ASIAN AIR ARMS Newsletter 31
March/April 2022

Serving Asian Air Arm Enthusiasts and Modellers in 60 countries

The C-130 Hercules in Indonesian Service

In this edition:

Editorial Page

I will be open and honest, as always. For very personal reasons, directly related to the tragic events taking place elsewhere in Eastern Europe, it has been extremely difficult to focus on the Asian Air Arms SIG during these dark times for the world. I had hoped to deliver a more positive message regarding the gradual re-emergence of model shows, and to look forward to the onset of an Air Show season, surely the best manifestation of 'our' world but all that seems a bit trivial in light of global events right now. I am, therefore indebted to Steve Komor for putting together another great newsletter and for the excellent support we have received from long established and new contributors, who have collectively produced a wide variety of interesting and informative articles. May these bring you some light relief as we all struggle to understand the evil that pervades our society, wherever you may live in the world.

Mark Attrill
Leader
Asian Air Arms Special Interest Group
Estonia - March 2022

Hello once again to all our readers,

Welcome to issue 31 of our Newsletter. In this edition, long-time member and resident Indonesian specialist, Mick Burton, makes a very welcome return with an article on the C-130 Hercules in Indonesian Air Force service.. Hugh Thomson is back with the second part of his examination of the Shenyang J-6, and Carmel J Attard also returns with a build of a little-known inter-war aircraft, the Breda Ba27, in Chinese Nationalist markings. Finnish member Kyösti Partonen has written an article about the Beijing Aviation Museum, and regular contributors David Thomas, Greg Kittinger, Meindert de Vreeze and Mark Attrill are all featured.

Some time ago, our SIG Leader Mark Attrill forwarded me a link to a short, 2-minute YouTube video which he says is "*...interesting in many ways, not least being to dispel speculation that the Elephant markings* **[on Thai aircraft]** *were applied to the wings - As the video clearly shows, the Japanese Hinomaru have been crudely overpainted on the upper wing surfaces.*" Definitely worth a watch, so here is the link:

เครื่องบินขับไล่ฮายาบูซะ กองทัพอากาศไทย สงครามโลก (Thai Ki-43 Hayabusa) ภาพสี HD

On the subject of YouTube videos, Gary Markham has sent links to two very relevant and interesting videos. The first is a walk-around of a type that was featured in our last edition, the Fairey Gannet in Indonesian colours, filmed by Eric Moya - **https://youtu.be/tc1GR4XSwMM**. The second film is of an aircraft featured in this edition, the Japanese F-2, and highlights the differences between that aircraft and the F-16 - **https://youtu.be/kixk6SCpGyM**.

Please don't forget, contributions are always welcome. We have only ONE criteria - the subject must belong to an Asian Air Arm! Simple!

Steve Komor (stevekomor@gmail.com)

Beijing Aviation Museum

by Kyösti Partonen

Beijing Aviation Museum/Beijing University of Aeronautics and Astronautics/
北京航空航天大学仪器电子信息工程学院
37 Xueyuan Road
Haidian Qu
Beijing Shi
China, 100191

Dear fellow AAA SIGgers!

During the last ten years, when it was still possible to travel, I had the opportunity to visit China more than once a year, mostly to a city almost no-one knew about before winter 2019-2022, but whose name is nowadays familiar to all! Whenever possible, I have tried to visit aviation museums or airshows. In the Beijing area I have visited the Beijing University Aviation Museum, the China Aviation Museum, the Civil Aviation Museum of China, and the People's Liberation Army museum, as well as the Tianjin Aircraft carrier "Kiev" theme park about 100 miles south-east of Beijing. I have visited Airshow China at Zhuhai in 2014, 2016 and 2018 as well as Tianjin Helicopter Expo 2017. The Zhuhai 2020 show was postponed and held in September 2021, but it was impossible to visit there due to the travel restrictions. After exchanging a few emails with the 'top brass' of our group, I promised to write a short description of these locations so anybody interested can get some idea what kind of material they have and maybe even to give some ideas for possible travel plans. From these visits I have several thousand photos, taken from a modeller's perspective.

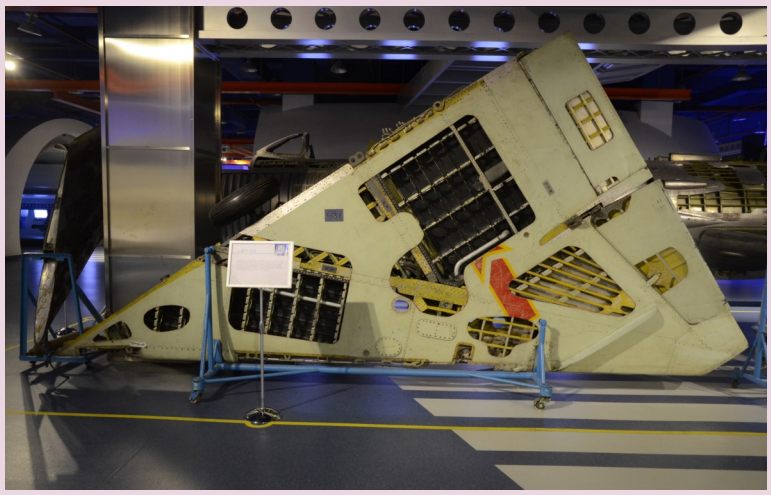
As new models of Lavochkin's last propeller fighters, the La-9 and La-11, have been reviewed in recent SIG newsletters, I decided to start with the Aviation Museum of Beijing University as there were better possibilities to photograph the Lavochkins there than in the China Aviation Museum at Xiactangshan.

The Aviation Museum of Beijing University is located in the university area north from the city centre, partially in a classic European-style university building and partially in a quite recently -built museum display hall. Earlier, the aircraft collection was located outdoors and they had begun to look really sad. When the new display hall was finished they were moved indoors and they have been partially restored and overpainted, although in some cases the quality of the painting looks quite hurried and the colours and markings are not necessarily correct. This seems to be a common phenomenon in the other Chinese museums too. Maybe the PLA museum is the best one in this regard?

Most of the more than 30 aircraft on display are Chinese-made military aircraft, either of Soviet-origin (cockpit of An-26, Il-10, [VEB] Il-14, La-11, MiGs 9, 15, 15bis 15UTI, Po-2, Tu-2S, Yak-11), locally manufactured Soviet types (H-5, J-5, J-6-III, J-7, Z-5), or Chinese designs including developments of the Soviet types (CJ-6A, J-8II, J-8III mock-up, Q-5). A few Eastern European light planes are also in the collection (Aero 45, Mraz Sokol, L-60 Brigadyr). There are also a few US-types originating from the Republic of China/KMT background (C-47B, NA Texan, P-47D Thunderbolt, a word-class rarity, the P-61B Black Widow (!) and a Ryan STM-2E). There is also a sectioned J-6 fuselage and an H-5 wing. Since my visit, the fifth prototype of the Chengdu J-10A has been added to the museum collection during autumn 2019. Maybe the most unlikely aircraft found there is a BAe Harrier GR 3 which the museum has got in an exchange for an La-11.

In January 2022, the museum web-page states that the museum is open only with prior reservation on Tuesdays and Saturdays from 8.00 to 12.00. This is likely due to CoVid restrictions, as when I visited there several years ago it was open in the normal way with typical museum opening times without the need to book beforehand.

The easiest way to get to the museum is by taxi giving the address to the driver. I have been fortunate to have a native friend either to go with me or order the taxi and agree the details with the driver. At this museum I went by the latter method, and I returned to my accommodation by taxing a taxi (a 'Red Flag' which was based on an Audi 100 of the mid-1980s. As it was good enough for the local politburo I thought it was acceptable for me too!) Another way would be to use the local subway which is a fast and easy way to travel around the city. The closest subway stations of the university are Xi Tu Cheng Station (line 10, marked as closed at the moment) which is closer to the museum, and Zhi Chun Lu Station (lines 10 and 13) at the south-west gate. There is also a bus stop at nearby Zhichun Road.



Links:

https://www.aviationmuseum.eu/Blogvorm/beijing-university-aeronautics-astronautics/

www.buaa.edu.cn

The next ones are in Chinese, please use your favourite on-line translator!

http://m.kzl.la/venue/5290

https://kknews.cc/military/63bn6yq.html

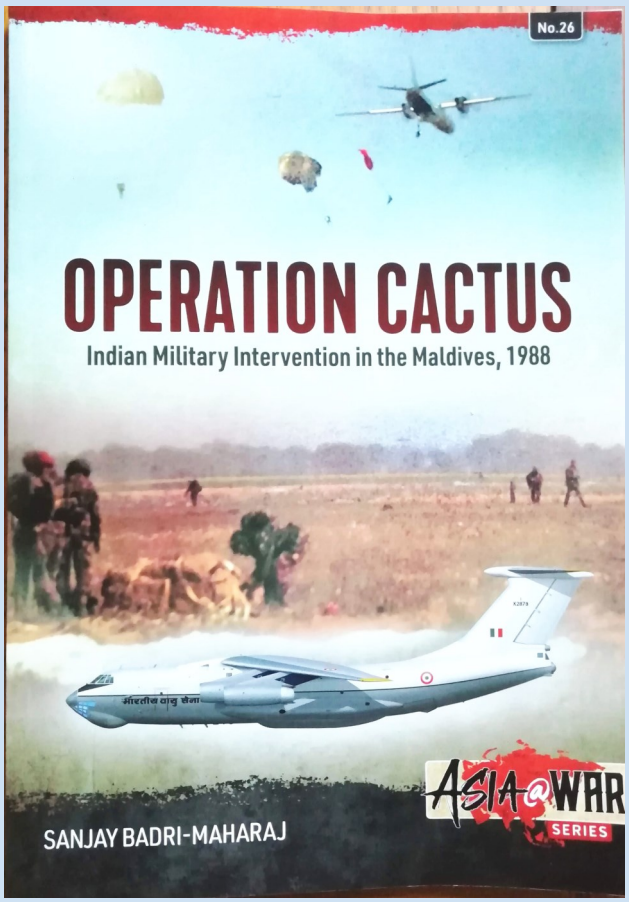
by Kyösti Partonen Fi 623 IPMS-Finland, January 2022

'Operation Cactus' book review

By David Thomas

Indian Military Intervention in the Maldives, 1988 by Sanjay Badri-Maharaj

Published by Helion, "Asia @ War" Series No. 26.



This slim volume, only 60 pages, follows the standard format of this and related series from Helion. Those of you who have read earlier reviews in AAA Newsletters, during 2021, covering the three publications on the Sri Lankan Civil War, will realise that this action took place at the same time as India was being drawn into that situation, and indeed there are direct links between the two.

In brief, Indian involvement in the Maldives followed an attempt by a number of Maldivian citizens, led by local businessman Abdullah Luthufi, to remove the elected government with the assistance of mercenaries recruited from a Tamil secessionist group, the Peoples Liberation Organisation of Tamil Eelam (PLOTE). This attempted coup failed, largely because of the swift and effective Indian intervention, mainly in the form of paratroopers and Special Forces, which led to the capture of the local leaders and the mercenaries.

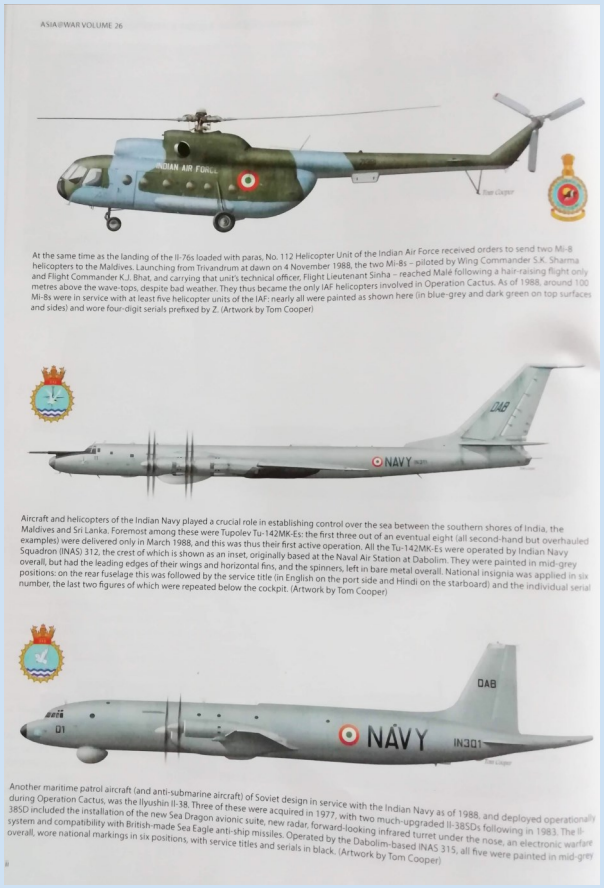
The initial chapter examines the political background leading up to the coup. In particular, it considers the election of Maumoon Abdul Gayoom as President of the relatively newly-formed Republic of the Maldives in 1978 as the major trigger of events in 1988. He was re-elected unopposed five years later and again after a further five years in power, shortly after the failure of the coup. Indeed he continued in similar unopposed power until 2008, averaging some 90% of the popular vote on five occasions. The writer describes him as "the elected dictator of the country"; one in which corruption at the top was the norm.

That said, the new republic, although small, consisting of 198 small islands and atolls in the Arabian Sea, was surprisingly prosperous, with a growing tourist industry, as well as fishing and shipping sectors. However, financial inequalities between workers and the relatively few rich families led to unrest, and this situation was made worse by the prevalence of cheap narcotics, especially in the capital Male. Piracy as a source of income remained common while the establishment of a sustainable democratic political system proved largely impossible to achieve in reality. Additionally, the country's position in the Arabian Sea has given it an important strategic location recognised by the European Powers from the 16th to the 20th centuries and explaining why the islands became a British Protectorate in the mid-nineteenth. The retreat of the British from "east of Suez" from the 1950's did not mean, however, that the importance of this strategic location was lost on the emerging powers in Asia at the time. This meant that the Maldives were increasingly becoming a "place of interest" to the new "big players" in the region. It was this background of diverse issues, which prompted events in 1988, that led to the Indian intervention and to that nation's emerging role as the major regional "peacekeeper".

Having set the scene for the coup, succeeding chapters cover the manner in which things evolved. Probably of greatest interest to members of the Asian Air Arms group is the role of the Indian Air Force in these events. This is covered in some detail in Chapter 2, with a number of photos and tables showing which aircraft were directly involved.

Overall the nature and composition of all of the Indian and opposing forces are covered at some length in Chapters 2 – 4 before the author moves on to consider the actual events that took place on the ground in Chapters 5 and 6, explaining how the coup was defeated and the perpetrators arrested.

