



# ASIAN AIR ARMS Newsletter 35

## January/February 2023

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ARMS



Serving Asian Air Arm Enthusiasts and Modellers in 60 countries

# KAI T-50, anyone?



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# Editorial

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I am told that Spring (well here in the Northern Hemisphere) is almost upon us although as I write this it is still snowing here in Estonia! Although there have already been a number of model shows in the UK, and further afield in Europe and the United States, the season is now gearing up for a series of both model- and air-shows as summer approaches. This is always a great time to garner inspiration for your next modelling subject, even if it is only viewing photographs from one of the Asian events. There has, of course, also been an uptick in the number of air-orientated multinational exercises in the current security climate with the likes of Exercise Pitch Black in Australia attracting a wide range of combat types from Asian Air Arms, and the regular events in Japan and the Republic of Korea also make for great viewing pleasure on the Youtube channel and aviation journals. I am also pleased to report that some of our modellers have been busy over the winter months preparing new display models for the season, which will culminate with our attendance at Scale Model World in November.

Turning to this particular newsletter, I am once again very grateful to our illustrious editor, Steve Komor, for putting together another bumper edition of the newsletter, which I hope will continue to be of interest to the readership. We have done very well with new contributors in recent months but can always welcome more so please do get in touch if you have something that you would like to share with your fellow members. On that note, we are still attracting a steady number of applications to join the SIG which is all to the good.

I feel compelled here to raise a couple of issues that have manifested themselves in the last year or so with the SIG and our newsletter, and some of the content. One or two of our membership appear to regularly query the accuracy or otherwise of our editorial, and I must admit that it is becoming a little irksome given the manner in which the newsletter is put together. We fully accept that we are not infallible and are not the font of all knowledge but Steve and I, along with all of our contributors, do spend a considerable amount of time checking and double-checking the accuracy of our content. As a full time academic, I am patently aware of the risks associated with the use of the internet as an absolute and accurate source of reliable information, a research risk that I regularly share with my full-time students. The internet *can* be a wonderful source for of some reference material but I will always cross-refer this with information from other sources. Taking my own series of previous newsletter articles on the aircraft of the South Vietnamese Air Force as a good example, I will combine internet research with information from a number of different published sources, both within my own personal library and that of the Defence College where I work. On occasion this is also combined with input from my existing network of Subject Matters Experts and, in some cases, veterans too. In this way I feel confident that the published work is as accurate as it can be and this goes for our other contributors too. It is highly unlikely that it will ever be 100% accurate but taken in context of who we all are as contributors, I believe we do manage to do a pretty good job. That said, if a *glaring error* in our research is apparent, we would, of course, welcome feedback in order to address the issue of accuracy.

The second issue relates to communication and information sharing within the SIG. For now, the principal method of communication to the membership as a whole is via this means, our bi-monthly newsletter. Thanks to the sterling efforts of our Editor, we have established a pretty robust copy deadline and publishing schedule for the newsletter, which normally appears within the first week of alternate months from February of each year. Each copy spans the previous and 'current' month so the 'February' issue covers January/February and the April issue is for March/April etc. If we have important or urgent information that cannot wait for the next edition of the newsletter, we will impart this via a standalone e-mail, our website and/or Facebook pages depending on content, speed of access etc. As you will no doubt appreciate, most of this 'extraordinary traffic' will normally occur during September/October in the run up to our annual Flagship event, the SIG participation in Scale Model World at Telford. Why do I raise this issue now, I hear you say ?. Well, again, I have had a number of messages from SIG members observing a lack of newsletters and/or other correspondence from the SIG over an extended period (4-6 months). Since all of our members should, *at the very least*, receive the bi-monthly newsletter every other month, it should go without saying that if this does not occur it would be good to check the validity of your current e-mail account or our Facebook pages and/or website to see if you have missed something. Ian Gaskell and Greg Kittinger are both very quick off the mark in publicizing or publishing the latest edition of the newsletter on our Facebook Pages and Website respectively so there should be no excuse for being able to keep up-to-date with SIG activity. It should also go without saying that any new e-mail address should also be communicated to the SIG Leader and/or Editor ASAP so we can update our own contact and e-mail address lists

As we go to press, our first competition will have closed and I will shortly announce the two prize winners via e-mail. Space and time precludes the inclusion of a competition in this edition of the newsletter but fear not! I will be arranging one to be circulated to everyone by e-mail in the coming weeks.

Until next time, happy reading and Stay Safe !

Mark Attrill, April 2023



# News Page



After the flurry of activity associated with new kit announcements from the annual Toy Fairs in Asia and Europe and as outlined in the last newsletter, things have settled down. That said, there are still some new items being announced. In the last update I may have suggested that those wanting to model in the smaller scales may have difficulty finding new kits so I am delighted to say that my most recent research has unearthed some promising new kits.

First off, Hobby Boss will release a 1:144 scale kit (HB83904) of the esoteric Shaanxi KJ-500 AEW Aircraft of Chinese manufacture.



Heller, the famous French company that was synonymous with some classic aircraft and ship kits in the 1970-80s has had a bit of a revival under new German ownership and, apart from the successful re-boxing of some Kinetic 1:48 aircraft kits, has announced a brand-new Grumman E-2C Hawkeye in 1:72 scale. This is NOT a re-box of the excellent Hasegawa kit but, from early CAD images, appears to be based on the larger scale Kinetic kit, complete with wing-fold etc. Heller has announced three releases including one, which will feature Japanese and Taiwanese markings.



A&A Models of Ukraine are producing a long overdue brand new 1:72 scale kit of the British Aerospace single-seat Hawk 200 light strike/attack aircraft and again, one of the releases (AAM7231) will cater for Asian Air Arms fans, with decal markings for Indonesian and Malaysian aircraft.

Returning to 1:48 scale, AFV Club will add to their excellent family of Northrop F-5 Tiger IIs with another special edition (AR48S12) complete with ROCAF markings and what looks like a comprehensive suite of new weapons.

Minibase, which up to now have focused on Russian subjects, surprised the modelling world with the recent announcement of a brand-new F-16A/B Block 20 Fighting Falcon which will obviously go head-to-head with the newly tooled Kinetic F-16 kits. It is understood that the Minibase kit will initially feature decals for ROCAF examples.

AMP have also announced development work for a family of Hughes OH-6 Cayuse helicopters, which will be released in both 1:48 and 1:32 scale.



Finally a couple of Italeri re-issues which may be of interest. The long sought after 1:72 scale Fairchild AC-119K Stinger Gunship, secondhand examples of which were commanding high prices on the internet, will be the subject of an imminent re-release (IT1468), and the new kit will finally include a VNAF option depicting an aircraft of 819<sup>th</sup> AS in 1972.



Italeri will also re-release their simple but accurate GD F-16C Fighting Falcon in 1:48 Scale this year (IT2825), and one of the many attractive decal options in this kit will be for a 5 Sqn 'Falcons' of the Pakistan Air Force.

Finally, we are pleased to welcome another 3 new members to the Group:

**Kamran Jones** and **Luke Smith** from the UK, along with **Miguel Ernesto Ozol** from the Philippines.

Mark ATTRILL – March 2023



# "Engage with small arms..."

The first dogfights took place with the pilots of flimsy biplanes firing small arms at each other in the second decade of the 20<sup>th</sup> Century. Just over 50 years later, a similar action took place, but this time only one of the protagonists was a biplane, and **FAR** from flimsy!



During Operation Rolling Thunder in 1967, bad weather over North Vietnam made the location and attack of targets by US aircrews difficult, so a radar was placed on a remote, sheer-sided karst mountain just inside Laos on the northern Laos/North Vietnamese border. The mountaintop was relatively flat, about 30 acres in size, and already had a tiny Hmong village called Phu Pha Ti, a small garrison of Thai and Meo mercenaries for defence, a helicopter pad and an ops shack for the CIA-owned Air America 'airline'. The site could only be accessed by helicopter or a torturous climb up the near-vertical slopes, so was considered safe from attack. The radar site was named Lima (for Laos) Site 85, while the fighter-bomber crews called it 'Channel 97' (the radar frequency). USAF Col. (Ret.) Lawrence E. Pence, who was a junior Air Force Captain at 7th AF Headquarters in Saigon as an Air Technical Intelligence Liaison Officer at the time, said, "The Channel 97 radar system was an old SAC precision bomb-scoring radar which could locate an aircraft to within a few meters at a hundred miles. In this application, the strike force would fly out from Lima Site 85 a given distance on a given radial, and the site operators would tell the strike leader precisely when to release his bomb load. It was surprisingly accurate, and allowed strikes to be run at night or in bad weather."

The increasing damage being caused by these strikes soon alarmed the North Vietnamese; so on 12 Jan 1968 a strike on the site was assigned to the North Vietnamese Air Force, who decided to use three Antonov An-2 'Colt' gunships based at Gia Lam, near Hanoi. First flying in 1947, the An-2 is a large single bay biplane of all-metal construction, with an enclosed cockpit and a cabin with seats for twelve passengers. Powered by a 1,010hp Shvetsov ASh-62IR 9-cylinder air-cooled supercharged radial piston engine, over 18,000 were built in the Soviet Union, and then Poland, until 2002, with another 1,100+ licence-built in China since 1958 (and STILL in production!) as the Nanchang/Shijiazhuang Y-5. For the attack they were armed with a 12 shot 57mm rocket pod under each lower wing, and 20 x 250mm mortar rounds with aerial bomb fuses set in vertical tubes let into the floor of the aircraft cargo bay, with one aircraft standing off as command and radio relay and two actually attacking the site.



They knew the radar site was on the mountain top, but they did not have good intelligence as to its precise location, and it was also well camouflaged, not readily visible from the air. During the attack they mistook the Air America ops shack for the radar site, giving it a good working-over. But a brave Thai mercenary ran out onto the helo pad and, amidst the rockets and explosions, emptied the 27-round clip of his AK-47 into one of the Antonovs, which crashed and burned.



On the same helo pad was an Air America Bell UH-1B, XW-PHF (Lao registration), that had been resupplying the site, with aircraft captain Ted Moore and his kicker Glenn Woods enjoying a Coke in the ops shack until holes started appearing in the roof. They ran to their Huey and took off in pursuit of the two remaining Antonovs as they fled back North,

quickly realising that their helicopter was faster than the biplanes. They caught up with them a few miles inside the North Vietnamese border, unseen as the Antonov crews had no rearward visibility.

Moore overflew the rearmost Antonov and used his downwash to stall its upper wing. The hapless pilot suddenly found himself sinking like a stone, so pulled back on the yoke, further reducing his forward speed. As the big green biplane munched just below them, Woods climbed out onto one of the Huey's skids and, hanging on one-handed, emptied the clip of his AK-47 into the cockpit. The Antonov went into a flat spin and crashed into a mountainside, but did not burn. This was the first ever helicopter air-to-air kill, the first helicopter fixed-wing-aircraft kill, and the first helicopter biplane kill, not to mention the first known CIA air-to-air kill.



Amidst panic about an international incident by the US State Department, Capt. Pence flew to the crash site the next morning in a USAF Air Rescue and Recovery Service 'Jolly Green Giant' helicopter, and found Vietnamese crew members (there was initial suspicion they could be Soviet) and a brand new, undamaged, IFF (Identification Friend or Foe) electronic "black box", something never before found in undamaged condition, which was subsequently used to improve the Red Crown warning system, saving many aircraft and their crews.



They tried to sling-lift the wreck out, but the Jolly Green had to depart to rescue the crew of an aircraft shot down further north inside North Vietnam, leaving Pence, with a CIA field operative and a handful of Meo mercenaries, alone in hostile territory with only pistols, the Meo's old WW2-vintage rifles, no food or water, and North Vietnamese Army units in the vicinity. Luckily the helo returned late that afternoon, getting them back to Udorn, Thailand in time for happy hour.

A month later the mountaintop was overrun by North Vietnamese ground troops, who climbed the sheer sides of the mountain with ropes and pitons (although many US personnel, including Pence, see all the hallmarks of the Soviet Spetsnaz) to attack the site, killing or capturing all personnel.

**Jamie McIntyre, February 2023**

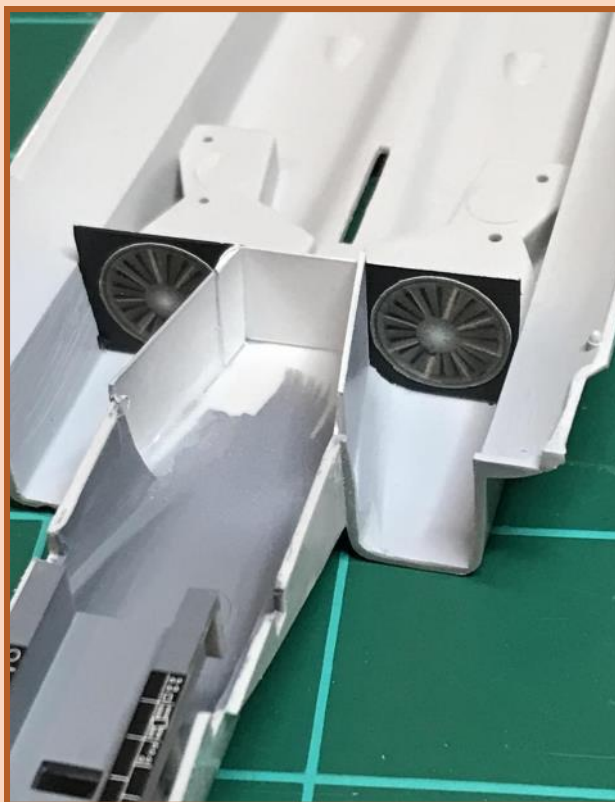
Ed: For more information, or to put this incident into context, read this article about the Battle of Lima Site 85 - [Battle of Lima Site 85 — Wikipedia Republished // WIKI 2](#)

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# JASDF F-15DJ Aggressor



This project took a few left turns. I had secured two Hasegawa F-15C kits over the years, either from eBay or from vendors at model shows. A few years back I bought a DMX decal set for Japanese F-15 aggressors, as the color schemes really stood out to me, and I love unique or different schemes. I decided to build both kits at the same time - one in US livery and the other as a Japanese aggressor.



