



ISRAELI PHANTOMS

» Table of Contents «

| | | |
|--------------------------|---|----------------------------------|
| Editorial and Dedication | | Page 2 |
| Table of Contents | | Page 3 |
| Foreword | General (ret.) Amir Nachumi | Page 4 |
| Chapter 1 | Introduction | Page 5 |
| Chapter 2 | The War of Attrition 'The Kammers' Shark Mouthed Kurnass #187 | Page 22 Page 54 |
| Chapter 3 | The Yom Kippur War US Airlift to Israel – Operation Nickel Grass | Page 56 Page 102 |
| Chapter 4 | Peace For Galilee Kurnass Movie Star – Iron Eagle II | Page 118 Page 138 |
| Chapter 5 | F-4 Yom Kippur War – Cockpit and Armament | Page 142 |
| Appendix 1 | Scale Drawings | Page 148 |
| Appendix 2 | Camouflage Schemes | Page 152 |
| Appendix 3 | Cockpit Layout – Early Production Block F-4E | Page 154 |
| Appendix 4 | Kurnass Serial Lists Kurnass Aces Kurnass MiG Kills IAF Kurnass Attrition List | Page 156 Page 157 Page 159 |
| Appendix 5 | Abbreviations Acknowledgements | Page 160 Page 160 |



The Attrition War

Avihu Ben-Nun (left), CO of Squadron 69, briefs IDF Chief of Staff (CoS) Chaim Bar-Lev (center) and Defence Minister Moshe Dayan. On the far right Maj. Gen. Hod can be recognized, who also attended the meeting. Avihu Ben-Nun graduated from IDF/AF fighter school class 29 in November 1959 and commanded Squadron 69 from October 1969 through April 1971. During that time he achieved one kill and another in September 1972, flying as emergency posting (EP) officer during his staff assignment with Operations Branch – Head of Attack Planning Section.



Kurnass #13 of 'The Hammers' squadron is seen taxiing back to its shelter after having returned from a training sortie on August 20, 1970. The aircraft is bare of any stores indicating a test flight after some major maintenance in the aftermath of the War of Attrition.

Kurnass #601 (Peace Echo I F-4E Block 38 USAF 68-0396), most probably of 'Ahat' squadron, is seen in the static display in August 1970 next to an A-4H Skyhawk, IAF nickname 'Ahit'. The Phantom is loaded with M117 and Mk.82 general purpose (GP) bombs with two SUU-16 gunpods and unidentified Israel made bombs laying in front of the aircraft. Note the absence of any fuses.



The 'Kurnass' in IDF/AF Service 1969 - 1988



The M117 was used by the IDF/AF in two variants: the M117 MAU-91 high drag tail with standard fins and the MAU-103A low drag tail featuring conical fins with strakes. Although the weapon had a nominal weight of 750 lb (343 kg), its actual weight, depending on fuse and retardation options, is around 820 lb (373 kg). The bomb, however, lacked the force and precision to destroy hardened or heavier targets such as bridge struts or small bunkers, thus it was to be phased-out during the mid 1980s.

military infrastructure build-up and training schedules continued unabated regardless of the fighting. The additional Israeli pressure to test Egypt's resolution was aimed at the Egyptian military infrastructure all over Egypt. Israel again changed the rules and seized the initiative.

The Kurnass was the key weapon to the new phase of warfare. Large enough to haul a substantial war load to a distant target, yet agile enough to challenge the enemy's interceptors on its own. Cockpit teamwork was crucial on long-range low-level

penetrations deep into the enemy's territory. The Kurnass' benefits were fully exploited to launch Operation Pricha (Blossom) on January 1, 1970. Four Kurnass aircrews flew the Pricha 1 mission. Squadron 201's Agmon with Eini and Yitzhak Peer with David targeted the Egyptian commando HQ at Inchas. Squadron's 69's Ben-Nun with Eyal and Aviem Sella with Shatai Ben-Shoa bombed the Egyptian ADF SA-2 School at Dahashur.