As with other books in this series, there are a number of photos, all black and white, as well as a series of coloured profiles of the aircraft, vehicles and troops involved . Finally the author includes a comprehensive bibliography for anyone wishing to build upon the information they have gleaned from this slim book.



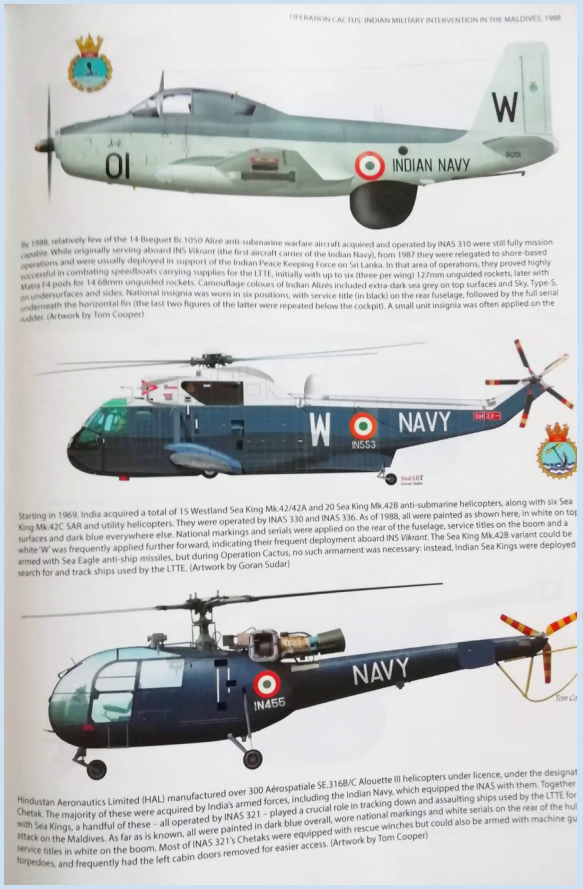
At the same time as the landing of the Il-76s loaded with paras, No. 112 Helicopter Unit of the Indian Air Force received orders to send two Mi-8 helicopters to the Maldives. Launching from Trivandrum at dawn on 4 November 1988, the two Mi-8s – piloted by Wing Commander S.K. Sharma and Flight Commander K.J. Bhat, and carrying that unit's technical officer, Flight Lieutenant Sinha – reached Malé following a hair-raising flight only metres above the wave-tops, despite bad weather. They thus became the only IAF helicopters involved in Operation Cactus. As of 1988, around 100 Mi-8s were in service with at least five helicopter units of the IAF: nearly all were painted as shown here (in blue-grey and dark green on top surfaces and sides) and wore four-digit serials prefixed by Z. (Artwork by Tom Cooper)

Aircraft and helicopters of the Indian Navy played a crucial role in establishing control over the sea between the southern shores of India, the Maldives and Sri Lanka. Foremost among these were Tupolev Tu-142MK-Es: the first three out of an eventual eight (all second-hand but overhauled examples) were delivered only in March 1988, and this was thus their first active operation. All the Tu-142MK-Es were operated by Indian Navy Squadron (INAS) 312, the crest of which is shown as an inset, originally based at the Naval Air Station at Dabolim. They were painted in mid-grey overall, but had the leading edges of their wings and horizontal fins, and the spinners, left in bare metal overall. National insignia was applied in six positions: on the rear fuselage this was followed by the service title (in English on the port side and Hindi on the starboard) and the individual serial number, the last two figures of which were repeated below the cockpit. (Artwork by Tom Cooper)

Another maritime patrol aircraft (and anti-submarine aircraft) of Soviet design in service with the Indian Navy as of 1988, and deployed operationally during Operation Cactus, was the Ilyushin Il-38. Three of these were acquired in 1977, with two much-upgraded Il-38SDs following in 1983. The Il-38SD included the installation of the new Sea Dragon avionic suite, new radar, forward-looking infrared turret under the nose, an electronic warfare system and compatibility with British-made Sea Eagle anti-ship missiles. Operated by the Dabolim-based INAS 315, all five were painted in mid-grey overall, wore national markings in six positions, with service titles and serials in black. (Artwork by Tom Cooper)

The publication is typical of the other books in the various "@ War" series from Helion. It covers the subject in detail, while at the same time encouraging the reader to further study. For myself, I find these books to be worth reading, covering as they do both the major and minor aspects of military activity in Asia primarily since the 1950's. They serve as a useful means of introducing the new student of current affairs in the region to the complex and often interlocking background of apparently separate events to life there today, while being able to bring new approaches and ideas to the attention of those who are already following in events in the region.

David Thomas,
January 2022



By 1988, relatively few of the 14 Breguet Br.1050 Alizé anti-submarine warfare aircraft acquired and operated by INAS 310 were still fully mission capable. While originally serving aboard INS *Vikrant* (the first aircraft carrier of the Indian Navy), from 1987 they were relegated to shore-based operations and were usually deployed in support of the Indian Peace Keeping Force on Sri Lanka. In that area of operations, they proved highly successful in combating speedboats carrying supplies for the LTTE, initially with up to six (three per wing) 127mm unguided rockets, later with Matra F4 pods for 14 68mm unguided rockets. Camouflage colours of Indian Alizés included extra-dark sea grey on top surfaces and Sky, Type-S, on undersurfaces and sides. National insignia was worn in six positions, with service title (in black) on the rear fuselage, followed by the full serial underneath the horizontal fin (the last two figures of the latter were repeated below the cockpit). A small unit insignia was often applied on the rudder. (Artwork by Tom Cooper)

Starting in 1969, India acquired a total of 15 Westland Sea King Mk.42/42A and 20 Sea King Mk.42B anti-submarine helicopters, along with six Sea King Mk.42C SAR and utility helicopters. They were operated by INAS 330 and INAS 336. As of 1988, all were painted as shown here, in white on top surfaces and dark blue everywhere else. National markings and serials were applied on the rear of the fuselage, service titles on the boom and a white 'W' was frequently applied further forward, indicating their frequent deployment aboard INS *Vikrant*. The Sea King Mk.42B variant could be armed with Sea Eagle anti-ship missiles, but during Operation Cactus, no such armament was necessary: instead, Indian Sea Kings were deployed search for and track ships used by the LTTE. (Artwork by Goran Sudar)

Hindustan Aeronautics Limited (HAL) manufactured over 300 Aérospatiale SE.3168/C Alouette III helicopters under licence, under the designat Chetak. The majority of these were acquired by India's armed forces, including the Indian Navy, which equipped the INAS with them. Together with Sea Kings, a handful of these – all operated by INAS 321 – played a crucial role in tracking down and assaulting ships used by the LTTE for attack on the Maldives. As far as is known, all were painted in dark blue overall, wore national markings and white serials on the rear of the hul service titles in white on the boom. Most of INAS 321's Chetaks were equipped with rescue winches but could also be armed with machine gu torpedoes, and frequently had the left cabin doors removed for easier access. (Artwork by Tom Cooper)

It might appear unusual for a military operation to start with the landing of a vulnerable transport aircraft, but this is exactly what happened in the case of Operation Cactus. Although uncertain about the condition of the runway of Malé International Airport, Group Captain A.G. Bewoor landed his Il-76MD from No. 44 Squadron in pitch darkness around 2200 hours local time on 3 November 1988, effectively opening Operation Cactus. At the time, the IAF had only quite recently acquired 17 such aircraft from the USSR. Locally designated Gajraj, they were assigned to Nos. 25 and 44 Squadrons. All had their top fuselage surfaces painted in white, a thin blue cheat line, and wings, horizontal stabilisers and lower portions of the fuselage painted in grey. Note the application of the service title (Indian Air Force) on the forward fuselage: in Hindi on the port/left and in English on the right/starboard side. (Artwork by Tom Cooper)

As soon as Malé International Airport was secured, an entire fleet of additional Indian transports flew in reinforcements, heavy weapons, ammunition and supplies. Among them were An-12s from Nos. 25 and 44 Squadrons, all nearing the end of their service but still in great demand and kept operational with the help of No. 3 Base Repair Depot at Chandigarh. By this time, all were painted in grey overall, with the cockpit roof in white. As well as their registrations – applied above the fin flash – they wore large black codes (apparently A to Z) at the base of the fin. Service titles were rarely applied on the IAF's An-12s, but this one received them in English on either side of the forward fuselage. (Artwork by Tom Cooper)

The third transport type deployed by the IAF in support of Operation Cactus was the Antonov An-32, locally designated Sutlej. This type was still quite new in India, but Nos. 12, 33, 43 and 48 Squadrons were working up on it. All received the same livery as the Il-76s, but some of the aircraft lacked their service titles. As far as is known, as of 1988, most had not yet received a single-letter code (apparently A to Z) applied in black behind the cockpit. (Artwork by Tom Cooper)

North Korean MiG-15bis

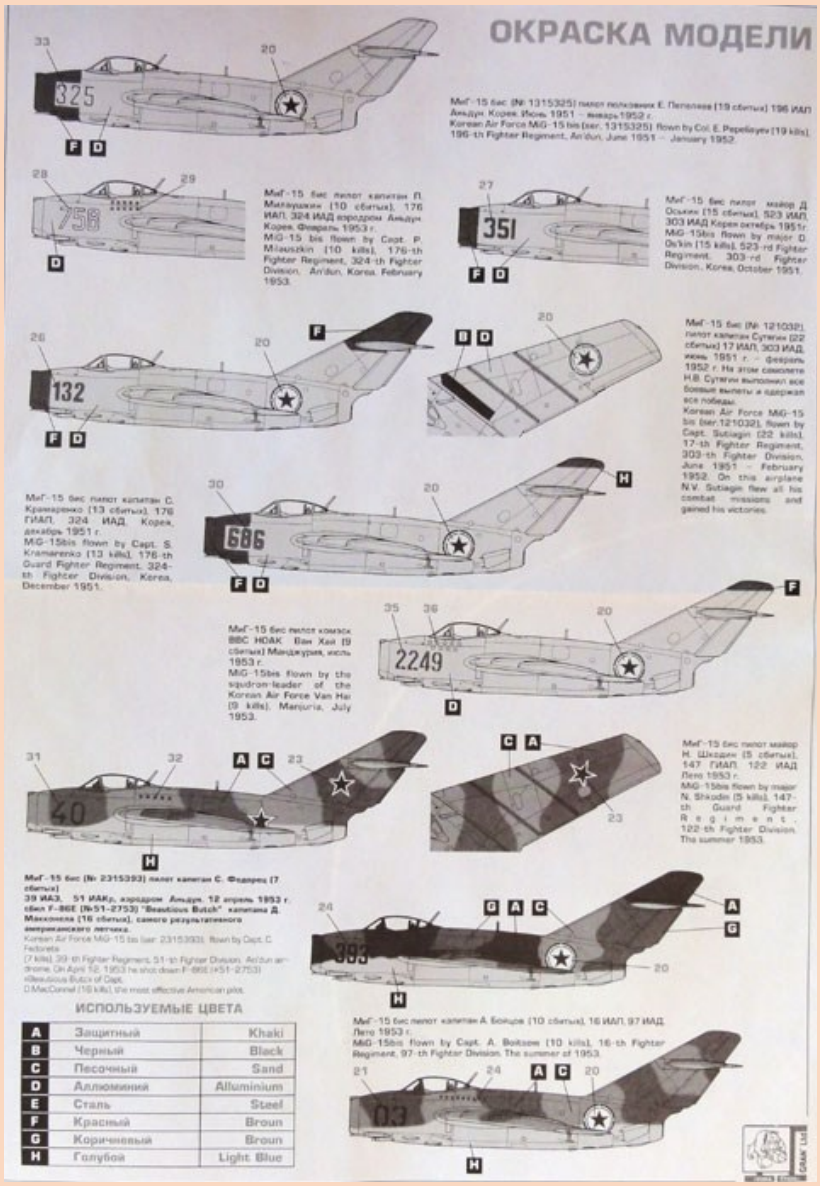
by Meindert de Vreeze

This previously unknown (to me) 1/72 MiG-15bis kit was issued by **GRAN** from Russia. The box art and decals seemed great, so when I saw it at a model show in Prague in 2005, I bought it. The kit seems to be their own original mould.

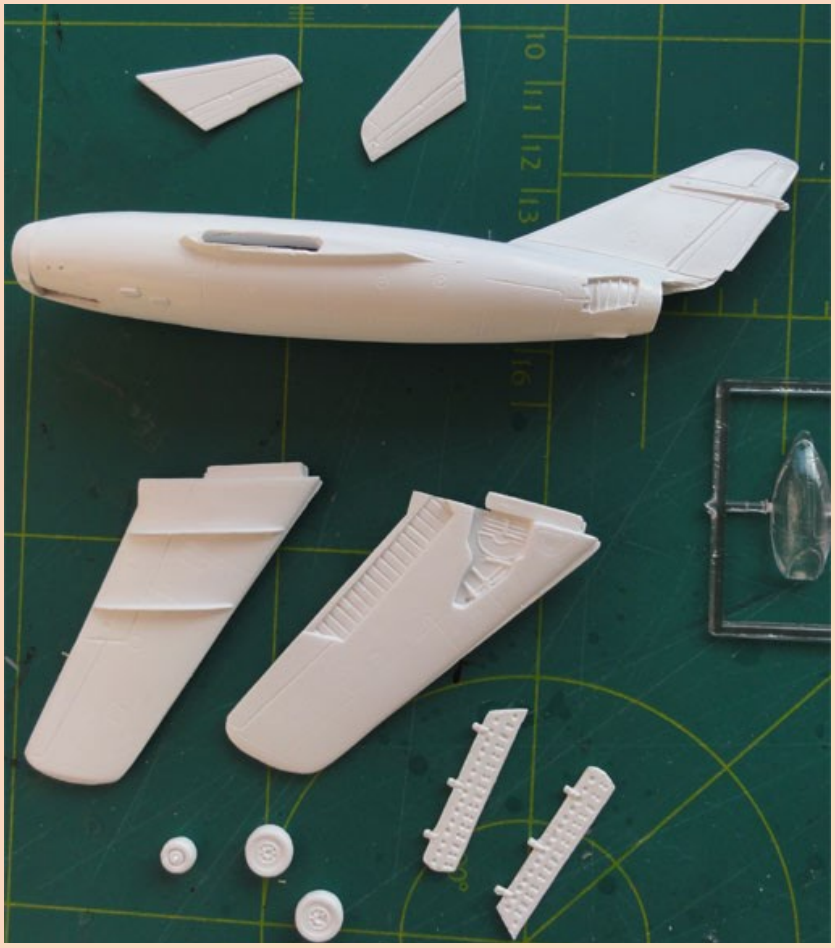
There are about 50 parts in light cream plastic. The kit instructions suggest it to be a MiG-15 *bis* with the bigger rear air brakes, which in the kit look appropriate for a *bis*, and with the landing light in the lower left wing. A nice feature of this kit are the separate parts for flaps that can be drooped down. The panel lines are recessed.