As I got started, I realized that there were a couple of parts missing - namely the lips of the intakes of one of the C's. I decided to secure another full kit, and when I went online, found an F-15D/DJ from Hasegawa. It was an older version of their moulds, which I didn't realize until I opened it up - more toy-like, less detail, raised panel lines, etc., BUT it was the 2-seat DJ version that the aggressors flew, as opposed to the single-seat C's I had started with. (I didn't realize when I got started that all the Japanese aggressors that I could find reference photos for were 2-seaters).

So, to make a long story (and build project) short, I started with the fuselage and vertical tails of the DJ (sanded and completely re-etched), attached the wings and horizontal tails of the C, opened up the intakes of the older kit and created the intake trunking and compressor blades (which are printed on paper), and married the intake interior sections to the older kit. I also added some of the other details from the C kit, such as the Sparrow clasps, the fuselage strakes, the pitots and AOA probes, and the exhaust nozzles. Not everything was a perfect fit, but I'm happy with the outcome.

Paintwork took forever. I first had issues with the two shades of Ghost Grey. I used AK Real Colors paints (I've been having good luck with them), and as I always do, I lightened both shades



with an equal amount of white paint to achieve scale effect. I undercoated the model with black and laid down the light ghost grey, but when I laid down the dark ghost grey, there was absolutely no contrast! I assumed this was probably due to the lighter coat I had used for the light grey retaining some of the mottling of the black base. So, I lightened the light grey, sprayed again, then tried the dark grey again. Still not enough contrast! On the third try I got close enough that I decided to live with it, knowing most of it would be covered by the aggressor scheme.

The masking for the 3 colors of the aggressor scheme took some careful planning and lots of tape and time! First there was a lot of "pre-masking" to do, because the aggressor scheme didn't cover over many of the panel lines (airbrake, control surface joints, etc.). Once I had that done, I printed out a scale diagram and used that to draw patterns, then lay the tape on the patterns and cut them out to use on the model. First time I've tried that technique, and it worked pretty well. In the end I only had a couple of spots to touch up.



The decals were up next. Whew! The Japanese love to number every panel, and basically print the operating instructions all over the skin of the airframe! Similar to the F-4EJ Kai I had built recently. Took me a couple of weeks working a few hours at a time to get it done.

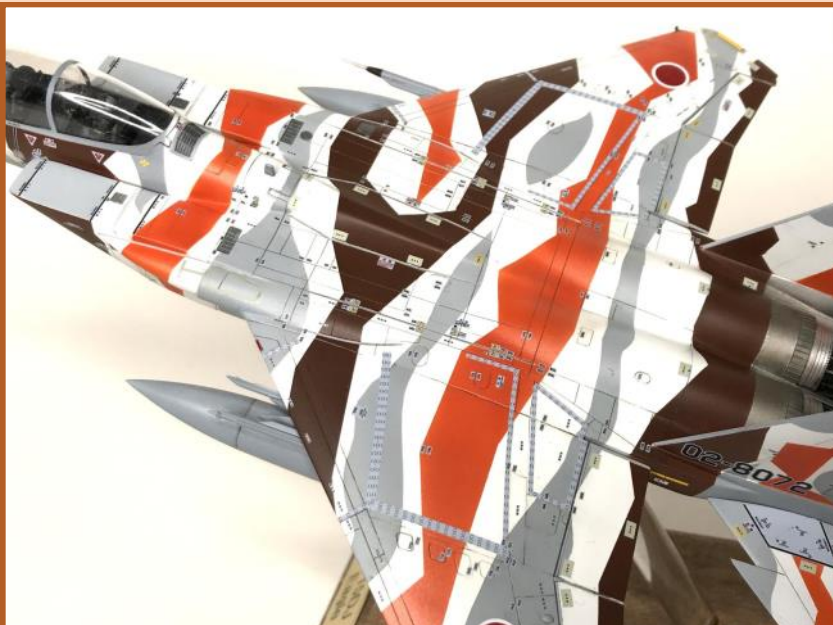
The ECM pod and air manoeuvring probe were from a couple of Hasegawa weapons sets, and I matched what I saw in reference photos.

My only let-down of the project occurred after I removed the canopy masking. Even though I used static wipes on the canopy, there were still some small pieces of plastic and grit that got stuck up in the cockpit coaming. Also - and this is a first for me - there was some sort of haze on the inside of the canopy. I don't know if some paint fumes drifted down through the mounting hole I drill in models to mount them, or what. I tried to pop the canopy off as I had glued it down with Gator Grip glue, but I

applied as much pressure as I dared and still couldn't pry it loose. I decided to live with it, even though to me it is an eyesore - probably my biggest disappointment for a modelling project in years, after having put so much effort into this.



The last photo is of the real bird.



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## Greg Kittinger

**Ed:** Greg's article first appeared on his blog on the iModeler website in March 2022, and I am grateful for his permission to reproduce it here.





# Building an Uzbek Flanker



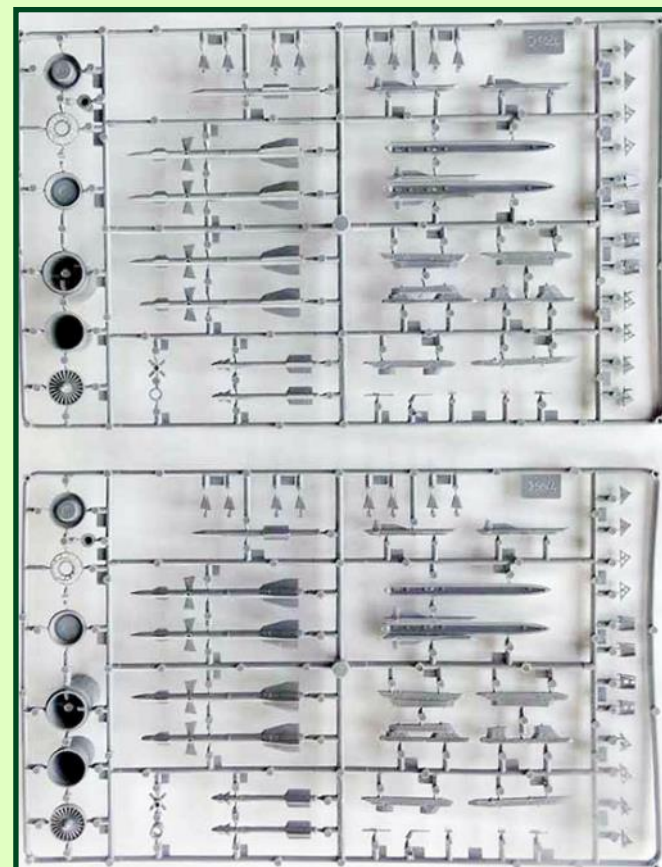
The republic of Uzbekistan gained its independence in September 1991, after the collapse of the Soviet Union. The country's main income comes from metals, oil and gas. An air force was

established as part of the Armed Forces' 49th Air Army, and the aircraft operated are Soviet types, beginning in 1991 with some MiG-21s and a few MiG-17s.

Main bases are Karshi/Qarshi/Xonobod with about 25 Su-27P and 6 SU-27UB trainers, along with some 20 MiG-29 and about 30 Su-24 strike aircraft, Dzhizak/Jizzax with strike aircraft such as the Su-25, and the training school at Farghona/Fergana with transports. The air base at Tashkent also houses transports, and Chirchiq has mainly Mil helicopters, with about 15 Mi-24 and 15 Mi-8 stationed there.

For this build, I used Zvezda's 1/72 Su-27SM kit, which was first released in 2014. The SM is the single seat fighter version with updated radar and an offset, larger IRST fairing ahead of the windscreen that was introduced in service in 2004. Zvezda indicates this variant as the 'Flanker B. Mod. 1'.

There are 5 sprues with about 220 plastic parts in light grey and 1 sprue in clear plastic. Details and panel lines look very good. The kit parts layout shares some commonality with sprues found in the other various Zvezda kits of the Su-27.



- Armament in this kit looks accurate and includes:
- 4x R-73 / AA-11 "archer" infrared homing missile;
  - 2x R-77 / AA-12 "adder" radar homing missile;
  - 6x R-27ER/ AA-10 "alamo" radar homing long range missile;
  - 2x R-27ET/ AA-10 "alamo" infrared homing long range missile;
  - 2x KH-31 / AS-17 "krypton" anti-ship (although not indicated, and for use in other versions)...
- .... with all their pylons.

The kit assembly instructions, with 15 steps, are clear but not always logical in order. For example, I would suggest installing the smaller parts at later stages. I also suggest that the vertical tails could be installed much later after painting, as this will ease masking the metal exhaust areas and generally handling the model.

The kit dimensions proved to be excellent, with wing span and length measurements all accurate to within 1 mm.

### Observations and suggestions:

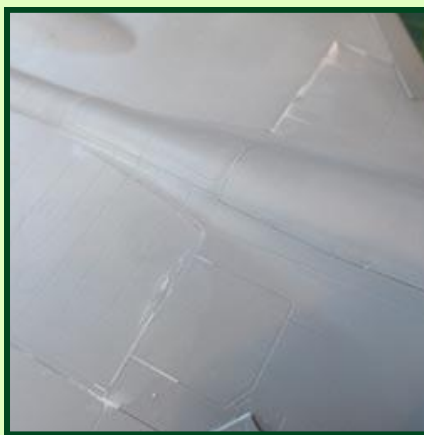
The K36 ejection seat looks good with multiple parts; you get a very nice pilot figure with posable arms, as well as a standing crew figure; Vertical tails are good and include the small different fin intakes; Undercarriage bays could be given a bit more detail from scrap, but you do get parts for closed doors as well for an "in flight" display. (a display

stand is shown, but is not in the kit and must be separately purchased);

For the single seater canopy, the shape should be a bit rounder with Ω 'omega' shape, but as moulded it fortunately has no mould seam; the clear plastic is rather soft but the canopy can be used; The later-style offset IRST fairing in front of the windscreen is for the Su-27 SM version. (so for older versions, a new central IR fairing will have to be made, along with some small antenna and instrument panel changes).



On with the build! This Su-27 kit has 2 main sections for the upper fuselage. Take care to align the upper forward fuselage with the rear section to avoid a step. I used strips of plastic card on the insides.



Still, some putty and sanding was needed. The lower engine fairings needed a bit of sanding as well.

After the fuselage and wing had been glued, only minor putty and sanding was needed.

As I was building Su-27 P "21 white", c/n 36911032715 of the Uzbekistan Air Force, I needed to establish the colours of the desert-like camouflage scheme by looking at reference photos and info. I settled on the following:

-1- Flanker underside blue has been a difficult issue for modellers for many years, but the paint hue can be found in the AKAN series with 73056 and 73061. However, my AKAN bottles had dried out.... so for the undersides, a mix was made consisting of 90% Revell Aqua 371 "hellgrau" and 10% Revell Aqua 52 "blau" blue.

For the upper surfaces, I used:

- 2- lighter brown Revell Aqua 16 "sand" with about 10% white;
- 3- medium brown Revell Aqua 17 "Africa braun";
- 4- darker brown Revell Aqua 82 dark earth;

Masking the upper camouflage pattern can be done by hand with pieces of curved cut cardboard or tape. While airbrushing, don't forget the vertical tails, as well as bits like gear doors.

The large metal areas at the exhausts on lower and upper fuselage ends were now tackled, Masking is easy as the vertical tails are not yet



setting at about 85 degrees. On each leg #D7 and #D8, I cut off the "triangle corner" that leads to the fuselage. Now they sit better. Some thin metal wire was added and "wash" inside the bays. The canopy was kept "loose" and was embellished with some mirrors from scrap.

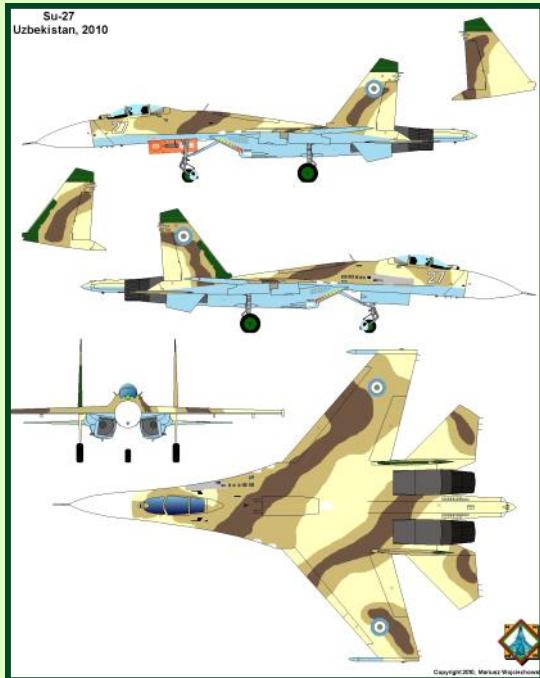
installed. After masking, these areas were first airbrushed with Revell Aqua 90 "silber". I also lightly airbrushed a varnish coat with a few drops of blue on some of these panels. Finally, a few cotton swab strokes were added with AK true metal AK455 paste and quickly polished:

The vertical tails were now set in place. The radar nose was airbrushed "off white" and the antenna panels on the vertical tails were hand-painted green.

After the paint scheme had been applied, the decals were applied. These decals were "home-designed" and custom laser-printed by a friend, as I needed more roundels than just the pair supplied on the Begemot decal sheet 72-025 "Flanker Family (1)".

After decals had been applied, some "sun fading" was done using each camouflage colour with a few drops of white mixed in. These were loosely airbrushed in different areas. As some thin layers were airbrushed over the decals as well, this gave a "blended-in" effect.

The instalment of the landing gear required



*Meindert de Vreeze, February 2023*

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# Indonesian F-86 'Avon-Sabres'

On 21 April 1972, the Australian Government announced the gift of sixteen CAC-built F-86 Avon-Sabres to Indonesia.

The aircraft were refurbished by the RAAF, and 150 members of the ANGKATAN UDARA REPUBLIC INDONESIA (AURI) were sent to RAAF Williamstown, NSW, to learn to fly and maintain the aircraft. Many of the pilots had previously flown MiG-21's, before a lack of spares grounded the Soviet aircraft.

