The Dassault Mirage F1
in South African Air Force service

VOLUME 2

Mirage F1CZ camouflage and markings

Revision 1
January 2025

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 2 contains additional and updated data to provide a more complete record.

South African Air Force Mirage F1 – Volume 2
F1CZ camouflage and markings

This volume 2 addresses the carious camouflage and markings applied to the SAAF Mirage F1CZ fleet.

Section 2.1 – Mirage F1CZ Colours and Markings overview

There were two camouflage schemes applied to the CZs during their service with the SAAF. These are the original delivery camouflage scheme and the final low visibility blue/grey camouflage applied prior to the retirement of the CZ from SAAF operations.

The reader should note that, as always appears to be the case with Air Force aircraft, there would have been subtle variations to the "standard' colour schemes described in this document. The discerning modeler may want to select a particular airframe subject which is backed up with actual reference photos.

Section 2.2 – F1CZ #200 – pre-delivery scheme

The images on the following page show how CZ #200 appeared during its tenure as development aircraft whilst with Dassault in France.

First SAAF CZ #200 prior to application of camouflage (unpainted natural metal), in flight over France.

CZ #200 seen later painted in the SAAF buff/dark green camouflage, seen at the Paris Air Show in 1975. Rudder is white and South African national colours have not been applied. It also lacks the SAAF Castle insignia.

Section 2.3 – Original delivery scheme

This is the colour scheme in which the CZs were delivered from Dassault in France. All 16 CZs were painted in this manner.

- The CZs 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. For purposes of simplicity, in this document we refer to "*buff/dark green"*.
- The light grey undersurfaces were later repainted in a pale blue colour. The exact designation of this pale blue colour is unknown. This was applied to some (if not all) CZs whilst they were in the initial buff/dark green camouflage.
- 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).
    - However, as is the case with military aircraft, there were always some variations. There are images in this document of CZs in this colour scheme carrying no Castles on the wing undersides. This may coincide with when these aircraft had the undersides repainted pale blue.
    - 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 3 Squadron badge (Wasp) 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 radome and anti-glare panel ahead of the windscreen were painted in black, but the radome varied from a very dark coal grey to black as can be seen in images in this document
    - Prominent red walkway stripes were applied on the upper surfaces of the wings, horizontal stabilizer and along the wing to fuselage junction. The latter are diagonal as can be seen in images in this document.
    - 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 F1CZ* was applied to each side of the forward fuselage beneath the windshield.
    - The upper and lower IFF antennas were painted yellow.