By the end of January four more Pricha operations were flown, the targets were all over Egypt: EAF signals warehouses at El-Hanka, a division HQ at Haxtap, an ammunition factory at Jabel Hof, engineering workshops at Hilwan and several barracks and training camps. All targets were strictly military but non-combatant. Each Pricha had an immune section of two Kurnass aircrews popping-up at a different location to unleash 5 to 10 tons of GP bombs on a non-suspecting target. In most Pricha operations two separated targets were bombed, one by a Squadron 69 pair and the other by a Squadron 201 pair. The usual special operation overhead of defensive CAPs, communication relay aircraft and SAR helicopters did exist but it was primarily a Kurnass show. The emerging pattern shocked the Egyptian conduct of war. Israel seized the initiative to decide where to attack and when. Relocating training facilities to neighbouring Arab nations was the first step but it was impossible to transfer the whole Egyptian army to neighbouring supportive nations like Libya. It was also a bitter blow to Arab prestige as Egypt failed to protect the sovereignty of its own airspace.



During the first weeks of the War of Attrition ground crews were able to gain substantial experience in arming and unarming their aircraft. In the top picture M117 bombs receive their fuses shortly prior to a bombing mission, while in the photograph below four airmen load a 90 kg heavy AIM-9D, IAF code Dekker (Rapier), on the left inboard pylon of a Kurnass.



Israel also grossly violated Syrian airspace during January 1970 in the 'sonic booms war'. Squadron 69 aircrews⁵ repeated the Cairo supersonic boom mission over Damascus on January 6, 1970. The Israeli provocation triggered intensive air operations over the Golan Heights that cost the Syrians dearly; the IDF/AF delta-fighters claimed three SAF MiG-21s on January 8, 1970. A lone SAF MiG-21 flew a reprisal supersonic boom over Haifa, smashing a lot of windows at 16:10hrs on January 29, 1970. Only a little more than an hour later Squadron 69 responded with a supersonic boom over Damascus. Around midnight the Kurnass aircrews returned to fly sonic booms over Damascus, Haleb, Hama, Homs and Latakiya.

January 1970 was the apogee of IDF/AF Kurnass operations during the Attrition War. Flying with complete immunity over

⁵ Rami Harpaz with Shaul Levy and Gideon Magen with Pinchas Nachmani.

'The Hammers' Special Kurnass

Shark Mouthed Kurnass #187

In late 1970 Israel became interested in the ongoing McAir development of manoeuvring slats for the F-4. McDonnell Douglas sent a team to Ramat David air base to equip one of the unit's Kurnass with fixed slats and to enable the IAF to assess their potential. Joe Dobronski and IAF test pilot Yuri Yarrey in the back seat conducted the test flights in Spring 1971 with converted Kurnass #187 (Peace Echo I F-4E Block 41 68-0544) and proved the structural integrity of the slat installment within the complete speed and G-envelope of the aircraft. Of interest is the fact that all test-flights were conducted with loaded gun. The manoeuvring demonstration conducted after the structural evaluation was finished, it differed widely from other McAir test projects. The flight-data gathering was achieved rather quickly to give the aircrew time to do actual ACM against an unslatted F-4. At the controls of the chase aircraft was no other then Ahser Snir, at that time an ace with a total of twelve confirmed kills on Mirage III.



Bottom right: In March 1971 Moshe Dayan paid a visit to 'The Hammers' squadron to get informed of the status of the fixed slat test project. Bottom left: Joe Dobronski dressed in typical US flight gear posing in front of Kurnass #187 in February 1971 prior to a test flight, while Yuri Yarrev, partially covered by the left wing, is conducting his pre-flight checks.