Later in 1972, an advanced party of nineteen RAAF personnel left Australia for Indonesia. They were to assist with the installation of navigational aids and air traffic control communications at the Iswahyudi air base in east Java.

When the Avon-Sabres were delivered, they were accompanied by another 30 RAAF personnel, who remained for 24 months, advising on aircraft operations, maintenance and equipment support. The RAAF detachment was led by the Project Manager, Wing Commander W. Richardson.

The serial numbers of the aircraft involved were:

F-8601	A94-361
F-8602	A94-366
F-8603	A94-368
F-8604	A94-945
F-8605	A94-949
F-8606	A94-952
F-8607	A94-957
F-8608	A94-963
F-8609	A94-968
F-8610	A94-969 *
F-8611	A94-971
F-8612	A94-972
F-8613	A94-975
F-8614	A94-980
F-8615	A94-988
F-8616	A94-990
F-8617	A94-955
F-8618	Not Known



\*F-8610 crashed during a landing approach at Iswahyudi in November 1974. The pilot ejected safely and separated from the ejection seat. He landed unharmed, but unfortunately the ejection seat killed a farmer working in a nearby field. The aircraft was a total loss.

From Williamstown the aircraft were ferried to Indonesia via RAAF Amberley, Mt. Isa, Darwin and Den Pasar (Bali) to their base at Iswahyudi, on the island of Java.

The aircraft flew in two groups; the first of which arrived on 19 February 1973; the second group arrived two days later. A94-352 was damaged in transit, during take-off from Bali; its replacement arrived at Iswahyudi on the 23rd. The damaged aircraft was dismantled and flown to Australia in an RAAF Hercules. Its AURI serial is not known. On each leg of the ferry flights, two Orions from No. 11 Squadron, flew as escort in case they were needed for search and rescue, and far communications purposes. Two Canberras from No. 2 Squadron flew ahead of the Avon-Sabres in a weather-reconnaissance role. Additionally, there were numerous flights by RAAF and AURI Hercules transporting stores and equipment. Australia also provided an instructional airframe, A94-370, for ground training purposes. It was embarked in the m.v. GUNUNG KERINCI at Sydney on 28 December 1972.

During the celebration marking Indonesia's National Aviation Day on 9 April, 1973, the Australian Defence Minister, Mr. Lance Barnard, officially handed over the aircraft in a ceremony at Iswahyudi.

In a change of title in mid-1974, the AURI was renamed TENTARA NASIONAL INDONESIA - ANGKATAN UDARA (TNI-AU). The Avon-Sabres were initially assigned to No. 14 Squadron, AURI (SKU 14), but, in the re-designations which occurred late in 1974, the unit was renamed SAT-SERGAP F-86 SQUADRON. The F-86 presumably refers to the first few digits of their TNI-AU serial number. The aircraft illustrated overleaf, F-8614, carries the markings of the unit commander - they are not squadron markings! A variation of these was previously carried on a MiG-17 flown by the same pilot. The other aircraft are finished as shown in the photographs.

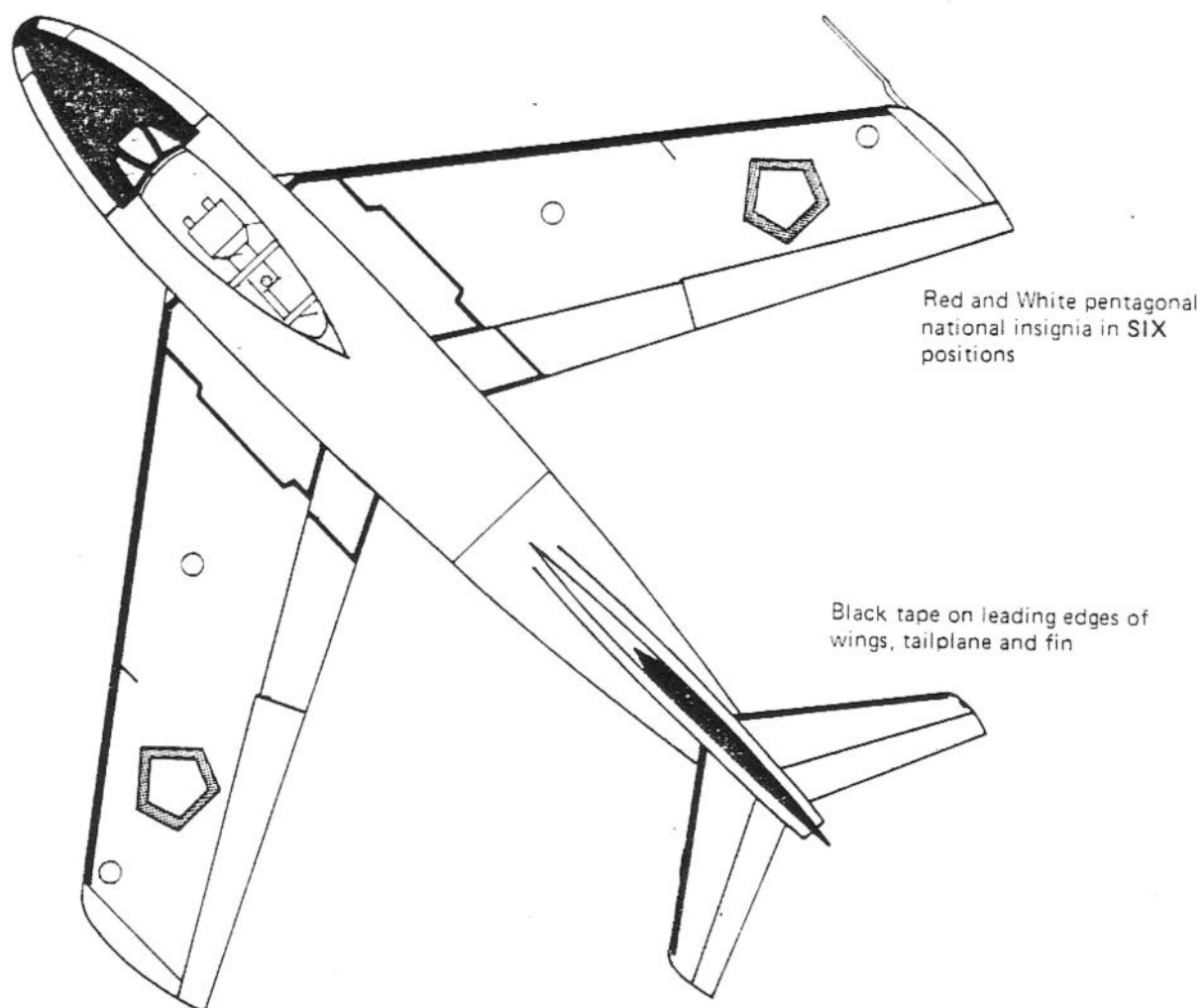
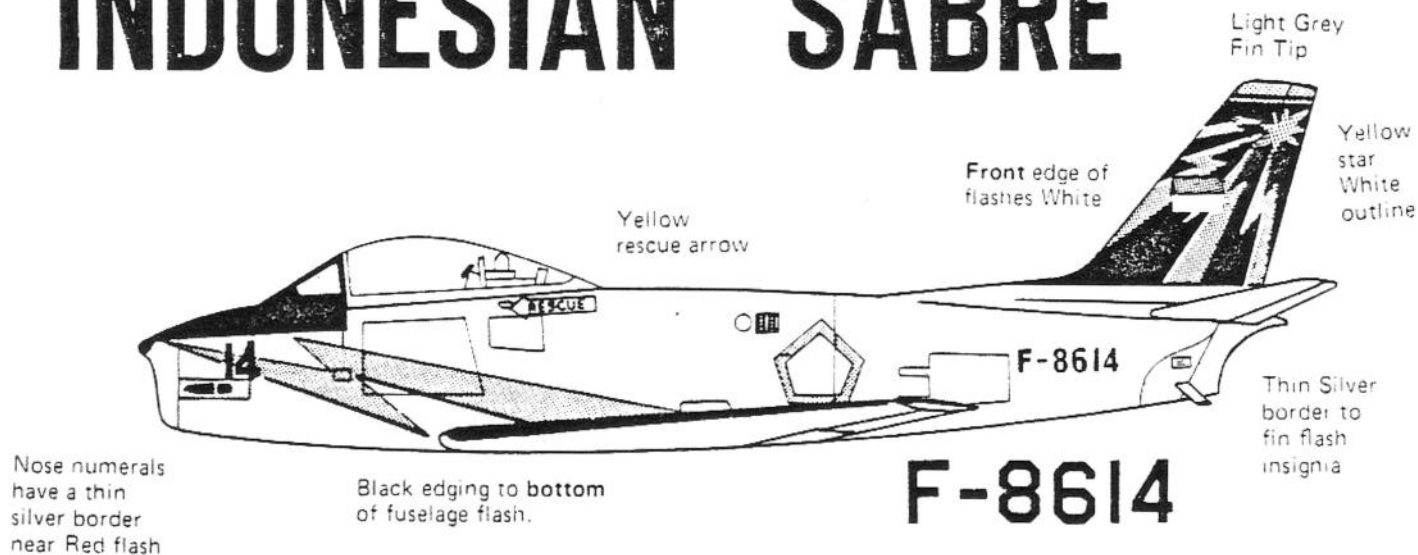
MARKINGS AND INSIGNIA: The Avon-Sabres were Silver overall with all stencilling in English. The AURI serial was painted on the aft fuselage and part repeated on the nose, in black numerals ten inches high. The RAAF serial was placed under the fin flash, with numerals four inches high. The red and white pentagonal national insignia of Indonesia was placed in the same six positions as the former RAAF kangaroo roundels.



Editor's Note: This article first appeared in MODEL CRAFT, No. 4, 1975 and was subsequently reprinted in the January 1979 issue of Small Air Forces Observer.

Decals to recreate this scheme are available from DEKL's of Australia, see here - [Decals - Avon Sabre](#) - Indonesian TNI-AU 14 SKU - Scale: 1/72, 1/48, 1/32, 1/144 | [DEKL's shop \(dekl.com.au\)](#)

# INDONESIAN SABRE





The initial 18 ex-RAAF Sabres were supplemented by a further 5 ex-Royal Malaysian Air Force examples in 1976. These were issued consecutive serial numbers in the form F-8619 to F-8623, to follow on from the ex-RAAF machines.

The "F" prefix was later replaced with "TS", meaning "tempur sergap", the Indonesian for "combat assault" or fighter. This page - [ADF Serials - Indonesia Sabres \(adf-serials.com.au\)](http://adf-serials.com.au) - attempts to document their history with the Indonesian Air Force or Tentara Nasional Indonesia Angkatan Udara (TNI-AU).

In 1978 the surviving aircraft were used to form the "Spirit '78" Aerobatic Display Team. Many of the survivors still display the red striped paint scheme.



This very colourful ex-RMAF airframe was delivered to TNI-AU in August 1976 as F-8622. Its serial was later changed to TS-8622. It was displayed on a plinth in front of the Riau Governor's Building in Pekanbaru City, from the 1980s. It wore this colourful scheme until being returned to the more correct red and white scheme of the Spirit '78 aerobatic team in 2010, although it was inaccurately marked as J-3111. In October 2011, it was moved and re-erected outside Geung Juang 45, Riau Memorial/Museum.



# Kinetic 1:48 Scale Lockheed F-104A Starfighter build: Pakistan Air Force – Part 1

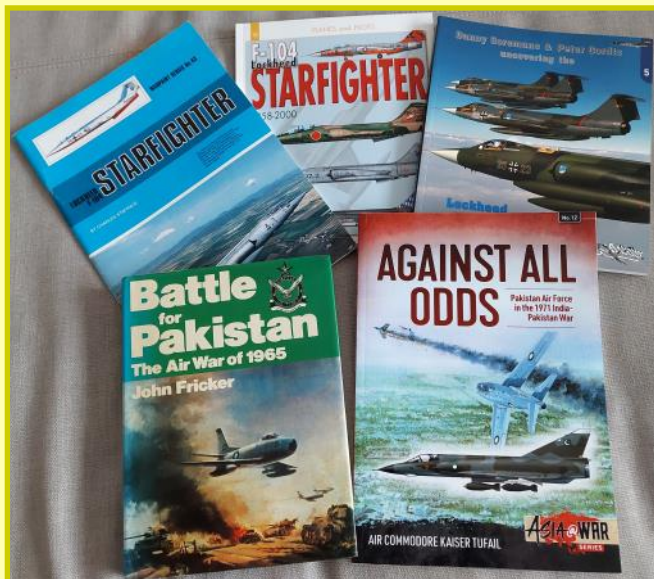


Some in the modelling community were somewhat surprised when, in 2019, Kinetic announced the first in a family of 1:48 scale Lockheed F-104 Starfighters, since both the single and two-seat types had previously been very well represented by Hasegawa, although the Japanese kits had suffered from an attack by the 'mad riveter' who normally targets Trumpeter kits. Aside from this issue, and the lack of any ordnance, the Hasegawa kits could be made up rather nicely, and were a bestseller, judging by the number of limited edition issues that were released over the years.

In the intervening period, Danny Coremann, the proprietor of DACO Productions and a former F-104 technician with the Belgian Air Force, decided to address the shortcomings of the Hasegawa kits with his very comprehensive injection-moulded Improvement Set, which sought to address the issue with the flying control surfaces and provide a very comprehensive range of weapons, stores and equipment for the kit.

Apart from the aforementioned main wings, tailplane and corrected air intakes, the 500+ part set included a multitude of AIM-9 Sidewinder options to include all of the special-to-type launch rails, additional underwing drop tanks, anti-ship missiles, nuclear stores and practice bombs and containers. The set also included all of the parts necessary to produce an accurate F-104S Starfighter, with ECM/RWR fairings, a fully detailed avionics bay, and, for diorama fans, pilots' helmets, a boarding ladder and towbar.

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Unlike many, I was not that surprised by the news of a new F-104 Starfighter since I had previously learned that the DACO set, which was moulded to a very high standard, had actually been produced by Kinetic. I believe another marketing factor when considering the release of the new kit was the increasing difficulty in sourcing copies of the Hasegawa kits. After the flurry of special releases, Hasegawa only appeared to maintain production of the early F-104C and later F-104J variants and yet there was still a high demand among modellers for the later F-104G/S and two-seat TF-104 kits, judging by the high prices that second-hand kits were realising on the on-line auction sites.

