootfontein in August 1988. It carries the original Castle / Springbok national markings, but no black anti-glare panel on the upper nose. The dark earth colour has been partially carried over from the port nose on the upper starboard nose.

AZ #235 was later configured as the test airframe for the proposed F1 avionics upgrade project (Project Nekwar) which was ultimately not adopted for the AZ fleet. The image below is of #235 with post Project Nekwar modifications as can be seen by the revised RWS antenna on the leading edge of the vertical stabilizer, a white blade antenna on the upper fuselage and the additional small black antenna just adjacent to the drag chute cap on the starboard side. Formation strip lights have been added to the fuselage spine aft of the canopy, the upper rear fuselage and on the vertical stabilizer as can be seen in the image below. The RIMS ventral fins are installed. The UHF and IFF antennas on the fuselage spine remain in their original colours.





Two more views of AZ #235 post Project Nekwar modification. Note that it now carries the Castle / Eagle national markings – the Eagle having replaced the Springbok. It would appear that this was unique to #235 in the dark earth/green colour scheme. Note also that #235 now has a completely green starboard nose and anti-glare panel when compared to the upper image on the previous page. Note the full suite of aircraft markings and servicing symbology applied to the AZ in this camouflage scheme.



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Great image showing AZ #229 in the original hard-edge buff/dark green camouflage and AZ #240 in the matte soft edge dark earth/green camouflage. Both aircraft have the standard high visibility markings applied. #229 is painted in the AZ pattern 1 scheme whilst #240 is in AZ pattern 2 scheme.



SAAF Castles were not applied to the lower wing surfaces of those AZs painted in the interim dark earth/green/pale blue colour scheme as can be seen in this image of #241.



AZ #241. No black anti-glare panel ahead of the windshield. Compare this port side image to that of #234 - #241 has the forward section of the nose painted green. Note that #241 is not carrying the distinct yellow rescue arrow aft of the canopy.



AZ #241. The camouflage scheme is the same as AZ pattern 2 used for the earlier hard-edge buff/dark green camouflage. The last two digits of the tail number, "41" appear in larger black numerals on the upper surfaces of the intakes. The red stripes have been removed from the wings, elevators and wing/fuselage junction. Unlike #240 on the previous page, #241 does not have the black anti-glare panel ahead of the windscreen. The VHF, UHF and ILF/VOR antennas on the vertical stabilizer remain in light grey. The external fuel tanks are painted differently – one dark earth/green and the other in a medium blue-grey<sup>8</sup>. The store on the port outer wing is an ELT-555 EW jamming pod whilst the store on the starboard outer wing appears to be an H2 bomb guidance pod. The AZ would carry the H2 on the fuselage pylon.

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<sup>8</sup> Most likely PE Blue. AZ tanks painted in the medium blue/grey always had dark earth/green camouflage on the upper forward portion. The F1CZ PE Blue tanks were the only ones painted in a uniform colour. The RP35 tanks could be used on both the AZ and CZ.



AZ #241 ("41" just visible on upper intake) at the Upington ACM camp (image dated 1989) in the foreground. The next aircraft is possibly AZ #231 and appears to be in the initial nutria/green scheme. Note that the dark earth/green demarcation on this aircraft is much more feathered than on #241. The dark earth on #231 extends forward on the upper fuselage to just behind the canopy. Both aircraft do not have the prominent yellow rescue arrow aft of the canopy. Also notice the lack of a black anti-glare area on the nose. UHF and ILS blade antennas on the fuselage spine remain in the original yellow colours. #241 is carrying what looks like a captive V3B missile body on the wingtip rail – note the lack of typical V3B canard fins (Photo: Daan Conradie)



AZ #242 was also as used for the H2 glide bomb trials at Upington.

## Section 4.6 – Final dark earth/green/blue-grey colour camouflage scheme

This camouflage scheme was applied to most of the surviving AZs and was the official camouflage scheme at the time of the AZ's retirement.