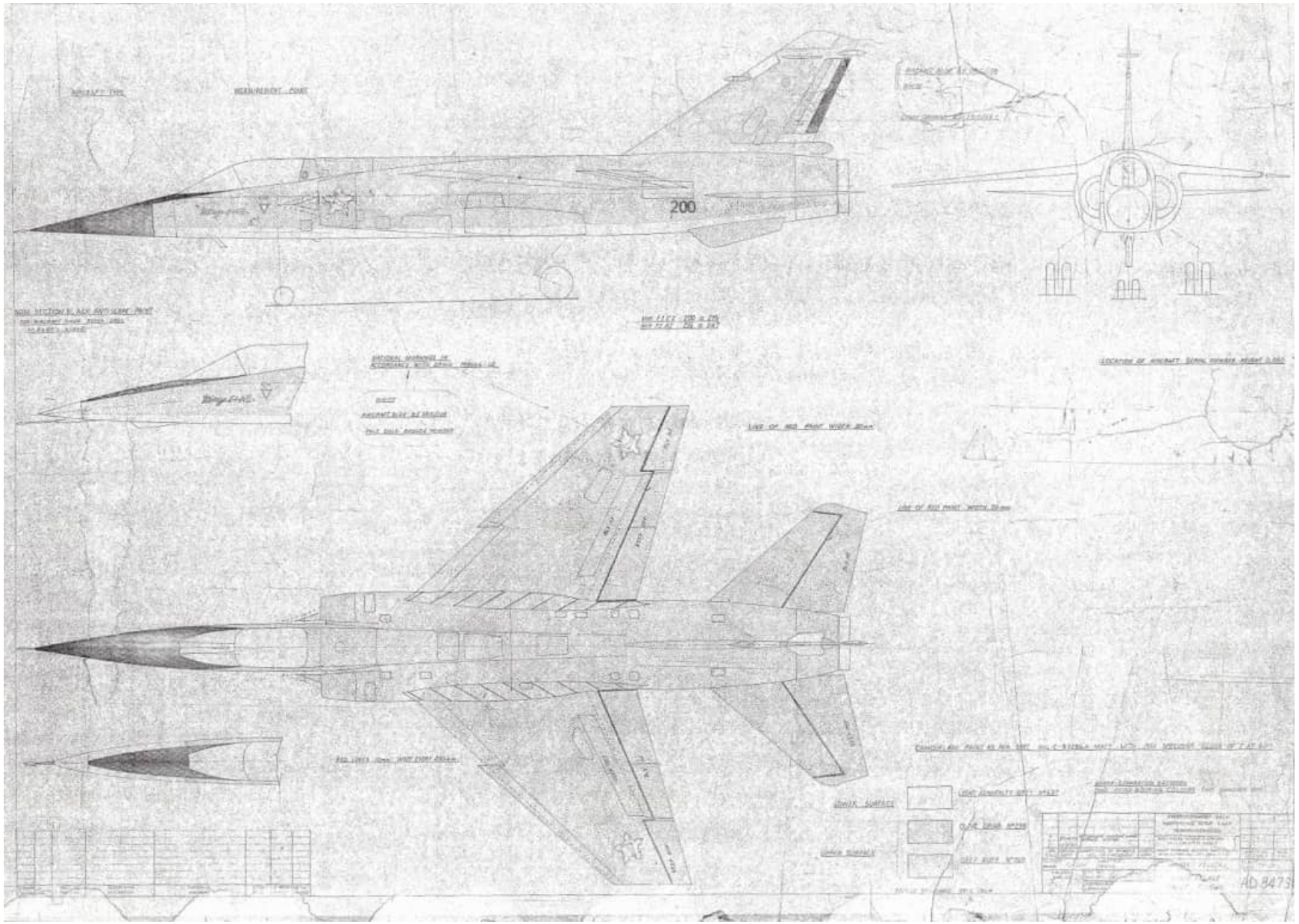
Gloss, satin or matte finish ?

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[1]. 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 CZs in SAAF service that the finish would vary from a semi-gloss/satin sheen to a more matte weathered finish.

[1] Wikipedia



Not the best copy of Atlas Drawing AD8473 but this relates to the original buff/dark green camouflage scheme for the SAAF AZ and CZ and refers to “Deep Buff No 360”, “Olive Drab No 298” and “Light Admiralty Grey No 697”.

Beautiful images of SAAF F1 CZs – these and those on the following page are assumed to be taken by the late Herman Potgieter. Below are #202 and 203 flying over the Drakensberg mountains. They're finished in the delivery camouflage scheme of gloss hard edge buff/dark green/light grey with high visibility markings. The 3 Squadron badge is carried on the vertical stabilizer. The VHF and UHF antennas on the vertical stabilizer leading edge and top as well as below the rudder were all painted in a light grey Note the red walkway markings on the wings and horizontal stabilizers. The radar noses are painted black. There is an antiglare black panel ahead of the windshield. Note the different "black" hues on the radomes of the aircraft in the image below. Also noticeable is the slightly different application of buff on the noses of the two aircraft below. The wingtip missile launchers are not installed. The drag chute cap was either left unpainted aluminium or painted light grey.

Note the consistent application of the upper surface camouflage pattern.

SAAF CZs were delivered with a light grey (Light Admiralty Grey) lower colour as seen in the image above. This was changed later to a very light blue, as is visible in some images in this volume. Note the location of the under-wing Castles (24" size) on three of the CZs and how the upper surface colours wraparound onto the lower leading edges of the wings and stabilizers. The F1 on the left does not have the Castles on the lower wings. These aircraft have the original ventral fins without the later chaff/flare dispensers. The right two CZs carry a centerline RP35 external fuel tank pylon. All four CZs are devoid of the wingtip missile launcher rails.

Lovely image of CZ #213 looking immaculate in fresh buff/dark green camouflage and full high visibility SAAF markings. The undersides are a distinct blue as opposed to the light grey in images presented on the previous page.

