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# ASIAN AIR ARMS NEWSLETTER 28

## August/September 2021

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## Death of an Air Force

As we go to press, the United States and some of its Allies are closing out another dramatic and tragic episode in Afghanistan's recent history with a massive military airlift operation from Kabul International Airport (KIA) following the Taliban's lightning-speed campaign to take back control of the country. The Taliban's success has, in large part, been down to the capitulation of the Afghan National Security Force, which for some time has not enjoyed any real degree of air support from the nascent Afghan Air Force. The Air Force was almost wholly reliant on the provision of maintenance and support from an external contractor workforce that had been withdrawn as part of overall drawdown of International military support to Afghanistan. As a result, the Afghan Air Force has seen a steady decline in its serviceability and availability rates with its fixed and rotary-wing assets in the months before the latest Taliban offensive began, and as a result it played a very small part in supporting Government forces. It has also been reported that the Taliban had conducted a very effective campaign of targeted assassinations of Afghan Air Force pilots over the last year or so, since they had identified this as one of the Government Forces' centres of gravity.

It therefore came as no surprise to me that the Afghan Air Force had reportedly followed in the footsteps of both the Vietnamese National Air Force of South Vietnam in 1975 and, more recently, the Iraqi Air Force in 1991, and conducted an exodus from Afghanistan as the Taliban overran the major regional capitals and then Kabul. Reports are understandably sketchy at this stage, since the International Press is rightly focused on the human tragedy that has unfolded at KIA, but there are indications that at least thirty aircraft fled to neighbouring Uzbekistan with at least one downed by Uzbek air defences for failing to identify itself. Satellite imagery appears to show at least 25 aircraft at Termez International Airport, including nine Mi-17s, ten A-29 Super Tucanos and 3 C-208 Caravans. Further online imagery suggests that another group of aircraft, including a dozen C-208s, have reportedly arrived at Bokhtar Airfield in Tajikistan.



Meanwhile, there has been considerable speculation about the number of military aircraft which may have fallen into the hands of the Taliban and what the new regime will do with these new assets. On the face of it there are estimated to be around 90 aircraft left in country but many of these will not be serviceable; indeed much of the recent footage of Taliban fighters touring former ISAF or Afghan Air Bases show the vast majority of aircraft to be in an unserviceable state. Widely circulated photographs show a Mil Mi-24 'Hind' with its main rotor missing and a number of Mi-17 'Hips' disassembled on

the hangar floor. Two Mi-17s based at Herat do appear to be operating in the hands of Taliban fighters and a UH-60 Blackhawk has also been observed taxiing at Kandahar Air Base. Elsewhere, close scrutiny of the international news coverage from KIA during the evacuation shows a fairly large number of A-29 Super Tucanos, Cessna 208 Caravans and Mi-17s residing at KIA, with the latter in constant use during the early stages of the international evacuation operation. Taking into account the adverse media coverage on the amount of sophisticated weaponry that the Taliban has already captured, I have little doubt that the US and Allied Forces currently occupying KIA will take measures to destroy or disable any remaining air assets on the ground before they finally depart but there will almost certainly be some former Afghan Air Force aircraft available for potential use by the Taliban. Historically the Taliban have not been huge advocates of any form of air power. They appear to have few aspirations to exert influence outside the borders of Afghanistan and during their previous period of rule, limited their use of aircraft to operating a few former-Afghan Government Mi-8/17 Hips to transport senior Taliban officials around the country.

That said, the situation is still very fluid and there are some variables that could come into play. Over time, Tajikistan and Uzbekistan may feel 'obliged' to return former Afghan Air Force assets to any new Taliban-led Government in Afghanistan, if the International Community (IC) that supplied these valuable assets in the first place do not act decisively to recover them, as the US Government did with former VNAF aircraft following the Fall of South Vietnam in April 1975. If they were returned, the other issue will be determining who would fly and maintain the aircraft. The obvious departure of so many Afghan Air Force personnel across the border or as part of the IC's evacuation programme, together with the withdrawal of contracted maintenance support, will have a significant impact on potential Taliban air operations, although there are also early reports of former AAF aircrew being press-ganged by regional Taliban leadership to operate at least some of the rotary wing fleet.

The long term prognosis is not good at this stage and I suspect we have now witnessed the death of yet another Afghan Air Force.

Mark Attrill, August 2021





# Air Graphic Models – On Target Decals

## 1:72 Scale Air Forces of the World – Part 5 Update Set

AIR-GRAPHICS



Thank you to Martin Horn (Picturus), Asian Air Arm SIG (IPMS UK), Jon Freeman (Aircraft), Max McGrath (Picturus RNZN), RAN Museum, RNZN Museum, Jon Anderson (Australia Picture Inc), Dave Hammond (New Zealand), Aviation Workshop Photo Collection, Mr. Sukumar Hengstler (Thai AF F-16), Air-Graphics Photo Collection, RAAF 2018, Self-Force Online with the, Nigel Pittman (Australia), Laurent Villeneuve (Heller-Forner)

Decals By Jon Freeman  
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Decals Printed by  
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ON TARGET  
Decals

AIR-GRAPHICS  
AIR72-017  
1/72 SCALE

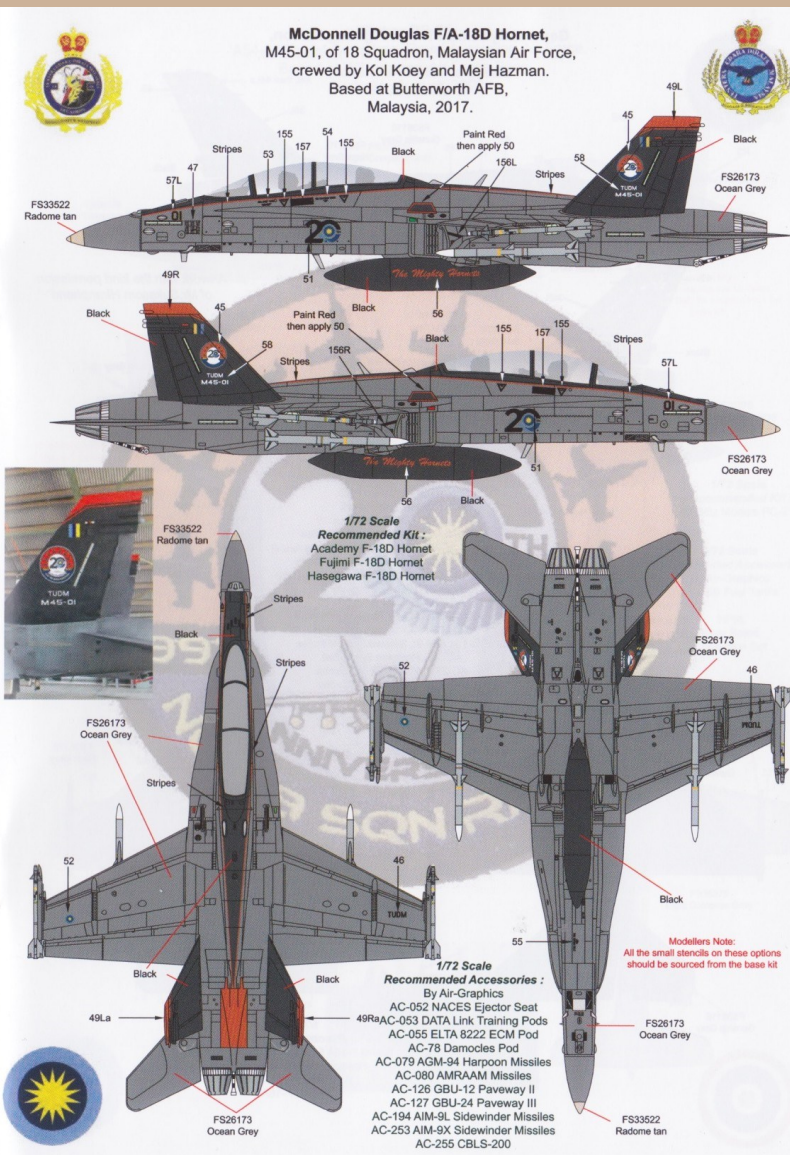
### Air Forces of the World Part 5 - Update Set



WORLD AIR POWER SERIES

AIR-GRAPHIC MODELS

Air Graphics Models' latest Air Forces of the World Update sheets will, again, be of interest to Asian Air Arms fans since it includes two very interesting and attractive options for aircraft from the Royal Malaysian Air Force (TUDM) and Royal Thai Air Force. The style and format of this latest sheet follows the same successful formula seen with previous releases. The sheet actually covers no less than 10 separate colour schemes, some of which are for very recent aircraft types such as the Royal Australian Air Force Pilatus PC-21 in low visibility markings and a very attractive French Aeronavale Dassault Rafale-M sporting 100th Anniversary markings from 2019. As previously mentioned there are only two Asian Air Arm schemes presented but since, if I recall correctly, neither have previously featured in other kit or aftermarket decal sheets, this particular decal sheet is worth a quick review.



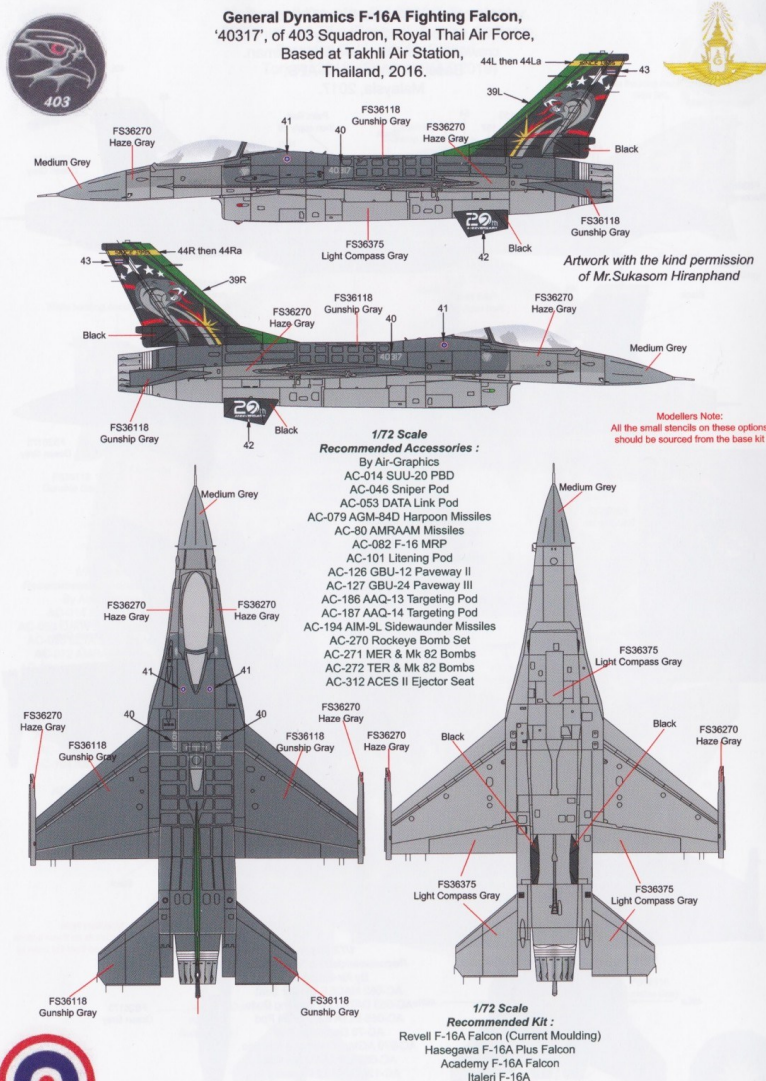
The first Asian option is for a Royal Malaysian Air Force (TUDM) McDonnell-Douglas F/A-18D Hornet as operated by 18 Squadron in 2017. The aircraft is featured in the standard overall FS26173 Ocean Grey colour scheme but sports special 20<sup>th</sup> Anniversary markings with black tails, spine and centerline drop tank, with red outlines and appropriate titles/commemorative badges applied to the fin and fuselage surfaces. The second Asian Air Arm subject is a General Dynamics (later Lockheed-Martin) F-16A operated by 403 Squadron of the Royal Thai Air Force and, again, sporting a special 20<sup>th</sup> Anniversary scheme. On this occasion, the special markings are limited to the fin and ventral strakes with an impressive Cobra motif applied across the entire fin. There are, of course, any number of excellent 1:72 scale kits of both aircraft types on the market and recommendations for these are made in the instructions. Personally, I would opt for either the Academy or Fujimi kit to reproduce the F/A-18D Hornet and either the current Revell or Hasegawa kits for the F-16A Fighting Falcon. As with quite a few decal sheets that include special markings, Decal sizing can be an issue. The relatively simple markings applied on pre-painted fin surfaces is less of an issue with the F/A-18D but it is not clear which kit had been used to size the tail markings for the RTAF F-16A, so care will need to be taken and the modeler may need to test and adjust the decals accordingly.

As I have previously outlined, Air Graphics have built up a very good reputation for the accuracy and standard of their decal sheets which are the result of a long partnership with Cartograf of Italy so their quality is assured. The decal placement instructions remain some of the best in the





General Dynamics F-16A Fighting Falcon,  
'40317', of 403 Squadron, Royal Thai Air Force,  
Based at Takhli Air Station,  
Thailand, 2016.



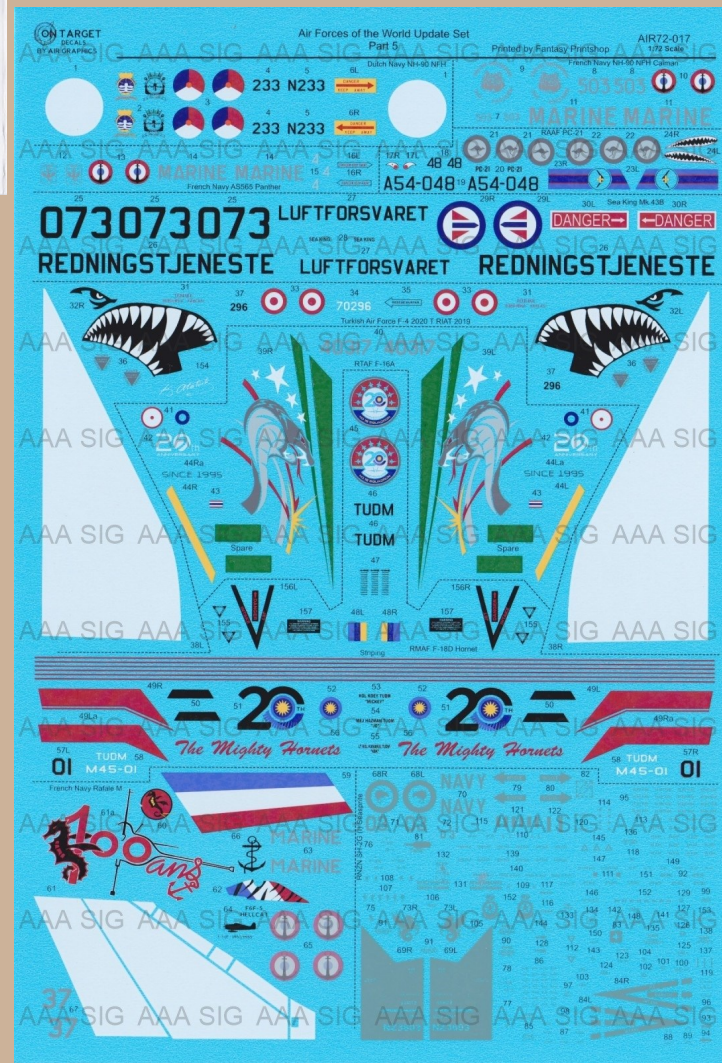
marketplace, with, in most cases, comprehensive colour references including FS numbers and specific paint references for at least six of the most popular brands.