Since 2019, Kinetic have released no less than ten different kits<sup>1</sup> including the early F-104A/C, Japanese orientated F-104J/F-104DJ and two other boxings covering all three sub-variants operated by the RoCAF. These build notes relate to my current build of an early F-104A Starfighter, which I am actually undertaking as part of a 120-Day challenge with a group of friends from another SIG. Since we were permitted to choose our own subject, I opted to do something that I could use as the basis for an article for our own newsletter and for which I could utilise a previously-reviewed Iliad decal sheet from fellow SIG member Bob Migliardi.

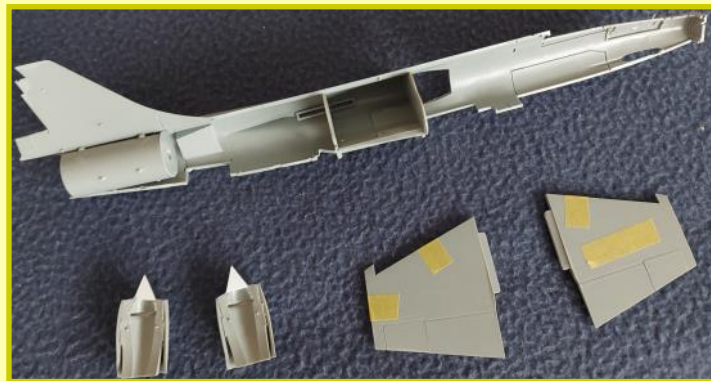
The project was also inspired by my re-reading of Jon Fricker's excellent book on the 1965 Indo-Pakistani Air War and a subsequent book review that I did on Pakistan Air Force air operations during the 1971 War, which featured in a previous edition of the newsletter, all of which provided my inspiration and a neat segue into this build article. My chosen subject is a F-104A in natural metal finish as operated by 9 Squadron of the Pakistan Air Force in the 1960-70s, which featured on the aforementioned Iliad decal release. I have kept the addition of aftermarket items to a minimum since I want to focus on the kit itself, but could not resist the simple Czechmaster 'drop-in' resin replacements for the distinctive C-2 ejection seat and wheels, the Eduard SPACE set which includes 3D decals for the instrument panels and consoles, and a Master Models turned brass pitot probe. I should also add at this stage that the kit obviously shares a lot of commonality with all of the other single-seat variants released by Kinetic so far, with many of the parts included in this kit surplus to requirements since they are only applicable to the later single-seat variants. Furthermore it will not be my intention to produce a full blow-by-blow account of the build but to focus more on those areas which may require more attention.





I suspect that some of you will be familiar with, and have had experience building, some of the earlier Kinetic offerings, such as the F-16 Fighting Falcon, Dassault Mirage III or Sea Harrier FRS.1 and F/A.2 kits but, up front, I am pleased to inform you that this Starfighter kit is a world away from those experiences in terms of fit and buildability. The kit is marketed under the Kinetic 'Gold' label for quality and it certainly deserves this moniker. The parts

have a Tamiya-like 'feel' to them although there are still some signs of very *minor* flash on some parts, which is not a Tamiya trait. Given my experiences with the Sea Harrier kits, I was a little concerned with all of the separate panels, particularly on the underside of the fuselage. This is a necessity borne out of the need to cater for all of the different variants (one of the panels even differs between the two early -A and -C variants). Thankfully these fears were unfounded; the panels are moulded along existing panel lines and with care and attention in some cases (see detailed build notes below), the fit is excellent. As a bonus these under fuselage panels also eliminate the vast majority of centreline seams that often blighted my previous builds of the Hasegawa kit. In overall terms, it should also be noted that the fit tolerances on some parts are very tight, so care should be taken at all stages of construction. By way of an example, when removing and preparing the drop tank fins ensure that there is absolutely no trace of any plastic 'burr' left on the mounting tab or the part will simply not sit flush when it is offered up to the drop tank opening. This is but one example and I will highlight others throughout the build notes.



I started, as I do with most of my builds, by identifying and removing all of the parts that were not required for the F-104A variant, and since this is a Kinetic kit it will come as no surprise to learn that you will end up with some additions to your spares box, although perhaps not as many as with some of their other kits. That said, do take care with parts identification, since some parts were mis-identified in the kit instructions (again, please see the detailed notes below). Before I launch into the more detailed notes, I should mention that any omission of stages is down to two factors; either I did not experience any difficulties during the stage, or there was a deviation based on the use of aftermarket items.



I would also like to add at this stage that I will not comment extensively on the accuracy, or otherwise, of the kit. The reasons for this are mainly related to my lack of specialist knowledge on the variant, and an equal dearth of accurate references in my library. I have little doubt that there are some inaccuracies with the kit. For example, and while Kinetic have provided an additional sprue to cater for the early F-104A/C variants in this particular issue, the main fuselage halves (parts G7/10) are common to all of the single-seat variants up to and including the F-104S. I noticed that some of the surface detail on these two parts includes some reinforcement plates, and I suspect that these were late additions to the structure, brought about by the challenges of operating the later variants at low altitude around Europe, and that they were probably not applicable to the earlier

versions, though I could be proved wrong. Where I have spotted more obvious inaccuracies, I have called these out in order to help you get the very best from the kit, but please do not expect this to be an in-depth commentary.

**Stages 1-4** C-2 ejection seat & cockpit tub. Since I would be using the aforementioned Czechmaster resin C-2 ejection seat together with the Eduard SPACE interior set for this build, much of the first four stages of construction was avoided. At Stage 3, I sanded down the majority of the detail on the side consoles and instrument panel to accommodate the Eduard SPACE 3-D decals, which I reinforced with the use of canopy (white) glue. These decals are superb, but do take care not to get anything on the surfaces of the instrument panel decals since they already feature individual 'glass' instrument dials. The white glue should be used on the inner faces and, after application, on the surrounding area for each decal to ensure they have been correctly affixed. Through previous experience, I have discovered that 3-D decals are obviously very thick, and the adhesive used in their production may not be robust enough to hold them in place. The use of the white glue, which obviously dries transparent, is the most obvious solution. The Kinetic ejection seat rail parts do not need any adjustment to accommodate the Czechmaster resin seat, which I did not fit until later in the build. I also decided to incorporate a suitable PJ Productions resin pilot figure into this build, thus avoiding the need to use any of the photo-etched seat belt parts included with the Eduard SPACE set.

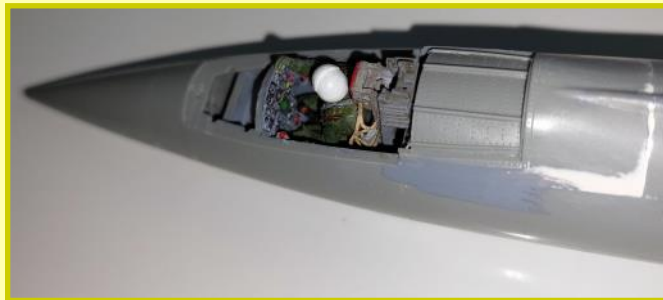






The resin pilot required some surgery to the legs to make it fit in the rather tight cockpit, including a new, remodelled, right arm sourced from another figure. I had originally intended to pose the model in 'taxiing mode' with the canopy fully closed and the pilot giving a 'thumbs up' after a successful mission. After several trial fits and the late discovery of the need to fit air conditioning conduit to the inner surfaces of the canopy I have now accepted that I will have to leave the latter in the open position and will probably add a crew access ladder to the final display. I used AMMO MiG washes for the cockpit tub (interior wash) and finished the rear decking and instrument panel coaming in tyre black with a light wash

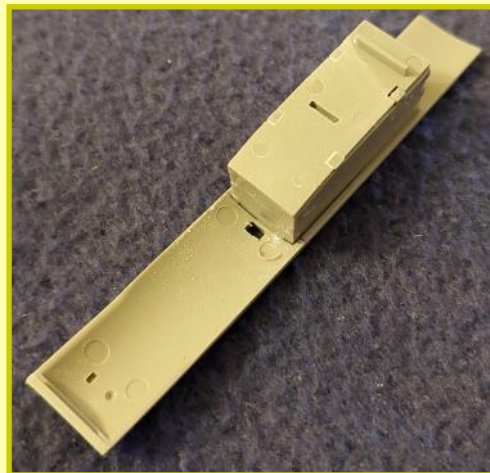
of neutral grey. I fitted the pilot to the resin ejection seat and utilised the distinctive cream coloured webbing straps together with a couple of strips of suitably painted Tamiya kabuki tape to 'connect' the pilot with the seat.



**Stage 5 Exhaust Chamber/Nozzle.** The assembly and fitting of the exhaust chamber is relatively straightforward, although it is recommended that you leave the rear nozzle (part C5) off until almost the end of the build sequence in order to ease the painting and finishing process.

**Stage 6 Nosewheel Bay.** Care should be exercised with the order of assembly for the sidewalls and forward-rear bulkheads otherwise it will be difficult to fit the actuating rods (parts B55/56). Once the nose bay section is complete, sand the top of the box carefully since this will aid fit at Stage 10.

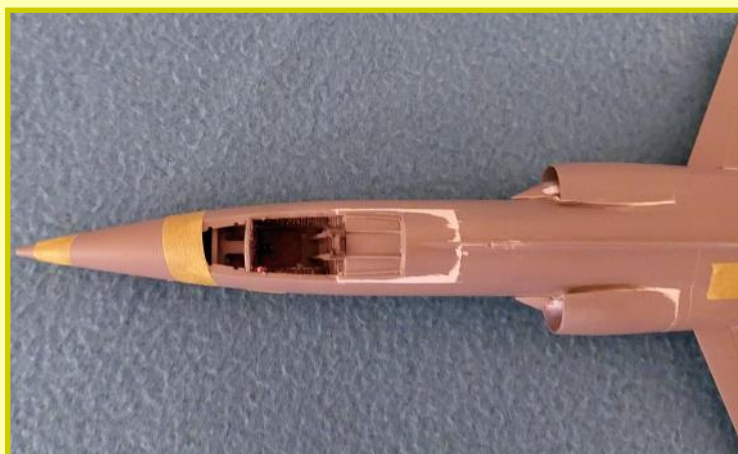
**Stage 9** Take care when fitting part B85 (the avionics bay) since the instructions are rather vague with regard to its location. I discovered that this part could actually be omitted if the avionics access door (Part B18) is fitted in the closed position (see Stage 24), although it can also provide additional strength to the upper section of the fuselage during assembly. The choice is yours.



**Stage 10** As previously stated, the tolerances for some parts are very tight, and such is the case when fitting the nosewheel bay to the fuselage. The top of the assembled wheel bay appears to rest against the bottom of the cockpit tub, and if it not trimmed back the assembly may stand slightly proud of the main fuselage. Sand and test fit regularly to ensure the assembly is correctly seated with no raised areas present, since this will avoid the need to fill and then re-scribe some of the very neat panel lines on the lower fuselage.

**Stage 12** The assembly of the air intakes has been the most difficult part of this build so far. The inner intake sections (parts B83/84) fit well, but the location of B10/11 to the outer intake panels (parts G18/24) is rather vague and could lead to issues when fitting the entire assembly to the fuselage. I resolved this by cutting out and sanding back some ridges on parts G18/24 to better seat parts B10/11. The completed intakes would also benefit from the addition of some 10-thou shims on the rear faces of the intake cones.

**Afternote:** Once I had cemented the air intakes to the fuselage sides, I noticed some 'air gaps' where the intake meets the fuselage. I have cured this with the application of some very thin plastic card shims between the fuselage sides and the intake, after which I masked the fuselage area immediately adjacent to the air intake and the upper surface of the intake, and then applied filler. The issue also relates to the lower surfaces but I elected not to treat this since the model will sit on its undercarriage and this cannot then be observed.



**Stages 13-17** The assembly of the main undercarriage is fairly straightforward, although care should be taken with the removal of some of the parts from the sprue, since some of the parts are very finely moulded. I applied a stepped process to the weathering of the nose and main undercarriage bays, finishing these off before affixing the undercarriage legs. Take care with the numbering of the parts for the main & nose wheels. The kit instructions for the early F-104A variant indicate the use of parts B62/63, which are the spoked variety, for the later F-104G/J variant. In spite of the fact that I had already elected to use some resin aftermarket parts, I still wanted to cross-check these items with the plastic parts to make sure I was using the correct variety.

At this point, I departed from the assembly sequence and skipped a couple of stages since I was keen to get the main airframe assembled in preparation for the painting stage, and to complete the majority of the filling and sanding. As you can see from the accompanying photographs, the fit of the majority of parts was excellent, so the presence of filler was minimal apart from around the air intakes, a perennial issue with the vast majority of F-104 Starfighter kits, and the avionics bay (see below for more details



on this issue). I will, of course, return to the stages I have skipped in Part 2 of this build feature. So, on to the wings.

**Stage 22** Main Wing assembly. Take care when fitting the main flaps (parts G19/20) to the wings in the flaps up configuration. The locating tabs may require some sanding on the top or bottom surfaces to aid with achieving a flush-fit with no discernible 'step'. Regular test fitting is essential throughout this process. Once the flying control surfaces (parts G19/20 & G22/23) have been fitted, there may be a need for the insertion of plastic card shims to close up gaps. On my kit, there was a variance with the overall fit of the main wings. One of the wings benefitted from the addition of a plastic card shim applied to the undersurfaces of the locating tab.

**Stage 24** If the avionics bay has been previously fitted and the avionics bay cover (part B18) is to be fitted in the closed position, it is recommended that a small triangular wedge is cut out of the rear bulkhead of the cover to aid fitment over the avionics bay. The cover appears to suffer from similar issues to that included with the Hasegawa kit. In this case, Kinetic appear to have designed it to be displayed in the open position and, as a result it became probably the most difficult part of the build. If it is cemented in the closed position, and due to its complex curvature, it does not quite marry up with the port fuselage, with some gaps along the 'hinge line' and at the rear. To complicate matters further, the final positioning could have a detrimental effect on the three-piece cockpit canopy (again, if fitted in the closed position (parts D5/19/20)), so extreme care needs to be taken with this whole area, in order to blend part B18 with the fuselage, re-scribe the panel/hinge line and ensure alignment with the closed canopy. It will, of course, be less of an issue with the canopy posed in the open position, but I would still suggest that care is taken at this stage of construction.