Note how the upper surface colours wrap around into the lower leading edges of the horizontal stabilizers. Also note the mismatch in green paint beneath the left stabilizer, indicating that the exhaust cone has been replaced at some stage. The landing light is in the deployed position just ahead of the nose landing gear leg. The auxiliary air intake doors on the engine intakes are in the open position providing more air to the 09K50 engine at lower speeds. The fuselage center line pylon for the external fuel tank is present.

Another image of a clean CZ, this time #211. It also present the distinct pale blue colour applied to the undersides.

The text at the base of the rudder reads “AVIONS M’DASSAULT” in two lines. Below the rudder is a VHF antenna which is painted light grey similar to the other VHF and UHF antennas on the top of the vertical stabilizer.

The SAAF Castles (24”) are blue surrounded by white. The Springbok is gold (and not yellow) and faces forward on the fuselage and inwards on the wings with legs towards the trailing edge. Note the location of the Castles on the upper wing surface. The yellow surround to the emergency canopy jettison handle is visible behind the canopy. Prominent ejection seat triangles are displayed beneath the canopy. The red diagonal stripes along the wing / fuselage junction are visible– these are not all applied at the same angle. The third aircraft is an AZ. The underside colour appears to be a very pale blue.

There appeared to be only one camouflage pattern for the buff/dark green upper surface colours on the CZ as in the image above. The wingtip missile rails fitted to the trailing CZ are a light grey colour. Barely visible are the red walkway warning lines on the horizontal stabilizer on the aircraft in the front as well as the diagonal lines at wing/fuselage junction. Note the reinforcing braces between the upper intakes and the forward fuselage. The white horizontal blade antennas at the top of the vertical stabilizer are for the VOR/ILS systems.

As always, there are exceptions to the norm. This CZ does not have a black radome. This is most likely a ballast nose, which would have been installed when the radar had been removed. This was not very common judging by available images of CZs. The buff and grey colours on the nose are also clearly brighter than the colours on the rest of the aircraft.

Two CZs look very clean and exceptionally elegant and are resplendent in full high visibility markings. The white circle on the vertical stabilizer is part of the original Dassault installed BF radar detection antenna suite. The pointed shapes on the vertical stabilizer leading and trailing edges are also part of this system. The dark object at the top rear of the vertical stabilizer is the red/clear navigation light. The blade antenna beneath the forward fuselage is the main UHF antenna. This was later relocated to the upper fuselage aft of the canopy when the upgraded RWS had been installed.

Four CZs in the delivery camouflage scheme. 3 Squadron “Wasp” badges are on the vertical stabilizers. All four carry the Matra R550 IR air-to-air missile on the wingtip launchers. Note the spotlight on the intake used for night intercepts. The AZ did not have the spotlight. It would appear that none of these aircraft have the Castles applied to the lower wings.

CZ #207. Note how the upper surface colours wrap around the leading edges of the lower wing surfaces. The upper camouflage also wraps around the leading and outer edges of the horizontal stabilizers. Wingtip missile rails are absent.

CZ with a centerline external fuel tank pylon installed. Note how the outer surface of the ventral stabilizer is painted in buff. The inner surfaces were painted in the underside colour. The camouflage is carried partially into the intakes and on the shock cone as can be seen in this image. The F1 has its leading edge slats and flaps in extended/drooped position in this image. Note the black anti-glare panel between windshield and radome.

Of interest in this image is the dull grey colour of the radome whereas the rest of the aircraft looks very clean and unweathered in the original camouflage scheme. The anti-glare panel is black. This is CZ #209 as can be seen by the small "09" digits on the nose gear door. Note how the outboard leading edge slats extend forwards whereas the inboard leading edge flaps droop down. Note also the yellow sealing trim around the windshield frames.

CZ #210 with what looks to be a practice captive R550 missile body on the starboard wing tip launcher – it has the black IR seeker head but no fins. Note that the antennas on the top of the vertical stabilizer are grey with white leading edges.

CZ #204 fresh off the production line in France. All markings have been added except for the 3 Squadron badge on the vertical stabilizer. Note the night intercept light on the intake just aft of the Castle. With hydraulic power on the main gear and nose gear doors were closed for takeoff and landing, only opening during cycling of the landing gear. #204 demonstrates the typical nose up attitude of the F1.