As an added bonus, this particular decal issue also includes a separate, and very useful, Paint Colour & Conversion chart for no less than seven of the most popular model paint ranges including Humbrol, Xtracolor, Gunze Sangyo and Tamiya. Modellers should also note that some of the schemes on offer, including the two Asian Air Arm types, rely on the use of some stenciling from the donor kit. The DPIs also include a nice selection of photographic references for each type for further inspiration.

Air Graphics have already confirmed that they will be continuing their trend of including more Asian Air Arms subjects in this series in the future so I would encourage you to support this noble enterprise, and can therefore thoroughly recommend this latest addition to their growing range.

Thanks to Air Graphics Decals for the review sample

Mark ATTRILL – August 2021







# Malaysian Northrop RF-5E, by Greg Kittinger

The Royal Malaysian Air Force modernization program of the 1970's – 1990's included 14 F-5Es, 2 F-5Bs, and 4 F-5Fs. In 1983 a couple of RF-5E Tigereye reconnaissance aircraft were added. These were actually the first two RF-5Es purchased from Northrop, who had hoped that the market for a cheaper reconnaissance platform (when compared to an RF-4E) would net up to 150 sales. In the end, Northrop only sold 12, with the other 10 going to Saudi Arabia.

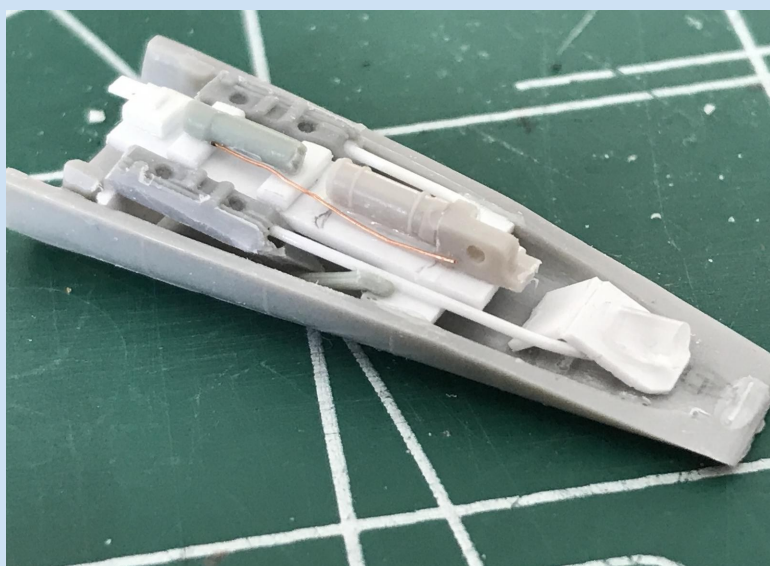
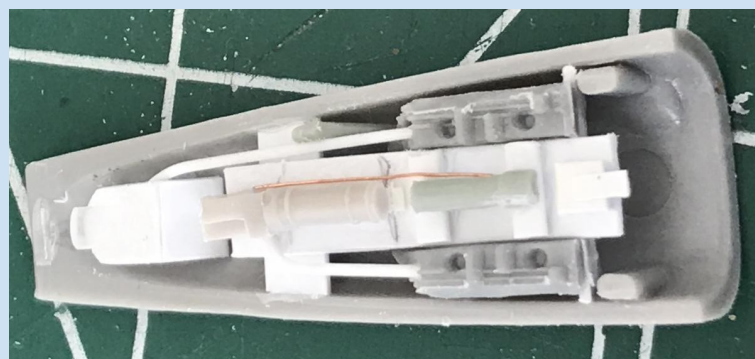
The nose of the RF-5E was about 10 inches longer than the F-5E and included 26 cubic feet of space available for camera equipment. A KS-87B camera could be mounted in the extreme nose, which had an optically-flat viewing window. The Tigereye kept the twin 20mm cannons mounted in the upper nose.



When I saw a picture of the Malaysian scheme in a magazine, I had to build it. I happened to have an old Airfix 1/72 kit in my stash, and the box art showed Saudi Arabian markings. I ordered a couple different sets of after-market decals (none for an F-5), but they didn't fit the size of the model. I was surprised when I opened the box and saw that it included decals for the Malaysian version! Though they were poorly registered, I made them work, along with some decals from my spares for additional stencils.

Externally, I replaced the gun with a brass barrel from my spares box, and added the blade aerial, the fin top, and took the belly tank from a Hasegawa F-20 kit, as it matched the Malaysian reference photos – I just had to extend the pylon to make it fit.

Internally, the camera bays were totally empty, and with such large glass panes I was afraid they would look that way. Using some reference photos, I scratch built the camera bays. They are hard to make out unless you use a flashlight, as the clear parts are so thick. I thought about trying to replace the kit glass, but due to the V-shape decided not to attempt it.



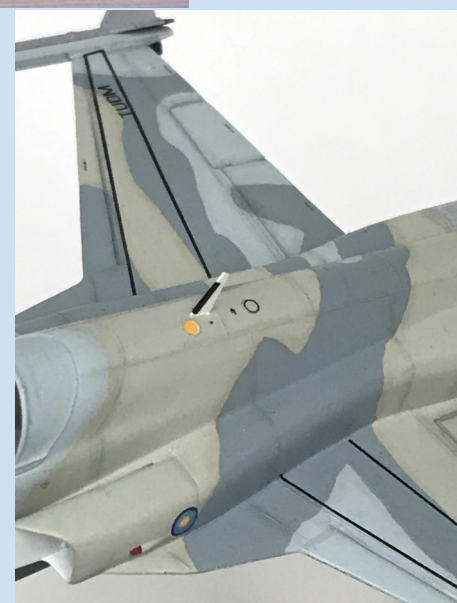




The camo scheme was hand-painted using Vallejo Model Color acrylics. For FS36440 I used 986 Deck Tan, for FS36495 I used 907 Pale Grey Blue, and for FS36373 I used 905 Blue Grey Pale.



Reference photos indicated some interesting darker patterns where the different colours of the camo came together, so I used pastel chalk powders on the tan and lighter grey shades to replicate this. In hindsight I wish I had taken the time to do some oil dot filtering to fade the paint a bit more prior to the pastels, but all in all I am happy with the results.



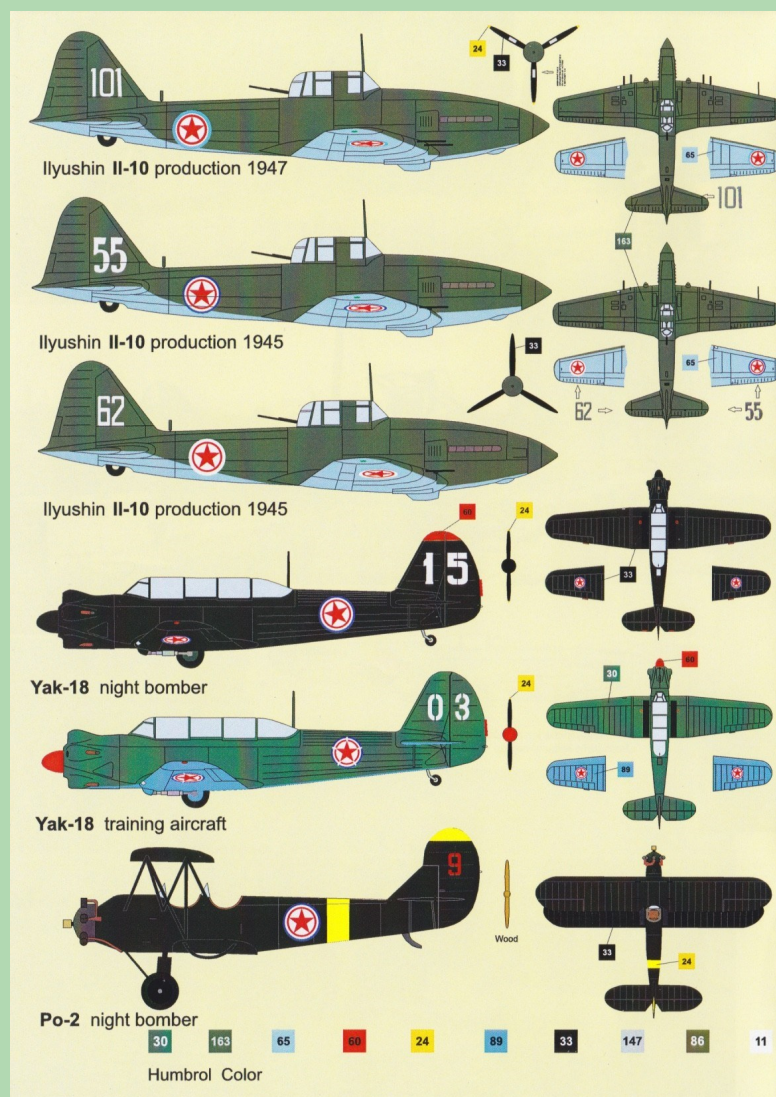
This article is taken from Greg's blog on the iModeler website, with his kind permission.





## DP Casper – “North Korean Air Force Piston Engined Fighters” Korean War 1950-1953

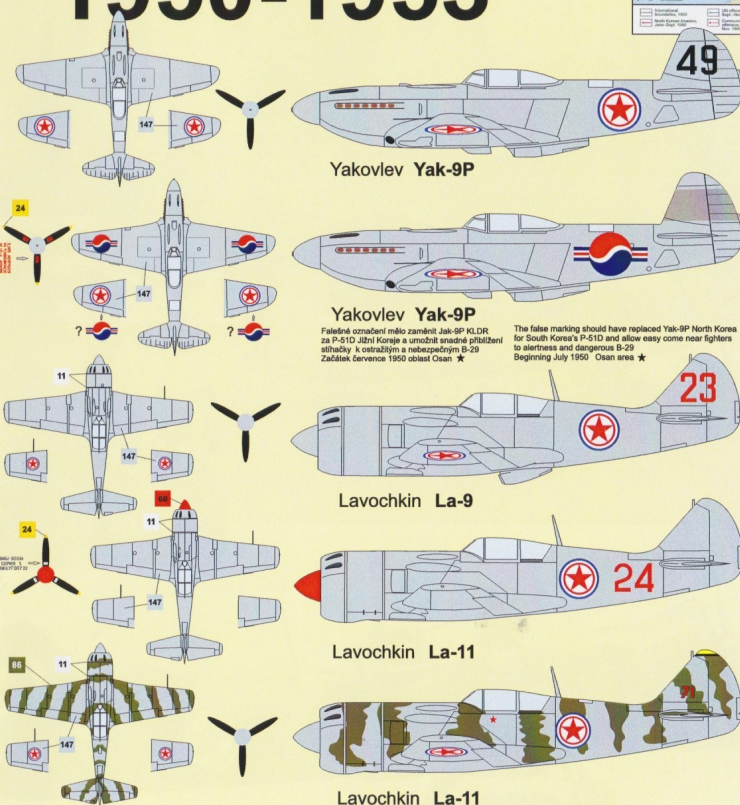
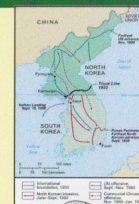
As some of you may recall, I reviewed Douglas C Dildy's excellent book 'Fury from the North' from Helion Publications' Asia@War series in the March 2020 edition of the newsletter and, I suspect, this was an inspiration for DP Casper of the Czech Republic to release one of their latest decal sheets, which purports to cover piston-engined fighters in service with North Korea's 'Korean Peoples' Air Force' (KPAF) during the Korean War of 1950-53. To be more accurate, the sheet also covers several radial engine aircraft types too but is all the more enriched as a result. I must admit that, for some reason, the vast majority of WW2-era Soviet aircraft are of little to no interest to me, but for some reason I am drawn to the Lavochkin La-9/11 series of fighters, and was delighted to learn of the recent release of high quality kits of these types by Ark Models, one of which is reviewed elsewhere in this newsletter. My preference for completing an example of this pugnacious but attractive looking aircraft in Post-War non-Soviet markings is now satisfied with the release of the DP Casper sheet.



## North Korea Air Force - Piston Engines

DP CASPER 48015 www.dpcasper.cz

### Korean War 1950-1953

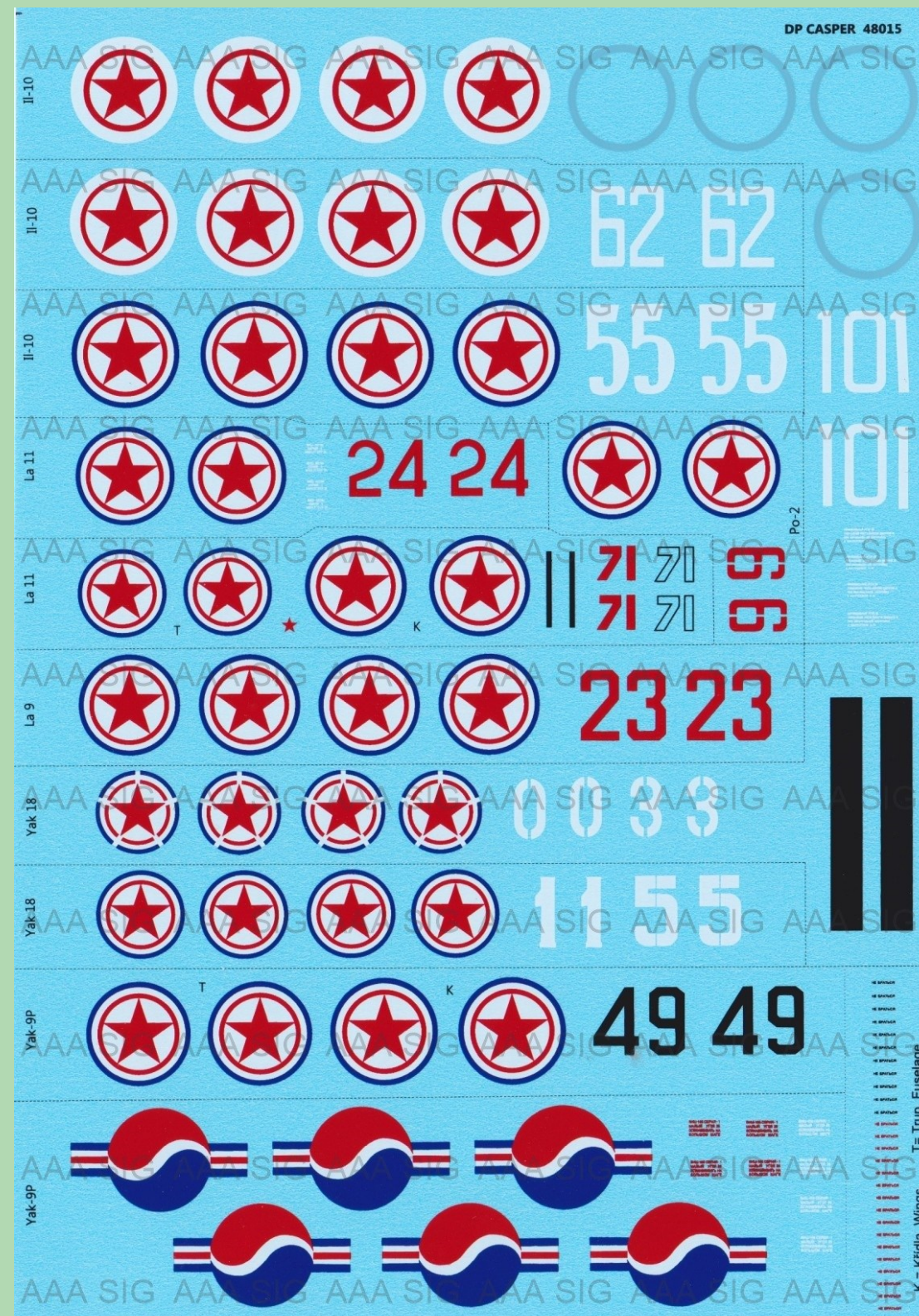


As with the majority of DP Casper decals, this release is generous with its range of subjects and includes decals for no less than eleven subjects across six different aircraft types. The sheet includes two Yakovlev Yak-9Ps, including one that sported bogus South Korean markings in an effort to lure unsuspecting USAF B-29 Superfortress crews to formate with the aircraft on their way to or from targets in North Korea. One set of markings is provided for a Lavochkin La-9 operated by a Training Regiment, with two sets dedicated to the later Lavochkin La-11 'Fang'. All of these aircraft feature an overall light grey colour scheme, apart from one of the La-11s which was operated by a night fighter regiment and featured hastily applied dark green 'tiger striping' across the upper surfaces of the aircraft to break up its outline during nocturnal operations. The sheet also includes three Ilyushin Il-10 fighter-bombers in the standard dark green and light blue colour scheme applied to these aircraft. The inclusion of the Yakovlev Yak-18 is a bit of a misnomer since these aircraft were primarily employed as training aircraft, although the hard pressed KPAF pressed some into service as night bombers, and the sheet includes one such example in an overall black colour scheme with a second in the more common dark green and light blue colours. The final option is for a rather antiquated Polikarpov Po-2 biplane which looks to be from another era but was, again, pressed into service as a night bomber.