*...to be continued*

**Mark Attrill**

March 2023

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 'K48-077 (Lockheed F-104G Starfighter 'RoCAF'), K48-080 (Lockheed F-104J Starfighter 'JASDF'), K48-092 (Lockheed F-104J/F-104DJ Starfighter 'JASDF 2 in 1') & K48-134 (Lockheed F-104A/TF-104G 'RoCAF 2 in 1')

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# Wolfpack's KAI TA-50

A big surprise a few weeks ago was the arrival, out of the blue, of the Wolfpack KAI TA-50 Golden Eagle kit in 1/48 scale. The original kit is the Academy T-50, with the additional parts from Wolfpack to make the interim version known here as the TA-50. I've been badgering both Academy and Wolfpack to make updated kits, as for too long now they just didn't exist. Actually, Wolfpack have made parts that cover the later version known as the FA-50 as well as the TA-50, a full-on fighter-bomber version that can match the F-16 in capability. As more and more countries are now buying the T-50 aircraft, more decal versions are going to have to be made! So far, Indonesia, Philippines, Thailand, Iraq and Poland have bought these aircraft for their Air Forces. Presently, Slovakia, Brazil and Australia are looking to do the same. These aircraft are an absolute blast to fly, very manoeuvrable, carry the same ordnance as an F-16, and once locked onto a target you **cannot** break away from them.



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Having read Jon Bryon's article on the T-50 kit he built in a recent newsletter, I was somewhat reluctant to try and tackle the Academy kit. However, now I have two (and one is already underway). I've been very carefully studying the parts (not so much the instruction book!). Careful dry fitting of the parts has revealed a truly lovely and well-engineered kit and parts. The most subtle of very minimal sanding on some parts and the potential for later fit problems is quickly disappearing. A beautiful 3D printed instrument panels for the Thai TH-50 is in the kit. There are also a full resin tail fin, 3D printed air scoop, RWR sensors, tiny brass AOA sensors (and tiny versions in plastic), etched brass parts for the cockpit etc, and resin later-version airbrakes (detailed reinforced structures).

As I'm discovering, things such as flaps and tailplanes can be either fully moveable or positioned, I think I can make the canopy operable as well with careful fitting of hinges. I was going to ram this all together very quickly for the newsletter, but now I'm having second thoughts and doing a more enjoyable and slower build. I nearly forgot, the kits don't have any weapons, but I've got the Academy F-16 kit for the weapons and pylons. The Kinetic kit of the Hawker Harrier GR1/3 arrived recently, and I've discovered that it has a lot of spare weapons in better detail that I can fit to the Eagle kits. Regarding decals, I'm looking at making stencils and spray painting the markings on, as ROKAF markings simply don't exist here [in South Korea], in any scale, sadly.



I've been regularly clambering about the aircraft photographing parts for the kit build, the crews are very helpful, and they are just as keen to see how this unfolds. Several guys have built the original T-50 into as close a FA-50 as they could, they are now badgering Wolfpack for more kits.



The photos show some detail on the hybrid prototype still flying as a test bed, (T-50/TA-50/FA-50). The airbrakes are as found in the TA-50.

Just to complicate matters, the airbrake units also vary for each country's requirements. So far, I've found 4 different types. The RoK TA-50 airbrake units are built up metal plates. The FA-50 uses much stronger cast ribbed matrix arrangements. Thai TH-50 airbrake units



are cast alloy. An example is included in the accompanying photos.

In Jon Byron's T-50 article, he described briefly the problem with trying to position the flaperons into a somewhat downward deflection. I managed to get a close-up look at a real aircraft in for a service and finally found why I couldn't make sense of the problem either. It's quite simple really, the inboard portion of the flaperons is cone-shaped, as is the inside hollow of the wing root. On the kit it's a 30/60 degree triangle-form, and any attempt to deflect downwards throws the leading edge of the flap away from the wing leaving a large gap! It's a similar problem with the kit's airbrakes in the closed position; they won't shut!



How to sort all that out I'm not sure, I'm looking for plastic cone-shaped things to fit onto the flaperons but it's a challenge. I have the advantage of having the real aircraft nearby so I'm chasing details I hadn't bothered with before. The KAI staff have also been pulling off panels and things so I could get into other areas we modellers love to tackle; gun bay details anyone?

Gary Markham, January 2023



"You can go mad just detailing the main wheel well with all the electric cables and plumbing".

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# FA-50

### Avionics

- Embedded GPS/INS
- UHF/VHF Radio
- Integrated IFF
- Store Management System
- Radar Altimeter
- Integrated Mission Computer
- Data Transfer & Recording System
- RWR/CMDS
- Tactical Data-Link System

### Cockpit

- Wide Field of View HUD
- Integrated Up-Front Controls
- Smart Color Multifunction Displays
- Hands-On Throttle And Stick (HOTAS)
- Zero-Zero Ejection Seat
- Night Vision Imaging System (NVIS)
- Digital Engine Instrument

### Flight control System

- Fly-by-wire digital flight controls
- Active stick technology
- On-board oxygen generation system (OBOGS)
- Electrical emergency power unit
- Triple redundant electrical system
- Digital break-by-wire

### Radar

- Multimode Radar

### Armament

- AIM-9 missile
- MK-82
- AGM-65
- Internal 20mm gun
- SUU-20
- JDAM/SPW

### Propulsion system

- High thrust with afterburner F404-GE-102
- Dual-channel digital electronic control

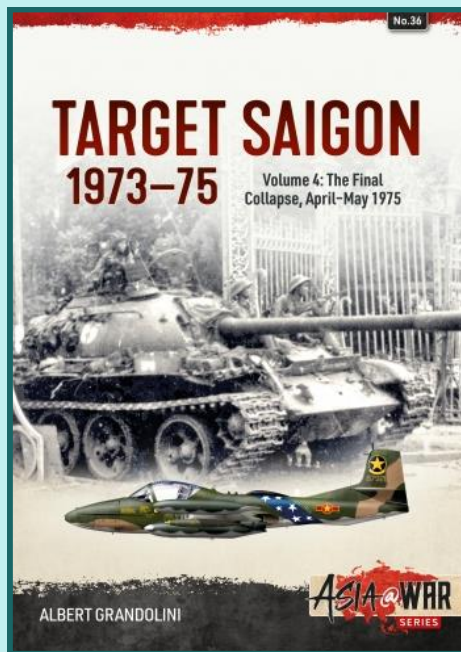
31 ft (9.45 m)

43.1 ft (13.14 m)

15.8 ft (4.82 m)



Author: Albert Grandolini



This is the fourth, and last, volume in Albert Grandolini's seminal account of the last two years of the Vietnam War and has, from a personal perspective, been the most eagerly awaited. As readers may recall, I have long had an interest with Post World War II conflicts and, within this, a particular fascination with those wars that resulted in the total rout of one of the adversaries, whether it was the Arab armies during the 6-day war, the Iraqi Army in 1991 or, more recently, the Afghan National Army in 2021. As an impressionable teenager living not that far from the action in 1975, I clearly remember the dying days of the Vietnam War and those iconic images of helicopters landing on rooftops or being pushed off the flightdecks of US Navy carriers and overloaded transport aircraft departing from South Vietnamese airfields for unknown destinations.

Quite understandably, the first three volumes in this series dealt largely with the land campaign as the North Vietnamese swept down through the country. Given the limited capabilities of the VPAF at the time, as it sought to transition from a purely defence-based air arm to one that could potentially support ground forces, pitted against the VNAF that was struggling with 'Vietnamisation' after the departure of the United States, coverage of the air domain was relatively light if not insightful and informative. That has largely changed with this last volume, which highlights some of the key aspects of air power that played out on both sides during the final months. For the South Vietnamese, it was a question of balancing their efforts between the provision of meaningful battlefield support to the Army of the Republic of Vietnam (ARVN), whether that was in the form of

Close Air Support (CAS) or air mobility, or the more strategic aim of rapidly redeploying forces around the country to plug gaps or attempt to halt progress down the Major Supply Routes (MSRs). At the same time the aforementioned VPAF were attempting to get to grips with the arrival of new equipment, in the form of fixed-wing tactical transport aircraft or medium- and heavy-lift helicopters with which to provide their own forces with battlefield mobility. At times, it was doubly difficult given the rapidity with which the NVA swept through the country.

Once again, the author has drawn on a wide range of Vietnamese-language sources, and while it may be argued that this particular period of the Vietnam War, that which occurred just before the final Fall of Saigon, has been well covered in the past, Grandolini has still found some golden nuggets with which to embellish this final volume. Against impossible odds, with failing equipment and a lack of logistics support, the VNAF was probably the one sector of the South Vietnamese armed forces that continued to provide effective resistance against the NVA. As it became clear that the flow of NVA forces could not be stemmed, so the burden fell to the VNAF to increase its sortie rate to protect and serve the final evacuation, and some truly heroic actions are described within the text. As a keen student of the Vietnamese Air Forces, I am familiar with most of the previously published images that have appeared in other books although, once again, the author and the series editor, Tom Cooper, have delved into previously unknown archives to deliver some more unique imagery. The photos of a VNAF A-37B Dragonfly that had force-landed on a highway in southern Thailand after running out of fuel, and another showing not one but *three* pilots that emerged from a single-seat F-5A Freedom Fighter, were unique to me and served to underline the desperation of the last few days of the war. Another previously unseen photograph, of a crashed VNAF AC-119K in a rice paddy two days before the end of the war, underlined the bravery shown by these particular crews in trying to defend their air base from enemy attack.

For the aviation modeller in particular, this last book in the 'Target Saigon' series is probably the best in terms of subject matter and inspiration. On offer are another excellent selection of aircraft Colour Side Profiles (CSP) by Tom Cooper, Luca Canossa and Pablo Albornoz covering the principal combat types operated by the South Vietnamese Air Force (VNAF) during the dying days of the Vietnam War, together with some of the VPAF types introduced to support the NVA offensive, and USN and USMC aircraft involved in FREQUENT WIND, the operation launched from USN carriers in the Gulf of Tonkin to carry out a Non-Combatant Evacuation. My particular favourites are the Northrop F-5A Freedom Fighter in an 'Asia Minor' camouflage scheme, a Cessna A-37B that had been recently captured and pressed into service with Provisional Revolutionary Government – National Liberation Front (Viet Cong) markings and a former Aeroflot Antonov An-24 that was also operated by the same Air Arm. All of these profiles provide a great deal of inspiration for modellers since they also highlight the plethora of individual unit markings and insignia worn by the various aircraft, with the vast majority of types well represented in kit form.

The publication of this last volume in the 'Target Saigon' quartet of books is an excellent culmination of the story surrounding the final years of South Vietnam from a military and political/military perspective. While the vast majority of each book is, understandably, dedicated to the respective land campaigns given the doctrinal and geographical aspects of the War, they all offer something for the aviation enthusiast, researcher or modeller. Once again, the @War Series Editors at Helion have combined the written talents of a well-informed author with a host of previously unpublished imagery sourced from personal collections and archives, and a very nice selection of colour side profiles, to produce a high quality reference book on an unusual and little publicised subject.

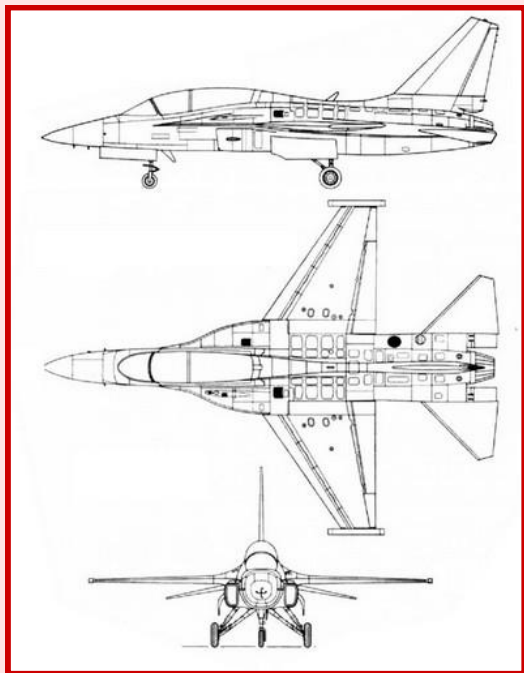
Thoroughly recommended to anyone with an interest in the Vietnam War and, in particular, the activities of the South Vietnamese Air Force during its last year of existence.

Mark Attrill, April 2023

# 'Elang Baru' aerobatic T-50i



In 1992, Korea Aerospace Industries (KAI), in conjunction with General Dynamics, began studies to develop a supersonic advanced jet trainer and light combat aircraft to replace RoKAF T-38 Talons and Hawks. Initially known as KTX-2, the design eventually became the T-50, and was named "Golden Eagle".



KAI also produced the F-16 under license, so experience with this jet was used in the development. Lockheed Martin acquired General Dynamics and continued the program with KAI, with a full scale KTX-2 contract signed October 1997. The type was given a US-made GE-F404 jet engine and a two-seat cockpit. First flight took place in August 2002.

The Republic of Korea Air Force (RoKAF) introduced the type in 2005. Currently, the RoKAF aerobatics team, the 'Black Eagles' flies the T-50B. Several variants were developed as trainer 'T' and fighter-attack 'FA'. A 20mm M61 gun is also an option with the gun muzzle in the left LERX. Other armament capabilities include Sidewinder missiles (on wing-tip rails), Mavericks, ECM, JDAM and various bombs.

The type has been ordered by South Korea (>140 aircraft operated), Indonesia as T-50i, Philippines as the FA-50PH and Thailand as the T-50TH. 'Free' Iraq also ordered the type as the T-50IQ, with deliveries beginning at the end of 2019. It is reported that Colombia ordered TA-50 and FA-50 jets in April 2022.