F-4E Phantom II, Kurnass #187, Peace Echo I (68-0544), Ramat David, March 1971
"Fixed slat test installation - Tayeset 69 Ha'Patishim - The Hammers Squadron"



Shark Mouthed Kurnass #187



Kurnass #187 seen taking part in the flying display at Ramat David during the open house held to celebrate Israel's Independence Day in 1975. The fixed slats and shark mouth are clearly visible in both images.

Dismantled Kurnass #187 seen at IAI Bedek undergoing depot level maintenance in the late 1970s. To make the aircraft more visible for high speed photography during the aerodynamic trials of the fixed slats, a large red and white shark mouth with eyes was painted on the nose. As the Yom Kippur War caught the IAF by surprise Kurnass #187 was thrown into action with the shark mouth and the fixed slat installation still in place. After the completion of the depot level overhaul the aircraft was handed over to Squadron 119 where it finished its service career. It is currently part of the exhibition at the IAF Museum at Hatzerim.



The 'Kurnass' in IDF/AF Service 1969 - 1988



aircraft were unlike the switches in our later Block aircraft but that was the least of my troubles.

I locked my eyes on one helicopter, attacked again using gyro sight and this time the helicopter exploded. By then it was 18:00hrs, darkness fell and I wanted to return the aircraft to Refidim. I contacted Refidim but the answer was 'no landings here at night' so I had a dilemma. I had plenty of fuel since we didn't use afterburners in the engagement so I could fly either to my home at Hatzetim or to the aircraft 'home' at Tel Nof. I decided to return the aircraft to its owners so I flew to Tel Nof. I took the camera's film as evidence to the kill and we were organized transport from Tel Nof to Hatzetim on-board a Noratlas transport aircraft that flew an engine to Hatzetim. We returned to Hatzetim at about 20:00hrs after we took-off at about 14:00hrs. We were vectored to engaged, landed on a nar-

row damaged parallel runway, our aircraft was damaged and patched, we got a flat tire and aborted take-off, we improvised a QRA pair flying another squadron's aircraft with a Neshar as our wingman, were scrambled, shot down a helicopter, flew the aircraft to its base and returned home in a Nord. Quite a crazy day!

Only in retrospect did I realize the importance of our action. There were 12 Mi-8 helicopters each carrying 25 commandos. The helicopter we shot down crashed just outside the perimeter of Refidim. If 300 Egyptian commandos attacked Refidim that evening when the base was not properly secured and the local soldiers still shocked by the Egyptian air raids the consequences can be easily imagined. Therefore, whenever Eliezer 'Cheetah' Cohen meets me he announces: 'here is the pilot who saved Refidim' and he should know, as he was the commander of Refidim."

Three-tanked Kurnass #673 (Peace Echo I F-4E Block 41 USAF 68-0525) of 'The One' squadron is seen departing Hatzor after having been scrambled for a CAP sortie on October 8. The Phantom is loaded with four AIM-9D Sidewinder IR and two semi-active homing AIM-7 Sparrow missiles. To suppress enemy anti-aircraft radar the aircraft carries an AN/ALQ-87(V)-4 ECM-pod in the left forward missile bay. The aircraft was lost to enemy fire on October 11, 1973.

Kurnass #671 (Peace Echo I F-4E Block 41 USAF 68-0524) returning to Hatzor from a October 9, 1973 mission. Of interest are the empty bomb racks, an early AN/ALQ-101(V)-3 and two AIM-9D Sidewinder air-to-air missiles. The aircraft was to be re-coded #171 in Squadron 119 service.



The Yom Kippur War



Kurnass #615 (Peace Echo I F-4E Block 39 USAF 68-0414) seen after its emergency landing at Hatzor on October 7. The Phantom sustained considerable damage when it veered off the runway. The ejection selector switch was hit by AAA cannon fire and ejected the navigator Avikam Lif who became PoW. The pilot Gad Samuk was able to nurse the damaged jet back home. Unfortunately Samuk did not survive the war. He was killed in action over the Egyptian front when his Kurnass #620 (Peace Echo I F-4E Block 39 USAF 68-0416) was destroyed by a SA-6 Gainful surface-to-air missile (SAM) on October 17, 1973.