The KPAF were not known for elaborate markings on their various aircraft and the colourful A5 sized decal sheet reflects this by providing, in the main, a series of different sized KPAF national markings, together with the aforementioned set of bogus South Korean roundels. The various styles of 'Bort' numbers applied to the different aircraft types are also featured, along with some individual service and maintenance markings, although I imagine some will need to be sourced from the kit decal sheets too.



Although there are no references to its providence, I believe the decals are printed by the BOA Agency so their quality is assured and they do seem to be all in perfect register with excellent colour saturation. My only reservation with this particular release is, once again, the quality of the decal placement instructions (DPIs), particularly given the lack of reference material on the subject matter. As a result the modeler is left with one A4 sized fold out sheet, although the colour side profiles are a little larger and therefore clearer on this release. The DPIs do also include references to Humbrol paint shades, but the modeller will have to do a fair bit of research to determine the nature of some of the colour schemes and, in particular, the accurate placement of some of the markings. On the positive side, the DPI's do include a nice set of rarely seen images of some of the aircraft types featured on this release, which provides some indication of colours and/or the placement of markings.

In spite of my misgivings about the DPIs, this is another great release from DP Casper, which should help inspire those with an interest in the Korean War, the rather secretive KPAF, or Asian Air Arms in general. The availability of good quality kits of most, if not all, the subjects featured on the decal sheet will also help motivate the modeler. 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, especially if it is used in conjunction with Tom Cooper's excellent colour side profiles and the photos included in the aforementioned 'Fury from the North' book. On a final note, and as before, DP Casper decals tend to sell out quite quickly so I would also suggest you get them while you can since I suspect production will be limited.

Review sample courtesy of my wallet!

Mark ATTRILL

August 2021





# JASDF F-15J Build by Meindert de Vreeze



**F-15J EAGLE™ 'MSIP Configuration II Aircraft'**

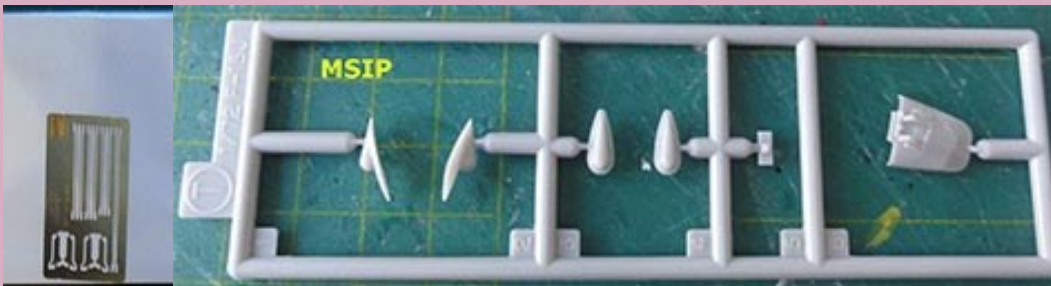


For F-15 users, the "Multi-stage Improvement Program" or MSIP started in the mid 1980s. The MSIP mainly involved installing an APG-70 radar with improved missile capability for the AIM-120 AMRAAM and advanced Sidewinder. System updates and improved ESM capability were also deployed.

The Japanese F-15J MSIP involves an APG-63 upgrade, F100-IHI engines, new ejection seat and the Japanese AAM-4 'type 99' missile. A Link 16 upgrade and helmet mounted sight, as well as the AAM-5 "type 04" missile are also envisaged for the JASDF in the 2020s.

Hasegawa released a kit of the F-15J 'MSIP Configuration II Aircraft' in 2014. The kit offers a choice of the JASDF MSIP I or MSIP II. This is

basically the old Hasegawa kit, but you get 2 extra sprues [K] and [T] and an etched metal fret [MA253] for the upgraded F-15J MSIP I or MSIP II. What is provided on these sprues?



(a) a different instrument coaming (part #T6) with different instrument decals.

(b) lightning protection strips on the radar nose cone (etched metal).

(c) a couple of different RWR antennas (K1 and K2) on the fuselage ends.



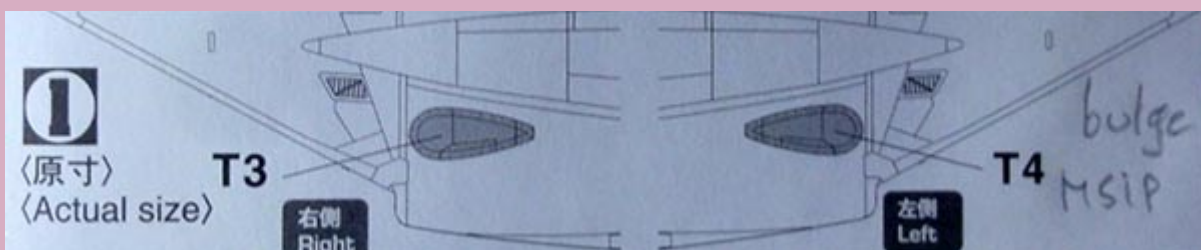
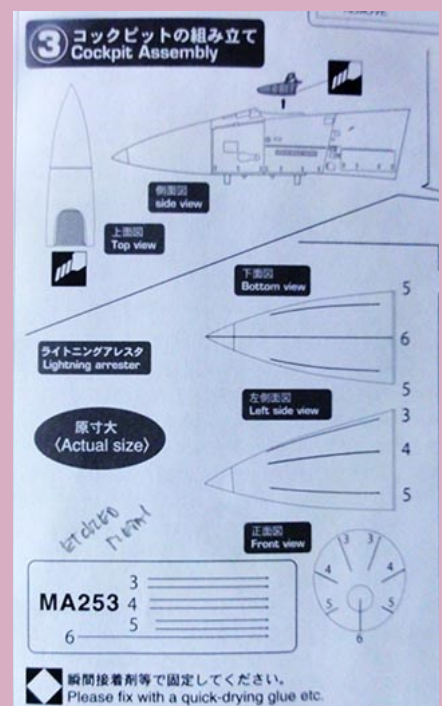
(d) re-enforcements strips on the vertical tail (etched metal).

(e) for MSIP I: anIRST fairing (T1+T2) in front of the windshield.

(f) for MSIP II: a pair of IEWS bulges on the intakes (kit parts T3 and T4).

(g) GPS antenna at the cover plate under the canopy (part #T5).

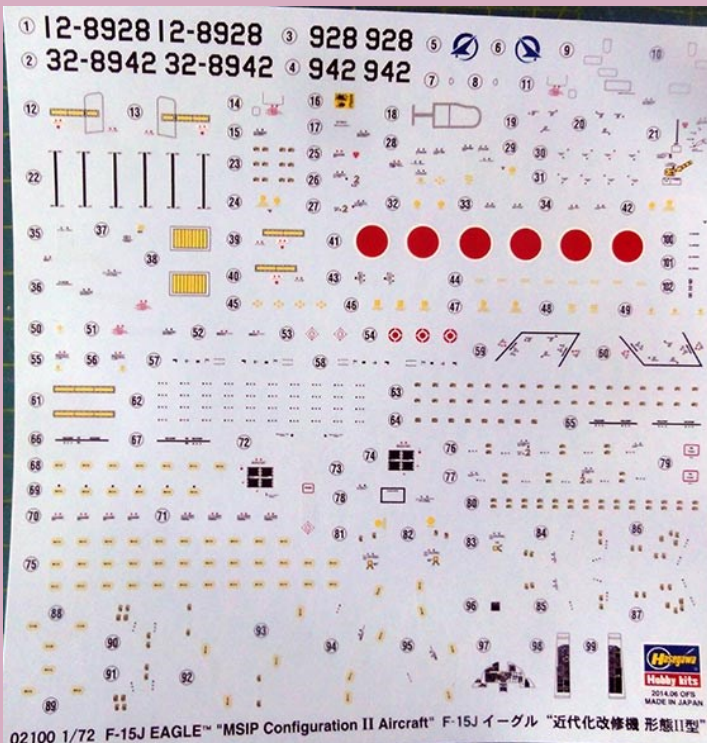
(h) for any upgraded F-15 MSIP, the airco exhaust grill on the right near the cockpit should be removed by filling and sanding.







Decals are for a JASDF test wing aircraft at Gifu AFB of either a MSIP I or MSIP II. These sport the standard "ghost grey" F-15 schemes with overall Fed.Std colours FS36375 with areas of FS36320 on top and sides. The schemes are a bit dull with no special squadron markings.



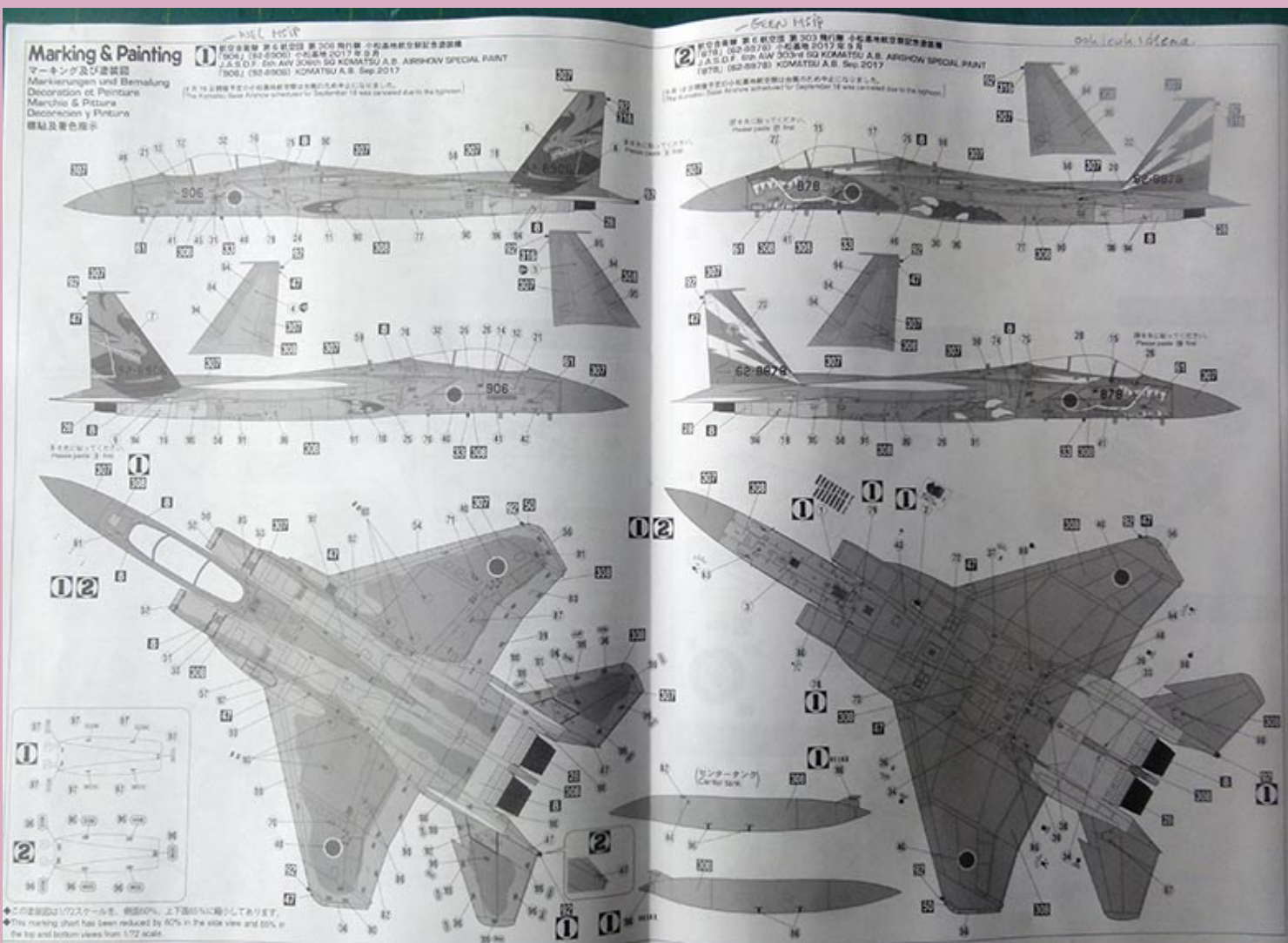
For that reason, I did some research to find a more colourful F-15J MSIP scheme. It turned out that the 306th squadron of the 6th Air Wing at Komatsu Air Base in September 2017 had special markings.

In fact, Hasegawa released kit #02272 with a scheme for a F-15J MSIP I "KOMATSU special markings 2017". This kit also has decals for a normal F-15J of the 303rd squadron with an Air Show livery. I managed to buy this kit.



F-15J EAGLE™ "KOMATSU SPECIAL MARKING 2017"

LIMITED EDITION



I opted for the F-15J MSIP I. (option "1").





The fuselage and forward section were completed first, filled and sanded. The wing halves were fitted, ensuring a symmetrical fit. The vertical tails were not added yet, but the horizontal stabilizers were affixed. These can be set in a tilted position if desired.

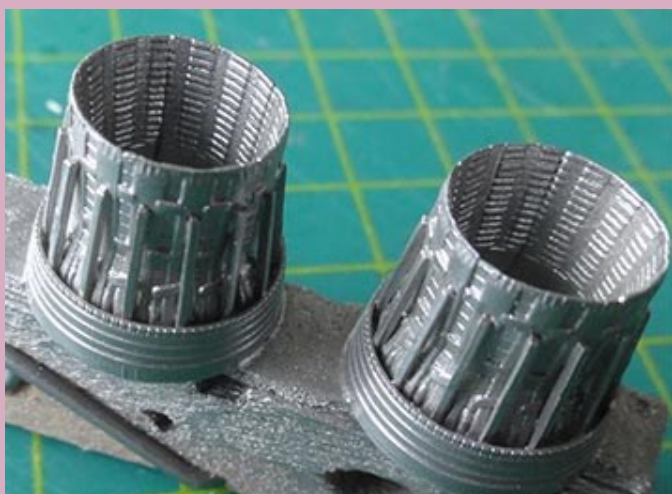
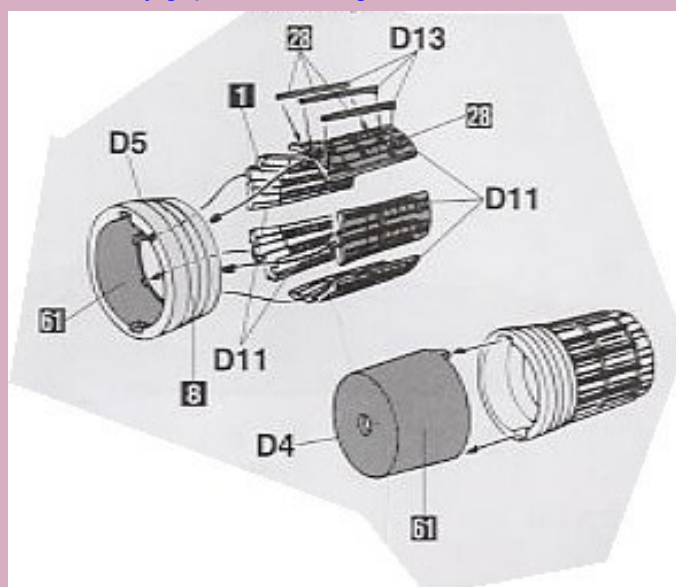


Here the "bulge" on the intakes for the MSIP I, and the GPS fairing at the canopy plate can be seen. A new instrument coaming is provided. (for the MSIP II the bulges are not installed but there is a special tracker fairing in front of the wind screen).