The landing gear is very rudimentary: the main doors 38 and 39 should be mounted reversed, and the nose wheel leg has no fork. The canopy has a lot of scratches. Overall fit is pretty bad and a lot of sanding and filling was needed. The exhaust tail pipe does not fit inside the fuselage.

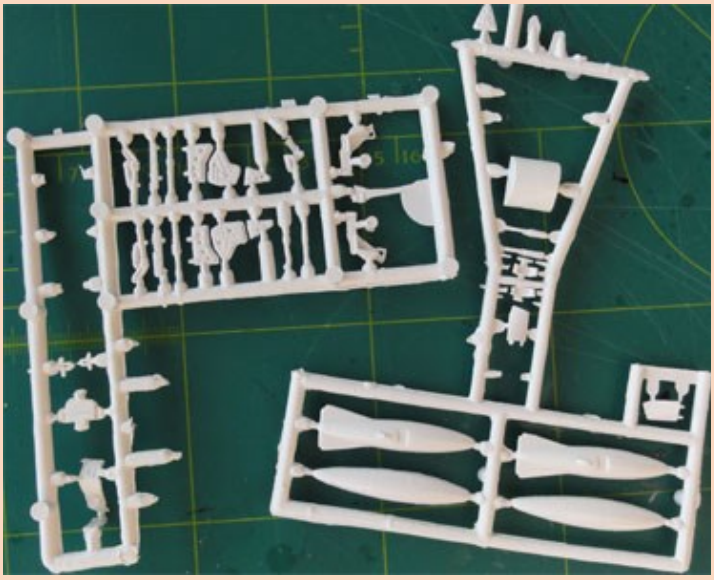
This kit looked promising at the time, but it cannot really be recommended. Nevertheless, it was built as a North Korean MiG-15bis.



The GRAN decals, which are printed by BEGEMOT, are very nice, and cover no less than 6 metallic MiG-15's with different "buzz" numbers from North Korea, two camouflaged North Korean MiGs and a camouflaged Soviet VVS aircraft.



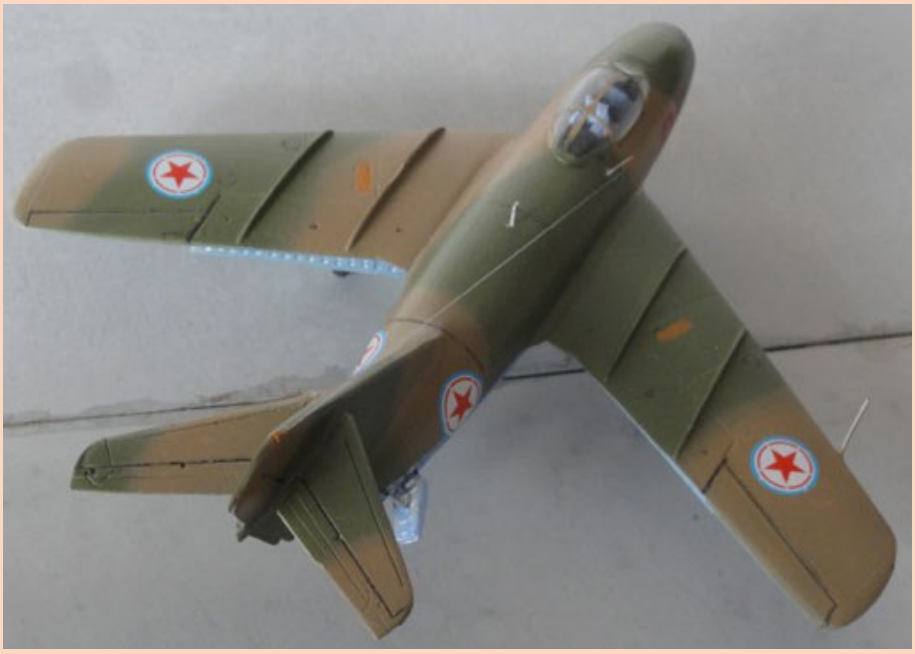
Two views showing the breakdown of parts on the sprues.

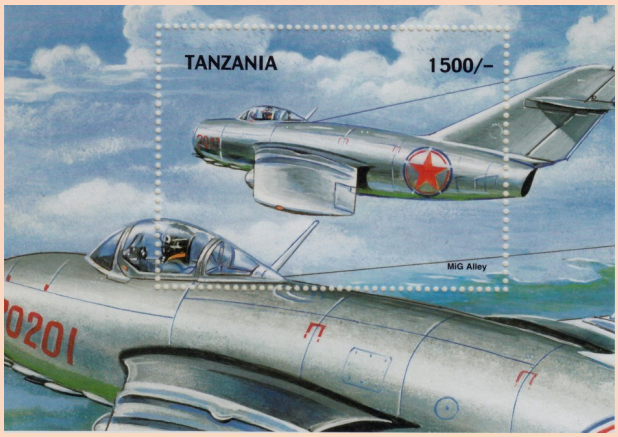


Drooped flaps are a nice option with this kit. Camouflage colours used for the North Korean MiG-15 were from Gunze Sangyo acrylics, namely #303 khaki, #310 sand, and undersides in blue which I achieved by mixing

The undercarriage was refined, and an antenna wire and other antennae were added before adding the canopy. Gaps were filled with white glue and painted when dried. The small radio blade antenna on the fuselage for the "bis" was also set in place.

The nose weight was insufficient, so to prevent tail sitting, a metal wire was set below the aft fuselage.





This old postage stamp from Tanzania depicts a North Korean MiG-15

The model was finished as a DPRK MiG-15bis as flown by Capt. Boitsow, who achieved 10 “kills" with the 16th Fighter Regiment during the Korean War.

By kind permission of **Meindert de Vreeze,** adapted from an article on his website *Aircraft Modelling in Plastic*,

plastic scale aircraft modelling (xs4all.nl)

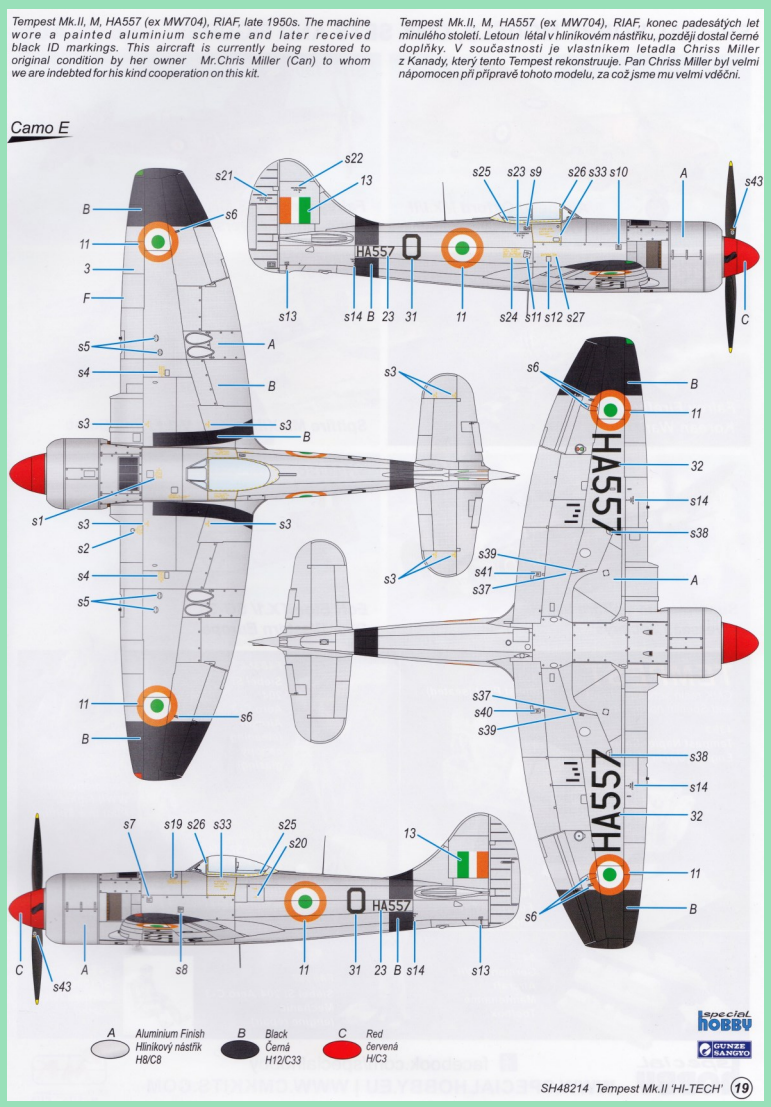
Double Take!

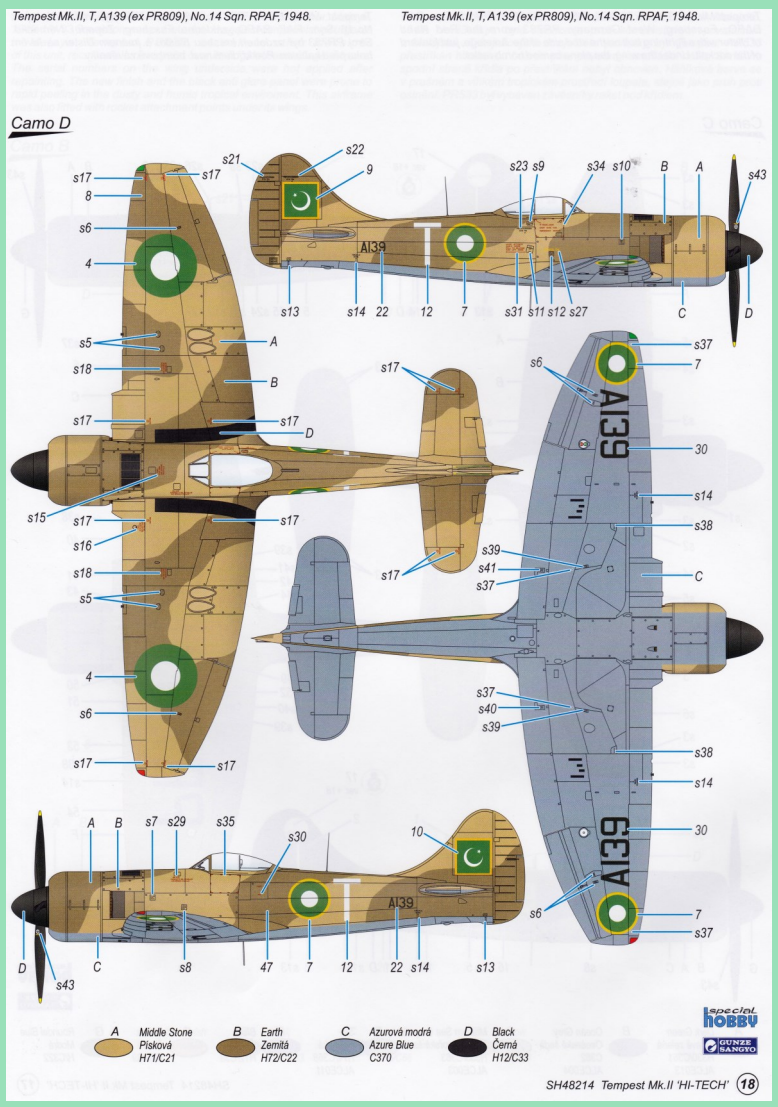
by Mark Attrill

Eduard Models – 1:48 Scale Hawker Tempest Mk.II Late Version (Kit Reference No: EDK82125)

Special Hobby – 1:48 Scale Hawker Tempest Mk.II 'The Last RAF Radial Engine Fighter' (Kit Reference No: SH48214)

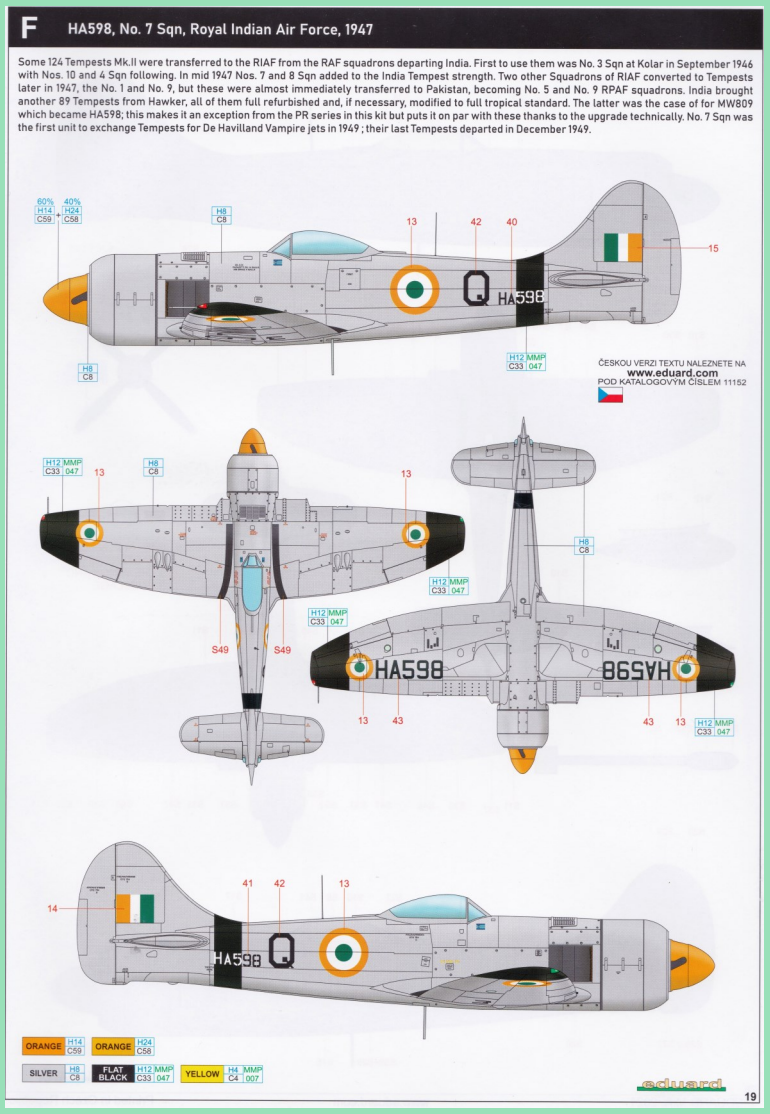
I have decided on a two-kit review on this occasion since these two recent releases are, in essence, the same kits but they do differ substantially in their presentation, and each contains decal options for Royal Indian and Royal Pakistan Air Force aircraft, so they are worthy of our attention from an Asian Air Arm perspective. For some time now there has been an obvious tie-in between the two model companies; I believe they share the same manufacturer for the plastic elements of their respective kits, so we have seen several Special Hobby kits re-released by Eduard with additional photo-etched and/or resin parts, different decal options etc. Eduard did produce a kit of the Hawker Tempest (albeit of the Mk.V variant) some years ago, but this was one of their early attempts at kit manufacturing and while it was very good at the time, a new kit of this popular Post-War British fighter is long overdue in 1:48 scale. Eduard and Special Hobby have now duly delivered in a cooperative venture that has seen all of the most common Tempest variants released in a variety of boxings. The Special Hobby kit of the Mk.II, one of their range marketed as a 'Hi-Tech Kit', was the first of the Mk.II variants to appear, and had clearly been based on their extremely nice 1:32 scale kit of the same subject, even sharing the same box art. As befits its 'Hi-Tech' moniker, Special Hobby have produced a very comprehensive package, that includes 6 medium grey sprues containing 209 pieces, although it should be noted that over 50 of these are not applicable to any of the kit options, together with two clear sprues containing a further 22 parts including the clear drop tank pylons that were a peculiarity of the Hawker Tempest. The finely engraved, highly detailed plastic parts are extremely well presented with commendably small attachment points which will aid their removal from the sprue gates. In addition to the plastic parts, the Special Hobby kit also includes 15 high quality resin parts, a photo-etched set of seatbelts, a full set of cockpit and wheel masks and decal markings for no less than five Hawker Tempest Mk.IIs including the aforementioned RIAF and RPAF options.