CZs #'s 203 and 207 and one other in the image above and #205 in the image below. Red walkway markings are visible on the wings, horizontal stabilizers and along the wing to fuselage junction. In the image below, the text "AVIONS M'DASSAULT" can be seen superimposed over the orange/white/blue rudder flash. Note the characteristic shape of the inboard under wing stores pylon. The natural metal rings ahead of the exhaust nozzle are also visible and present different metallic hues. The aircraft serial number is in black 8" numerals in the standard location for SAAF F1s on the aft rear fuselage.

The nose and main gear doors would be seen variably in either open or closed position on parked F1s. The front and rear of the wingtip missile rails appear to be a dark grey colour.

In this image of #207, the original glossy camouflage appears to have faded and has a distinct patchy appearance with some panel lines clearly visible.

CZ #213 displaying an Angolan MiG-21 kill mark beneath the wind shield. #213 is on quick reaction alert status beneath the anti-mortar screens at Ondangwa Air Force Base in northern South West Africa. This Angolan "kill" mark represented the demise of MiG-21MF C-41 on 6 November 1981. The only other CZ to wear an Angolan kill mark was #203 which was used to damage Mig-21MF C-40 on 5 October 1982. Initial SAAF intelligence reports indicated that the MiG had been destroyed but this has subsequently been disproved and C-40 landed safely with a rather large hole in the wing care of the 30mm cannon rounds from CZ #203. At this stage #203 was the only CZ to be painted in the new low visibility blue-grey camouflage and was called "Le Spectre". These above mentioned two F1-MiG-21 encounters are described in the wonderful book "The MiG Diaries".

CZ #204 comes in for landing on the taxiway at AFB Louis Trichardt due to work on the main runway during Exercise Golden Eagle in October 1990. She was one of the last CZs to be repainted in the new air superiority camouflage. She is seen here armed with a dummy and Captive V3S Air Training Missile bodies. Also note that she is still in a pre RWS and RIMS mod state.

Section 2.4 – CZ low visibility blue-grey camouflage

Section 2.4.1 – camouflage development (research by Martin Strümpfer with input from Geoff Timms)

During the early 1980s, operational experience prompted the SAAF to investigate alternative colour schemes for its Mirage fleets. At this time, particular attention was given to developing a new colour scheme for the air-to-air-focused Mirage F1CZ. The type's buff and dark green camouflage scheme, while particularly effective over the winter Highveld, was not well suited to air combat at high altitudes.

Development of the new colour scheme started in a somewhat unlikely fashion. Geoff Timms, a member of the International Plastic Modelers' Society (IPMS), heard via society connections that the SAAF were considering a new camouflage scheme for the F1CZ. On his own accord, he started searching for suitable air superiority focused camouflages in use around the world at the time, but found none he thought would be suited for local use. He then decided to mix his own colours from paints he had and built an Esci 1/48th Mirage F1C in a camouflage pattern design of his own creation.

Without contacts at 3 Squadron, he simply went to AFB Waterkloof and asked to see the Officer Commanding of 3 Squadron with his unsolicited proposal. Times were simpler then… Upon being presented with Geoff's model, discussions quickly moved to the pilots' tearoom and from there outside, where the model was attached to a steel wire and held against the sky to observe the camouflage at work.

From this simple meeting a project, marked "secret", was created to develop a new colour scheme for the CZ. Then Major Martin Louw was assigned as the SAAF Project officer and would be the liaison between the squadron and Geoff.

The initial model built by Geoff Timms in his proposed new camouflage.

Under strict secrecy, four more F1 models were built in various camouflage patterns ranging from interceptor to ground attack, using specially mixed colours. Martin Louw relayed inputs and suggestions from the squadron about their thoughts on the various schemes being created. It was during this stage that SAAF HQ requested official SAAF artist, then Captain Ron Belling, to become involved and give his input regarding the new colours. He would officially name Geoff's specially formulated colours.

The interceptor scheme would be the chosen scheme to proceed with. The three colours that made up the interceptor camouflage were: “Highveld Grey”, “PE Blue”, and “Mirage Grey”, listed in order from lightest to darkest. “PE Blue” was named after Geoff and Ron’s hometown, Port Elizabeth. Tests were also conducted by the CSIR regarding the radar absorbency of the proposed colours to confirm they complied with SAAF requirements, which they did.

The next step was to trial the colour scheme in operational conditions. CZ #203 was on her way to Atlas for a service and would thus be the test aircraft for the new camouflage. She would be fully stripped of her old camouflage before the new one was applied. The new camouflage would require 600 hours of work and 72 litres of primer, paint, etc. to apply.