A Squadron 201 four-ship formation on a CAP mission was vectored to intercept the Mi-8s at the central sector. Itzchak Amitay recalled:

"We were scrambled to fly a CAP but while airborne the pair we were leading was joined by another pair and we continued to patrol as a four-ship formation with Eitan Peled leading. The Egyptians launched many SAMs towards us, so quite quickly we learnt to fly on the boundaries of the Egyptian ADF SAM envelope. It was dusk and we were looking for the helicopters as GCU told us that the helicopters were there. Suddenly someone shouted 'there they are' and there they were, six Mi-8s flying in a perfect formation at low altitude. Flying in a circle we took turns attacking the helicopters. We practiced helicopter interception scenarios and we knew that it was a tough mission. We could not lock our radars on them as they flew so low, so Peri with the sight in cage position attacked them like strafing a ground target. In four passes we shot down three helicopters, definite kills in a surreal scene: helicopters catching fire



F-4E Phantom II, Kurnass #615, Peace Echo I (68-0414), Egypt, October 6, 1973
"Air base attack on Tanta – Tayeset 201 Ha'Ahat – The One Squadron"





Operation Nickel Grass



new group and lead a total of twelve fighters to Israel. Two more KC-135 tankers joined us from Spain as we approached the Gibraltar Strait. This made us a flight of twelve fighters and four tankers. What an armada I had now! I thought this was definitely not in the job description of a civilian test pilot.

Our flight arrived in good shape without any real problems. After I got out of my aircraft, an Israeli pilot acquaintance of mine by the name of Eitan Ben-Eliahu stopped to say hello and we talked briefly. He was on his way to fly a combat mission then. As he departed, I turned around to retrieve my personal belongings and discovered that my aircraft was no longer there. With some help from the maintenance chief, we found it was already repositioned in an underground revetment being loaded with ammunition in preparation for a mission. I think that most of the aircraft we delivered that day were airborne before we even left the base. Ben-Eliahu was a very young Israeli fighter pilot when I first met him. He brought his wife and baby to visit Ginny and I in St. Louis upon his graduation from the USAF Fighter Weapons School some years earlier. He soon became an outstanding combat pilot, rose to the position of Commanding Officer of Squadron 133 and became Commander of the IAF. I really felt sorry for the young US Air Force pilots who were told that they had to leave Israel almost immediately after we arrived. Four of them had been airborne for more than twelve hours

after takeoff from the States. They were without sleep for a total of fifteen or sixteen hours. A military transport landed about an hour after our arrival and flew all of them out of the country. The fact this was done in the interest of not offending the Russians was ironic since Russian pilots were known to be flying in Syria and Egypt. Thankfully, we civilians went to Tel Aviv and spent a day recuperating before returning to the States by way of Europe”.

An interesting note about the USAF F-4E transferred from the 4th TFW, 33rd TFW, and 57th FWW, has to do with the kind of weapon capability provided to the IAF. While IAF F-4E had some weapons capabilities deleted on their production line the USAF F-4E rushed to Israel likely had all of the USAF weapon capabilities delivered intact, which may have included an intact nuclear capability. Thus, the IAF likely received by combat-related default the very systems they were denied in the first place. As for the nuclear capabilities, after YKW was over those aircraft were likely transferred to the Tel Nof to partake in a nuclear alert duty. Since in-country firms conducted all of their overhaul work there was no need to return the aircraft to the US to have any of the ‘gifted’ systems degraded.

When the cease fire was implemented on October 24, the airlift immediately slowed. Further flights were made to rebuild Israeli forces to their pre-war strength, and Operation Nickel Grass was ended on November 14.