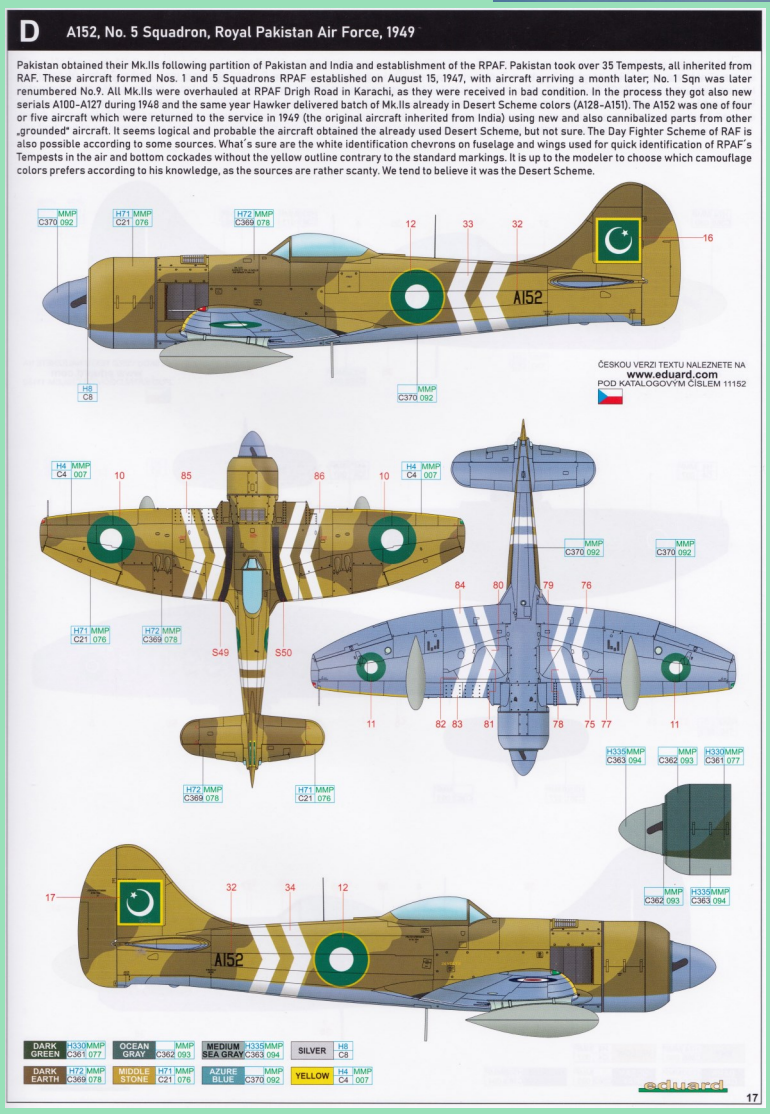




The Eduard kit that is the other subject of this review is their second Mk.II boxing; the first focused on the early Mk.II, with the kit only providing decal markings for RAF examples, although some of these early aircraft were subsequently retrofitted with tropical equipment and were also supplied to India and Pakistan. Eduard's Hawker Tempest Mk.II 'Late Version', which is marketed under their familiar 'Profipack' range, not surprisingly features the same plastic parts as the original Special Hobby kit. The Eduard version, however, drops the resin parts in favour of a more comprehensive photo-etched fret, which provides not only the aforementioned seat belts but a full set of cockpit details, including the main instrument panel and side consoles, airframe details

and even the connectors for the rocket projectiles (RPs). This boxing also includes a full set of cockpit masks (but no wheel masks) and a slightly more comprehensive decal sheet for six aircraft that include two slightly different RIAF and RPAF options. I imagine that for most modellers, it will come down to whether they feel the need to display the partly open engine compartment that is offered, via the resin parts, in the Special Hobby kit or a slightly more detailed cockpit using the photo-etched parts in the Eduard Kit.





In terms of presentation, both kits are remarkably similar as one would expect. They are packed in the reasonably sturdy 'Eduard' type boxes that we have become familiar with, which is a further indication of the joint nature of this release. If sales were determined by the quality and dynamism of the box art, then Eduard would probably win hands down with its very dramatic portrayal of a pair of RAF Tempests operated by No.33 Squadron launching RPs into the jungle during the early stages of the Malayan Campaign in 1951. Both kits also feature very clear and well-presented assembly instructions on high-quality paper with comprehensive painting instructions and superb four-view colour profiles to aid with decal placement. The decal sheets are also very similar, being comprehensive in nature with full stencil detail and printed by Cartograf so their colour density, register and quality are assured.

Once the modeler has taken early action to remove almost 25% of the plastic parts, which are then consigned to the spares box, the rather conventional assembly sequence follows tradition with the rather nicely detailed cockpit and engine cowling (in the case of the Special Hobby kit) before bringing the fuselage halves together and taking care to align all of the excellent internal detail, much of which will unfortunately be lost, since the cockpit aperture is actually quite small. The mainplane is next, with some very well detailed and appropriately deep undercarriage bays to assemble before the upper wings are joined to the one-piece lower wing section. Once again, care will need to be taken with the alignment of these parts. The tail surfaces are next, followed by a wealth of airframe parts, including the cockpit coaming, 'turtle deck', ailerons and leading edge cannon mounts; I suspect care will need to be taken with the latter which are often difficult to fair in to the rest of the wing. The main undercarriage, with its levered-leg Dowty design is also nicely detailed although the split mainwheels were a disappointment since it is notoriously difficult to clean up the seams on these items; I know that kit manufacturers currently favour this approach since it provides for separate hubs and tyres but I believe the majority of modellers would prefer to mask these on one-piece components than struggle with cleaning up seams. Fortunately, Eduard have been quick off the mark with resin replacements and I have noted other options from the likes of Barracuda, Czechmaster and Ultracast to name but three aftermarket manufacturers. As the modeller reaches the end of the build, care will also need to be taken with the choice of propeller, since at least one of the kits offers two different versions for their decal options, such is their attention to detail; in fact both kits contain no less than three propeller variants which underlines the importance of removing the unwanted plastic parts right at the beginning of the build. Final construction focusses on the fitting of either the drop tanks or the RPs and, again, care will need to be taken since the latter are handed; The very clear assembly instructions should help one to avoid making any mistakes.

As previously mentioned both of these kits provide decal markings for Royal Indian Air Force and Royal Pakistan Air Force aircraft:

Eduard (EDK82125)

Option	Air Arm/Unit	Scheme
1	HA598/Q, No. 7 Squadron, Royal Indian Air Force,	Overall High-Speed Silver with black identification
2	A152, No. 5 Squadron, Royal Pakistan Air Force, 1949	Dark Earth/Middle Stone over Azure Blue – White Stripes

Special Hobby (SH48214)

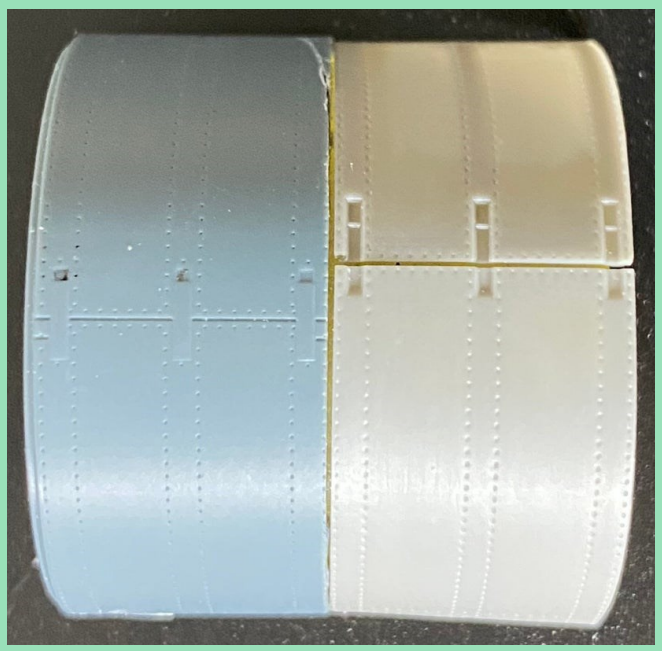
1	HA557/Q, Royal Indian Air Force, Late 1950s	Overall High-Speed Silver with black identification markings
2	A139/T, No. 14 Squadron, Royal Pakistan Air Force, 1948	Dark Earth/Middle Stone over Azure Blue

Modellers should note that the Eduard instruction sheet highlights the fact that their interpretation of the Dark Earth/Middle Stone and Azure Blue on A152 of the Royal Pakistan Air Force may be speculative and that the aircraft may have actually been delivered to the RPAF in the standard RAF temperate scheme of Dark Green/ and Ocean Grey over Medium Sea Grey!

I would not call myself an expert on the Hawker Tempest family of aircraft but the general consensus of opinion among the modelling fraternity seems to indicate that these new releases from two closely-associated Czech companies are worthy successors to the original Eduard kit of the late 1990s, and that they are now the most accurate rendition of the type in this scale. That said, the purists have reported some minor concerns over the shape of the cowling, a feature that plagued another kit of a Bristol Centaurus powered aircraft, the Airfix 1:48 rendition of the Hawker Sea Fury. It seems that all of these kit manufacturers have fallen foul of this particular element of the airframe but please see below for a quick solution!. In every other respect, however, these two fine kits of the Hawker Tempest look and feel right and certainly pass my own litmus test for accuracy and, perhaps more importantly, appearance. It should come as no surprise that the aftermarket companies, most notably Aerocraft, Barracuda, and Eduard, have been quick off the mark with the release of various detail parts or sets for the more fastidious modeller, which include replacement engine cowlings, exhausts, instrument panels, undercarriage legs, doors and wheels. These days, the modeller can get quite carried away with the purchase of aftermarket parts with which to enhance a particular kit but in my humble opinion, the only items I would probably invest in for either of these excellent Hawker Tempest kits would be a set of resin mainwheels and the corrected cowling parts.

Aerocraft Models corrected cowling parts for Eduard/Special Hobby 1:48 Hawker Tempest Mk.II

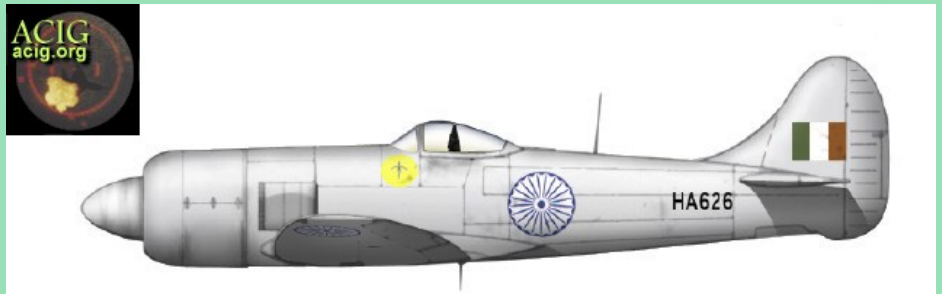
As Ali Maclean, the proprietor of Aerocraft Models has pointed out, kit manufacturers do seem to have problems replicating the subtle shape and contours of the cowling that houses the Bristol Centaurus engine on the classic Hawker Tempest and Hawker Sea Fury. Ali produced a previous correction set for the Airfix 1:48 Hawker Sea Fury shortly after that particular kit was released and now he has found it necessary to repeat the process for the new Eduard/Special Hobby kits of the Tempest Mk.II !. In keeping with his meticulous attention to detail and the needs of the modeller, Ali has actually released two versions of the cowling correction set, depending on which kit the modeller purchases. There is a plain one-piece replacement part for the rather simple Eduard option with a second set providing a replacement cowling with the 'cut outs' necessary to display the exposed portion of the Centaurus engine on the Special Hobby kit, and which also utilises the resin access doors already provided in the donor kit. In both cases the kit fuselage parts K1/2 will need to undergo minor surgery with a razor saw to accommodate the new resin corrected cowling parts, which are crisply moulded and include some nice renditions of the latches found on the original aircraft. These resin replacement parts do not carry Reference Numbers but can be easily identified on the Aerocraft Models website.