On the intake panels C3 - C6 some injection pin marks need to be removed. The small pitot inside each intake is missing, add from scrap if desired.

The engine intake ducts are not very deep and can be extended inside with plastic card if desired, fitting these at the rear edges of the parts B1 and B2. The large air intakes can be fitted as per kit. (They only droop down when the engines are running and with a pilot in the cockpit.)

Most F-15's have the Pratt and Whitney F100 engine; the exhausts are often used without "turkey feathers" installed, showing the different detailed segments. The actuator rods #13 are in the kit but are very vulnerable; use a razor saw to remove them carefully from the sprue. Their assembly needs care in order to get a circular nice symmetrical exhaust. Close any gaps with white glue.



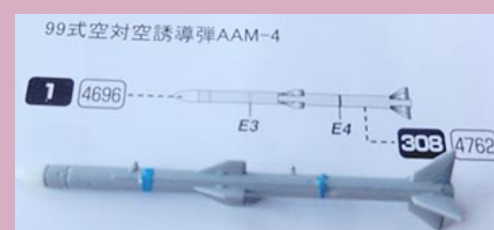
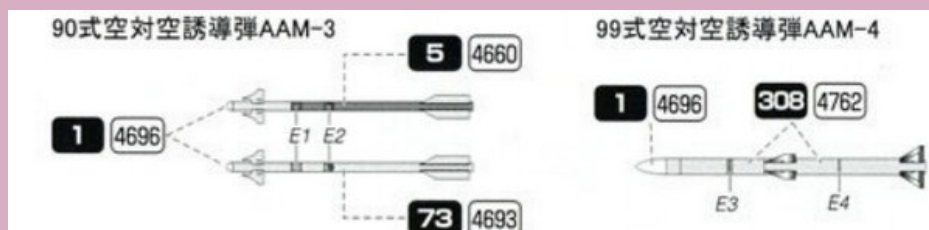
The exhausts insides were later brush-painted with "burned white". On the rear fuselage separate parts are provided for the antenna bulges #C9, C11. On real F-15's these may vary.

The antenna fairings on the upper section of the vertical tails vary for the USAF and Singapore air forces. An extra tail (C10) is provided in the kit. The JASDF F-15s have only the anti-flutter weights so use parts D1.

No Sparrow, Sidewinder missiles or later Japanese missiles are provided in the Hasegawa kits, only the pylons and launch rails, but 2 fuel tanks are in the kit. Source any desired missiles from elsewhere, such as the Platz F-15 or Hasegawa Weapon Set IV.

The decals for the 306th squadron aircraft were fine but it was difficult to fit the vertical tail markings. I removed about 1 mm on the forward edge. At the base, it was necessary to cut the each tail decal in a few sections.

The F-15J MSIP is capable of firing the new AAM-4 missiles. They are fitted on the "Sparrow" stations. I found some of these in the Platz F-15J kit. These were painted FS36375 with off white heads, decalced and installed.







AAM-3 missiles are more commonly seen on JASDF F-15s, and these were also fitted. The wing fuel tank pylons with launch rails were installed.



Note the AAM-4s on the fuselage stations and the AAM-3s on the wing pylons.



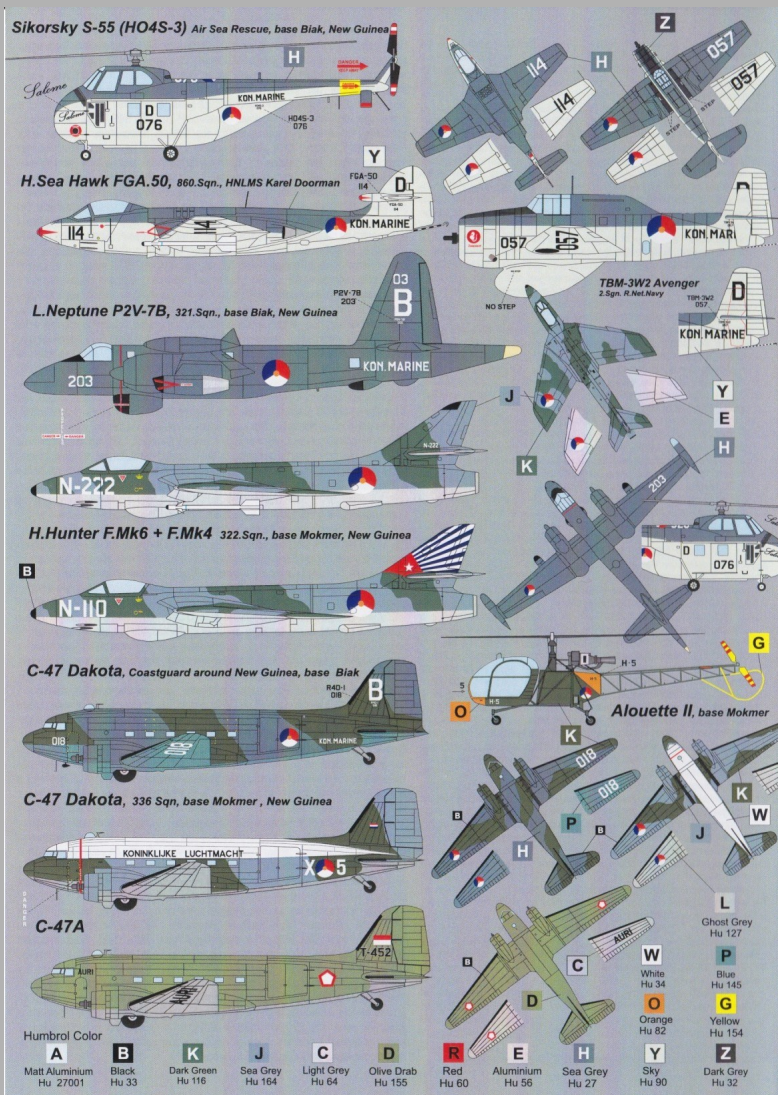






# DP Casper – “TRIKORA 1962” Decals

One of DP Casper's recent releases is the latest in their 'Forgotten Operations' series, and covers part of the Indonesian confrontation of the 1960s and, more specifically, the stand-off between the Dutch and the Indonesians at this time. The title refers to the name of the campaign (sometimes also spelt TRICORA) that was coined by the Indonesians at the time.



This release includes decals for no less than seventeen different subjects, but this includes aircraft operated by both the Dutch and Indonesian Air Arms, and since the former fall outside the scope of our SIG, I will focus on the eight options provided for Angkatan Udara Republik Indonesia (AURI – Indonesian Air Force) aircraft. The early 1960s was an interesting period for the AURI, since it still operated aircraft types 'inherited' soon after the end of World War II, with more modern types being supplied by the Soviet Union as the latter sought to extend its influence over a post-colonial South East Asia. The decal sheet, therefore, offers decals for two P-51D Mustangs, in two different colour schemes but both sporting very impressive 'sharkmouth' markings and/or unit insignia. Other early types include a North American B-25J Mitchell, which had been relegated to transport duties by the early 1960s. In keeping with a large number of post-war air arms, the AURI also operated the iconic Douglas C-47A, and the sheet includes one such example wearing an olive drab over neutral grey colour scheme. The four other AURI options cover those more modern types supplied by the Soviet Union, and include a MiG-15UTI operational trainer, two MiG-17F 'Fresco C' fighter bombers and a Tupolev Tu-16KS-1 strategic bomber. The supply of the latter aircraft was hugely significant at the time since the only other countries that operated truly strategic aircraft were the United States, the Soviet Union, Great Britain and France. All four aircraft were operated in an overall natural metal colour scheme although one of the MiG-17Fs received some spectacular tail markings, which make for an interesting model. I will not dwell too much on the Dutch options except to say that they cover all three air arms involved in the confrontation and include Koninklijke Luchtmacht (Air Force) and Koninklijke Marine (Maritime Air Arm) assets such as the Hawker Sea Hawk, Hawker Hunter, Lockheed P2V-7B Neptune and Douglas C-47 Dakota.

Two A5 sized decal sheets are provided and they are literally crammed with decals, and as one would expect, they include all of the national markings, serial numbers and titling, individual unit insignia and/or special markings and some special-to-type safety



and warning markings. The decals maintain the company's high production standards so their quality is assured and they do seem to be all in perfect register with excellent colour saturation. As with most of their previous releases, the decal placement instructions (DPIs) are a little sketchy and the modeler will have to rely heavily on alternative sources of reference for specific colours and markings. The inside centerfold does include a four-language potted history of the period and the TRICORA Operation of 1961/2 in particular but there are no reference photographs on this occasion. The DPIs also include the usual references to Humbrol paint shades.



Once again, DP Casper have provided us with an excellent product with which to fill in more of the missing gaps with Asian Air Arms subjects. The AURI, as an air arm, has not been well covered in the past and this decal sheet will go some way to address this omission. That said, modellers should note that this is one of the most expensive items in DP Casper's current range and it has been produced in very limited numbers so anyone wishing to invest in a copy should not hesitate.







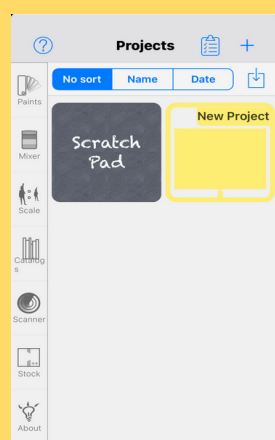
# Mobile Apps for Modellers, by Steve Komor

In one of my recent editorial pieces, I mentioned some of the apps that are available to assist modellers, and I thought it might perhaps be worth taking a closer look at some of these Apps for iOS and/or Android devices, as well as one or two for use on home computers. I hope that some of you will find this article useful.

Being a bit of a technophile, I've built up quite a library of these apps over recent years, both on my iPhone and my Kindle Fire (Android) tablet. Some of these apps are available for both operating systems, but most have only been developed for one or the other. Please note that this is not intended to be a complete and exhaustive list, rather a look at the apps that I have personally used.

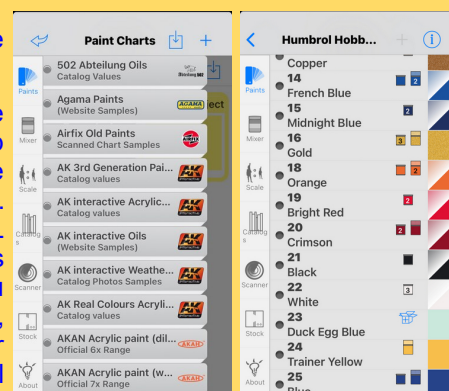
## iModelKit ([Scale Model Software - iModelKit - id6](#))

As its name might suggest, this app is only available for Apple iOS-based devices, and is definitely the most versatile of all the apps reviewed here. It comes in both a Light (*free*) and a Full (*paid*) version, and obviously you'll have to pay to remove the ads and limitations. It is still being actively developed, and if you know of a paint range that isn't already in the list, you can request to have it added. I have myself been responsible for the addition of two paint ranges, of which I still have some very old but still useable stock, these being the old Airfix paint range and the Humbrol 'Authentic's' range. If you are able to provide a photo or scan of the colour chart for the range, it is more likely to be included.



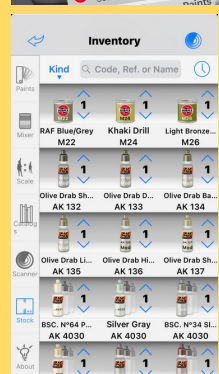
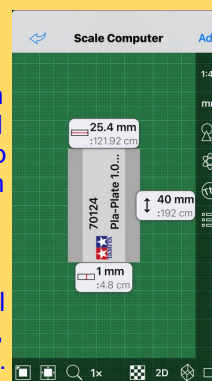
The app itself has several sections which are accessed via the sidebar:

**Paints** – This brings up a list of all the paint ranges in the database and can be used to manage your paint inventory. Tapping on any tab brings up a colour chart for that particular paint brand, and there are also full colour charts for B.S.381c, B.S.4800-2011 & B.S.5252, F.S. 595c, ANA (Army-Navy Aeronautical), Methuen Colour Index, RAL and RLM. You can sort the list to suit yourself by dragging Name tabs up or down, and you can also delete brands that are irrelevant to you in order to customise it to your liking. When you open a colour chart, the colours are listed in numerical order, and tapping on any colour will bring up a window showing the nearest equivalent colours from all the other ranges. You can also use the colour charts to catalogue your paint stock by tapping on the little 'box' icon and then tapping to add the requisite number. This is the section I use most, and I have found it very handy for keeping track of my stock.



**Mixer/Colour Picker** - With this tool, you can mix colours in a virtual palette to try to match an existing colour from any of the ranges in the database. First, you pick the colour you need from any of the ranges in the swatch - you can even use a photo as the source. The app keeps track of the ratio of different colours you've used so that when you're satisfied, you can see exactly what proportions of each colour you need.

**Scale Computer** - I must admit I haven't used this at all, but I'm sure there are many who will find it indispensable. You can select the scale you are working in, the material you are using, e.g. Tamiya Pla-Plate (shown here), Evergreen plastic strip, etc., and the unit of measurement. You then get a readout of the scale size of the item.



**Catalog** - Similar to the **Paints** section, this allows you to keep track of the various materials such as Plastruct, Evergreen and Tamiya Plates and Beams in your stock.

**Scanner** - A bar code scanner that uses your device's camera to scan barcodes (if present) of any item you wish to add to your stock.

**Stock/Inventory** - gives a scrolling overview of every item you have added to the **Paints** and **Catalog** sections.

## [Paint Pot \(paintpotapp.com\)](#)

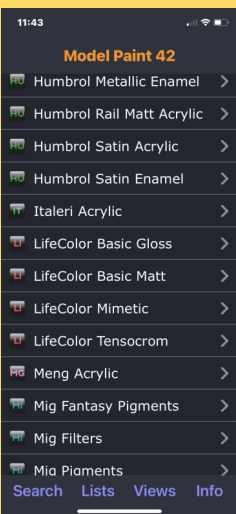
Paint Pot is available as an app for Apple devices and as a web app for home computers. It features an extensive catalogue of paint brands, which can be used to keep an inventory. One tap on any colour in any of the ranges will add it your stock list. Unfortunately, paints in each range are sorted alphabetically according to the colour name, which can make it a little tricky to find a particular colour. Once you've catalogued your paints, your stock list can be sorted and filtered in various ways. I have found the





computer version to be rather more useful than the iPhone app, as the filter options are more versatile. For example, you can call up a list of all instances of a particular colour such as red, beige, gold, etc., from any or all ranges, and the results can be further filtered to show only the paints which you have in your inventory.

What this DOES NOT DO is cross-reference colours against other paint ranges, however it is free and is useful if you just want to keep track of your paints.



## Model Paint 42

I have no idea what the '42' signifies, but this iOS app is a database of over 8000 paints from 28 manufacturers, including Abteilung, AK Interactive, Akan, Citadel and Hataka to name but a few. All the usual suspects are included, along with quite a few of the more obscure ranges.