Only a few days after the cease fire and the end of the Yom Kippur War, Squadron 201 held a war’s end parade at Hatzor, with Karpada #330 (Nickle Grass F-4E Block 43 USAF 69-7255) serving as background. The aircraft features a dark red gun muzzle with red flames on the cover – applied by its former owner, the 58th TFS/33rd TFW. Note the non-standard ejection seat triangles with large white outlines.



512th MAW
C-5A Galaxy
Dover AFB, Delaware

F-4E Phantom II, Karpada #330, Nickel Grass (69-7255), Hatzor, October 1973
“End of YKW parade – Tayeset 201 Ha’Ahat – The One Squadron”





In 1978, Karpada #311 (Nickle Grass F-4E Block 50 USAF 72-0137) which had already been retrofitted with the in-flight refuelling boom, is seen taxiing out at Ramat David air base to conduct a training mission. The aircrew wears USAF-style Gentex HGU-33 helmets.



Karpada #301 (Nickle Grass F-4E Block 50 USAF 71-1395) was one of four 'Karpadas' to be operated by Squadron 201. The aircraft, with Eitan Remler at the controls, is seen being pushed back into one of the Mirage sun-shelters at Hatzor in 1976. The aircraft was lost in an accident on April 22, 1979.



Photographed after YKW, Karpada #322 (Nickle Grass F-4E Block 37 USAF 68-0333) still features the early production block 'hardwing' configuration without manoeuvring slats. Of interest is the artwork on the gun cover just aft of the muzzle, applied when the aircraft belonged to the 33rd TFW. Note the suspensions for the AGM-45 'Shrike' anti radiation missile (ARM) on both inner wing pylons.

Operation Nickel Grass had immediate and far-reaching effects. Holding to their threats, the Arab states declared a complete oil embargo on the United States, which had a definite impact on US air forces operations in 1974 and 1975, as many annual flying exercises/deployments were reduced in size or outright cancelled as a result in the availability of adequate fuel supplies. Nickel Grass also revealed a severe deficiency in American airlift capabilities: the need for staging bases overseas. Without Portugal's assistance, the airlift might not even have been possible. As a result, the US greatly expanded its aerial refuelling capabilities and made long-distance flight operations the standard rather than the exception.

A GOA study of the operation discussed the shortcomings of the C-141A. As a result, the C-141B was conceived. The A models were sent back to Georgia where they were cut fore and aft of the wing, extended in length by two pallet sections, and refitted for aerial refuelling.