Kit part *Aerocraft replacement*

Very highly recommended

Mark Attrill, January 2022



AZ Models' Breda Ba-27

by Carmel J Attard

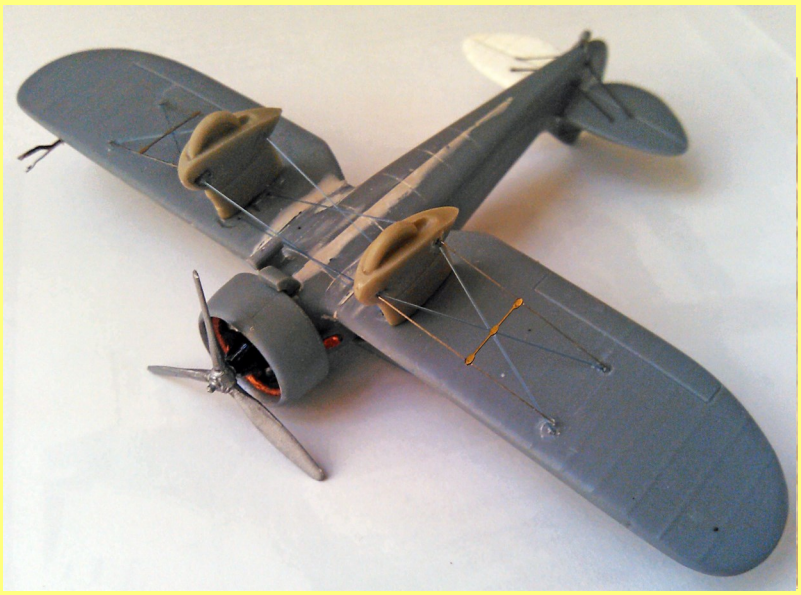
History

Originally the Ba-27 was an Italian fighter that was designed in 1932. It bore a close resemblance to the Boeing P-26, which inspired its design. Serial production was based on the last i.e., the third prototype, which was an all-metal machine. The kit depicts one of the 11, out of the original order of 18 of the type, which were produced and delivered to China in 1935. They were used against the Japanese in 1937 by the 29th Squadron under General Y.M. Chang.

The Italian Air Force never actually used the type operationally. The prototype, MM218, was exhibited in Norway but no purchase agreement was forthcoming. The prototype was finally incorporated into the 86th Squadrigilia, 5 Sturmo of the Italian Air Force in 1936. The Ba-27 was powered by a 700hp Alfa-Romeo Marcurius VI radial engine giving a maximum speed of 380 Km/Hr, a ceiling of 29,000ft, and an armament consisting of 2 x Breda Safat 12.7mm or 2 x Madsen 7.65 machine guns.

The kit

This short-run,1/72 scale multi-media kit is injection-moulded in grey plastic, and has an obvious connection with Legato, as their logo is printed on the decals and resin parts. A 4-page, A5-size instruction booklet gives a brief history, a plan view of the kit parts, resin and brass etch items. The box art is quite impressive, depicting a Ba-27 intercepting two Japanese medium bombers while on a mission. On the back of the box are colour side- and plan-views for the two decal options, one being an overall dark green (H30), and the other with dark green upper and light blue (H89) under surfaces. The Chinese insignia remains standard for both options and only the white numbers on the fuselage sides differ in size and number.



The kit has only a few parts. The wings have slightly raised ribs and finely scribed panel lines. The construction of the cockpit interior detail in brass etch is a bit complicated, with a resin column and seat, and much of the work is hardly visible once the fuselage is closed. Being a short-run type, all the joints are of the butt type, including the wings, tail planes and wheel spats. However their position is marked on the plastic. A gun sight needs to be added, and a folded piece of transparent plastic sheet forms the canopy, which also contains a slot for the gun sight.

Construction

As mentioned earlier, much of the detail work in the cockpit remains hidden, but a seat and brass etch straps are included. I added a crew figure, which hides more interior detail. One has to find a way to fit the interior sub assembly by placing it over a short plastic spacer. Having tackled the cockpit and painted it, the rest is straightforward. I did, however, incorporate a few tabs for aligning the fuselage halves in view of the absence of locating pins. I also noticed that one fuselage half was slightly deeper than the other. I added a pin dowel with corresponding holes at all the wing and spat joints. This helped me to precisely position the items in place before glue, or super glue in the case of the spats, could be applied.

The instructions suggest using stretched sprue for the struts and rigging which are attached to the wings' upper and lower surfaces. Instead, I used fishing line of the same thickness for the cross-bracing wire, and metal wire for the outer ones. The leading edge 'U' shaped aerial on the starboard wing comes in brass etch. This was reinforced with a small piece of wire. The instructions showed this item upside down whereas the views on the cover and the back of the box show it correctly. The gun sight was made from a small piece of metal tube.

Colour and decals

My choice fell on a Breda 27 allocated to the central China territory by the Chinese Air Force in 1937. This had an overall green finish which, according to the box art painting, appeared more as an olive-green shade. The cowling ring front was bronze. The interior was cockpit green, and the seat was light grey. The crew figure that I added wears a khaki flying suit. The propeller had a natural metal finish. The radial engine is silver with black central hub and wiring. The exhaust pipes were painted copper.

The decals, printed by Aviaprint, behaved well, although they appeared on the thin side. Prolonged soaking tended to make them brittle, so you should ensure that the decals are only allowed the minimum time to soak.

Conclusion

This kit makes an interesting addition to any collection. The completed model showed how closely related the design of the aircraft was to the P-26 'Peashooter', when both types were placed side by side.

Carmel J.Attard

Hasegawa 1/72 Mitsubishi F-2B
by Greg Kittinger

The **Mitsubishi F-2** is a multirole fighter derived from the General Dynamics F-16 Fighting Falcon, and manufactured by Mitsubishi Heavy Industries and Lockheed Martin for the Japan Air Self-Defense Force, with a 60/40 split in manufacturing between Japan and the United States. Production started in 1996 and the first aircraft entered service in 2000. The first 76 aircraft entered service by 2008, with a total of 98 airframes produced. The F-2 is nicknamed "Viper Zero", a reference to the F-16's unofficial nickname of "Viper" and the Mitsubishi A6M Zero. The last of 94 production aircraft ordered under contract was delivered to the Defense Ministry on 27 September 2011. During the roll-out ceremony of the last production F-2 fighter jet, Mitsubishi Heavy Industries confirmed that production of the F-2 would end and no more F-2 fighters will be produced by the manufacturer. As of 2014 there are 61 single-seaters flying, and 21 two-seat trainers.

Larger wings give an aircraft better payload and maneuverability in proportion to its thrust, but also tend to add weight to the airframe in various ways. More weight can have negative effects on acceleration, climbing, payload, and range. To make the larger wings lighter, the skin, spars, ribs and cap of the wings were made from graphite-epoxy composite and co-cured in an autoclave. This was the first application of co-cured technology to a production tactical fighter. This technology for the wings encountered some teething problems, but proved to be a leading-edge use of a technology that provides weight savings, improved range, and some stealth benefits. This technology was then transferred back to America, as part of the program's industrial partnership.

The F-2 is capable of both air-to-air and air-to-surface roles though it is optimized for the latter role, to protect Japan's sea lanes. Many of the aircraft's innovative systems, including the fly-by-wire flight control system and integrated electronic warfare system, were developed in Japan. The F-2 was also the first production fighter to be equipped with an Active Electronically Scanned Array (AESA) radar. In 2015, the F-2 became the eighth aircraft platform to be equipped with Lockheed Martin's Sniper Advanced Targeting Pod.

The aircraft's integrated electronic warfare system, mission computer and active phased array radar were developed by Mitsubishi Electric.

An M61A1 Vulcan 20mm multi-barrel gun is installed in the wing root of the port wing. There are 13 hardpoints for carrying weapon systems and stores: one on the fuselage centreline, one on each wing-tip and five under each wing. The stores management system is supplied by Lockheed Martin.

There are two Frazer Nash common rail launchers manufactured by Nippi. The aircraft is capable of deploying the Raytheon AIM-7F/M medium-range Sparrow air-to-air missile, the Raytheon AIM-9L short-range Sidewinder and the Mitsubishi Heavy Industries AAM-3 short-range air-to-air missile.

The F-2 is armed with the ASM-1 and ASM-2 anti-ship missiles. Mitsubishi started developing the Type 80 series anti-ship missiles, ASM-1 and ASM-2, in 1980, originally for the F-1 fighter.

The fighter aircraft can also carry 500lb bombs, CBU-87/B cluster bombs and rocket launchers. The centreline and the inner-wing hardpoints can carry drop tanks with a 4,400kg fuel capacity.

Some differences in the F-2 from the F-16A:

- a 25% larger wing area
- composite materials used to reduce overall weight and radar signature
- longer and wider nose to accommodate a J/APG-1/J/APG-2 active electronically scanned array (AESA) radar.
- larger tailplane
- larger air intake
- three-piece cockpit canopy
- Equipment and OFP related to the avionics system differ from the F-16 in many aspects.
- Original flight control system.
- capabilities for four ASM-1 or ASM-2 anti-ship missiles, four AAMs, and additional fuel tanks.

This was finished in January 2020 and was my first airbrushed jet project. I attempted a hybrid black-basing technique - when I laid down the white, I used the erratic swirl pattern, but stayed a bit clear of panel lines to end up with a panel line pre-shading effect in addition to the mottling. With that combination, and how light I attempted to stay on the color overcoat (especially the lighter blue), it came out just a bit more intense that I was shooting for, but I'm on a learning curve using the airbrush so am satisfied with how it came out.

This was a really nice Hasegawa kit - lots of recessed details and a pretty good fit - only needed a bit of spacer behind the cockpit tub to fill an obvious gap. Some of the smaller details are a little heavy - like the static wicks and pitot, but I decided to just live with them.

I did use an aftermarket set of decals - Hasegawa decals can be pretty thick - that included TONS of stencils. Took days - working a hour here and an hour there - to get them all on. I had a lot of difficulty getting a good smooth gloss coat for the decals, and thus had to fight some silvering.

I think it was my rookie airbrush technique perhaps contributing to too grainy a layer of paint. After 5 coats of rattle can Testors gloss coat, I still had issues, especially with small stencils across panel lines. Following advice from other modelers, I used a scalpel to slice through the decals where silvering was prevalent and laid on more setting solution to try to get rid of the silvering. After a few passes over the most stubborn decals, it ended up ok – not perfect, but ok.

The bombs and TERs came from a Hasegawa Japanese weapons set. The F-2 is often pictured with missiles, but I wanted to do something a tad different. I did add PE sway braces to the pylons - that was the only non-OOB addition.

I used GS Mr. Color paints for the Ocean Blue scheme, as I wanted to practice for the same scheme I planned to use on an F-4EJ Kai, though for the Kai I found the GS set that is specific to the Ocean Blue scheme (a tad lighter colors than what I used). AK weathering pencils and pastel chalk powders were used for weathering.

Greg Kittinger

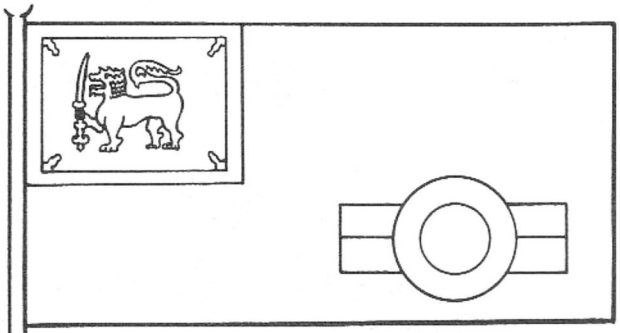
More photos of this build can be found on Greg's blog at **Hasegawa F-2B 1/72 - F-2 Japan - iModeler**, part of the iModeler website.

SAO MISCELLANY I

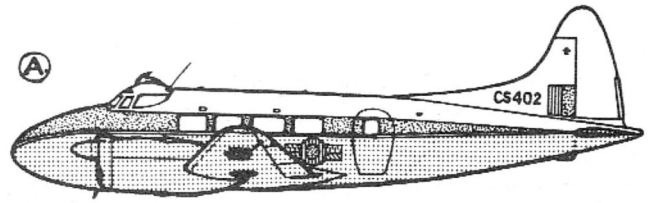
ROYAL CEYLON AIR FORCE

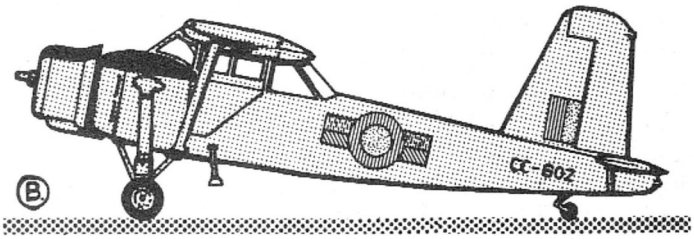
Founded 10th October, 1950
(On 22nd May 1972, the country officially became Sri Lanka)

Ceylon



1. R.Cy.A.F. ensign
The R.Cy.A.F. ensign (of R.A.F. blue) has in its canton the Sinhalese Lion Flag portion—not the complete national flag– consisting of a Gold lion design with border on Maroon. The fly carries a roundel of red outer ring and gold (yellow) centre, with bars of saffron above and green below



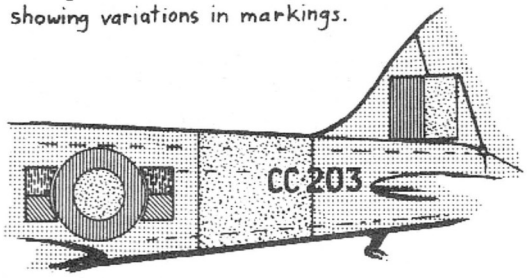


NO SCALE

Ⓐ DE HAVILLAND DOVE, CS 402 (Deliveries of the type began in 1955.)

Ⓑ SCOTTISH AVIATION PIONEER C.C.1, CC-602 (Its mate, No. 2 Squadron's CC-603, illustrated in 12/63 AIR PICTORIAL, shows slight difference in application of number, as well as fittings for crop-spraying.)

Ⓒ Fuselage detail of AIRSPEED OXFORD, CC 203, showing variations in markings.



3. Cap badge, metal.

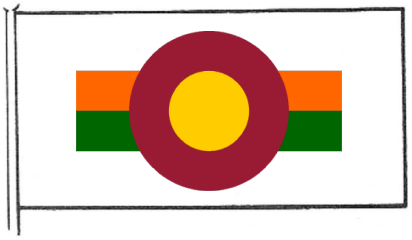
2. Shoulder Title, cloth – light blue lettering embroidered on navy-blue felt.

4. Light-blue lettering & red bird (navy-blue markings) embroidered on navy-blue felt.

5. **R.Cy.A.F. Pilot's badge, cloth (silk embroidered) white feathers, brown rays, all on black background**

NOTE: SOME OF THE INSIGNIA & FLAGS HAVE BEEN LEFT "BLANK" SO THAT THOSE WHO PREFER MAY THEMSELVES ADD THE APPROPRIATE COLORS FOR A MUCH MORE ACCURATE (AND ATTRACTIVE ?) REFERENCE PAGE.