The user can turn each manufacturer and range (e.g. Humbrol enamel) on or off at any time so that you see only the lists you want. You can save your own views so that you can set the lists you want to see and the order you want to see them quickly. You can see details of each paint plus equivalent colours from all the included ranges, or you can select to see equivalents from only the ranges you have switched on, the same medium or the same finish.

Furthermore, you can search across all the paints by colour, name, code, manufacturer, finish (e.g. gloss, matt), paint type (e.g. acrylic, enamel) and paints you have in stock, and you can create your own lists from any paints in the database. You can lock the lists (to save accidental changes) and these lists can be set as stock lists (meaning you have

these paints).

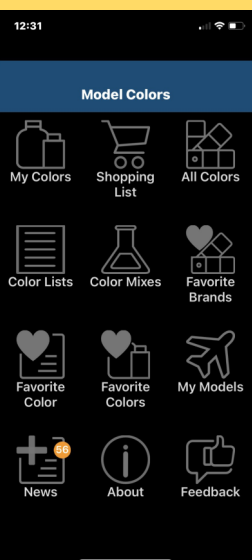
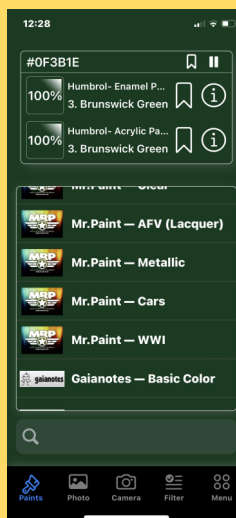
You can make notes against the list itself or the individual colours and you can sort the lists and colours any way you want. Paints you have added to any of your stock lists are indicated in the ranges, the equivalents and the search results so you can see what paints you have when you do a search. Saves a lot of wasted money buying the same colours twice and handy when you go shopping (you can have a shopping list too)!

## ModelPaints (information taken from the Apple App Store)

A database of paints from most of the manufacturers designed for modellers (more than 17000 paints). Match paints for your models in real time from database, by photo from your library or by camera. Search and match similar paints from tens of thousands of paints.

Model Paints simplifies scale model builder work by providing a set of easy to use and comprehensive tools. With Model Paints you can:

- Browse paint charts from colour standards and model kit paint manufacturers;
- Match paints from whole database or your favourite paints only;
- Match from a selected photo in your library;
- Online matching from camera;
- Get detailed information about each paint;
- Scale colour calculation;
- Paint matching for a manually specified colour;
- Search for paints by barcode;
- Paints lists support;
- Get new colours when blending paints

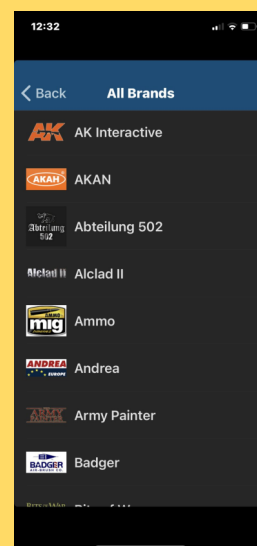


## Model Colors (information taken from the Apple Store)

Another iOS-only application for helping you keep track of your hobby model colours and projects. Have you ever ended up buying the wrong colours because you didn't remember the exact code of the colour you needed, or forgot to get that pesky Dunkelgelb that you needed to finish that glorious tank you're working on? If so, then Model Colors helps you keep track of the colours that you own and the colours that you need to buy. The application contains lists of all colours from a set of brands and you can browse these lists and mark the ones you already own and the ones you need to buy. Currently the app has over 16000 colours included from most big and many small manufacturers.

If you mainly use some particular colour types or individual colours you can set them as favourites and easily access them from the main menu. The lists of your own colours and colours that you need to buy can be easily shared via mail, iMessage etc.

You can check for colours that are similar to a certain colour either via colour standards like FS, RAL, RLM etc, or via industry standard CIE deltaE 2000 calculations.







Various colours can also be grouped together for quick access into custom colour lists. You can keep the colours you normally use for US airplanes in one list and colours you use for fantasy miniatures in another, making them easy to find.

## Paint Rack ([Courageous Octopus software](#))

This is a bit of a strange one. It has just about everything the modeller might need to keep stock lists, match colours, etc, and it does all these things pretty well.

**BUT** (and it's a big **BUT**!) instead of listing paint ranges by number, or even by name, it shows them as coloured circles which are supposed to match the paint colour. So, for example, if you want to find Humbrol 24 Matt Yellow, you have to find the Humbrol colour list, then pick out the circle you think is Matt Yellow 24 (in the image, it's actually circle number 30). Bear in mind that there is no way (as far as I've been able to figure out) to list paints in numerical order, and the task of finding a particular colour is completely hit or miss!

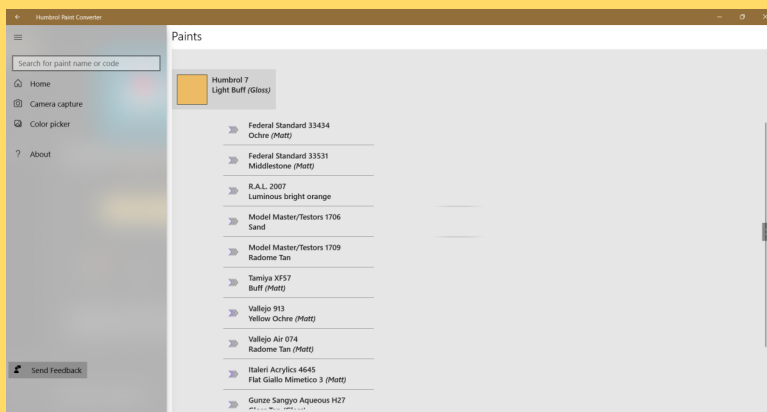
On the plus side, this one is available for iOS and Android devices, but I consider it seriously flawed. Try it for yourself!

Lastly, let's take a look at an app that's available for PCs from the Microsoft Store. It has a free and a paid version, which, if I remember correctly, costs £4.99.

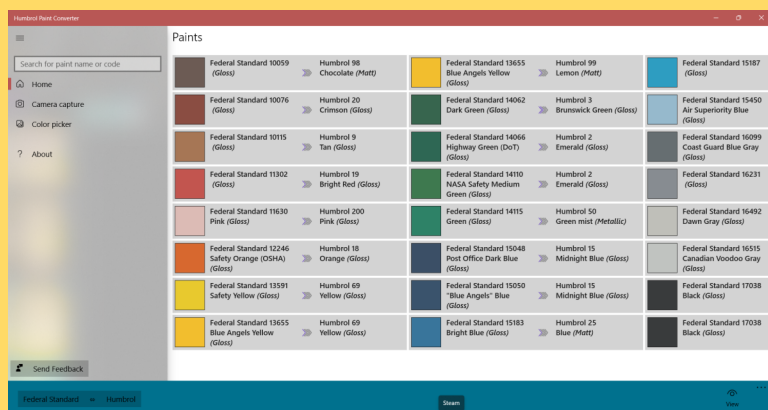
## Humbrol Paint Converter

This does exactly what it says on the tin, i.e. it displays conversions between Humbrol, Revell, ModelMaster/Testors, Tamiya and Vallejo paints (new paint ranges are added occasionally) and the correspondence of paints from any range to US Federal Standard colours as well as other standards. In the first image below, you can see the equivalence of some Humbrol paints to the F.S. standard.

The second image shows what you get if you click on a colour. Now you see the nearest equivalent in all the other ranges in the database



Below, I've switched the table round to show FS standard colours and their Humbrol equivalents., and in the last image you can see FS colours and Vallejo Air equivalents. The app also allows searching by name or by code, and filtering of the model paints.



I hope some of you will find this article useful, and if you know of, or use, another app which is not listed here, perhaps you'd like to submit a brief article about it so that other modellers may benefit from it as well? I look forward to hearing from you!

Steve





# The Republic of China Air Force Today

by Roy Choo and Peter Ho

## Modern Taiwanese Air Power

The Republic of China Air Force Today

Roy Choo and Peter Ho



New to me are authors Roy Choo and Peter Ho, who have recently given us a detailed and admirably slim volume on the current state of the Republic of China (Taiwanese) Air Force.

It is a timely review of this air force in view of the massive expansion of the PLAAF on the Chinese mainland and the avowed intent of the People's Republic to one day reunite the mainland with the offshore territories.

The book is focused only on the Air Force and makes little or no mention of any form of the air assets used by either the Taiwanese Army or Navy. It begins logically enough in Chapter 1 with an historical overview of the establishment of the air force and its role to date in maintaining the separate nature of the island. Continuing with a detailed section on the organisational structure of the force today in Chapter 2, it goes on to explain how the Taiwanese have developed various means of dispersing their aircraft from the main air bases to underground shelters and the use of sections of motorway in lieu of runways.

This is followed by an analysis of other forms of air defence than manned aircraft, as well as the probable development of a surface to surface offensive missile capability. Although such systems are rarely officially acknowledged they are much speculated upon by observers and the local media as a possibly meaningful deterrent to the mainland's perceived policy of aggression. Leaked information suggests that the most recent system, the Hsing Feng 2, can reach mainland coastal ports and air bases, having a possible range of some 2000km.

The authors include, at this point of the book, an updated order of battle of the air force for April 2021, and while not quoting actual numbers it does detail the type and location of the individual fighter wings and other aircraft. Maps show locations of these bases.

Chapter 3 is for me the most interesting section of the book. In it author Roy Choo explains the geopolitical background to the current situation as well as assessing the nature of the military threat posed by the mainland. He then tackles the likely forms of response the ROCAF have available to them. One particularly interesting section in this chapter is what he refers to as "grey-zone warfare" being carried out by the PRC against Taiwan. By that he means the attempts by the PLAAF particularly to wear down, short of open military action, the forces available to the ROCAF. He cites mainland "encirclement drills" where H-6 bombers and their escorts fly around the perimeter of the islands Air Defence Identification Zone (ADIZ) but requiring Taiwanese aircraft to shadow the potential intruders from their own side of the line. Additionally there are increasingly frequent crossings into the ADIZ by PLAAF aircraft usually involving crossing the mid-point line established as the western boundary of the ADIZ down the centre of the Straits of Taiwan, the body of water separating the offshore islands from the mainland. Choo quotes sources saying that in 2020 fighters were scrambled from QRA posts on almost 3000 occasions. He states that the costs on man-power and aircraft maintenance are likely to become unsustainable in the future as men and machines are worn out by the constant need to respond to the challenge. It is even suggested that the life span of the current ROCAF fighter fleet will be more likely to be decided in Beijing than Taiwan.







Following that, the author goes on to examine the over-riding importance of American support for the islands which he regards as paramount to the survival of the Taiwanese government, and considers that given the on-going power politics being played out between the USA

and the PRC across the globe, that relationship is safe. It remains to be seen, however, whether the US withdrawal from Afghanistan causes several countries across the globe, Taiwan included, to revisit the perceived permanent nature of their relationship with the USA.



For the modellers among you Chapter 4 will probably be the most valuable, covering the various aircraft currently in use by the ROCAF. It includes a number of excellent photographs of the machines in use including the F5E, F16A/B, Mirage 2000 and from a western perspective the most interesting of them all, the locally developed Indigenous Defence Fighter or Ching Kuo, the F-CK-1C/D. The chapter also covers transport and training aircraft such as Hercules, Orion and Hawkeye and various other VIP types.







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www.harpia-publishing.com

The final chapter looks at the future of the ROCAF, mainly from the point of view of acquisition of new aircraft such as the 66 Block 70 F16Vs and a new trainer, the T-5 Yung Ying, based on the Ching Kuo fighter, to enhance the self-sufficient policies of the current government. The growth in the building and use of drones, although slower than elsewhere, is also covered before concluding with an assessment of how the future might unfold.

The book concludes with several pages showing the badges and patches of the various squadrons of the ROCAF followed by a comprehensive bibliography for further reading on the subject.

Authors Choo and Ho have packed a great deal of information into this slim new volume from Harpia Publishing. It is current, clear and well written, and provides an important counter-point to the earlier similar but not so slim series of books from the same publisher on the air power of the PRC. Several of these have been reviewed in earlier issues of this newsletter.

This book breaks much new ground especially for interested readers in the West, informing students of current world events as well as stimulating the creative juices of the modelling community. I would recommend it to anyone with an interest in a part of the world that will become of increasing importance to all of us as the 21<sup>st</sup> century proceeds.

Indigenous Defence Fighter Ching Kuo - model by **David Thomas** in 1:48 scale



As a modeller I am sorry to have to admit that as yet I have only produced one model of a ROCAF machine, that of a Ching Kuo from Freedom Models in 48<sup>th</sup> scale, but I think this book is likely to encourage me to build more. However, for modellers of any of the major scales, kits of the various aircraft are reasonably easy to find and can be supplemented by accurate decals from several producers, notably Best Fong, to be found at [www.bestfong.com](http://www.bestfong.com). Several of these decal sheets have also been reviewed favourably in previous issues of the newsletter.

David Thomas.

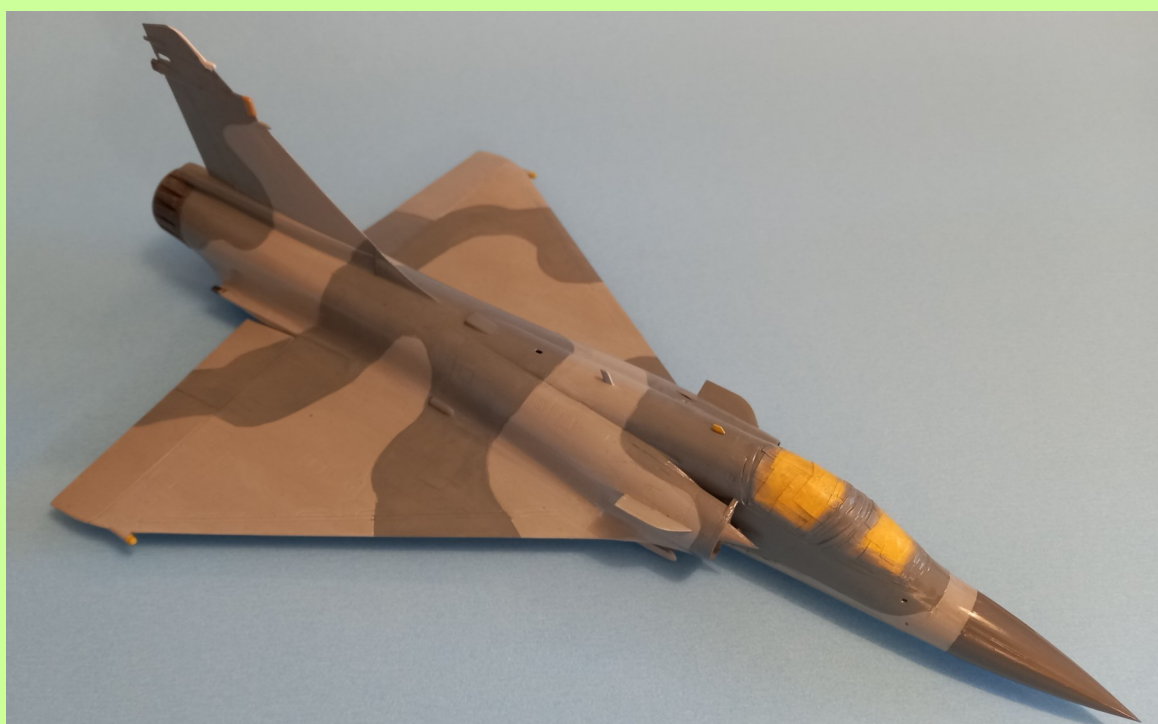




Mirage 2000-5DI from  
*Kinetic Model Builders  
Guild* via **Mark Ascott** of  
IPMS Mirage SIG (1:48)



Unfinished Mirage 2000 single seat EI and twin seater DI models by **Mark Ascott**. (1:72 scale)