For the USAF T-X program for a new trainer, a variant was proposed as the KT-X with new systems, a dorsal fairing and a refuelling receptacle. However, the USAF competition was lost in 2018.

DATA: Length: 13,14 m; span with missiles: 9,45 m. Max speed 1,800 km/hr, Range 1800 km, Max TO weight 12,300 kg.

In 2015, Academy released a 1/72 snap together kit of the KAI T-50 Golden Eagle, but it is for the prototype lay out. This kit #12519 has only about 25 'multi colour parts' in black and white. It has a black display stand and full colour instructions on glossy paper. There are no waterslide decals but thick stick-on stickers for single scheme R.o.K scheme in white and red. There is no landing gear, but a transparent display stand is included. The surface detailing is nicely done, but there is no weapons load-out, only a centreline fuel tank. The kit snaps together with almost no gaps.

## Modifications needed:

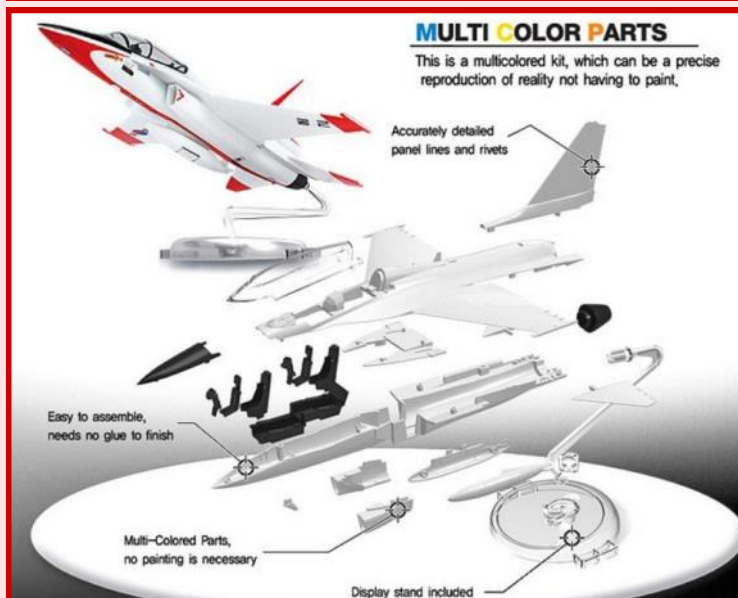
The model parts are for the early prototype trainer and in order to capture the production T-50 trainers and Fighter Attack (FA) variants, some modifications are needed:

- [1] the vertical tail tip is different; it was cut off and extended with a flat antenna fairing;
- [2] 2 thin plates were added to the fin sides;
- [3] some aircraft also have a gun, so a small fairing and gun nozzle should be added to the left-side LERX above the intake;
- [4] some aircraft have small ECM? Fairings on the wing leading edge, these are located about 46 mm from the centre line;
- [5] the wing tips of the kit are fairings. For missile rails these are 5 mm too short at the front so extend these;
- [6] the kit cockpit parts are a good basis for adding a bit more detail such as on the ejection seats;

[-] add pylons and stores if desired or keep the model in "clean" configuration; the inboard pylons should be about 32mm from the centreline and the outboard ones are some 47mm from the centreline.

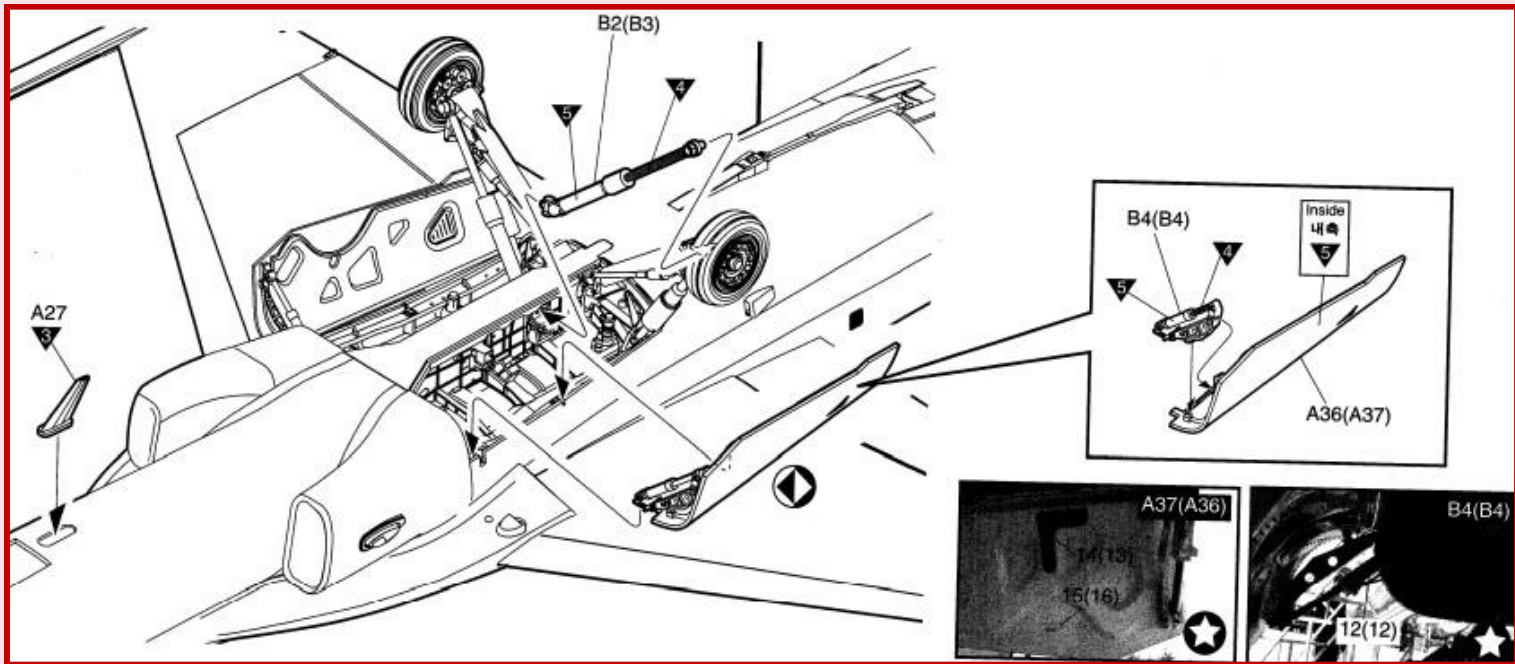
[- ] add landing gear if desired (see notes below).

NOTE: Some reports suggest that the FA-50 has a longer radar nose but I could not really see this. To my eye, the Academy model nose is a good shape and the model has a correct overall length of 182 mm.

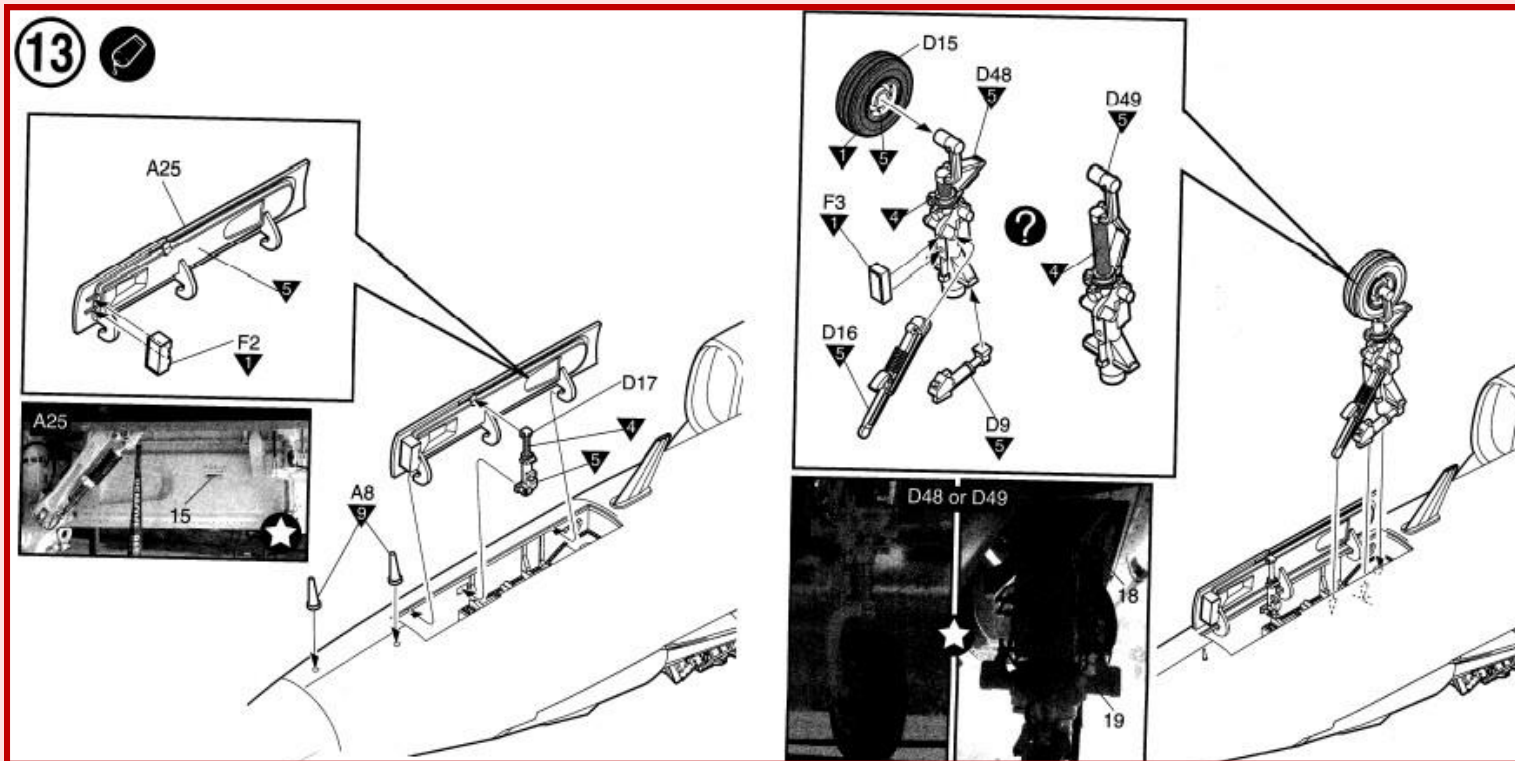


First, the engraving of the flaps and ailerons was made a bit deeper with an Olfa P-cutter. The static discharger attachment points at the trailing edges were shaved off and sanded flat. The cockpit tub is not bad, with raised details and reasonable seats that look to be of the ACES type.

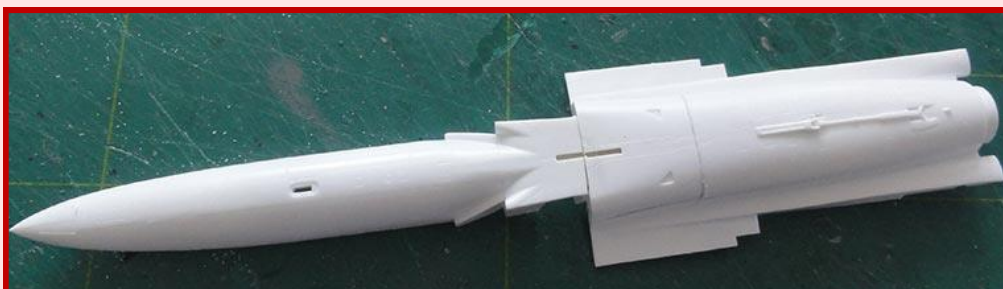
The lower fuselage part #B4 was tackled to contain landing gear bays. I used the kit instructions of the Academy 1/48 scale T-50 kit for how the gear looks as seen here:



Note that the nose gear is quite different from that of the F-16, and retracts forwards:

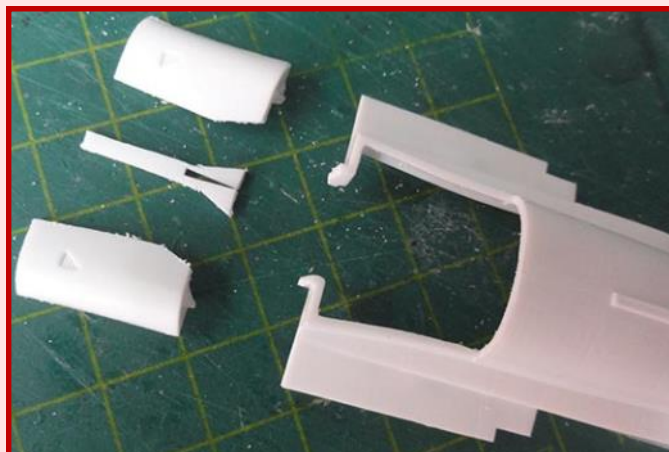


First, the bays were to be opened up. With a razor saw a cut was made at the intake location.





Then, the bay boundaries as engraved were scribed in with the razor saw. After a while, the central main gear door section became loose. The central beam was made from strip, and the gear bays from bent card. I did the same with the nose gear bay. It did not require a lot of effort!



The remainder of the model was now assembled. At the rear airbrakes there was some plastic shrinkage, so I filled with putty and sanded smooth. During assembly (with glue), I removed all the bigger click pins. Before closing the fuselage, I added some nose weight just in case. After main assembly was done, just a little putty and sanding was needed on the lower fuselage at the intakes. A base coat was airbrushed with Revell Aqua 75 'Steingrau' acrylic (although any grey can be used), and any imperfections repaired with putty and sanding.



The vertical tail tip [see 1 below] was cut off and extended with thick rod for the antenna fairing sanded in shape. Two thin plates were added on the side [see 2]. The gun nozzle slot at the LERX (if required) can be crafted, drilled open and a small gun fairing and plate made from card [see 3]. NOTE that some pure T-50 trainers do not have the gun fitting, nor do the Indonesian aerobatic team aircraft. The 2 small ECM? fairings [see 4] on the wing leading edge were made from plastic rod.