About a month before 203 was presented to senior SAAF officers, a Mozambican MiG-17 pilot defected to South Africa on 8 July 1981. While the aircraft itself was not of great interest to South Africa, who were at the time trying to acquire a MiG-21 for evaluation, its overall Soviet Light Blue colour was. Feedback from SAAF test pilots were very positive regarding the effect of the MiG’s colour at altitude, particularly in comparison to the standard buff/dark green of the F1AZ chase aircraft. It has been theorized that these observations initiated the development of SAAF low visibility camouflage schemes. At the time of the MiG’s defection however, #203 had already spent close to three months at Atlas for the application of the new camouflage. Given the advanced stage of local work, the MiG merely provided reassuring feedback to the project team.

An F1AZ escorts the Mozambican MiG-17. The Light Blue colour of the MiG was judged well suited to a high-altitude environment.
(Photo: Paddy Carolan)

#203 would be unveiled in what would become known as the air-superiority scheme on 7 August 1981 at a function held in the squadron hangar. Here she would be given the nickname of “Le Spectre” – “the Ghost” by attending General Jan van Loggerenberg. The colour scheme would later often be referred to as the “Spectre” scheme after #203’s nickname.

The scheme and pattern were a complex design. The aircraft was finished overall in PE Blue as the main colour. A diamond pattern in the dark Mirage Grey was applied to the top and bottom surfaces of the aircraft. Human eyes are naturally drawn to darker instead of lighter colours; therefore, the colour and shape were designed to draw the attention and confuse an enemy pilot about the exact orientation of the aircraft. Even a momentary hesitation could prove advantageous during air combat maneuvers.

Highveld Grey was applied to the extremities of the aircraft to break up its outline and blend it into the background, thereby masking its true size when viewed by an opponent. In conjunction with the dark Mirage Grey diamond, this created confusion not only about the aircraft's orientation but also about its distance from the observer. Eventually a false canopy and tail applied in black to the aircraft's underside would further aid in the confusion.

Martin Louw flies CZ #203 for publicity photos. Notice how even with the aircraft at close range to the photo ship it starts blending away into the background.

After her unveiling, #203 would embark on a series of tests to evaluate the colour scheme under operational conditions. During the unveiling function, #203 was flown in a formation display alongside another CZ, still in the delivery buff and dark green colours. During the sequence, #203 would often disappear against the background while the other CZ was still clearly visible, providing early indications of the scheme's effectiveness. Several feasibility sorties would eventually be flown under actual combat conditions. Final

effectiveness of the scheme was proven on 5 October 1982 when then Major Johan Rankin, shot down[2] his second MiG-21 while flying "Le Spectre".

The champagne flows as Johan Rankin celebrates with senior officers and ground crew. #203 in air-superiority colours can be seen behind him.

At the time, #203 was still the only CZ painted in the air-superiority camouflage scheme. Other aircraft would eventually follow in being repainted, although the process was slow, and by October 1990, some aircraft, notably #204, were still seen in their original buff and dark green camouflage. By the type's retirement in September 1992, however, all remaining CZs had been repainted into the air-superiority camouflage scheme.

The success of the F1CZ's new colour scheme would be the start of development of new camouflage schemes for most Mirage types in service with F1AZ #244 and IIIRZ #837 receiving near identical schemes and colours sometime after[3].

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[2] Decades later, it would be revealed that the MiG actually survived and managed to limp back to base. A full account can be read in "The MiG Diaries".

[3] It has been noted in some articles that IIICZ #802 was the first Mirage type to receive a new air-combat-oriented camouflage scheme. In reality, it was only repainted in February 1989 and was part of trials to reduce the number of colours required, while maintaining the camouflage's effectiveness.