# ARK Models – 1:48 Scale Lavochkin La-11 'Fang'

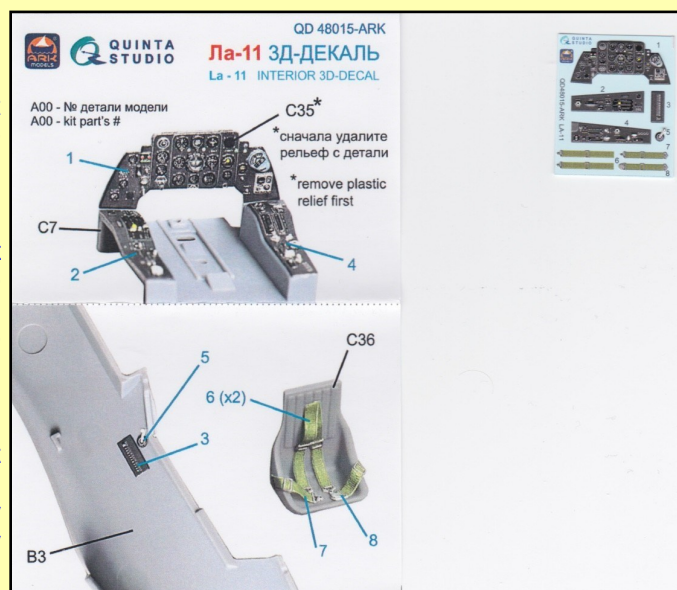
The recent Ark Models of Russia release of a 1:48 scale kit of the Lavochkin La-11 (NATO Codename – 'Fang') is not the first example of the type on the market. Two other Russian kit manufacturers, Scale Bureau and MikroMir, have previously released full resin and limited production injection moulded plastic kits respectively; contrary to initial suggestions, the new Ark Models kit is not a re-release of the MikroMir mould under a new name. In addition, and in what is becoming almost a tradition these days, the Ark Models kit has recently been followed by a 'mainstream' release of a La-11 by HobbyBoss, to which I will briefly refer later in this preview. Like, I suspect, many others, I was not too familiar with the type but have discovered that it was the first post-war long range interceptor/escort fighter developed by the Soviet Union to both protect its own strategic bomber fleet and to combat those of any opposing force. The aircraft gained a degree of notoriety during the early 1950s, having been involved in the downing of several Western aircraft in both Northern Europe and the Far East, including at least one civilian airliner operated by Cathay Pacific Airlines. The aircraft also saw action during the Korean War, during which time it was flown by Communist China's Peoples' Volunteer Army (PVA) and the Korean Peoples' Air Force (KPAF). Apart from the aforementioned air arms, the La-11 was also operated by the Soviet Air Force, Chinese Peoples' Liberation Army Air Force and the Indonesian Air Force, with the PLAAF finally retiring their last examples in 1966.



The kit is presented in a fairly sturdy box featuring attractive artwork of a La-11 escorting a Soviet Tupolev Tu-4 (licence-built Boeing B-29 Superfortress). Inside the box, the modeller is presented with three sprues containing 54 finely moulded light grey and 4 clear parts, which is a relatively modest parts count for a 1:48 post-war piston-engined subject. The decal sheet includes markings for no less than four aircraft; three in Soviet markings and the fourth in Peoples' Volunteer Army markings from the Korean War period. A full set of comprehensive and clear assembly instructions, which also include full colour camouflage and marking diagrams complete a nice package. Prospective buyers may wish to note that some Russian and Ukrainian mail order companies (mainly operating via

eBay) are including a full set of superb Quinta 3D instrument panel/side console and seatbelt decals with the kit, which can make this purchase extremely good value for money.

Assembly is rather conventional, and starts with a nicely detailed cockpit, although the addition of the aforementioned Quinta set is thoroughly recommended; apart from everything else, the Quinta set also includes a set of seat harnesses which are omitted from the original kit. Not surprisingly, given the simplicity of the original, the entire airframe comes together quite quickly after the installation of the cockpit tub. The kit does not feature any separate flying control surfaces although I suspect Vector or another Russian aftermarket manufacturer will provide suitable replacements in due course. The undercarriage bay and main doors also feature some good detail which will pop out nicely with an appropriate wash. The comprehensive undercarriage is also nicely detailed and can be posed in the retracted or deployed position. Assembly is rounded off with the assembly of the engine cowling, propeller and a very clear, one-part cockpit canopy. The parts are all nicely moulded with no flash present; some internet forums have highlighted the deep panel lines, which are a little reminiscent of those found on Matchbox kits, although I suspect they would respond well to a light application of filler and/or paint. My only other minor complaint with the kit parts concerns the mainwheels which are split; this often leads to misalignment issues during assembly and it may be necessary to resort to aftermarket resin replacements. On the positive side, the kit does include two identical canopies so the modeler could experiment with producing an open canopy to show off the Quinta enhanced cockpit, safe in the knowledge that one has a spare in case of an accident.



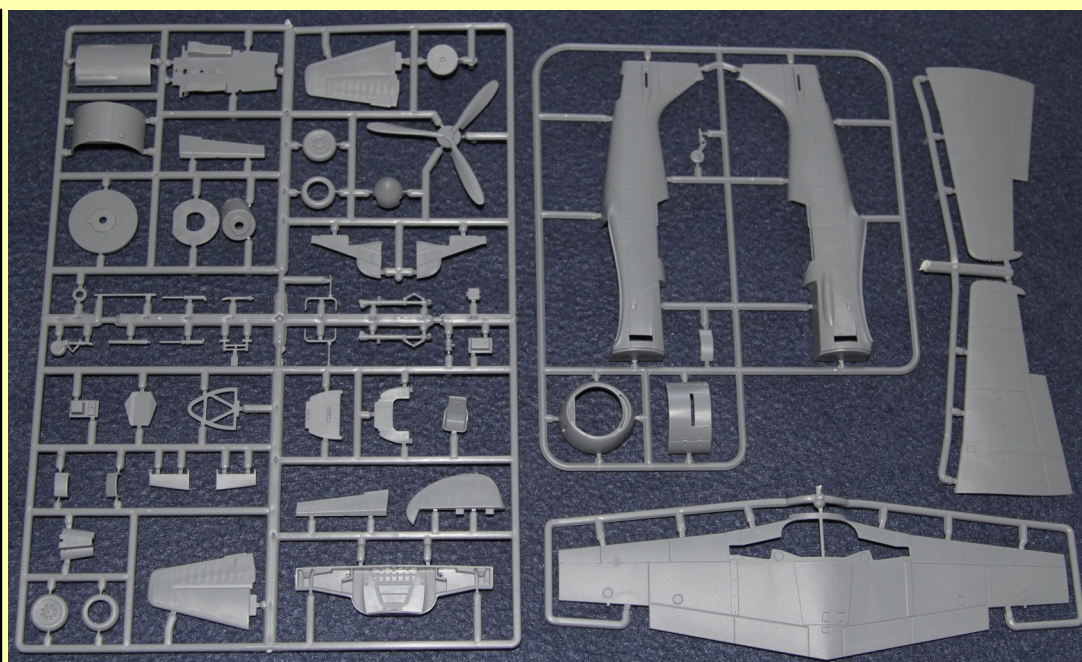
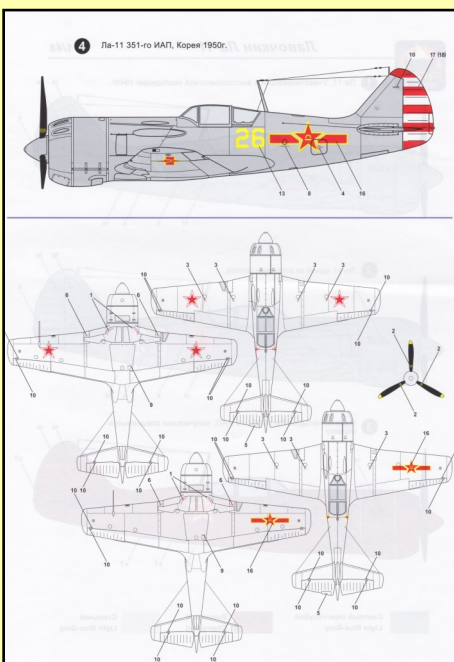




I have no prior experience of the decals included in Ark Model kits; these appear rather thick and have a matt finish, but these factors do not always indicate problems with their application. Fortunately, for those of us wanting to look for alternatives there are a number of options. The DP Casper sheet reviewed elsewhere in this newsletter features a North Korean example, and Begemot have recently announced a new and very comprehensive set of decals, which will allow Asian Air Arms modellers to reproduce



an example of the La-11 'Fang' from any of the air arms that previously operated the type.



I am not an expert on the Lavochkin La-11 but the general consensus of opinion seems to indicate that this new Ark Models release is now the most accurate rendition of the type in this scale. Comparisons with the new HobbyBoss kit of the type are inevitable, and while I have not seen the latter 'in the flesh', internet images would suggest it has some issues with its accuracy when compared with the Ark Models rendition. One of the most obvious is the presentation of the reinforcement 'strips' across the main wing surfaces which are deeper and wider than those found on the Ark Models kit. The intakes in the leading edge of the cowlings on the HobbyBoss kit also appear to be over-sized, and the mainwheels also lack more refined detail. I have little doubt that one of the aftermarket manufacturers will produce some resin improvement sets in due course, with which to enhance the new Ark Models kit; in the meantime, I would recommend investment in one of these kits, especially if you can source one with the very nice Quinta 3D cockpit decals.

Mark Attrill – August 2021







# Miliverse Decals



Over the last couple of years, I have looked at the Miliverse website on several occasions, and have fancied a few of their decal sheets. However, the ordering process has always dissuaded me from progressing any further (more on that later). Now that I'm involved in the AAA SIG, I decided it was time to bite the bullet, and so I finally got around to ordering the three sheets I had been after for a while, these being: MV-72004-1 for an F-16C of the RSAF Black Knights aerobatic team in 2014; MV-72003-50 for an F-15SG in a spectacular scheme marking the 50th anniversary of the RSAF; and MV-48002-1 "Singapore Tigersharks" (I've always had a soft spot for the Tigershark!).

As far as I can ascertain, Miliverse is a one-man operation, based in Singapore and owned and run by a guy named Mark G. (surname not known). It appears that he started producing decals around 2013, certainly that's the earliest year referred to on the site. Anyway, on with the review.

Each of the three sheets came in its own Ziploc envelope, accompanied by several pages of highly detailed full colour photos, notes and instructions. It's quite obvious that Mark really knows his stuff. Let's take a look at each sheet in turn.

## MV-72004-1

The notes begin with some general information regarding the decals, and continue with a brief history of the RSAF's aerobatic teams (7 in total since the first was formed in 1973). There are sufficient decals to build any one of the 6 aircraft used by the team in 2014, and enough stencils are supplied for two aircraft. The recommended kit is the one by Revell. Decals are also included for BK7 and BK8 which, as Mark points out, are not official numbers. Instead, these are two spare aircraft which can stand in for any of the first six aircraft, in which case they will be assigned that aircraft's number. However, he also adds that an aircraft was once spotted with the number 8 on the tail, and so numbers 7 and 8 are provided. There are even decals for the crew access ladders!

The accompanying notes could easily be used as a Wikipedia entry for the 'Black Knights, they are that detailed. Mark himself writes 'No effort is spared in making this product as realistic as possible', and he's not kidding! Very careful study of the complete instructions is highly recommended, as it would be very easy to miss an important detail. Also mentioned is the option to use a photocopy of the decal sheet as a template to make masks, and so paint the scheme rather than use the decals.

The centre spread shows full-colour top, bottom, port and starboard views of aircraft '1', with notes on colours with FS numbers where applicable. A lot of detailed information is



Thank you for purchasing this decal sheet.

The subject matter contained within requires medium level modelling skills as conversion/scratch building is required of the models if conversion sets are not available. The modeller is advised to read through the instruction sheets to ensure correct/proper usage of the decal.

Any 1 of Black Knight F-16Cs can be modelled using this decal. The slight mods unique to the configuration of the RSAF F-16C Black Knights can be studied within the instruction sheets.

In this release, some decals will come with optional base decals (eg knights in black) and to apply the numerals on top. This is because the white numerals may not be fully saturated against the red base (tail fin) if say for eg decal H1-H8, b1-b8 is used. Trim excess decal carrier film where applicable.

The modeller may also decide not to use the Black Knight colours (red/white) provided and use them as templates (photocopy) for masking instead. The crescent (decal 42) goes over some antennas and may be problematic when applying the decal. Also the sizing is based on the Revell kit, so for other brands: a) test fit and trim the colours if necessary before applying or b) mask and spray the colours.

To coincide with the RSAF 45th Anniversary and Singapore Airshow 2014, the Black Knights aerobatic team was reformed. This time the national flag design was used as a basis for the Black Knight colours on the top surfaces. It must be, arguably, one of the most attractive schemes ever applied to any RSAF Black Knights aerobatic aircraft.

A brief history of the RSAF Black Knight aerobatic teams can be seen below:

Year	Aircraft	Description and Events
1973	Hawker Hunter (team named Osprey Reds)	drawn from 140 Sq, performed at SAF Display
1974	Hawker Hunter (team re-named Black Knights)	Team logo inspiration from Tengah Air Base logo
1981	Northrop F-5E (team named Flying Tigers)	SAF Day Display
1990s	McDonnell Douglas A-45-1/SU (Black Knights)	Asian Aerospace
2000	McDonnell Douglas A-45-1/SU (Black Knights) and General Dynamics F-16A	First aerobatic team in the world to fly 2 types of aircraft Asian Aerospace
2008	Lockheed Martin F-16C	Singapore Air Show RTAF Children's Day
2013	Lockheed Martin F-16C	Singapore Airshow 2014 13th BK Team

No effort is spared in making this product as realistic as possible. Nevertheless there are times where information is not wholly available and thus informed guesswork is applied.

Pay due attention to the decals called for in the instruction sheets. Some symbology is also applicable as follows:

① : Only unique sqn markings and serials are shown.  
② : Pay attention  
( ) : Reverse side decals are shown in parenthesis  
/ : or  
\* : cut & apply required decal  
? : unknown

The RSAF F-16Cs come with FMS-serials (x4) applied. However they were not applied on the Black Knights. Instead only RSAF serials were applied to the inner nose gear door covers. See below, for the correct application of serials to the particular Black Knights aircraft.

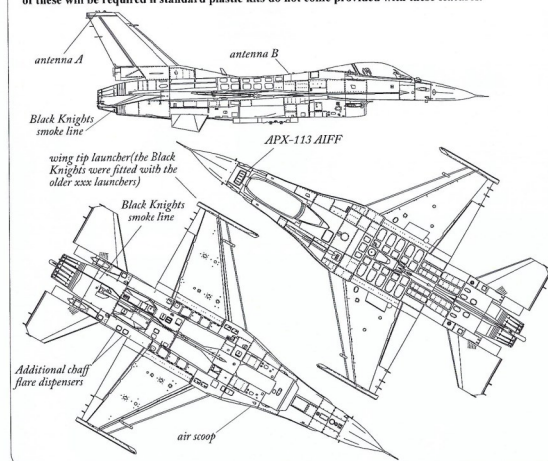
BK1 608 Team Leader  
BK2 646 Right Wingman  
BK3 614 Left Wingman  
BK4 605 Slot Man  
BK5 610 Lead Solo  
BK6 645 Opposing Solo  
BK7 620 Spare  
BK8 642 Spare

Note that there is no official BK7 and BK8. These are actually 2 spare aircraft that are applied BK1-6 nos when required to stand-in for any of the first 6. Nonetheless for trivia, an a/c was spotted with BK8 applied on the tail! Decals are provided for 7 and 8 for the more adventurous.