The main gear looks like that of an F-16 (which KAI also produced under license in South Korea). I had a spare 1/72 scale F-



16 main gear from a Revell F-16. This was used as pattern to make the legs from scrap, with rod and metal wire. Wheels used on the T-50 model are spare F-16 wheels of the thin F-16A/B type; these will be installed later on. The separated main doors were refitted after they had been sanded thinner. The nose door was made from a piece of card.



Landing gear and bay interiors are mainly gloss white inside. The cockpit interior is mainly FS36231 grey for which Gunze Sangyo H317 can be used. Ejection seats are black. The kit ejection seats can be used but would be better if detailed a bit with harnesses





etc. You also need to close the rear opening with card.

16 T-50i aircraft were delivered to Indonesia beginning in September 2013, and received the codes TT-5001 - TT-5016. These aircraft seem not to have the gun nozzle/ fairing. I opted to make a T-50i in the special blue and yellow scheme of the Indonesian Aerobatic Display Team 'Elang Baru'.

The blue colour seems to approximate to FS15090, and the yellow to FS13591. For the blue Gunze Sangyo Mr Hobby H5 was airbrushed overall and the yellow swirls will be made using decals. The decals for this model had to be home-made which took a lot of effort, studying various photos. A photo and draw editor was needed. If you are interested in this decal sheet, let me know. Please also look at my special [decal page here....](#)

ASIAN AIR ARMS NEWSLETTER 35

### T-50 i Indonesia demo

designed by Meindert de Vreeze

E-mail: designer@xs4all.nl © copyright!



**RECOMMENDED KITS:**

1/48 Academy

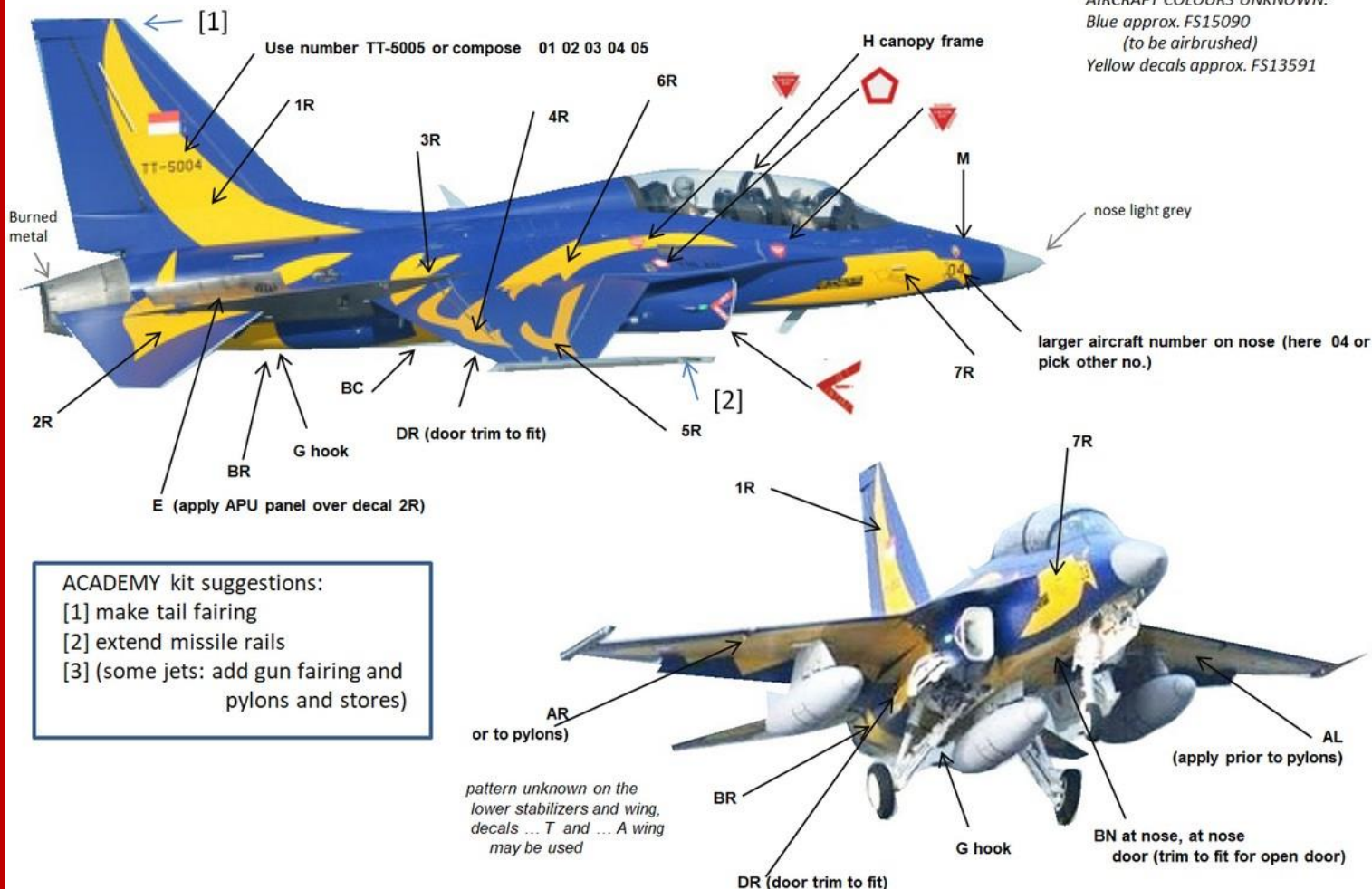
1/72 Academy (has no undercarriage parts, this looks similar as F-16 undercarriage)

**AIRCRAFT COLOURS UNKNOWN:**

Blue approx. FS15090

(to be airbrushed)

Yellow decals approx. FS13591



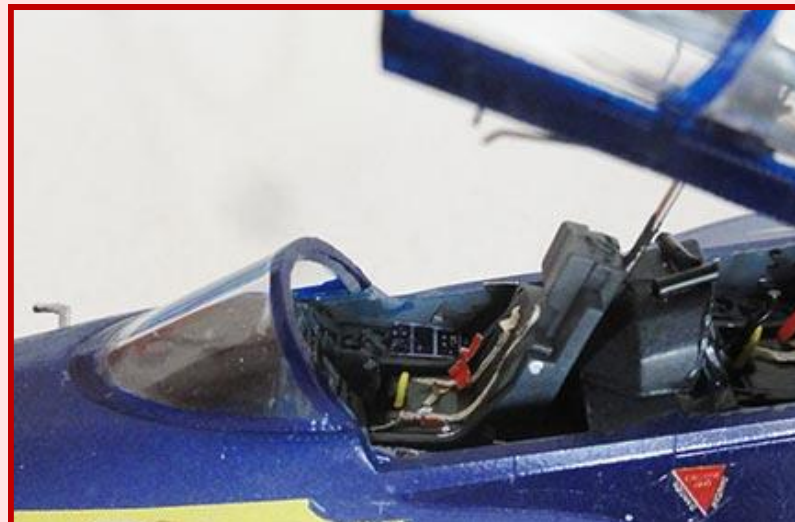
**ACADEMY kit suggestions:**

- [1] make tail fairing
- [2] extend missile rails
- [3] (some jets: add gun fairing and pylons and stores)

pattern unknown on the lower stabilizers and wing, decals ... T and ... A wing may be used

The custom-designed decals were printed by a third party using an OKI laser printer that can also print white and this is essential for the yellow patterns. Note that I could not fully see all angles, so the yellow pattern on the lower horizontal stabilizers had to be "guesstimated". The decals are on a single clear film so each needed to be cut out with fine scissors.





The canopy was hand painted with a fine brush, with a black inside edge applied with a permanent marker. A cross frame was made for the actuator (not shown above). Inside the canopy frame, small locks were added from very thin stretched sprue, with two small mirrors in the front frame and one in the mid frame from scrap.

Final smaller details like static dischargers, probes and pitot were added. The anti-collision lights were painted red and blue. On the fin top a clear light was added from a transparent bit.

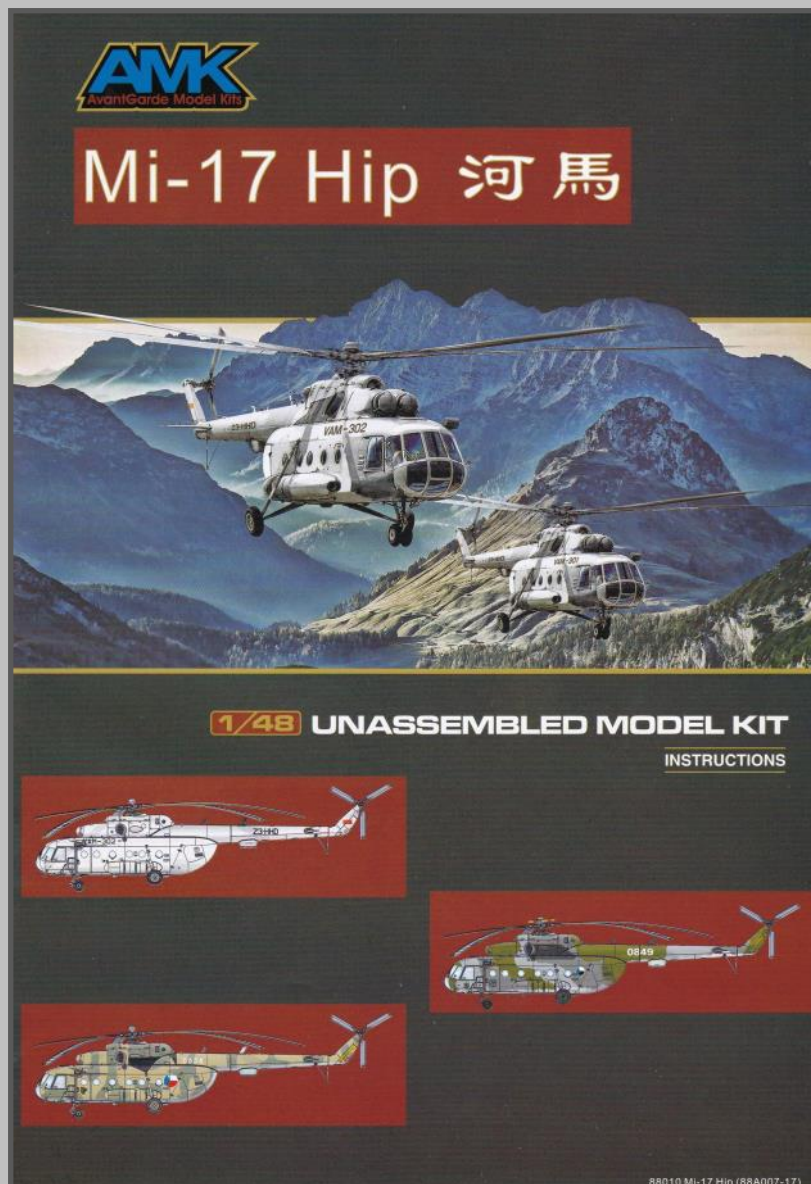


### Meindert de Vreeze

**Editor's Note:** Since Meindert undertook this superb conversion, and as reviewed in the last Newsletter, Blue Diamond Models recently released two resin upgrade sets for this kit, Item Reference: PMSM72-001 and Item Reference: PMSM72-002. The first contains 'a comprehensive array of resin parts for the nose and main landing gear & wheels, vertical fin, Radar Warning Receivers, gun shroud and wingtip Sidewinder rails. The second is labelled as a FA-50PH weapons set, and this includes 2 drop tanks, 2 each of AIM-9 Sidewinder and Python 5 Air-to-Air Missiles, 2 x Mk 82 bombs and four stores pylons.' You can find them here:- [Philippine Military Scale Models](#)



# AMK 1:48 Scale Mil Mi-17 Hip C



I suspect that this recent 1:48 scale kit release (**Reference AMK88010**) will become very popular with the modelling community, given that the Mil Mi-8/17 'Hip' family of medium-lift helicopters has been, or is still, in service with no less than twenty-four Asian Air Arms, stretching from Georgia to Papua New Guinea and China to Indonesia. We have waited a long time for one of the mainstream kit manufacturers to release a kit of the hugely popular Mil Mi-8/17; AWC, a Polish concern, did release a 'hi-tech' resin kit of the type some years ago, but it was hard to source and understandably quite pricey. Now, like the proverbial bus, not one but three kit manufacturers have sought to release 1:48 scale Mi-8/17 kits within a couple of months of each other, although this preview will focus solely on the Avantgarde kit. I have no doubt that some of you have followed the progress of this kit on the usual internet modelling sites. It appears to have had a long gestation period, with a first announcement by Annetra, a new Czech company, way back in September 2015! The original announcement indicated that the kit would be designed in the Czech Republic and tooled by AMK in China, and it was, at the same time, suggested that the first edition would include decal markings for a Chinese example. Since that time AMK/Annetra has provided sporadic updates, with the first sprue shots appearing in 2018, and images of a test build on display at the Moson show in Hungary in 2019, together with images that indicated the decal options had been modified to include Afghan, Indian and Chinese examples among others. This news would normally have suggested a release shortly thereafter, although I have little doubt that the COVID-19 situation had a severe impact on progress, and this has meant that we have now had to wait almost four more years to see the final product. In spite of their reputation for seemingly glacial production-to-release timelines (the Grumman F-14D Tomcat was a classic example of this), Avantgarde are well-known for their superb kits of popular subjects including the IAI Kfir, MiG-31 Foxhound and aforementioned F-14D Tomcat, so I was confident that they would do a good job with this long-awaited rotary-wing subject.