- This camouflage consisted of upper fuselage, upper wings and upper elevators painted in matte dark earth and green (similar to the interim scheme colours), with the lower surfaces, fuselage sides and vertical stabilizer painted in a matte medium blue-grey, called dark coastal blue grey. There was a soft edge demarcation between all colours. Both inboard and outboard surfaces of the ventral fins were painted in the medium blue-grey colour. The leading edges of the intakes, the wing leading edge flaps and the elevators were painted in a slightly lighter medium grey protective coating. The leading edge of the vertical stabilizer was variably painted in a darker grey – refer to the image above. This scheme is referred to as “*dark earth/green/blue-grey*” in this document.
- This camouflage pattern was similar to pattern 2. However, this appears to have been more loosely applied showing variations between individual aircraft. For example, some aircraft did not have the green patch on the forward part of the nose.
- Most markings were applied in a dark or light grey depending on the background camouflage colour. These included :
  - SAAF 24” Castles were retained in four positions only (upper wings and on intakes). The Springbok was later replaced with the SAAF Eagle. The Springbok and Eagle faced forwards on the intakes and inwards on the wings. These markings were applied in dark grey.
  - The 1 Squadron badge was retained on both sides of the vertical stabilizer but toned down with an overspray of blue-grey. The 1 Squadron badge was applied in a pale yellow colour.
  - The three-digit aircraft number was painted in 8” high numerals on the rear fuselage in dark grey. The last two digits were applied in small numerals on the lower part of the forward-facing nose gear door.
  - The small ranging radar cover was black.
  - The anti-glare panel ahead of the windscreen was removed.
  - The conformal UHF/VHF antennas on the vertical stabilizer were painted blue-grey.

- The horizontal VOR/ILS blade antennas on the vertical stabilizer were painted blue-grey.
- Standard NATO airframe servicing symbology was applied in dark grey or dull red.
- The ejection seat warning triangles were painted in dull red.
- Rescue and warning markings around the canopy emergency release handles aft of the cockpit were applied in dark grey.
- The last two digits of the aircraft number were applied in large numerals on the intake upper surfaces facing forward. These were painted in the blue-grey colour.
- *Mirage F1AZ* was painted in dark grey on the forward fuselage of some aircraft.
- The wing walkway stripes were applied in medium grey on the wings ahead of the ailerons and flaps and on the horizontal stabilizers. There were no walkway stripes on the wing/fuselage junction.
- As always, there were variations and this colour scheme was no exception. For example, there are images of these aircraft without squadron badges, Castles and/or *Mirage F1AZ* text. As always, check your references.
- One aircraft, #220, was painted in this colour scheme, but with the starboard vertical stabilizer painted in the dark earth/green pattern and the port vertical stabilizer in the blue-grey. #220 was painted like this to evaluate the effectiveness of the proposed low visibility camouflage scheme. The outcome was that both sides of the vertical stabilizer would be painted in the blue-grey colour.

Some of the AZs which were painted in the late dark earth/green/blue-grey camouflage were seen with white noses and horizontal stabilizers. These were used to simulate enemy aircraft or “bogey” for air combat maneuver training.

These aircraft were all post RWS and RIMS mod state.

#### Section 4.6.1 – Initial development of the final scheme (research by Martin Strümpfer)

While some AZs were formally being repainted in the interim matte dark earth and green camouflage, work simultaneously began on developing a new paint scheme better suited to the mostly low-level operational environment of the AZ. This eventually resulted in matte dark earth and green upper surfaces, with a dark coastal blue grey<sup>9</sup> underside extending up onto the sides of the aircraft. By late March 1988, with the Squadron back at AFB Grootfontein, #220 was deployed to operationally trial this colour scheme.



AZ #220 was involved in the last strike mission flown by Mirages during the border war on 23 March 1988. It had arrived at AFB Grootfontein only a few days prior carrying the latest scheme under evaluation. The mission was aborted due to poor weather over the target area.



Another view of the new camouflage scheme of AZ #220. The other AZ, #224, has formally been repainted in the interim matte dark earth/green scheme. Both aircraft are upgraded with the RWS but not RIMS.

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<sup>9</sup> After the successful project to develop a new camouflage for the CZ fleet, Ron Belling continued to work on new colour formulations. *Dark Coastal Blue Grey* was one of the colours he developed around 1984. The use of this colour was confirmed to the author by Louis Kriel, one of the lead painters at AFB Hoedspruit who was intimately involved with repainting the first AZs, and maintaining their paint thereafter.



More views of AZ #220 flying over Southern Angola. The improvement of the scheme compared to the standard buff/dark green scheme is clearly evident. (Photos: Nick Scheltema)



The story, however, would not finish there. By August 1988, #220 was spotted at AFB Grootfontein on exercise with a unique camouflage. The starboard side of the vertical stabilizer remained in matte dark earth and green, as before. However, the port side was now also painted in the same dark coastal blue grey as the underside of the fuselage. After this evaluation, the final camouflage scheme would feature a completely dark coastal blue grey vertical stabilizer.