Section 2.4.2 – Later low visibility 3-tone blue/grey camouflage

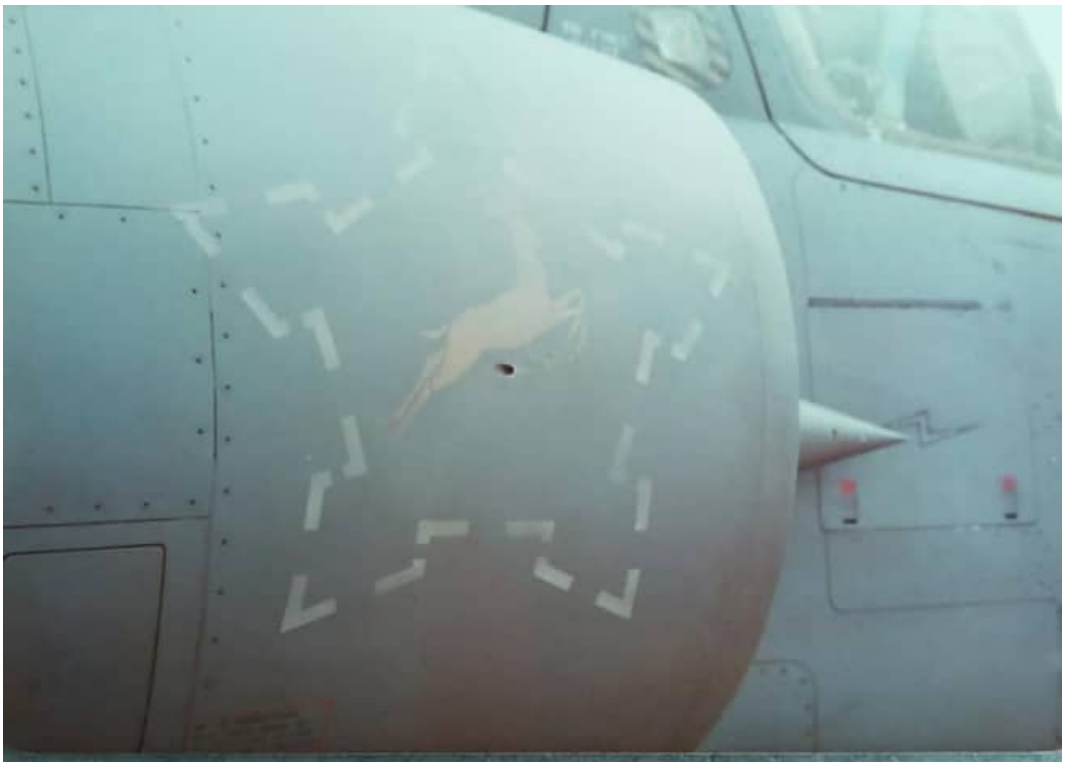
Surviving CZs were painted in the low visibility camouflage scheme as noted in Section 4 above. Some details related to this scheme are :

- The three colours were applied in a matte finish with soft edges between the three colours. The colours were applied in an overall general diamond pattern on both the upper and lower surfaces with the light grey at the extremities, and the dark grey forming a distinct central diamond shape.
- These colours covered the entire aircraft including the UHF/VHF antenna and the radome. The black anti-glare panel was not applied.
- High visibility Castles were applied to the intakes. Generally, the Castles were absent from the lower wing surfaces but were variably applied on the upper wing surface. The Springbok was replaced later with the SAAF Eagle on #205 and #209 when being used by Atlas for missile trials after the type's retirement. #203 was unique in having the dashed Castles applied as noted in the previous section.
- The three digit aircraft number was located on both sides of the rear fuselage in black. As these numerals and other markings were oversprayed in a light coat of the base colour, it is difficult to identify specific aircraft in the images in this document.
- Standard NATO aircraft servicing symbology was applied.
- Generally, all markings were heavily toned down by over spraying them with a light coat of the local camouflage colour often to the extent of being nearly invisible.
- *Mirage F1CZ* was **not** applied to the forward fuselage.
- This camouflage scheme coincided with the introduction of the Radar Warning System (RWS) and Radar and Infrared Misleading System (RIMS) modification to the CZ fleet (as detailed in Volume 1). However, the first few aircraft painted in the new camouflage predated the RWS modification and some only had the RIMS modification installed after receiving the RWS upgrade and new camouflage.
- In the mid 1980's a matte black false canopy and vertical stabilizer were painted on the fuselage underside. This predated the installation of RWS and RIMS on the early aircraft to receive the new camouflage scheme. All RWS and RIMS equipped CZs had the black false canopy and vertical stabilizer applied.

When viewing the images of the low visibility camouflaged CZs in this document, it is apparent that aircraft appearances after being repainted can vary significantly due to a) low quality reproduced images sourced from the internet, b) variable image processing using film negatives in the pre-digital age, and c) these colours tended to fade relatively quickly.