See relevant instructions below to apply the correct crew names to the respective Black Knights aircraft

decal (crew)	BK 1	BK 2	BK 3	BK 4	BK 5	BK 6	BK 7	BK 8
c1	c2	c3	c4	c5	c6	c7	c8	c8
decal (serial)	a1	a2	a3	a4	a5	a6	a7	a8

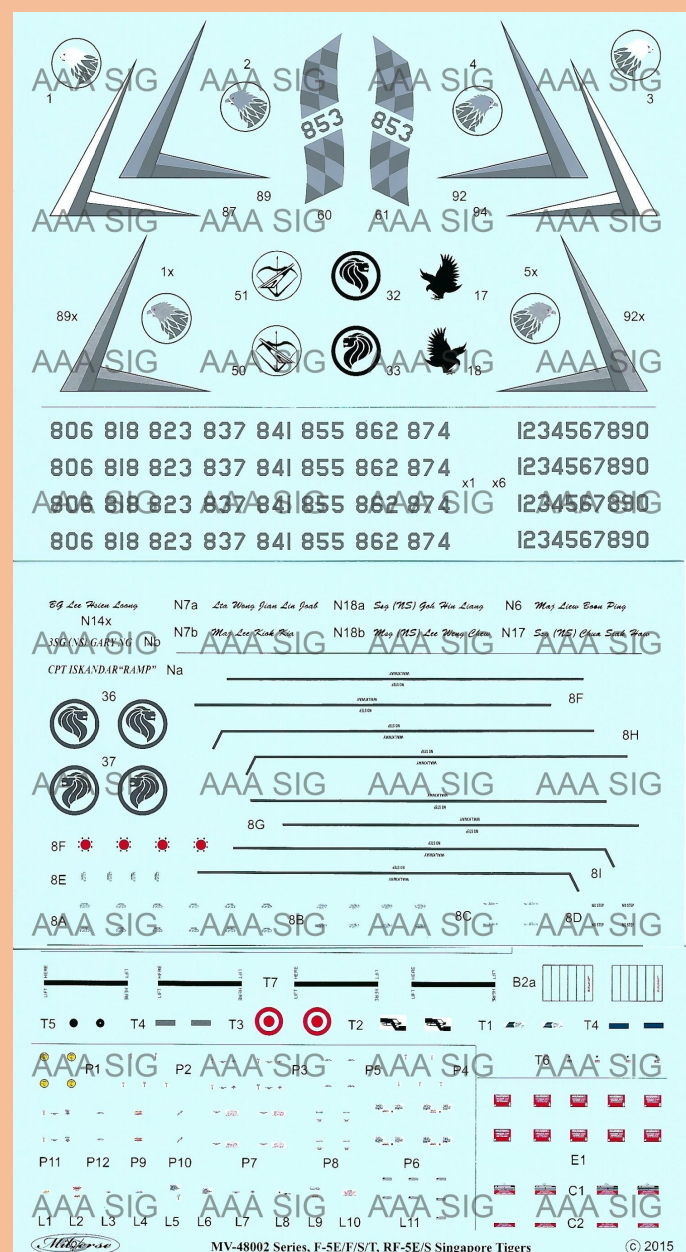
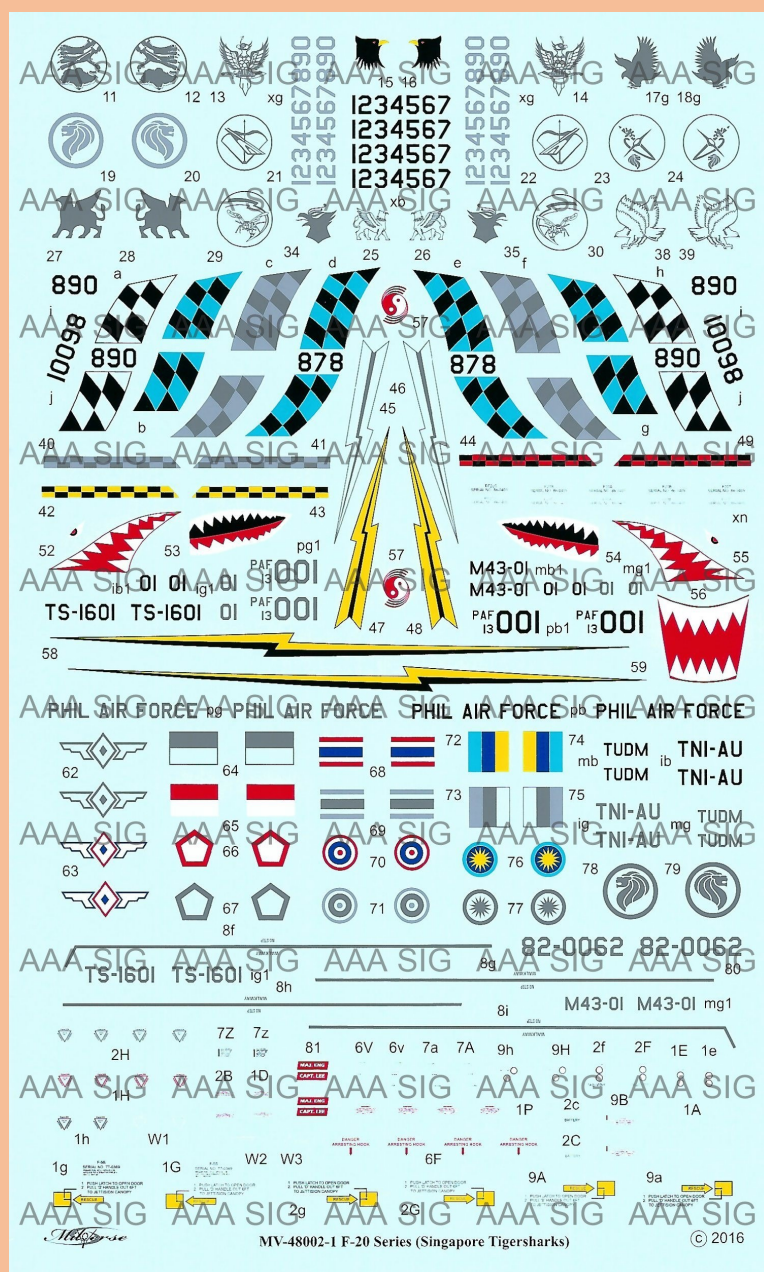
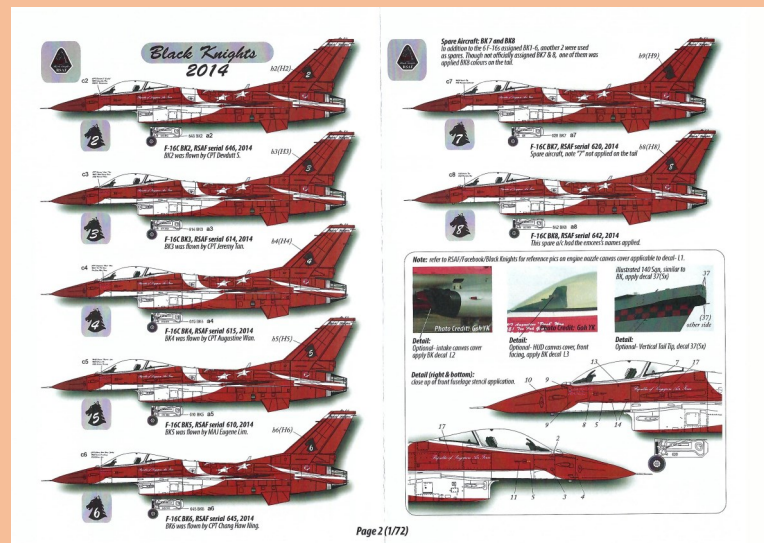
The RSAF F-16C comes with minute unique features as illustrated here. Take note as scratch building of these will be required if standard plastic kits do not come provided with these features.







The next page shows port side profiles of the other 5 aircraft, tail numbers and serials being the only variation here. A few colour photos finish off the booklet.



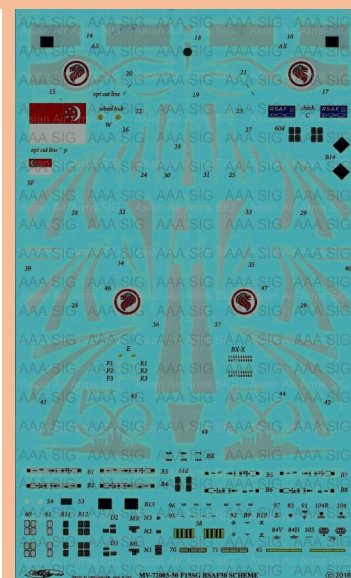
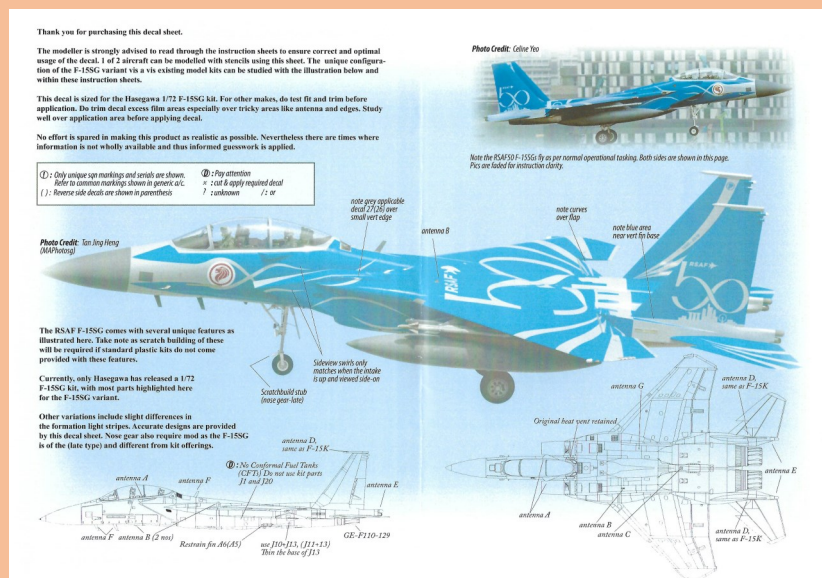
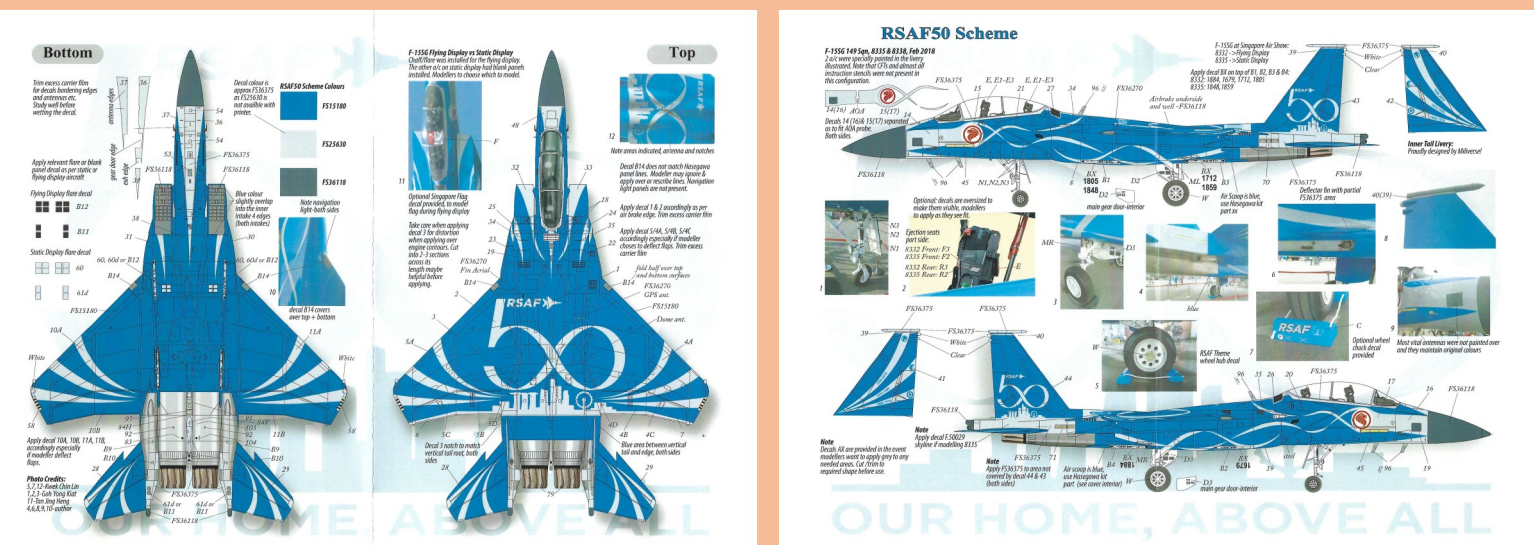




In February 2018, two F-15SG aircraft of 149 Squadron of the RSAF were painted in a special scheme to mark the 50th anniversary of that air arm. The aircraft were painted FS15180 blue overall, with the anniversary markings in FS25630 grey. The rear fuselage/engine area was left in bare metal.

This set comes on two sheets, slightly smaller than A5, allowing either of the two aircraft to be modelled. Text at the bottom of the two sheets indicate that they have been printed by Cartograf in Italy, so you will already be aware of the quality you can expect. As with the previous decal sheet, these are accompanied by copious notes and placement images, and careful examination of these is highly recommended both before and during application. Although Mark notes that '*almost all instruction stencils were not present*' on these aircraft, those that were carried are faithfully recreated on the sheet. Everything you could possibly need is here, down to decals for the wheel chock and tiny (really TINY!) discs for the centre of the wheel hubs! An optional Singapore flag is also present to replicate the one carried in the rear cockpit during flying displays! Two small rectangles in FS25630 grey

are provided 'in the event modellers want to apply grey to any needed areas'. A superb product in all aspects.







## MV-48002-1

Chuck Yeager, the first pilot to break the sound barrier, once said that “of all the airplanes in the world that I've flown, the F-5 is the most fun to fly”. Ever since building the Airfix F-5 'Freedom Fighter' for my younger brother in the late 1960's, I have have admired the Northrop F-5 series of aircraft. The natural culmination of the series, the F-20 Tigershark, has been a particular favourite of mine, and one can only wonder what might have been had not a series of events, including two fatal crashes during its development, conspired against it and sealed its fate. There can be little doubt that, with its excellent performance and relatively low price tag, it would have been a best-seller around the world, and would probably still be in service with most, if not all, the air forces which operated the F-5A ('Freedom Fighter) and/or the F-5E (Tiger).

When Freedom Models released several kits of speculative versions of the Tigershark in 2015/2016, I just had to buy one. It went into the stash to await a suitable 'what-if' decal sheet. This, for me, is that decal sheet.

The title 'Singapore Tigersharks' is actually a misnomer, as the sheet caters for aircraft [that might have been] operated by Singapore, Indonesia, Malaysia, Thailand and The Philippines, all in both full colour and toned-down 'lo-viz' markings.



Thank you for purchasing this decal sheet.

The subject matter contained within requires minute to advanced level modelling skills in conversion & scratch building in required of the models if conversion sets are not available. The modeller is strongly advised to read through the instruction sheets to ensure correct and optimal usage of the decal. Up to 2 or more aircraft can be modelled using this decal with the extensive array of RSAF fighter ops markings provided. The configuration of the few variants can be studied within the instruction sheets. As this is primarily a 'What-If' decal, the modeller may model his own aircraft independent of the featured air in the instruction sheet.

This decal is intended for the FMK 148 F-20 kit series. For the RF-20S variant, the AFV 148 RF-SS/RF-SE kit could be used where the nose may be grafted in place.

The only actual F-20 seen in RSAF markings that of the 1st prototype, 86-0062, as illustrated within this page.