In the two images above, the difference in camouflage applied to the port and starboard sides of the vertical stabilizer can be clearly seen. Details to note are that the VHF, UHF, and VOR/ILS antennas remain in their original light grey colours. These would later be overpainted in dark coastal blue grey once the camouflage scheme became standard on the AZ. Also note that the last two numerals of the tail number (20) have been applied in black on the upper intakes. (Photos: Piet Van Schalkwyk)



Another view of 220, with six inert Mk.82 bombs, is seen over the Drakensberg Mountains near AFB Hoedspruit. More details to note are that the main UHF blade antenna is yellow on the fuselage spine, and the upper IFF antenna is white. The aircraft is equipped with the upgraded RWS, but not with RIMS.



Tail number 220 at retirement. The vertical stabiliser is now entirely in dark coastal blue grey , including the various antennas. The UHF and IFF antennas have been overpainted in the local camouflage colour. The tail number numerals have switched from black to dark grey. All national and squadron insignia are in low-visibility versions. The aircraft is now fitted with both RWS and RIMS. (Photo: Morné Booij-Liewes)

## Section 4.6.2 – Application of the final camouflage scheme to the surviving AZ fleet

The table below provides a list of AZ airframes which the author has verified from images which indicates the different markings applied to various airframes when painted in the final dark earth/green/medium blue-grey camouflage scheme. The reader will note the variable application of the Mirage F1AZ logo, national insignia and 1 Squadron badge.

Aircraft number	Mirage F1AZ on forward fuselage	National insignia	1 Squadron badge	RWS mod state
#217	Mirage F1AZ	Low visibility Castle/Springbok	1 Sqn badge	Post-RWS
#217	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#218	-	Blue Castle/ Gold Springbok	-	Post-RWS
#218	-	Low visibility Castle/Springbok	1 Sqn badge	Post-RWS
#218	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#219	Mirage F1AZ	Low vis Castle/Black Eagle	-	Post-RWS
#219	-	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#220 (20 above intake in black)	-	Blue Castle/ Gold Springbok	-	Post-RWS VHF/UHF and ILS/VOR antennas in grey
#220	-	Blue Castle/ Gold Springbok	-	Post-RWS
#220	-	Low visibility Castle/Springbok	1 Sqn badge	Post-RWS
#220	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#221	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#225	Mirage F1AZ	Low visibility Castle/Springbok	1 Sqn badge	Post-RWS
#225	Mirage F1AZ	Low vis Castle/Black Eagle	Not visible in image	Not visible in image
#225	-	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#225	Mirage F1AZ	Not visible	1 Sqn badge	Post-RWS
#226	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#227	-	Blue Castle/ Gold Springbok	1 Sqn badge	Post-RWS
#227	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#230	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#231	-	Low visibility Castle/Springbok	-	Post-RWS
#231	-	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#232	-	Low visibility Castle/Springbok	Not visible in image	Post-RWS
#232	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#233	Mirage F1AZ	Blue Castle/ Gold Springbok	1 Sqn badge	Post-RWS
#236	Mirage F1AZ	Blue Castle/Gold Eagle	1 Sqn badge	Post-RWS
#236	Mirage F1AZ	Blue Castle/ Gold Springbok (toned down)	1 Sqn badge	Post-RWS
#236 (36 above intake in black)	Mirage F1AZ	Blue Castle/ Gold Springbok (toned down)	1 Sqn badge	Post-RWS
#236	-	Not visible in image	1 Sqn badge	Post-RWS
#236	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#237	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#237 (with white nose)	Mirage F1AZ	Low visibility Castle/Springbok	Not visible in image	Post-RWS
#239	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#240	Mirage F1AZ	Low visibility Castle/Springbok	1 Sqn badge	Post-RWS
#241	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#243	Mirage F1AZ	Low vis Castle/Black Eagle	Not visible in image	Post-RWS
#243	-	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS
#244	Mirage F1AZ	Low visibility Castle/Springbok	Not visible in image	Post-RWS
#244	Mirage F1AZ	Low vis Castle/Black Eagle	1 Sqn badge	Post-RWS

Note that this may not be an exhaustive list of AZs painted in this final camouflage. This list is based on images which the author could find.