Section 2.4.3 – CZ #203 “Le Spectre” low visibility camouflage trials scheme

CZ #203 was the first SAAF F1 painted in a low visibility camouflage scheme for evaluation purposes. The colours are described earlier in this document. The following images show details of the evaluation scheme and the dashed/crosshatched markings unique to #203. #203 at this stage did not have the false canopy or vertical stabilizer painted on the underside.



Some closeup photos over the next few pages of CZ #203 in pre-RWS and RIMS mod state (note that the UHF blade antenna is not present on the fuselage spine aft of the canopy). #203 was the original test aircraft for this low visibility color scheme. The cross-hatched markings were not adopted to other CZs painted in this camouflage. These markings were changed on #203 later as witnessed by its current state at the Swartkop Museum (see Volume 1 of this PDF series).

The light on the engine intake is for night identification of other aircraft. It was only installed on the port intake trunking of the CZ.


203


203

Section 2.4.4 – CZ Low visibility 3-tone blue/grey camouflage – fleet application

The soft demarcation between the three colours is visible. The overall finish was matt. The Castles and other markings such as the ejection warning triangles were applied variably to the CZ fleet painted in this colour scheme as will be shown in the following images. The CZ in the image above appears to have the fuselage and wing Castles and ejection seat warning triangles as well as stenciling around the emergency canopy release window applied but has no 3 Squadron badge on the vertical stabilizer. The Mirage F1CZ logo on the forward fuselage was removed from aircraft painted in this scheme. Prior to retirement, some aircraft had the pilot's names applied beneath the windshield in black . Identifying the particular aircraft is almost impossible as the three digit aircraft numbers on the rear fuselage were barely discernable.

CZ carrying empty centerline pylon and empty wingtip missile launchers. The prominent bullet shaped fairings on the leading and trailing edge of the vertical stabilizers were the original French supplied RWR antennas. These aircraft in the images on this page show the location of the prominent UHF blade antenna on the underside of the forward fuselage – this was later moved to a location on the upper fuselage aft of the cockpit. The ventral fins on the aircraft above appear to be the original Dassault units – note the rounded leading edge.

Lovely image of CZ #205 in the three-tone low visibility blue-grey camouflage during her time as a missile test aircraft for Atlas. Squadron badge has been painted over on the vertical stabilizer. Note the higher visibility Castle with gold Springbok and standard airframe markings. #205 demonstrates the post RWS and RIMS mod state (refer to Volume 1 for details of RWS and RIMS).

Great image of four CZs departing Waterkloof Air Base with two in the original camouflage and the other two in the low visibility scheme.

CZ with the locally developed RWS suite – note the round black antenna at top of the vertical stabilizer. The factory fitted rearward facing RWR bullet antenna has been removed, but the one on the leading edge was retained. The port side front hemisphere antenna can just be made out aft of the radome as well as the cylindrical CD/DF antenna on the underside just aft of this. The RIMS chaff/flare ventral fins are installed – note the shape difference to that of the CZ in the image on the previous page. The ventral UHF blade antenna has been relocated to the spine just aft of the cockpit.

Note that the light grey on the upper wings extends inboard along the leading edge. The medium blue/grey therefore does not replicate the diamond shape of the dark grey. This is also very visible in the images on the next page. SAAF Castles are absent from the upper wings.

Two interesting images to compare. The image above represents the early application of the three-tone blue-grey scheme on #203. The UHF blade antenna is still located on the forward fuselage underside and the ventral fins are the original factory fitted items. In the image below, the CZ has the RIMS chaff/flare ventral fins installed (more angular and wider) as well as the full RWS suite – note how far the forward RWS antennas protrude from the fuselage. It also has the false canopy and vertical stabilizer painted in black. Note the absence of SAAF Castles on the lower wing surfaces on both aircraft.

Unknown CZ at Upington in June 1989. The aircraft is not yet equipped with RWS or RIMS. Note the black nose gear doors indicating a false canopy has been applied.

Another view of the false canopy applied to an unknown CZ. In the last years of the types service the last two digits of the aircraft tail number would be applied on the nose gear door.