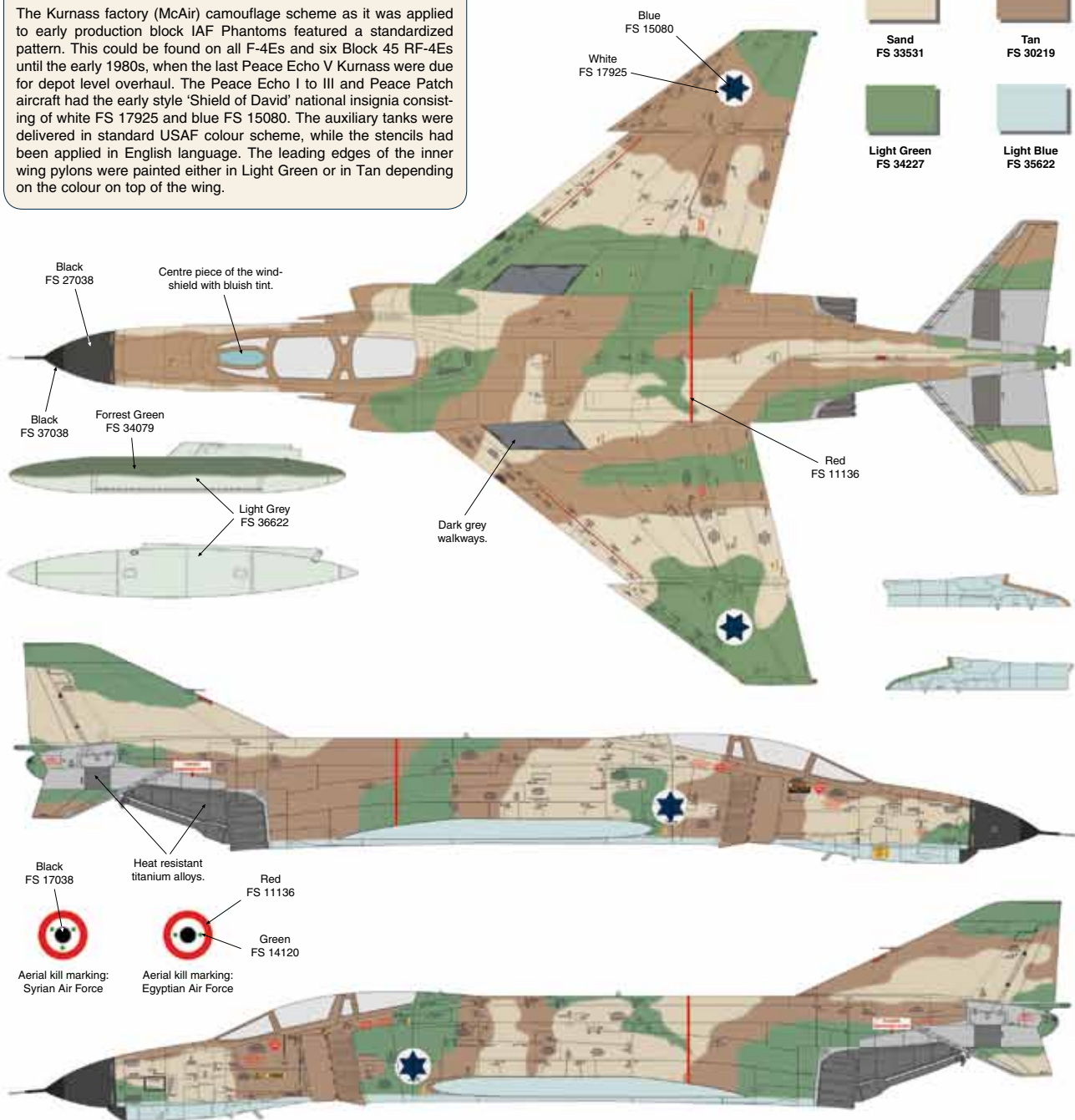
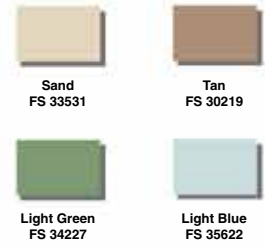
Nickle Grass vindicated the Air Force decision to purchase the C-5 Galaxy. Since its introduction in 1970, the C-5 had been plagued by problems. The Air Force claimed to have rectified the problems, but the C-5 was still viewed by the US press as an expensive failure. The C-5 also carried outsize cargo such as M60 Patton tanks, M109 howitzers, ground radar systems, mobile tractor units, CH-53 Sea Stallion helicopters, and A-4 Skyhawk components; cargo that could not fit in smaller aircraft. This performance justified the C-5's existence, and allowed the Air Force to move forward with their proposed upgrade to the C-5B variant.



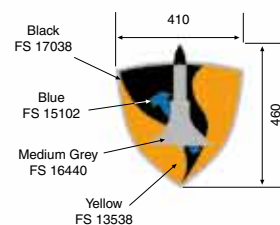
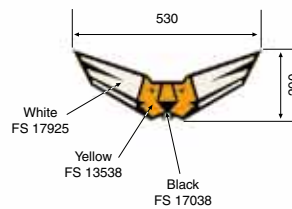
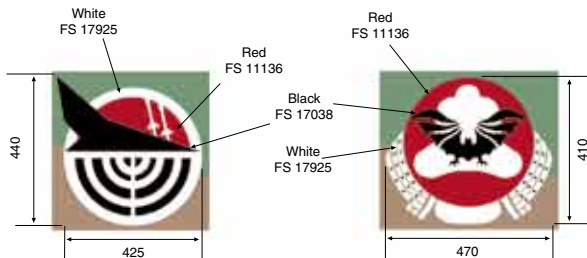
Appendix 2: Camouflage Schemes