AZ #241 demonstrating the final operational camouflage scheme applied to the remaining fleet of AZs. This was an attractive dark earth/green/blue-grey camouflage. The pattern is similar to the original buff/dark green pattern 2 but did vary quite a bit from one aircraft to the next. The overall finish was matte. Some details :

- a) No black anti-glare panel ahead of the windshield
- b) The vertical stabilizer and outer surfaces of the ventral fins were painted in blue-grey
- c) All UHF/VHF/VOR/ILS/IFF antennas were painted in the base camouflage colours
- d) 1 Squadron badge was applied in yellow
- e) Wing and elevator walkway markings were applied in dark grey
- f) The national markings were applied to the intakes, in this case the later dark grey Castle with dark grey Eagle, whilst those on the wings appear to be blue Castles with grey borders and Eagle.
- g) "Mirage F1AZ" was variably retained on the forward fuselage (both sides).



AZ #226 showing the final iteration of the AZ camouflage and markings. Note the location of the Castles on the upper wings. From both images on this page, the wing Castles appear to be blue with a medium grey border and medium grey SAAF Eagles. The fuselage Castles are the same colour as the base blue-grey camouflage with a darker grey border and dark grey SAAF Eagle.

Regarding the national insignia, there were several permutations :



Above - blue Castles with gold edges and Springbok.

Below - low visibility Castles with dark grey edges and dark grey Springbok.





Low visibility Castles with dark grey edges and SAAF Eagle as can be seen on AZ #218 above and #219 below.





AZ #217 at Hoedspruit AFB. Markings include Castle/SAAF Eagle combination, 1 Squadron badge and *Mirage F1AZ* on the nose.



F1AZ #225. Note the "25" above the starboard intake in the same blue-grey as the fuselage. The national insignia appears to be the low visibility Castle/Springbok. The Castles on the upper wings are barely visible and comprise blue Castle with grey border and gold Springbok. No *Mirage F1AZ* on the nose.



A nice selection of AZs. The first three and last aircraft are in the final dark earth/green/blue-grey camouflage. The 4<sup>th</sup> aircraft is in the original buff/dark green/pale blue camouflage. Note that the 3<sup>rd</sup> aircraft does not have the green colour on the nose, unlike the first two. The second and third aircraft have blue-grey canopy frames.



Most probably the same lineup of aircraft as in the first image on this page. All aircraft are post-RWS mod state as can be seen by the RWS antennas on the top trailing edge of the vertical stabilizers. The 6<sup>th</sup> aircraft is painted in the interim dark earth/green/light grey camouflage going by the colours on the vertical stabilizer.



AZ #2xx. Note that all open hatches have been painted / framed with a high visibility orange colour.



This AZ has the canopy frame painted in medium blue-grey. Low visibility markings have been applied. There is no dark grey leading edge to the intakes. The yellow antennas on the nose gear door is the lower IFF antenna. Note the black RWS button antenna on the small nose gear door and the black RWS blade antenna on the larger nose gear door.



AZ #236 with blue Castles and low vis Springbok markings. The "36" digits on the intakes are in black and not dark grey. The spoilers are open on the port wing supper surface.



AZ #230. The Castle appears to be a lighter grey than usual.



Top view of an AZ in the final colour scheme. Note that the camouflage has been applied in a manner similar to the original pattern 2. This AZ does not have green applied to the front of the nose. The walkway lines on the wings and the horizontal stabilizers have been applied in red instead of the more standard dark grey. The wingtip missiles are V3Bs and the launch rails are in light grey.



No Castles on the lower wings.



Lovely images of AZ #226 (above) and #232 (below) refueling from a SAAF Boeing 707. Details to note are the subdued markings. The last two digits of the aircraft number are located above the starboard intake and are in blue-grey. #226 has the *Mirage F1AZ* script on the forward fuselage whereas #232 does not. #226 has the Castle/SAAF Eagle, whereas #232 has the Castle/Springbok markings. Note also the differing dark earth/green patterns on the noses. Both UHF and IFF blade antennas on the spine have been painted in the camouflage colours.

Note the tonal differences between the colours in the two images, no doubt due to variable image processing (both in the darkroom and, possibly later, digitally).





This AZ (possibly #220) is missing the green colour at the nose extremities. Compare this to the two AZs on the previous page.

Similarly, AZ #231 below, has no green colour at the nose extremity.





AZ #231. Note the following anomalies to the camouflage scheme :

- a) Replacement exhaust cone – different pattern from the rest of the aircraft, this appears to have come from an AZ painted in the interim dark earth/green camouflage.
- b) Medium grey canopy framing
- c) No green camouflage on the front of the nose



Not the best image, but what is apparent is that the camouflage pattern varies on all three AZs (look at the noses, wings and rear fuselages). The second AZ is painted in the interim dark earth/green/pale blue camouflage with high visibility SAAF Castles and the light grey UHF and VHF antennae on the vertical stabilizer. The other two AZs are in the final dark earth/green/blue-grey camouflage.