Above – pre-RWS and RIMS mod state. Note how different the greys appear in this image when compared to the one on the previous page – no doubt a product of variable lighting, film type and darkroom photo processing. Note the incorrect date on the image :. #203 the first CZ in low viz camo was only unveiled in August 1981.

Below – post-RWS and RIMS mod state. Note false canopy and fin painted on this aircraft.

Another view of the false canopy and tail seen on #209. The aircraft is in a post RWS and RIMS mod state. Note again the lack of castles under the wings. The aircraft is carrying a practise bomb rack on the centreline station.

Both aircraft in the images on this page (#212 above) repesent the pre-RWS and RIMS mod state of the F1CZ. The original factory fitted RWR antennas are present on the vertical stablizier as well as the factory fitted ventral fins. #212 above appears to be devoid of the 3 Squadron badge and Castles on intakes. The UHF blade antenna is still located beneath the forward fuselage.

This aircraft has the Castles on the intakes as well as the 3 Squadron badge on the vertical stabilizer but appears not to have the Castles on the wings.

CZ #210 with prominent Castles on the intakes. The camouflage appears to be freshly applied. Both aircraft on the page have the RWS and RIMS ventral fins installed. The UHF blade antenna has been relocated to the spine aft of the cockpit. #205 below has had the 3 Squadron badge on the vertical stabilizer painted over. Note how variable the greys/blues appear in the two images – a product of light and photo processing. #205 below has a single medium grey painted nose cone.

Ysterplaat AFB. CZ #209 with what appears to be freshly applied Castles, 3 Squadron badge and other markings. This image reflects the characteristic nose up stance of the F1. #209 has the upgraded RWS suite – note the cylindrical RWS antenna beneath the lower forward fuselage. Several access panels are open on the aircraft underside.

CZ with what appears to be the Castle on the intake with dashed lines, possibly indicating that this is most probably #203. This dashed Castles were not adopted as standard. The 3 Squadron badge is present on the vertical stabilizer. The CZ at the rear is in the original camouflage.

Two CZs at Ysterplaat AFB. Note the differences between the two. The rear aircraft has the 3 Squadron badge on the vertical stabilizer. Its markings also appear to be more prominent than those on the aircraft in the front. Note the red interior of open access panel.

Two images of CZs in post-RWS and RIMS mod state. UHF antenna is now on the fuselage spine aft of the canopy.

The CZ #209 below has a very bright Castle (with SAAF Eagle) applied to the low visibility camouflage. This was during her time as a missile test aircraft with Atlas after the type's retirement. There is a dark grey patch on the vertical stabilizer – most likely overpainting of the 3 Squadron badge.

Dashed Castle outline is clear in the image above. In this case the inside of the Castle is not blue as appears to be the case in the aircraft in the preceding page. The Springbok is gold and not yellow (as should always be the case).

Nice image (slightly more saturated) showing the Highveld Grey, PE Blue and Mirage Grey colours. The patches on the wings are fuel stains. Note how much this colour scheme weathered. The are no SAAF Castles on the upper wings.

A lovely view of a CZ from 1989 showing the topside camouflage. The faded appearance seems to indicate this was one of the first aircraft repainted into the new camouflage. Notice the lack of Castles on the upper wing surfaces. The aircraft is still in a pre RWS and RIMS mod state

Both CZs on this page are post-RWS and RIMS mod state.

#201 had the last Officer Commanding 3 Squadron's name applied in yellow. This was not standard practice and was done shortly prior to the types official retirement from SAAF service. Other CZs had the pilot's names applied in black under the windshield on the port side. Note also how bright the yellow warning arrow aft of the canopy is when compared to other images of the CZ in this scheme.

CZs at weapons camp with white noses and all white horizontal stabilizers. These aircraft were used to simulate bogies (enemy aircraft) for air combat maneuver training involving multiple aircraft of the same type.

Early applications of the white noses as seen here on CZ # 209 were rather primitive. Later some CZs has their radomes more formally repainted in a matte white.

Three CZs in the final low visibility blue-grey camouflage scheme. The lead aircraft carries a single V3S missile beneath the port wing and an inert missile shape on the starboard wing.

Great image of CZs at Upington Airport in June 1989 during Exercise Golden Eagle. Three are in the low visibility blue-grey camouflage and one in the original buff/dark green camouflage. The Mirage IIIRZ to the left is in the low visibility blue-grey camouflage.

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
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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
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