6. **Car flag 12"x6" of Station Commander (Squadron Leader or above), on light blue background**



►►►SOURCES►THE ABOVE DRAWINGS BASED ON FOLLOWING—

1. Artwork in The International Flag Book in Color, Pedersen & Petersen (Politikens Forlag, 1970; Blandford Press Ltd., 1971; Wm. Morrow & Co.) - page 71.
2 & 4. Drawings in Maj. J. Waring's Identification Pamphlet No.3 (Shoulder Patches of Commonwealth Military Forces, Part 1) - page 128; Courtesy Maj. Waring, Military Heraldry Society.
3. Unidentified Canadian source, via G.E.Biss.
5. Drawing, W.Verleur - also in Trading Post, Jan-Mar.1970 (Vol.XXIX, No.2), page 56, of American Society of Military Insignia Collectors.
6. Color artwork in Flags of All Nations, B.R.20(2), Vol.II (H.M.S.O., 1958)
A. Photo, Jane's All The World's Aircraft, 1957/8 edition, page 70
B. & C. Photos, The Air Forces Of The World, Green & Fricker, (Hanover House, 1958), both page 65

T.K. '72-'73

Shenyang J-6/F-6 in Vietnam and Pakistan

by Hugh Thomson

The J-6 as exported

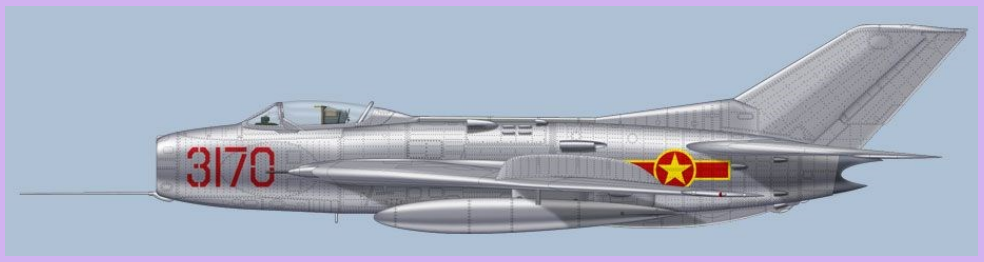
The J-6, J-6C and JJ-6 was exported extensively to Air Forces around the world – Albania, Bangladesh, Cambodia, Egypt, Iran, Iraq, North Korea, Pakistan, Somalia, Sudan, Tanzania, Vietnam, and Zambia. The export version however used the letter 'F' instead of 'J' – 'F' being for fighter. So, the J-6 became the F-6 and the J-6C became the F-6C. The JJ-6 as exported, however, became the FT-6 (FT for Fighter Trainer).

To attempt to review the experience of each of these Air Forces with the J-6/F-6 type would be quite difficult. One would not only have to allow for the differing competencies of each Air Force and the varying political and economic background, but also the limited information available. Instead, I have considered two Asian nations where we have some information on the operational use of the J-6/F-6.[i]

The F-6 in Vietnam

In 1968/69 the North Vietnamese Air Force (strictly, the Vietnamese People's Air Force or VPAF) sought to expand North Vietnamese air defences by the creation of the 925th Fighter Regiment. This Regiment was to be equipped with MiG-17 and F-6 and would operate out of the airfield at Yen Bai (northwest of Hanoi). It would be responsible for the defence of North Vietnamese western and north-western airspace[ii].

The aircraft supplied to the VPAF appear to have been of the Chinese built F-6 type (and not Soviet built MiG-19S). The exact number supplied is not known but an apparently reputable source suggests fifty-four in 1968/69 and a further twenty-four in 1974.[iii] By way of comparison one source indicates that by May 1970 the VPAF held approximately 140 MiG-17 and 94 MiG-21 aircraft – so the F-6 force was a relatively small component of North Vietnamese air defence[iv].



It is said that the aircraft was not popular ---in North Vietnamese service though it was regarded nevertheless as useful. Pilots liked its rate of climb and acceleration, but its range was considered to be poor, and maintenance was difficult.[v] The kill ratio is uncertain but was probably not in favour of the type –about seven kills for thirty-five F-6 lost have been quoted.[vi] Further:

Of the seven aircraft claimed destroyed by VPAF F-6s the US has only admitted the loss of two;
The seven aircraft claimed (and the two admitted) destroyed by the F-6 were all F-4 Phantoms.
All of the air action in which a VPAF F-6 claimed a 'kill' took place in May 1972;
Some of the F-6 aircraft 'lost' appear to have been in accidents and at least two F-6 were shot down in 1972 by 'friendly fire' North Vietnamese SAMs[vii]; and
It is not clear when F-6 combat losses took place, but it appears that these arose mostly in 1972[viii].

The F-6 rate of climb and acceleration was used in 'hit and run' tactics against USAF and USN aircraft operating over North Vietnam. The F-6 would patrol ahead of a target at low level working with a MiG-21 at a higher level, the F-6 making a rapid climb up to engage a US opponent otherwise focused on his MiG-21adversary. The F-6 would make one pass then dive away. Natural metal finished F-6 aircraft would also lure down high-flying USAF aircraft which would then be 'bounced' by a camouflaged MiG-17 or MiG-21[ix]. VPAF fighters were very reliant on ground control to both position them for an interception and warn of any risk from the rear (VPAF formations tended be trail formations which were useful in attack but poor in defence – particularly at risk was the last aircraft in trail[x]).

The US was able to acquire and test a Shenyang F-6 which had been supplied to Pakistan. The test concluded that the F-6 had:

a higher wing loading than the MiG-17 but could easily out turn the F-4 Phantom;
excellent acceleration – better than the MiG-17, it could out-accelerate the F-4 to Mach 1.2 - but the J-6 was ultimately slower than the MiG-21 or F-4; and
good visibility from the cockpit and a heavy fixed armament.

In short:

"*US Air Force pilots found the MiG-19 had many shortcomings but overall considered it to be an excellent fighter. Its major problem was its short range…it was also noted that, unlike other Soviet fighters, the MiG-19 was very difficult to maintain*[xi]"

By the end of 1972 only a few VPAF F-6 aircraft remained operational, such that F-6 operations slowed to a trickle. Although China supplied further F-6s in 1974, with the ending of the war in 1975 flying activity declined generally, and from the end of 1975 one source states that the F-6 was confined to a training role, the F-6 being finally withdrawn from service in the late 1970s[xii]. Another source states that Vietnamese F-6s were deployed in the 1979 war against the Khmer Rouge in Kampuchea and that when Phnom Penh airport was overrun, a few Kampuchean F-6s were captured and these were used against their former operators by the Vietnamese[xiii].

The F-6 in Pakistan

The Pakistani Air Force (PAF) was a major user of the J-6/F-6, in both air defence and ground attack roles, over a period from 1965 to 2002, and probably had more combat experience with the type than any other Air Force.

When the US imposed an embargo on the export of arms to Pakistan, following the 1965 India/Pakistan conflict, China was only too pleased to offer the J-6[xiv]. Pakistan accepted the offer with the aircraft thereafter being ferried from China to Pakistan by PAF instructor pilots following a period of conversion training. In PAF service the aircraft was known as the F-6.

The exact number of F-6 aircraft acquired by the Pakistani Air Force is a matter of some disagreement. Some sources suggest as few as one hundred and forty, others as many as two hundred and sixty. However, deliveries appear to have been in at least two tranches – the first of between forty and sixty F-6 aircraft over several months from late 1965 to early 1966; and the second of the F-6C type (i.e., with the airbrake positioned in a housing at the base of the tail) in the late 1970s, of around 125. As the total aircraft delivered in the first and second tranche does not come close to the higher total deliveries of 260, it is quite possible that additional attrition replacements were acquired from time to time[xv]. To further complicate this subject the PAF is said to have had some 90 F-6 aircraft in service at the time of the 1971 war with India[xvi].

It seems that the PAF initially found the F-6 difficult to master, with some unattractive low-speed, low-altitude characteristics (i.e., flicking into an uncontrolled spin). Matters were made worse by the lack of a local two seat introductory/conversion trainer. It was only after ten years, when the PAF acquired the two seat FT-6, that the latter complication was addressed. However, sources also describe the aircraft as strong, sturdy, and easy to maintain[xvii].

Given the PAF's difficult procurement situation (political and economic), and given the PAF's utilisation of Western, Soviet and now Chinese equipment, it is only to be expected that the F-6 would undergo some 'indigenous' modifications. Pakistani changes principally involved alterations to avionics, the adoption of Martin Baker ejection seats (the Chinese HTY-2 could not ensure safe ejection below 850ft), missile systems permitting carriage of the AIM-9 Sidewinder, unguided rockets, a conformal underbelly 'gondola' type fuel tank (fitted to some aircraft – variously quoted as 165 or 250 imp gallons), and the addition of an auxiliary power unit (to facilitate 'quick engine starts')[xviii].

Some of these modifications were undertaken at the Kamra Aircraft Repair Facility in Kamra, Punjab, an overhaul facility for the F-6 constructed by the Chinese 'free of charge'[xix].

No. 23 Squadron of the PAF became the first to go operational with the F-6 in 1966. By the time of the 1971 War with India, four squadrons were equipped with the F-6, namely Nos 11, 18, 23 and 25. These four squadrons, with an average strength of some 16 aircraft, were then stationed at three airfields in West Pakistan, namely Mianwali, Sargodha and Risalewala, in the Punjab, to the west of Lahore (11, 18 and 25 Squadrons, with 5 Squadron using the Mirage IIIEP- constituted 33 Wing at Sargodha).

Lahore is the capital of the Punjab region of Pakistan but is very close to the Indian border. Indeed, in the 1971 war with India, the PAF would be at some disadvantage as most airfields in West Pakistan would be within reach of Indian Air Force strike aircraft, Mianwali being the most distant at only 130 nautical miles from the border. As the average distance of a PAF airfield from the Indian border in West Pakistan was ninety nautical miles (about 11 minutes flying time at combat speeds), this was not considered enough for a ground-launched interception to be successful. As a result, the PAF would be forced to rely on combat air patrols[xx].

At this time, at least some F-6 aircraft appear to have been fitted with launch rails carrying AIM-9B Sidewinder missiles, though most appear to have still been confined to their original cannon armament. The aircraft were then generally finished in two layers of clear lacquer, the colour being known as 'bare metal overall' or 'silver grey.' However, toward the end of the war, some F-6 began to appear in a makeshift camouflage of varying shades of green, brown, and tan. A more formal camouflage of two shades of grey in an irregular pattern on the upper surface and a lighter shade of grey on the under surface only

began to appear in the 1980s[xxi]. Some J-6 aircraft also appeared in an overall white finish in the 1980s and 90s, which probably reflected Chinese practice in that period[xxii].

The causes of the 1971 conflict are complex and beyond the scope of this article. However, broadly, at this time Pakistan consisted of two parts – West Pakistan and East Pakistan[xxiii], the two regions separated by India and over 1,000 miles apart. Growing political, social and cultural differences between West and East led to East Pakistani demands for independence. Military repression, civil disorder and violence in East Pakistan became widespread. Increasing Indian involvement in this emerging crisis was matched by Pakistan resentment and an intention to preserve the Pakistani state. Both sides turned to a military solution, with Pakistan initiating an offensive against India from the West, hoping to make quick territorial gains which would offset expected losses in the East. Pakistani military force was mostly based in the West, the East being weakly defended[xxiv]. The air war would be overwhelmingly fought in the West[xxv].

Hostilities between India and Pakistan began on 3 December 1971, with F-6 operations beginning at daybreak on 4 December, two PAF F-6 aircraft strafing the Indian Air Force (IAF) base at Amritsar, where IAF Su-7BMK aircraft had only just landed and had not yet taxied to their revetments. Notwithstanding the opportunity, not a single hit was scored. Later that morning Flight Lieutenant Javed Latif flying an F-6 of 23 Squadron shot down an IAF Su-7BMK (the Indian pilot, Flight Lieutenant Harvinder Singh, being killed) using a single Sidewinder (though it is possible that the Su-7 was already damaged from a previous pass using cannon armament). The Su-7 was one of two aircraft attempting a strike on the airfield at Risalewala[xxvi].

Again, on 4 December, just before sundown, an F-6 flown by Flight Lieutenant Qazi Javed of 23 Squadron intercepted IAF Hawker Hunter F56 aircraft (the Hunter F56 being, in effect, an export Hunter FGA9) engaged in a raid on Mianwali airfield. The F-6 launched its two Sidewinder missiles against a single Hunter, but both missed, and the Hunter was brought down by strikes from the F-6's three cannon. The pilot, Flying Officer V.S. Chati, ejected and became a PoW.

Sorting claims and counter claims in the 1971 war between India and Pakistan can be difficult at times – exaggeration and misrepresentation exist in any war. For the following, the author relies on the data in 'Against All Odds' by Air Commodore Kaiser Tufail of the PAF[xxvii]. In the thirteen days between the commencement of hostilities on 4 December and the ceasefire on 16 December 1971:

- the PAF F-6 was credited with destroying four IAF aircraft - the Su-7BMK and Hunter F56 on 4 December, another Hunter F56 on 5 December (pilot KIA) and another Su-7BMK on 7 December (pilot KIA).
- Four PAF F-6 were lost – two by AAA, one by 'friendly fire' (from his leader) and one by a Su-7BMK - two pilots killed, two pilots safely ejected over their own territory.

It is important to note that Indian and Pakistani claims have, at one time or another, varied from the above. Indian reports refer to an additional four F-6 aircraft shot down while Pakistani sources claim that the F-6 destroyed (in total) an IAF MiG-21FL, six Su-7BMK, two or three Hunters, and damaged a few more IAF aircraft[xxviii]. Pakistani sources have stated that all F-6 interceptions took place after IAF aircraft had released their ordnance – however, this has been said to be due to the inadequacy of the air defence network and that, if anything, the F-6's rapid acceleration rate allowed it to still effect an interception[xxix].

In his book, Air Commodore Tufnail published a table listing the utilisation rate for the PAF's aircraft during the 1971 war. Data from that table concerning the F-6, Sabre, Starfighter, and Mirage has been extracted to produce the following smaller table:

Aircraft	Inventory	Operational	Sorties	Utilisation Rate
Shenyang F-6	90	48	821	1.6
F-86E Sabre[xxx]	74	62	835	1.3
F-86F Sabre	65	44	617	1.3
F-104A/B Starfighter[xxxi]	8	8	96	1.1
Dassault Mirage IIIEP/ RP/DP	23	23	390	1.6

The performance of the F-6 is quite creditable, though the utilisation rate was less than that planned by the PAF prior to the war[xxxii]. Of the 821 sorties flown by the F-6, some 674 were in the air defence role (40% of total PAF air defence sorties), and 139 were in the close air support role (20% of total day PAF close air support strikes)[xxxiii].

The F-6 remained active in PAF service for about another thirty years following the end of the 1971 war. New squadrons were formed (14, 15, 17, 19, 20 and 26) in addition to those already in service, and it is probable that by the early 1980s the PAF would have had at least 160 F-6 aircraft in its inventory. The late 1970s saw developments in Afghanistan which resulted in open conflict in that country. PAF F-6 aircraft were deployed against incursions by Afghan and/or Soviet aircraft, and this later resulted in some air combat, though by that time the PAF was mostly using the F-16[xxxiv].