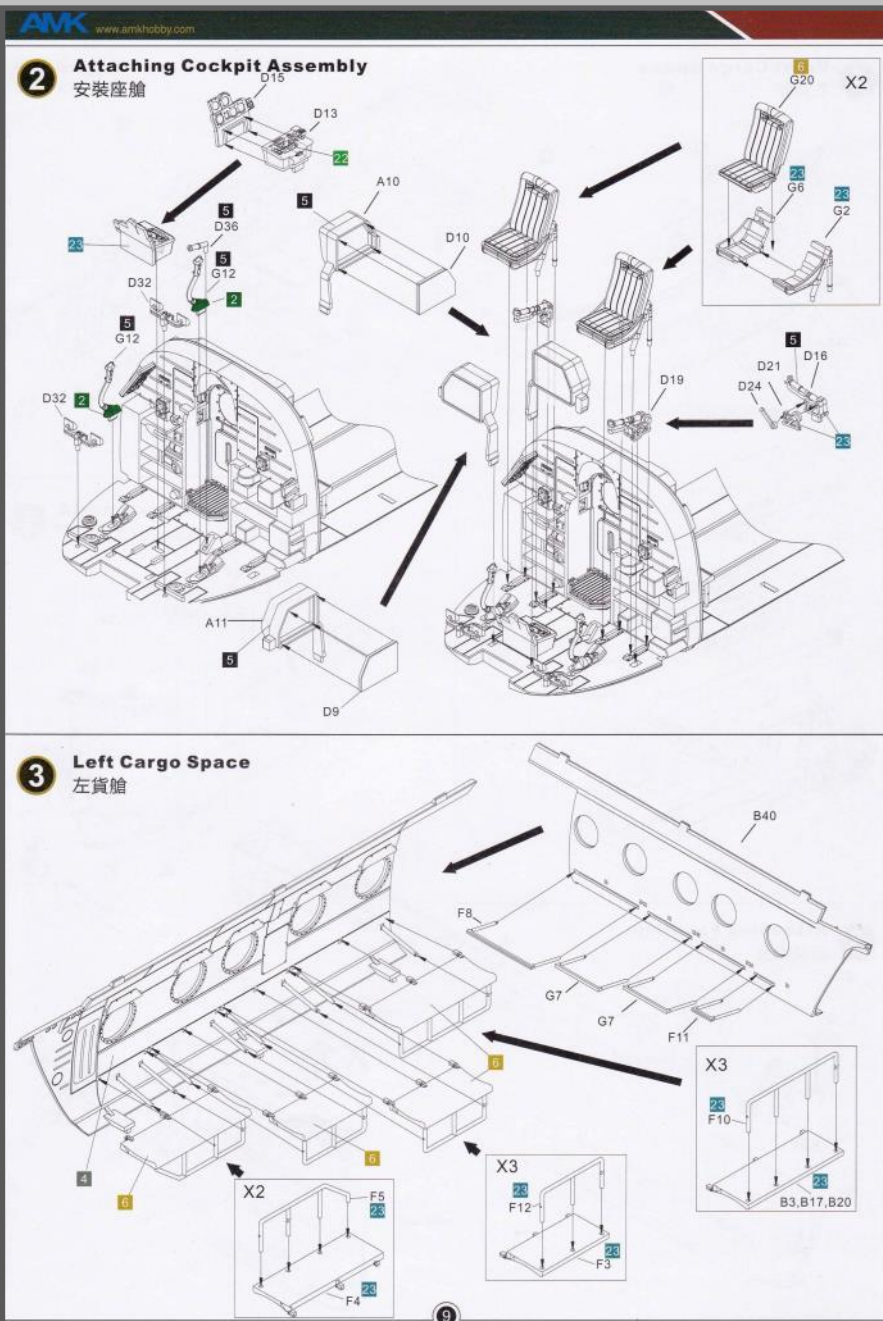
The initial AMK/Annetra kit is marketed as a Mil Mi-17, the export version of the Mi-8MT, and is presented in a standard top-opening box with a rather striking picture of two North-Macedonian Mi-17 Hips flying through mountainous terrain, presumably somewhere in the Balkan region of Europe. On opening the box, we are presented with just over 240 parts moulded in AMK's customary dark grey styrene with a further 22 clear parts, a small photo-etched fret with around 24 parts, a decal sheet with markings for three examples of the Mi-17 and a 20-page colour/black & white instruction manual. All in all, a very nice package.

A closer examination of the parts revealed some extremely nice detail, and allayed one of my potential concerns with the kit. There had, prior to release, been a considerable amount of internet 'chat' about a rather rough surface texture and, indeed, some of the images of earlier test shots appeared to bear out these concerns. Reports then began to emerge about some of the first production kits released but these days I tend not to take much notice until I lay hands on the kit myself. I have found that there are far too many out there looking for the 'perfect' kit and it simply does not exist. Every kit has challenges, some more than others, but this is one of the joys of modelling rather than kit assembling.

Anyway, I digress, so back to the preview. I am pleased to report that my particular example does not suffer from any issues with the surface texture or detail, unless you look at it under a microscope. If there *are* any issues, they will surely disappear under the first coat of primer. During the initial inspection, standout items for me included the separate one-piece top cowling (which indicates that further releases of the kit will cater for later variants of the Mi-8/17), the main rotor hub, tail rotor and main rotor blades which are moulded with the characteristic droop seen on the Mi-8/17 when at rest. The transparencies are also nicely moulded and crystal clear although I did notice some minor distortion on the lower panels of the one-piece main canopy; I suspect these will be less pronounced once the part is fitted and the eye is distracted by all of the lower cockpit detail that sits behind these particular panels. The kit also has provision for armed examples with the relevant stores pylons and six superbly rendered slide moulded UB-32 rocket pods included. Although I have not had the opportunity to inspect the other recently-released kits of the Mil Mi-8/17 Hip, online imagery would suggest that in overall terms the detail included on the AMK parts is vastly superior to that found elsewhere, and I have little doubt that this, combined with the early results of test fitting the major parts, means that AMK/Annetra are on to a winner.



An initial study of the Instruction manual is recommended, since there are minor variations in airframe detail between the options provided for in the kit and, indeed, any other model of the Mi-17 'Hip' that you may have in mind. In a departure from most types of manuals, the painting and marking instructions are at the beginning, and they include a colour chart. Unfortunately the text is in Chinese only and indicates Mr Color paint references; while these are nice paints, they are not readily available in some countries, but fortunately AMK have provided Federal Standard numbers for all of the shades so it should not be too difficult to cross-refer these numbers to your favourite paint range. One of the highlights of the painting instructions was the inclusion of a section that details the colours applied to the main and tail rotors and the various instrument panels. The main instruction manual consists of exploded diagrams; some of these are quite clear although some are somewhat crowded and it may be difficult to pick out the location of some parts, so care should be exercised throughout. Some colour callouts, particularly for the interior, are included in this main section, which are helpful if not extensive. I would recommend regular reference to images of the particular machine you are going to model. A parts map is also included at the back but it is not particularly helpful since it is difficult to make out the part numbers.

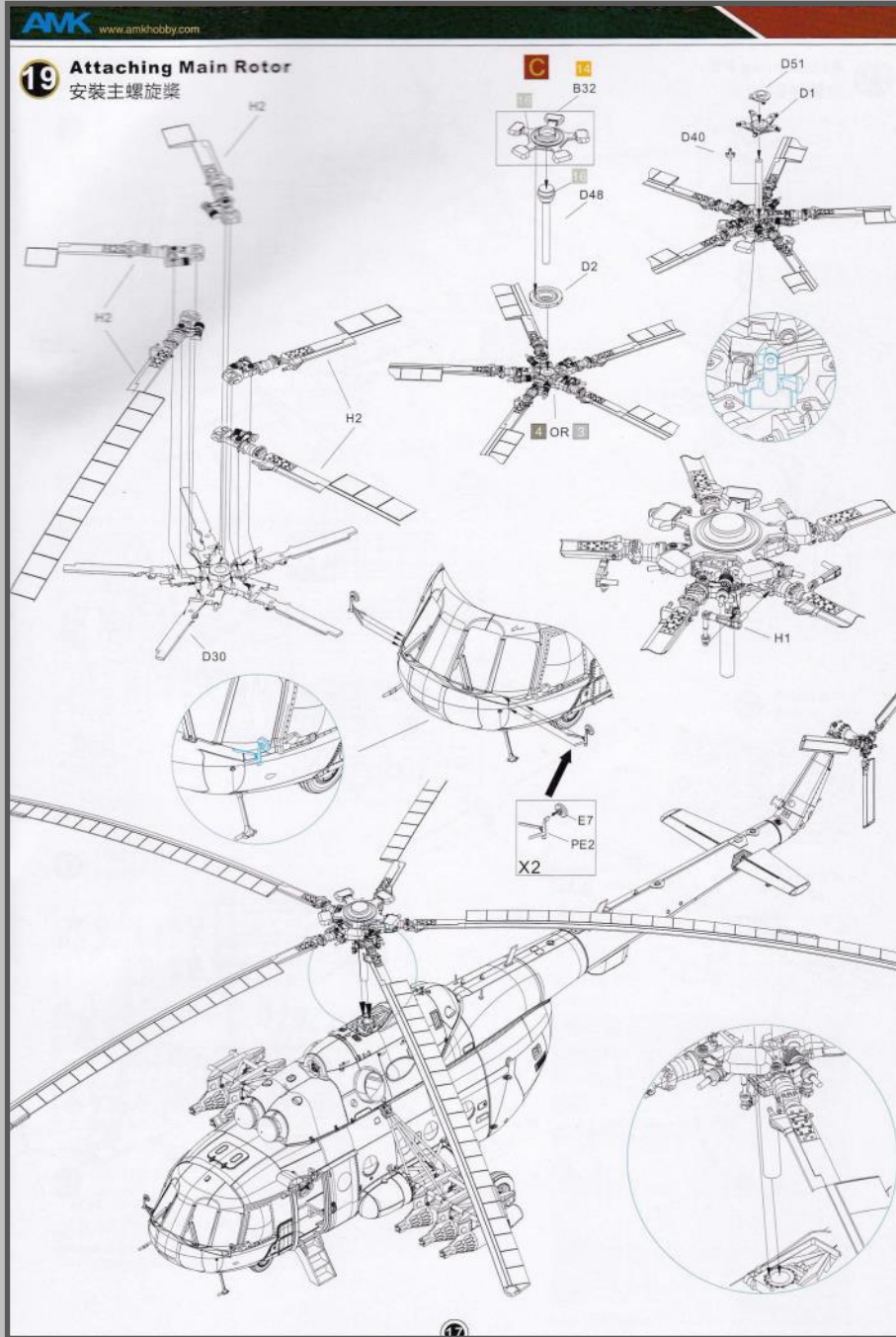


Not surprisingly, construction starts with the main cockpit, with almost 40 parts making up a very busy and nicely detailed focal point for this model. Highlights here include three-part pilots' seats, a separate cockpit/cabin access door and fire extinguishers. The instrument panels feature some nice raised detail although the decal sheet also provides a nice set of instruments so it will be your decision as to whether you apply the decals over the raised detail or sand it flat. The next couple of stages deal with the main passenger/cargo area, and in keeping with other recent transport helicopter kits, the parts combine to produce a separate pod that is then inserted between the main fuselage halves. The main compartment includes some nicely rendered seating with finely detailed frames although it does appear that these parts can only be assembled in the deployed position. If you want to display folded seating then some modification of the parts will be necessary. Once the fuselage is assembled, attention turns to the engines, top cowling and main rotor mounting. The distinctive rear 'clamshell' troop access doors are next and these, much like the cabin interior, are superbly rendered with fine rib detail, storage boxes and crew seating included; the doors can be mounted in the open or closed position. Lower fuselage detail is next, which includes mounting the distinctive auxiliary fuel tank sponsons that run the length of the fuselage. Please note that the tanks included in this kit are the so-called short '3-brace (strap)' version which were fitted to earlier examples of the Mi-8MT/Mi-17 so you should check your references to ensure they are the correct ones for your particular model. Since these are presented as separate items, this is another indicator towards the possible release of subsequent kits that cater for different variants. This section also covers the fitting of the LPG-150M external winch, which is another distinctive feature of the Mi-8MT/17.

The undercarriage comes next and includes a feature that I am not keen on; multi-part wheels. Both the main and nose wheels are made up of four parts and while I understand that this approach can help with painting and finishing, I do find that cleaning up the inevitable seams can be hard work and lead to

the potential loss of detail. I suspect that I will resort to aftermarket resin parts for these items. The design of the tail rotor and subsequent assembly is yet another indicator of future plans; the kit features a tail rotor mounted to port, while on earlier variants this was mounted to starboard. Nearing the end of main construction, attention now turns to the assembly and attachment of the stores pylons and rocket pods for those that want to arm their 'Hip' helicopter. Final assembly includes the attachment of the extensive five-blade main rotor head and various airframe details including a cabin access ladder, pilots' windows and plastic/photo-etched rear view mirrors. The very last section of the assembly sequence caters for those modellers who may wish to remove some of the integrally moulded part of the fuselage detail and replace it with photo-etched parts, and is mainly focussed on the tail and sponson surfaces.

My only disappointment with this kit is the rather uninspiring choice of decal subjects although I do appreciate the origin of the kit and any commercial decisions related to the final production. I did think it was a pity that the original proposal to include seven or eight options, including the three aforementioned Asian subjects, is an opportunity lost. As a result we are presented with three



options including the North-Macedonian machine featured on the box top and two Czech Air Force examples spanning a 30-year time period with contemporary camouflage schemes. Certainly, the inclusion of two Czech subjects ensured that the initial delivery of kits to one well-known Czech online retailer resulted in the kit being sold out within 6 hours of release! Surprisingly, given the lack of any mainstream kits, the late-lamented US company Cutting Edge did release two decal sheets for the Mil Mi-8/17 some 20 years ago, and these did include some Asian subjects, but these sheets are long out of print and difficult to source.

Caracal Decals have announced the future release of at least one decal sheet covering this helicopter, although there are no indications yet of the subjects they will select for inclusion. I have no doubt that, with the availability of three 1:48 scale mainstream kits, there will be more decal releases in the near future, and maybe even a re-release of a kit with Asian markings. We will, of course, review any new dedicated sheets when they are released. In the meantime, it should not actually be too difficult to reproduce one or two of the Asian colour schemes using some of the excellent generic Asian Air Arm decal sheets produced by AAA SIG member Mick Burton under his BrightSpark range, serial numbers from the spares box and the stencils included in the AMK kit.

Review sample courtesy of my wallet.  
Highly recommended

**Mark Attrill**  
March 2023



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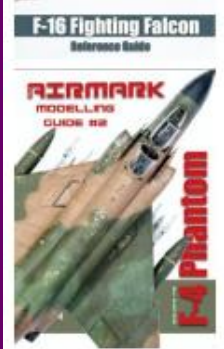
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