'Kurnass' Factory Camouflage Scheme

The Kurnass factory (McAir) camouflage scheme as it was applied to early production block IAF Phantoms featured a standardized pattern. This could be found on all F-4Es and six Block 45 RF-4Es until the early 1980s, when the last Peace Echo V Kurnass were due for depot level overhaul. The Peace Echo I to III and Peace Patch aircraft had the early style 'Shield of David' national insignia consisting of white FS 17925 and blue FS 15080. The auxiliary tanks were delivered in standard USAF colour scheme, while the stencils had been applied in English language. The leading edges of the inner wing pylons were painted either in Light Green or in Tan depending on the colour on top of the wing.



All dimensions given in millimetres!



Squadron 201 'The One'
Pre-1974 unit insignia, carried on both sides of the fin, always facing to the right.



Squadron 201 'The Bats'
Unit insignia carried on both sides of the fin. Several pre-1973 aircraft missed the red flash.



Squadron 107 'The Knights of the Orange Tail'
Some pre-YKW aircraft had the unit insignia on the fin and/or missed the orange colour (close to FS 12473) on the rudder.



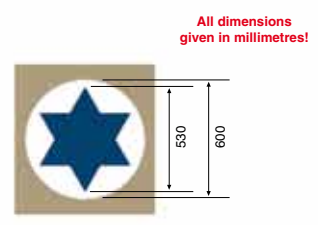
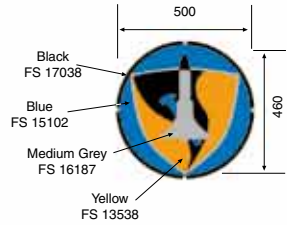
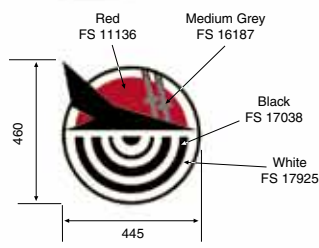
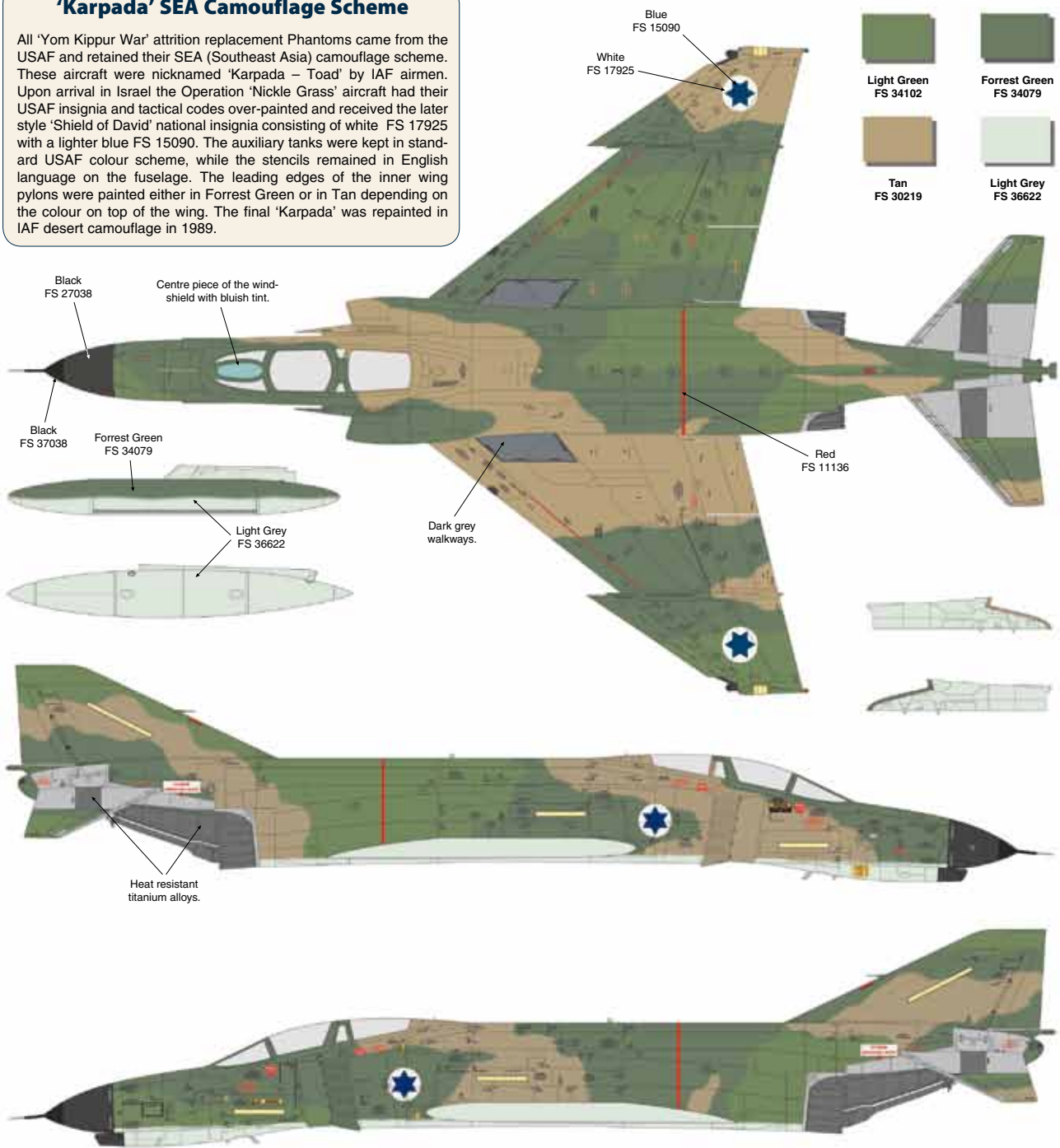
Squadron 69 'The Hammers'
Unit carried on both sides of the fin.



Appendix 2: Camouflage Schemes