By the late 1980s the rundown in service of the F-6 had begun, with the aircraft being steadily relegated to the advanced training role, serving in two conversion units - No1 Fighter Conversion Unit (14 Squadron), and 25 Squadron OCU - and the Combat Commanders' School. As the 1980s progressed, the F-6 began to disappear from the PAF inventory, being replaced by the F-16 and Chengdu F-7P Skybolt. A total of 40 F-6 and FT-6 aircraft were given to the Bangladeshi Air Force in 1989/90 (which were in addition to about thirty-six supplied by China) though most (but not all) of these were destroyed by a typhoon in 1992.

The F-6 was finally withdrawn from service in 2002, surviving airframes being flown to Karachi where they were scrapped. The FT-6 continued to be used until 2010 when they were also retired.

Like Chinese use of the J-6, whatever else one may say about the F-6 in Pakistani service, the F-6 was regarded as having performed a useful role. One suspects that at a time when the Pakistani Air Force needed to step up in terms of the performance of its aircraft, the F-6 offered at least a partial solution - one which represented a manageable cost for a developing world nation and one which was less demanding on its air- and ground-crew than many alternatives. Could a western aircraft have offered as much? And would a Western aircraft have remained in front line service in these circumstances for forty years?

What is really striking though is the contrast between use of the F-6 by the PAF and MiG-19 operations with Soviet and East European Air Forces. At a time when the Soviet Union was withdrawing the MiG-19 from service, the PAF F-6 was only just getting into its stride. And whereas one senses Soviet and East European dissatisfaction with the MiG-19, there is a great deal of PAF warmth for the F-6. 'Horses for courses' of course, but there seems to be more to this story than we know.

Author's note: "Much of this article is derived from, and reflects the works of, Yefim Gordon and Dimitri Komissarov – specifically 'Mikoyan MiG-19', 'Soviet Air Defence Aviation' and 'Soviet and Russian Military Aircraft in Asia', and I must acknowledge that I have extensively drawn from these works. Without their work there would be no article at all."

Explanatory Notes

i. For those interested, the experience of the Arab Air Forces with the MiG-19 in the 1960s is not overly complimentary. Egypt acquired about 60 MiG-19 aircraft from the Soviet Union but was disappointed with the type. The range was considered to be poor; the cannon ammunition was too limited (so restricting use); low altitude handling was difficult and ground attack ordnance said to be 'feeble.' Plans for a major acquisition of the type were abandoned - see 'Arab Migs' Volume Two by Tom Cooper and David Nicolle 'Harpia Publishing 2011. That said, in the mid-1970s with the easing of hostilities with Israel (resulting in the 1979 Peace Treaty), and the deterioration in relations with the USSR, Egypt looked to acquire Western aircraft but found these both expensive and demanding to operate. Instead, Egypt turned to China and acquired F -6C and FT-6 aircraft to operate in the ground attack role. These aircraft remained in service until early this century.

ii. Yen Bai is about eighty miles west northwest of Hanoi.

iii. See 'MiG-17 and MiG-19 Units of the Vietnam War' by Istvan Toperczer, Osprey Publishing 2001, page 64.

iv. 'Clashes – Air Combat over North Vietnam 1965-1972' by Marshall L. Michel III Navalpage 188

v. 'Clashes – Air Combat over North Vietnam 1965-1972' page 188

vi. 'Mikoyan MiG-19' page 302.

vii. 'MiG-17 and MiG-19 Units of the Vietnam War' pp 61 and 62.

viii. 'MiG-17 and MiG-19 Units of the Vietnam War' pp 58-64.

ix. 'Mikoyan MiG-19' – pp299-302.

x. Clashes – Air Combat over North Vietnam' 1965-1972' pp 172-173.

xi. Clashes – Air Combat over North Vietnam' 1965-1972' pp 188-189.

xii. 'MiG-17 and MiG-19 Units of the Vietnam war' page 64.

xiii. 'Mikoyan MiG-19' pages 330 and 331. This states that up to sixteen F-6Cs may have been supplied to Kampuchea by China as a 'gift', and that when the Vietnamese occupied Phnom Penh in 1979, some of these aircraft were still in their crates and were assembled and used by the Vietnamese. Page 330 has a photo of an F-6C in Kampuchean national markings being towed across Phnom Penh airfield.

xiv. 'Mikoyan MiG-19' - page 379 - states that the aircraft were supplied by China at nil cost, but acknowledges that other sources suggest a flyaway price of as much as US$1.1 million.

xv. 'Mikoyan MiG-19' – pp 379-381.

xvi. See 'Against All Odds' by Kaiser Tufnail, Helion and Company 2020, page 17.

xvii. see **https://www.facebook.com/combataviationhistoryofpakistan/posts/f-6-in-paf-serviceby-alan-warnesin-march-2002-when-the-shenyang-f-6-was-retired-/1522496824666428/**

xviii. Soviet and Russian Military Aircraft in Asia' by Yefim Gordon and Dimitri Komissarov, Hikoki Publications 2014, pp 323 and 324, and 'Mikoyan MiG-19'page 381.

xix. Mikoyan MiG-19' page 381.

xx. 'Against All Odds' page 18.

xxi. 'Against All Odds' page 11.

xxii. There is footage on Youtube which purports to show a 'scramble of PAF J-6 aircraft in a white finish – see: Shenyang F-6/ MiG-19 scramble Pakistan Air Force **https://www.youtube.com/watch?v=SS17eWi1S74&list=PLZcgrYRnsQb9bgF6BvXijYTsEo0lGdC57&index=10**

xxiii. East Pakistan achieved its independence following the war and is now known as Bangladesh.

xxiv. This is the author's summary of the situation. He accepts that others may express a different view, and that the subject deserves better treatment than a single paragraph.

xxv. The PAF only operated one fighter squadron in East Pakistan – 14 Squadron, equipped with F-86 Sabres operating out of Tejgaon airfield near Dacca/Dhaka. IAF airstrikes effectively closed Tejgaon from 8 December and brought the air-to-air war in the East to a close. For a description of the air war in the East, see 'Eagles over Bangladesh' by P.V.S Jagan Mohan and Samir Chopra, Harper Collins India 2013 – it can be obtained on Amazon UK and, in the author's opinion, appears to be a fair and objective review of the 1971 air war over East Pakistan.

xxvi. 'Mikoyan MiG-19' pp 306-307.

xxvii. Helion and Company 2020. Kaiser Tufnail was commissioned in the PAF in 1975 and retired in 2003. He flew most PAF fighter type aircraft during this period including the F-6, Mirage IIIE, Mirage V, F-16, and Chengdu F-7P. He has written a number of works on PAF history.

xxviii. 'Mikoyan MiG-19' page 309. There is film on Youtube which purports to show F-6 aircraft returning to an airfield and an interview with a PAF pilot who claims to have shot down a MiG-21 – see 'Indian Mig-21 shot by Pakistani F-6 (AVM Aamer Ali Sheriffe)' **https://www.youtube.com/watch?v=1OsLgQGGBPY**

xxix. See **https://defence.pk/pdf/threads/paf-f-6-defending-the-skies.364244/**

xxx. The PAF operated a large inventory of Sabre aircraft obtained from various sources. Some were ex-USAF and -JASDF F-86F while others were ex RCAF and West German AF Canadair Sabre Mk6 (using the Orenda engine). Confusingly, in PAF service the Canadair built Sabres were referred to as the F-86E', notwithstanding being a different aircraft to the US (North American) built F-86E.

xxxi. The PAF originally acquired twelve ex USAF F-104A/B in 1961 and two additional 'A' models in 1964. Ten additional F-10A aircraft were acquired on 14 December 1971 but were not active in the war. These aircraft were transferred to the PAF from the Royal Jordanian Air Force. The PAF deployed the F-104A/B in both the 1965 and 1971 wars with India, losing one in 1965 for three IAF aircraft claimed destroyed (two Mysteres and one Canberra), and two in 1971 for no confirmed claims. See a note on PAF operation of the F-104 at **http://www.916- starfighter.de/PakistanAF_F-104history_04.2009.pdf**

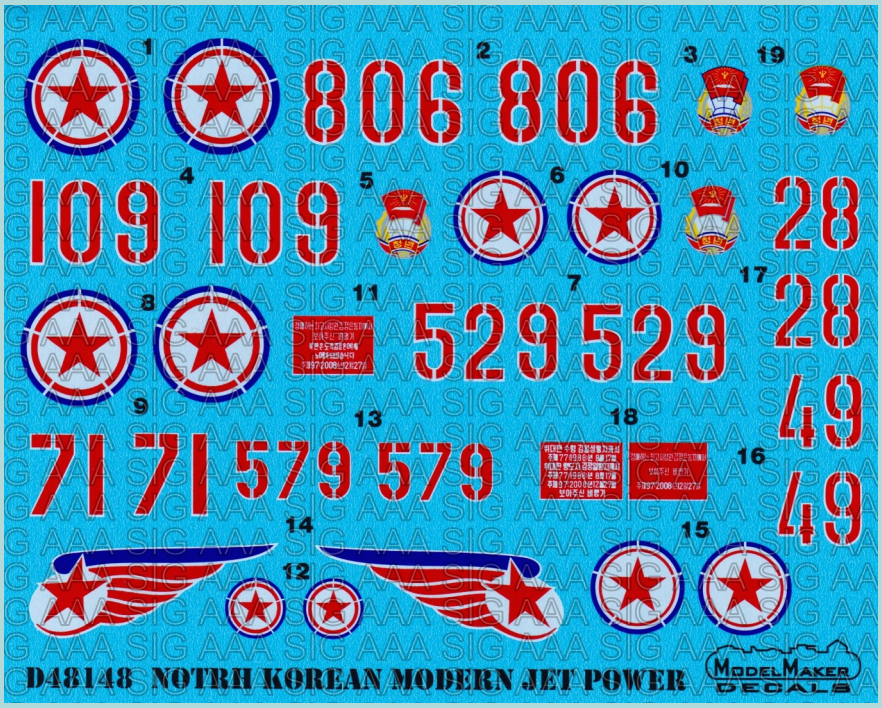
xxxii. **https://defence.pk/pdf/threads/paf-f-6-defending-the-skies.364244/** - and 'Against All Odds' page 73 - states that a utilisation rate of 2.2 had been planned.

xxxiii. 'Against All Odds' page 75.

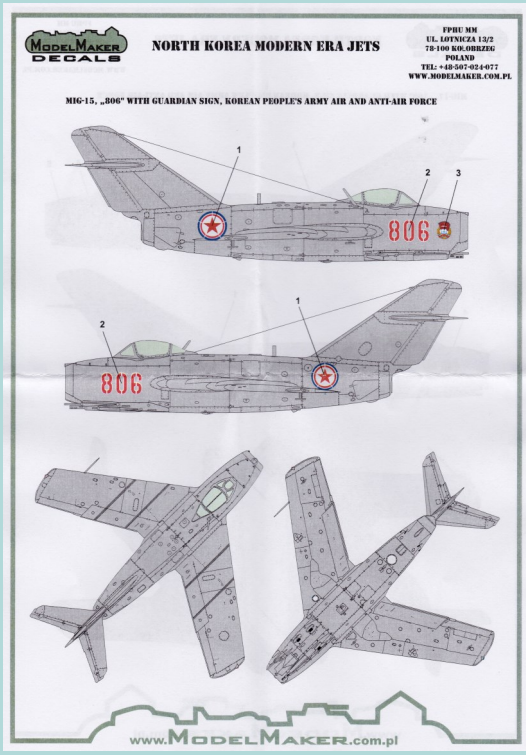
xxxiv. 'Mikoyan MiG-19' page 309.

Model Maker Decals – "North Korea Modern Era Jets"

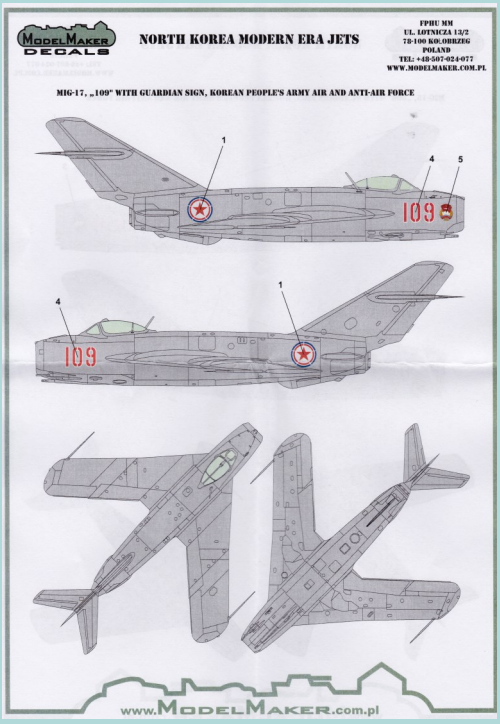
by Mark Attrill



Model Maker Decals of Poland are big fans of Russian or former-Soviet era jet fighters, and I suspect they were buoyed by the sales of their previous KPAAF decal sheet, which focused on the Mikoyan MiG-21 'Fishbed'. They have now followed up on the aforementioned release with another that, I have little doubt, will also be of interest to members of the SIG, since it covers all of the other main types operated by the Korean Peoples' Army Air and Anti-Air Force (KPAAF) of North Korea since the 1960s. I'm not sure that I would consider the first three subjects of this decal sheet as aircraft from the 'Modern era' although given their longevity of Service with the KPAAF this could be a moot point. In any case, we are treated to decal markings for no less than six different aircraft types, ranging from the Mikoyan MiG-15bis to the MiG-29 Fulcrum. The first three subjects, all covering the early MiGs in Service (MiG-15, -17 and -19) all feature the straightforward natural metal colour scheme with National markings limited to the fuselage sides and prominent Red Bort numbers outlined in White. The two earliest aircraft also feature a North Korean 'Guardian' insignia on the Starboard side of the forward fuselage; I would expect that time will not be an issue when applying a maximum of five decals to the finished model! The other three subjects included on this sheet bring us right up to date with the equipment operated by the KPAAF and feature aircraft that have been openly observed in recent years as North Korea relaxes its strict censorship on military equipment. All three are presented in the contemporary two-tone Light/Medium Grey over Light Blue camouflage that now adorns the majority of the KPAAF's front-line combat aircraft types. One of my favourites is the MiG-23 Flogger 'Red 71', which is portrayed as seen at the Wonsan International Friendship Air Festival in September 2016. The Sukhoi Su-25 Frogfoot option includes markings for two of the aircraft, Red 28 and 49, that also appeared at the Wonsan Air Festival and will make a very attractive addition to the forthcoming Zvedza 1:48 scale kit which is due out in 2022. The final offering on the sheet is for a Mikoyan MiG-29 Fulcrum (Red 579) that was observed taking part in the Pyongyang Military Parade in 2020 and featured large stylized Winged insignia underneath the cockpit canopy.