Lineup of 1 Squadron F1AZs. They are all post-RWS mod state. The one on the left is in the original hard-edge buff/dark green camouflage – the finish appears to be quite glossy which may indicate that this is the display aircraft, #229. #218 and the others are in the final matte dark earth/green/blue-grey scheme. Note the natural metal leading edge on #218's vertical stabilizer and the various hues of metal on the exhaust area. The forward section of the drag chute cone is white, the rear section unpainted. Another peculiarity of the buff/dark green aircraft is that the VHF antenna beneath the rudder has been painted dark green.



Another lineup of 1 Squadron AZs. In this case, the front two aircraft are in the original buff/dark green scheme. The third aircraft is in the final dark earth/green/blue-grey scheme. The next two aircraft appear to be in the interim brow/green/pale blue scheme – note the hard demarcation between the upper colours and the underside pale blue. These aircraft also appear to all be post-RWS mod state.



For ACM camps, some of the AZs had their noses and horizontal stabilizers painted white. This was applied over the dark earth/green/medium blue-grey camouflage. The markings are in the final low visibility colours. AZs were painted like this to represent "bogey" for the Cheetah Es for air combat maneuver training. Note that the white has not been applied where there is standard service stenciling – this is apparent in both the image above and below on the nose and horizontal stabilizers respectively.





This AZ with white nose and horizontal stabilizers is carrying a captive V3S missile body on the port outboard wing station.



AZ #218 receiving fuel from the Boeing 707.



AZ #227 and friend. #227 has the high visibility blue Castle with gold Springbok markings, whereas the other AZ has the later low visibility Castles with Springbok. #227 has the "27" digits on the upper intake in black, whereas the other AZ's numerals are in dark grey. It is apparent that the camouflage patterns were loosely applied showing some variations between the two aircraft.



AZ #244 with low visibility markings including the Castle/Springbok insignia. The UHF blade antenna is also camouflaged. Note the dark grey leading edge to the intake. The "44" above the intake is applied in dark grey. The upper UHF antenna has been painted in dark earth. All other markings have been applied in subdued colours.



Nonstandard yellow call signs / pilot names were applied to the AZs in the final months of their service. Note the forward RWS antenna and the shape of the laser designator fairing. The round object above the RWS antenna is the crash-tow tube. A rod could be put through this to lift / tow an aircraft if required. Light grey doppler antenna is visible on the lower surface aft of the laser designator fairing.



AZ #236 with high visibility blue Castle and gold SAAF Eagle. All other markings are of the low visibility type. The blue Castle may have been added to #236 along with the yellow pilot's call sign and surname to celebrate a special occasion, possibly part of the AZ's retirement.



AZ #227 heading off in clean configuration. Both RWS and RIMS features can be clearly seen.





More AZ nose art, this time celebrating the "Billy Boys". Note how the ejection seat warning triangles and rescue arrows aft of the canopy have been differently applied to the two aircraft.





Great image demonstrating a comparison between the original delivery buff/dark green (AZ #229) color scheme. #229 was the 1 Squadron display aircraft and received a gloss finish to the camouflage colours. The high contrast, high visibility buff/dark green is apparent when comparing to the final matte scheme. Note the distinct difference in the tone of the greens applied to the two aircraft. Both aircraft have the SAAF Castle with SAAF Eagles. It is possible that this image was taken at the AZ retirement parade.



AZ #231 with another SAAF Border War icon in the background, C160Z Transall, seen at Swartkop Air Base.



Great image of several AZs in various states of camouflage. The AZ on the left and the two on the right are finished in the final dark earth/green/blue-grey camouflage. None of these have the 1 Squadron badge applied to the vertical stabilizer. The second AZ from left is painted in the interim dark earth/green camouflage scheme and appears to be carrying full high visibility SAAF markings. Note the variability of the green colour, especially at the tail pipe area. The third AZ from the left is #244 painted in the three-colour low visibility blue-grey camouflage but has had a replacement tail pipe section fitted, which is painted similar to the aircraft to its left.



Another interesting image of several AZs displaying the various camouflage schemes as described in this document.