'Karpada' SEA Camouflage Scheme

All 'Yom Kippur War' attrition replacement Phantoms came from the USAF and retained their SEA (Southeast Asia) camouflage scheme. These aircraft were nicknamed 'Karpada - Toad' by IAF airmen. Upon arrival in Israel the Operation 'Nickle Grass' aircraft had their USAF insignia and tactical codes over-painted and received the later style 'Shield of David' national insignia consisting of white FS 17925 with a lighter blue FS 15090. The auxiliary tanks were kept in standard USAF colour scheme, while the stencils remained in English language on the fuselage. The leading edges of the inner wing pylons were painted either in Forrest Green or in Tan depending on the colour on top of the wing. The final 'Karpada' was repainted in IAF desert camouflage in 1989.



Squadron 119 'The Bats' operated two 'Karpada' aircraft during and after YKW. These were aircraft #321 and #333.

The majority of 'Karpadas' were operated by **Squadron 69 'The Hammers'**. Early YKW aircraft had only the unit insignia without the blue disk and without yellow checkers (RAL 1021).

Aircraft #320 was the only 'Karpada' operated by **Squadron 107 'The Knights of the Orange Tail'** during YKW. At that time it had no unit insignia. This was only applied after the war.

Squadron 201 'The One' operated four 'Karpadas': #327 and #330 during YKW and #301 and #324 there after. The shown late style unit insignia and rudder decoration was only applied in 1976.