As one could imagine, the decal sheet is not that big, given the very simple application of markings on KPAAF aircraft, which do not appear to sport any form of data or maintenance markings. That said, the decals are nicely printed with excellent register and colour saturation. I can attest to their good adherence qualities based on previous experience.



As with previous Model Maker Decal releases, my only reservation is with the very simple Decal Placement Instructions (DPIs), which provide nice four-view drawings for the different colour scheme options but very little information on the camouflage colours in particular. The modeler will therefore have to seek out other references in order to determine the best colour shades and paints with which to reproduce a particular scheme. Fortunately we are beginning to see more references.

As before, the lack of detailed DPIs does take a little bit of a shine off the release, given that it is not the cheapest of decal sheets but, on balance, I would still highly recommend it to members of the SIG and especially those interested in post Korean War-era KPAAF aircraft. As mentioned in previous reviews, Model Maker decals do have a tendency to sell out quite quickly, so I would also suggest you get them while you can.

Review sample courtesy of my wallet !

Mark ATTRILL – February 2022

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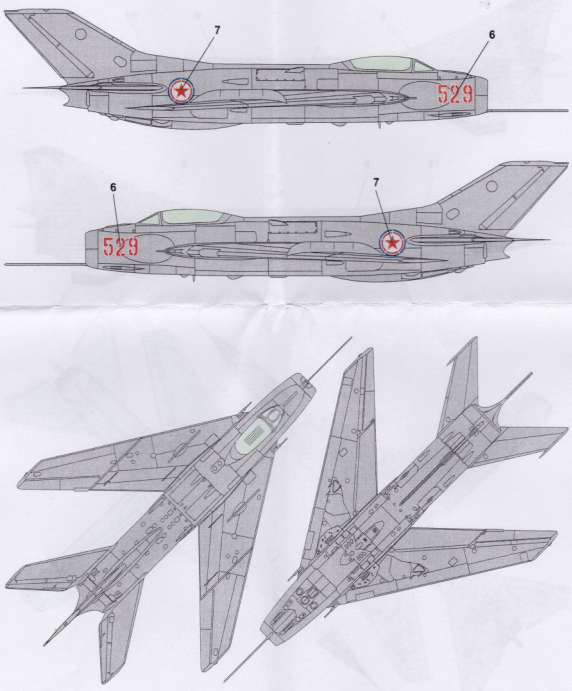
MIG-19, „529" FLOWN BY CAPTAIN LEE CHUL-SU DURING HIS DEFECTION TO SOUTH KOREA, KOREAN PEOPLE'S ARMY AIR AND ANTI-AIR FORCE



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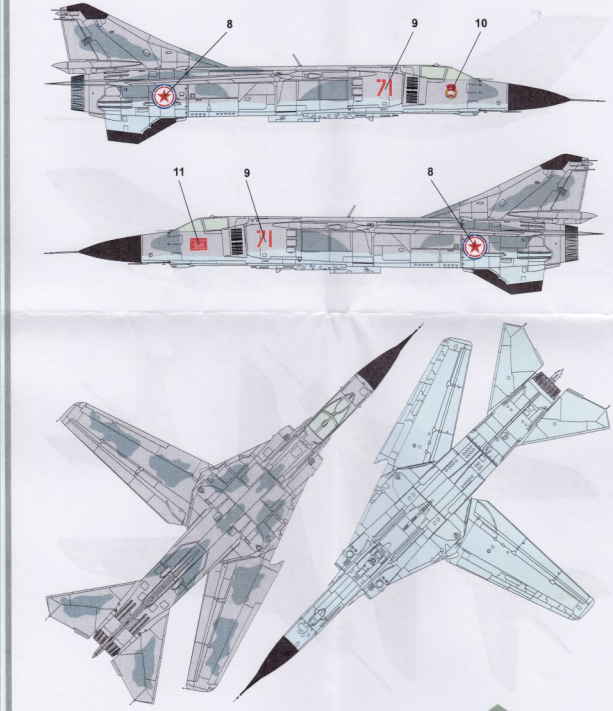
MIG-23, „71" WITH GUARDIAN SIGN, KOREAN PEOPLE'S ARMY AIR AND ANTI-AIR FORCE, WONSAN INTERNATIONAL FRIENDSHIP AIR FESTIVAL, SEPTEMBER 2016



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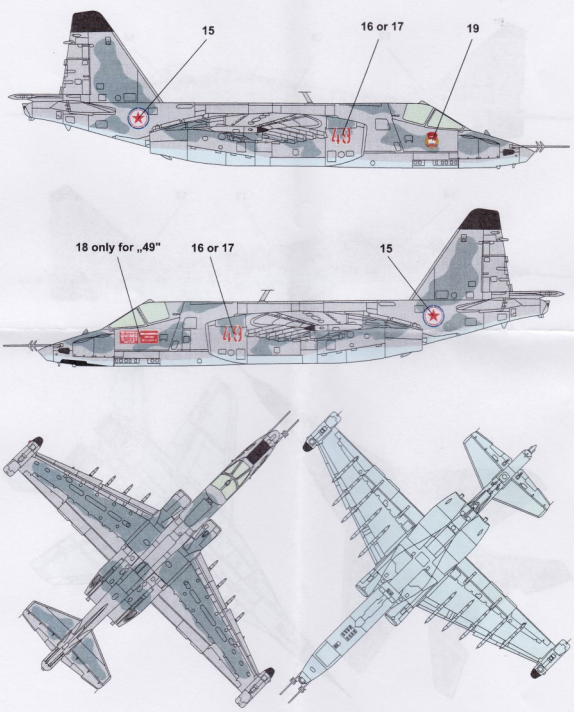
SU-25, „49" AND „28", KOREAN PEOPLE'S ARMY AIR AND ANTI-AIR FORCE, WONSAN INTERNATIONAL FRIENDSHIP AIR FESTIVAL, SEPTEMBER 2016



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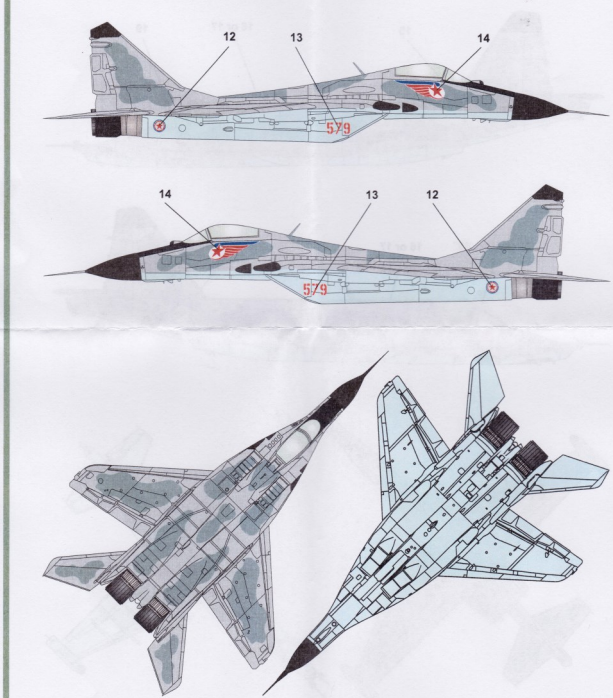
MIG-29, „579" ,KOREAN PEOPLE'S ARMY AIR AND ANTI-AIR FORCE, PYONGYANG MILITARY PARADE, 2020



The LOCKHEED C-130 HERCULES in Indonesian Air Force service

by Mick Burton

Hercules; the Roman equivalent of the Greek *Heracles*, son of *Jupiter* and the mortal *Alcmene*. In classical mythology Hercules is famous for his strength and his numerous far-ranging adventures. That nicely sums up the Lockheed L.100, or to give its military designation, C-130, that has served numerous air forces over the past 60 plus years, one of which is that of Indonesia, the TNI-AU.

History:
The country is the largest in South-East Asia and consists of 17,508 islands, 6000 of them inhabited. It spans roughly 3200 miles east to west and 1100 miles north to south, meaning air transport is an essential means of communication. The TNI-AU acquired its first ten Hercules (the C-130B variant) in 1960, in exchange for the return of a captured CIA pilot. These were serialled T-1301 to T-1310. The first , T-1301, is currently exhibited in the Air Force Museum at Bandung, and T-1308 was leased for a while to Penas, the Government airline, as PK-VHE, before returning to TNI-AU service.

The final C-130B, by then A-1310, was converted to a KC-130B in the mid-1980's (no photos have appeared with refuelling pods), but was probably de-converted at a later date, retaining the square troop door windows; it was lost as below. These aircraft were operated by 17 and 31 Skwadron, with 32 and 33 Skwadron added in due course. The serials were changed from a T- prefix to A- later in service.

Further aircraft were delivered from the USA at later dates:

C-130B's A-1311 to A-1313, C-130H's A-1315, A-1316, A-1323

L.100-30 A-1314 (seen fitted both with and without the wing mounted fuel tanks)

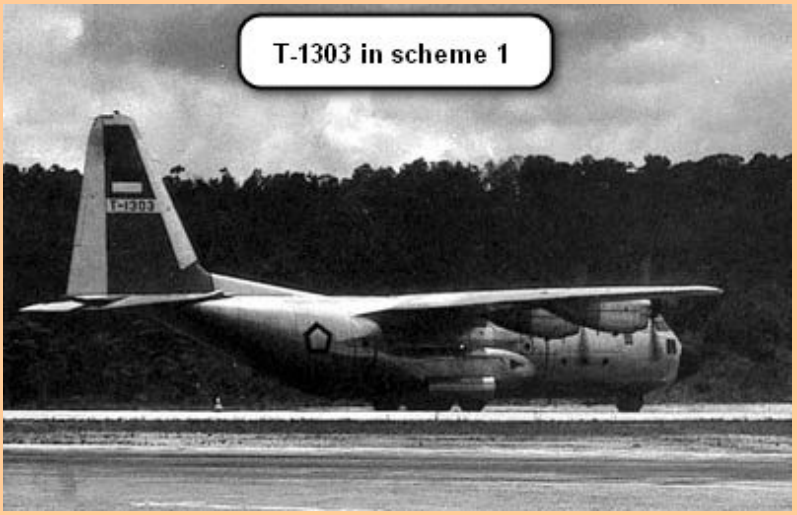
SC-130H AI-1322 (with glazed troop doors, and capable of air-dropping SAR equipment)

C-130H-30's A-1317 to A-1321, A-1324, A-1325, A-1326 (VIP interior and numerous passenger windows), A-1327, A-1328, A-1329, A-1341 (VIP interior with two passenger windows on the left and four on the right)

Between 2016 and 2020 nine C-130H's were transferred from the Royal Australian Air Force, serialled A-1330 to A-1338 (identifiable by the self-protection equipment fitted under the nose)

It is likely that serials A-1339 and A-1340 are in use as well, or may even be kept vacant for future deliveries

There are currently (early 2022) twenty-one Hercules' of all variants in service with the TNI-AU.



Colours and markings:
The first aircraft were delivered in an overall natural metal scheme, with yellow tail, tailplanes and outer wing panels, all edged in black added shortly afterwards. Full colour pentagons were carried in five positions with a red and white fin flash, **AURI** under the right wing, and a combination of **AURI** and **Indonesian Air Force** carried behind the cockpit. There was more than one variation of this titling.

The second scheme retained the yellow panels with black edging, but with white upper surfaces and grey lowers separated by a black cheat line. This scheme saw both **AURI** and **TNI-AU** titling whilst the Air Force was changing its designation, and both A- and T- serials. The single L.100-30 A-1314, and C-130H-30 A-1341, wear a wide yellow band across the fin, with the national marking flash outlined in black, rather than the previous yellow fin layout.

The third scheme was a very matt green and earth with pale grey undersides, with small low visibility pentagons in black in five positions. No fin flashes were carried, and **TNI-AU** replaced **AURI**, although not all aircraft carried the fuselage titling.

The current colour scheme consists of a striking glossy brown with two greens above and pale grey below, which faded to a matt sheen over time. They wear the full colour national markings, again with the **TNI-AU** titles. Although generally similar in pattern there are noticeable differences between airframes.

Although the ex-Australian aircraft were initially flown in the medium grey colour of their previous operator, they were soon repainted in the current colour scheme for all Indonesian Air Force transport aircraft. Noteworthy are A-1336 and A-1338 which retained grey rudders for some time after being repainted.

Interestingly A-1311 was delivered in the then-current USAF SEATO scheme of tan, two greens and very pale grey and had the fuselage titling and serials outlined in yellow.

The Hercules carried their AURI/TNI-AU serials in black on the fin, with the last two digits repeated under the cockpit windows. The prefaces A- and T- can be seen on aircraft in both schemes one and two.

Attrition losses:

T-1306 - lost September 1965 during a paratroop insertion when the two right engines were hit by “friendly fire” during a military operation. The troops bailed out, and the aircraft made an emergency landing nearby, but was totally destroyed by fire; there were no injuries.

T-1307 - lost September 1964 when it disappeared crossing the Karamita Straight at low level, possibly trying to evade interception by an RAF Javelin; 15 persons missing, presumed dead.

A-1310 - tragically crashed June 2015 shortly after take off near Medan killing all 122 souls aboard and 17 on the ground; likely cause was engine failure.

A-1324 crashed into a Government building at Jakarta airport in October 1991 following an engine fire en route for participation in an Air Force ceremony and carrying Paskhas (Orange Beret) troops. There was only one survivor from 134 on board, and two people were killed on the ground.

A-1334 was lost in December 2016 when it crashed at Wamena in poor visibility while landing, after a training mission, killing all 12 on board. It was still wearing its delivery grey scheme at the time.

Conclusion:
There is something to be said about the longevity of the C-130 Hercules as the TNI-AU has at least four C-130B airframes still in service after sixty-plus years' of service, albeit overhauled and upgraded a number of times in that time span, as can be seen in the accompanying pictures with A-1303/T-1303 appearing in all four colour schemes!


L-100-30 A-1314 in modified scheme 2
A-1314
TNI ANGKATAN UDARA
INDONESIAN AIR FORCE
14


ASIAN AIR
ARMS


T-1304 in scheme 2
T-1304
A.U.R.I.


A-1311 in SEATO scheme
T.N.I.-A.U.


A-1315 in scheme 4
A-1315


T N I - A U
INDONESIAN AIR FORCE
14
31 Skwn badge on A-1314


C-130H-30 A-1318 in scheme 3
A-1318
TNI ANGKATAN UDARA
18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