Upington, June 1989. The first and second aircraft are in the original hard-edge buff/dark green camouflage with high visibility markings. The third AZ has what appears to be a very feathered matte dark earth/green camouflage (look at the vertical stabilizer). The green on the vertical stabilizer does not carry onto the rudder indicating this AZ is possibly one of the first to have had the initial test interim dark earth/green scheme applied. The next two AZs carry the dark earth/green camouflage scheme but with the demarcation between these colours is a more tightly feathered and with the green carried through onto the rudders. However, compare the noses of these two – the closest one shows the dark earth wrapping around from the port side and does not have the black anti-glare panel applied, whereas the next one appears to be all-green with black anti-glare panel. The sixth AZ is #243 painted in an experimental two tone grey. The rest of the aircraft are Cheetah Es going by the shape of the top of the vertical stabilizers and the overall medium blue-grey camouflage. Only one of the AZs displays the 1 Squadron badge on the vertical stabilizer. (Photo: Daan Conradie).



A closer view of the same line up of AZs as depicted in the image on the previous page.

Compare the noses of the 4<sup>th</sup> and 5<sup>th</sup> AZs which are both painted in the interim dark earth/green/pale blue camouflage scheme – the 4<sup>th</sup> aircraft shows the dark earth patch on the nose wrapping around from the port side and does not have the black anti-glare panel applied, whereas the next one appears to be all-green with black anti-glare panel.

## Section 4.7 – AZs operated by other air forces

Once the F1AZs had been retired, the fleet was bought by the Paramount Group / Aerosud and some AZs were sold to the Gabonese and Congo Air Forces. They retained the final SAAF AZ scheme of matte soft edge dark earth/green/blue-grey but had the new operators' markings applied.

### Section 4.7.1 – Gabonese Air Force AZs

Several AZs were sold to the Gabonese Air Force. AZ airframes seen in Gabonese Air Force markings are :

- #217 / TR-KMP
- #219 / TR-KMQ
- #236 / TR-KMN
- #237 / TR-KMP (Resold to Congo in 2010)
- #239 / TR-KML
- #241 / TR-KMM
- #243 / TR-KMQ (Resold to Congo in 2010)
- #244 / TR-KMO



Four Gabonese Air Force AZs



AZ #236 / TR-KMN





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AZ #217. This would be given the Gabonese registration TR-KMP which would be applied to the vertical stabilizer.



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AZ #244 / TR-KMO



AZ #243 / TR-KMQ

## Section 4.7.2 – Congo-Brazzaville Air Force AZs

The following AZs were sold to the Congo-Brazzaville Air Force “

- #230 / TN-364
- #232 / TN-365
- #237 / TN-362
- #243 / TN-363



AZ #230 / TN-364



AZ #243 / TN-363. Note the difference in national markings on the vertical stabilizer compared to #230 above.



AZ #230 / TN-364 and two others.



AZ #243 / TN-363 and AZ #230 / TN-364.



This one would appear to be AZ #232 / TN-365. Note the Congo -Brazzaville roundel on the vertical stabilizer and the "32" on the upper intake.

## Reference list.

Apart from the Internet, several published reference works were used in the compilation of the three Volumes of this book. These are :

Aircraft of the South African Air Force	Herman Potgieter and Willem Steenkamp	Struik ISBN 0 86977 133 7 1980 first edition
South African Air Force In Profile Artwork (1960 - 1989)	Piet van Schalkwyk	Golden Eagle Artwork, 2022
South African Air Force In Profile Artwork Volume 2 (1985 - 2003)	Piet van Schalkwyk	Golden Eagle Artwork, 2024
Squadrons of the South African Air Force (and their aircraft 1920 - 2005)	Steven McLean	Interpak Books ISBN 0-9584929-4-8 2005
More Than Game - A salute to the South African Air Force	Herman Potgieter	AirReport ISBN 0-620-19213-5 1995
Vlamgat - the Story of the ~Mirage F1 in the South African Air Force	Dick Lord	Covos-Day Books ISBN 0-620-24116-0 2000
The SAAF at war 1940 - 1984	JS Bouwer and MN Louw	Chris van Rensburg Publications (Pty) Ltd ISBN 0 86848 056 7 1989
The MiG diaries - Fighter pilot memoires & accounts of Cuban, SAAF and Angolan air combat in Southern African skies	Lt-Col E. Gonzalez Sarria & Lionel Reid	Burnet Media ISBN 978-1-990956-60-7 2023
75 Years on wings of eagles South African military aviation history	Dave Becker	Colourgraphic ISBN 0 947478 47 7 1995
Africa @ War 54 - War of Intervention Angola Volume 4	A. Fontanellaz, T. Cooper, J.A. Matos	Helion & Company Limited ISBN 978-1-804510-59-9 2021