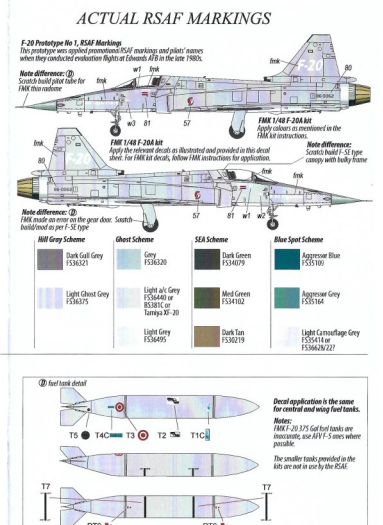
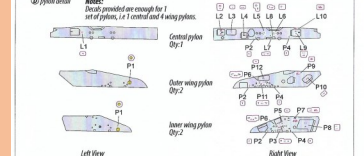
There are minimum stencils applied on the actual F-20 aircraft. It is up to the modeller to follow the FMK kit instructions or to be creative and apply stencils provided in the decal. Instructions are given for some of the more general stencils (provided) in the decal, which were normally seen on RSAF F-5s.

The same disruptive camouflage scheme applied to the early RSAF F-5s could also be applied to the F-20s and are illustrated on page 2-4. The same demonstration style is applicable to the 3 colour schemes, see pg 4.

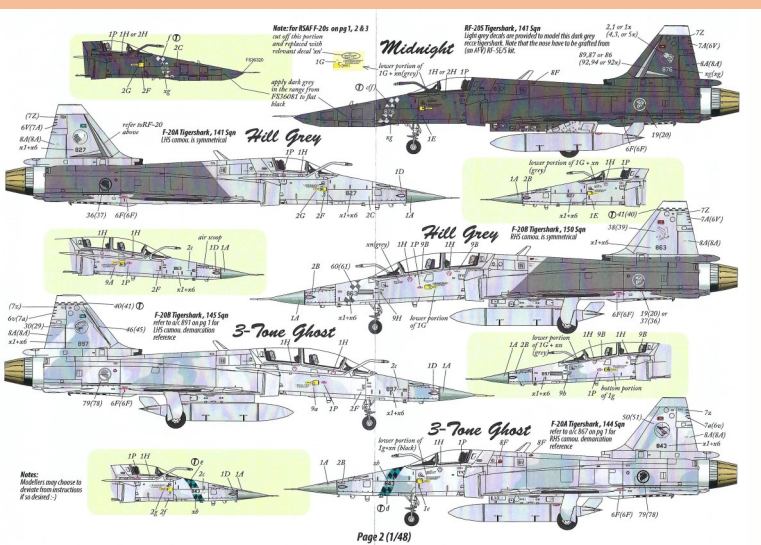
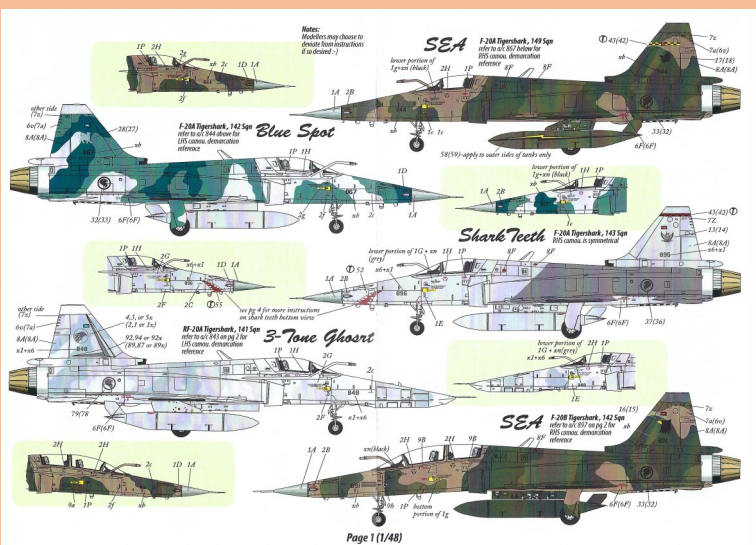
Pay due attention to the details called for in the instruction sheets. Careful study will allow the optimum number of air to be modelled from this decal sheet. One may also want to scan or take a photo of the decal before cutting out for use so that it can be used for reference in subsequent builds. Some symbology is also applicable as follows:

① Only unique ops markings and certain ops are shown. Refer to common markings shown in generic air. ② Only apply required decal ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿

No effort is spared in making this product as realistic as possible. Nevertheless there are times where information is not readily available and thus inferred guesswork is applied.



There is one A5 sheet together with three smaller sheets that, when combined, are slightly longer than another A5 sheet in this set. Three folded A4 sheets in full colour make up the 12-page instruction booklet. At least 15 aircraft are catered for here, including an actual F-20 prototype that was finished in promotional RSAF markings when it was evaluated by pilots from Singapore in the late 1980s, and a speculative RSAF 'RF-20S Tigershark'. Here Mark notes that the modeller will need to graft on the nose from an AFV RF-5E kit.



As may be seen from the accompanying images, a range of colour schemes are suggested, although Mark points out that, of course, 'Modellers may choose to deviate from instructions if so desired'. Indeed, with such a huge variety of decals in colour and various shades of grey, the possibilities are almost endless. At the moment, I have my eye on the so-called 'Blue Spot' camouflage scheme, but possibly with full-colour markings and maybe even 'Shark's Teeth' on the nose!









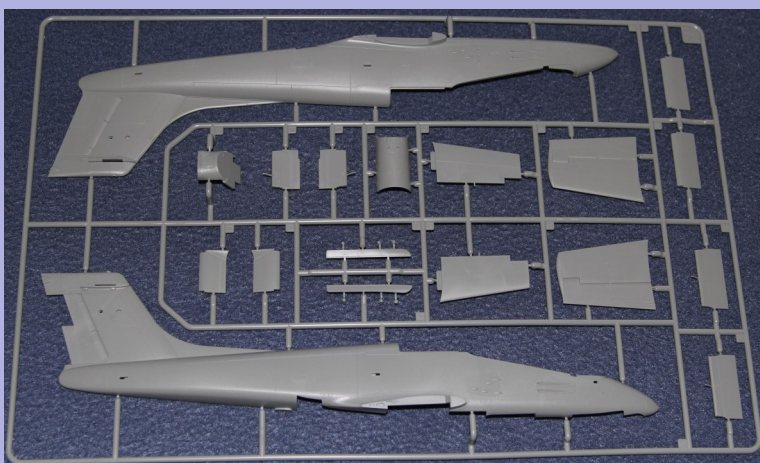
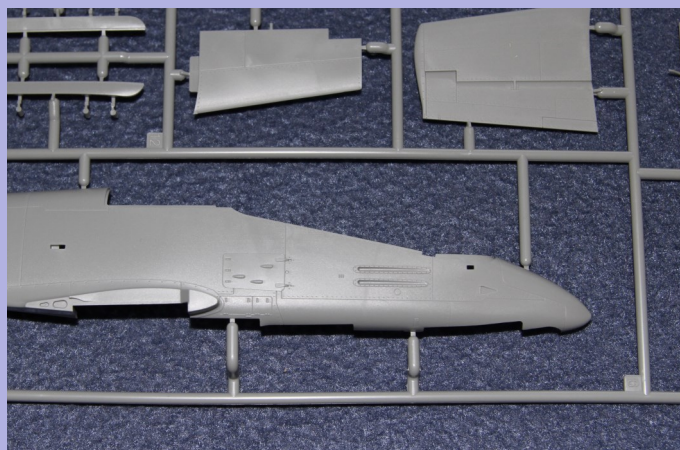
# Kinetic Models – 1:48 Scale FMA IA-58 Pucara



My first exposure to the rather esoteric twin-engined FMA IA-58 Pucara ground-attack and Counter Insurgency (COIN) aircraft, was during the annual RAF St Athan 'At Home Day' Airshow in September 1982, shortly after one of several examples (serial number A-549) had been recovered to the UK from the Falklands Islands, following the successful conclusion of the military campaign against Argentina. At the time, the aircraft was destined to join the AAEE fleet at RAF Boscombe Down as a potential test/trials aircraft; in the meantime it had become part of an RAF 'roadshow' to attend public events and honour those Stations that had played a key role in supporting the Falklands War. In April 1982, RAF St Athan was the home of the RAF's largest Maintenance Unit, responsible for the deep maintenance of several front-line types, including the Avro Vulcan, HP Victor and the BAe Harrier GR.3, together with a new task to conduct post-acceptance checks and modifications to the Fleet Air Arm's new BAe Sea Harrier FRS.1 fleet. While the Pucara has never

been at the top of my personal 'wishlist', it does have some appeal, with its functional design, stalky undercarriage and large panoramic canopy. I resisted the urge to add one to the collection until Kinetic announced their 1:48 scale kit and I learned that the Sri Lankan Air Force operated the type, albeit in very limited numbers, during their long civil war.

The Fabrica Militar de Aviones (FMA) IA-58 Pucara (Fortress), to give the aircraft its full title, is one of Kinetic's Gold Kits and is presented in a sturdy box featuring an Argentinian Air Force example, sporting Falklands War-era markings, flying low across hostile terrain. Inside the full box, the modeller is greeted with five medium grey sprues containing just over 190 parts, a clear sprue with 13 parts, and a small photoetched fret with a number of detail parts, including ejection seat harnesses, canopy framing, heat shields for auxiliary exhaust ducts and static wicks. In comparison with other contemporary kits, the overall parts count appears to be quite modest and this can largely be attributed to a distinct lack of external ordnance, which is a bit of a departure for Kinetic. The company has a well-earned reputation for its decal sheets and this one is no exception although, again, it only covers two examples. Designed by Crossdelta and printed by Cartograf, it provides superb decals for one Falklands-era Argentinian Air Force (FAA) machine, with the second option providing for a specially marked Uruguayan Air Force aircraft. Last, but not least, is the comprehensive instruction booklet, which has been a perennial weak spot for this company. The instructions included with this kit are much better than some previous iterations, although the black and white camouflage scheme and decal placement instructions continue to be very difficult to read. However, I understand that Kinetic now provide access to full colour versions on their website.



As with the vast majority of modern aircraft kits, assembly is rather conventional and starts with a nicely detailed cockpit tub, which is without doubt one of the highlights of this kit. Almost thirty parts provide for two highly detailed ejection seats and the cockpit coaming, instrument panels and consoles. Assembly of the mainplane follows, with some nicely detailed slide-moulded undercarriage bays and the option to pose the flaps in their deployed position. This section culminates with the assembly of the impressive 'T' section tail surfaces, engine nacelles and stores pylons. Fortunately, the kit has been designed in such a way that the modeler can avoid assembling and fixing the propellers until almost the end of the build in order to minimize any form of breakage. Next up is the aforementioned undercarriage, optimized for rudimentary or rough field operations. The remainder of the assembly sequence is given over to applying a wealth of airframe details, a crystal-clear two-part cockpit canopy, which can be posed open, and the photo-

etched static wicks found on the trailing edges of some of the flying control surfaces. Once final assembly of the main airframe is completed, the modeler can then turn their attention to completing the ordnance fit which is an area where the kit is a little disappointing. In spite of the wide variety of different weapons that the original can carry, including Mk.82 bombs and LAU rocket

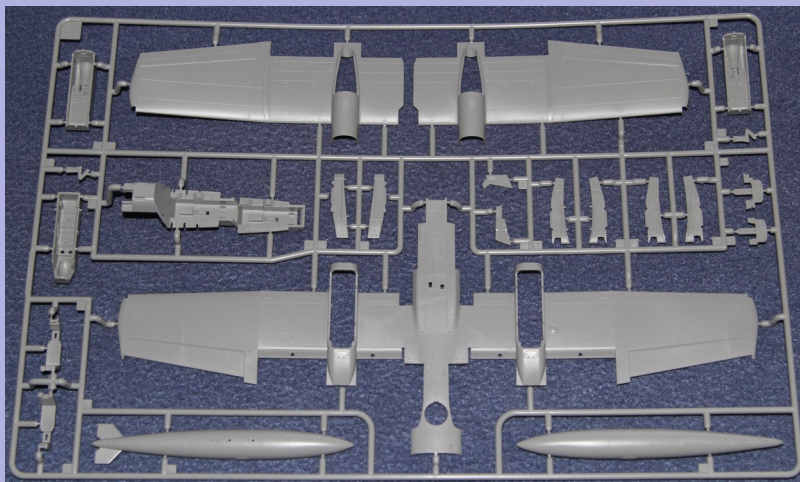




Pods, the kit only offers one large Aero 1D 500 Gallon centerline, and two smaller wing mounted drop tanks together with a pair of BRU-42A Triple Ejector Racks (TERs). Any other weaponry will need to be obtained from the spares box or aftermarket sources.

As previously mentioned the kit provides decal markings for two different aircraft;

Option	Type/Unit	Notes
1	FMA IA-58A Pucara – A-511 - FAA Fuerza Aerea Argentina Air Force	Falklands War Markings
2	FMA IA-58A Pucara – 223 – 1 Squadron/2 Brigade Uruguayan Air Force	With nose art



The Kinetic FMA IA-58 Pucara is marketed as one of their 'Gold' standard kits and there is no doubt that the overall appearance of the kit parts, with finely recessed panel lines and excellent detail should confer this moniker when compared with some of their previous releases. I can imagine that care will still need to be taken with some of the assembly, most notably the joining of the fuselage with the mainplane but some early test-fitting suggests that this will be easy. That said, I was somewhat disappointed with the lack of imagination regarding the provision of stores, and that the decal options were also rather limited. Both of these considerations are out of character with this manufacturer, which has previously built a sound reputation for the number of decal options and weapons included with many of their kits, so one is left with the impression that they were perhaps looking to economise with the production of this particular kit. That said, in overall terms, this is an excellent kit of a rather

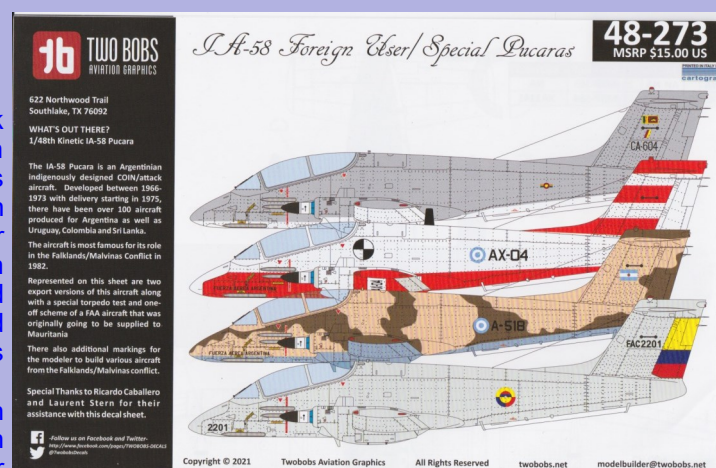
esoteric subject, and I have little doubt that a very nice replica can be produced from the box, with consideration given towards raiding the spares box or purchasing some aftermarket decals and stores.

Highly recommended

Mark Attrill, August 2021

**Afternote:** Two Bobs Decals of the United States have been quick off the mark with the release of some decals to supplement those on offer in the kit and one of their two releases so far includes markings for a Sri Lankan example of the IA-58 Pucara. Their 'IA-58 Foreign User/Special Pucaras' issue (Sheet TBD48-273) includes decals for IA-58A Pucara CA-604 of the Sri Lankan Air Force, one of four such

machines supplied to that air arm and as featured in Chris Luz-Raymond's excellent article on the IA-58 Pucara in the last issue of our newsletter. As one can expect from Two Bobs Decals, these are superb, Cartograf printed DPIs that provide very clear four-view colour drawings with which to identify and place both the national markings and the plethora of safety, maintenance and stencil markings included in the decal sheet. As an aside, and for those who may wish to contemplate building more than one Pucara, this decal release also includes a Colombian Air Force example along with an Argentinian torpedo trials aircraft and a fourth, sporting a unique 'desert' scheme applied to an aircraft originally destined for delivery to Mauritania before the order was cancelled.







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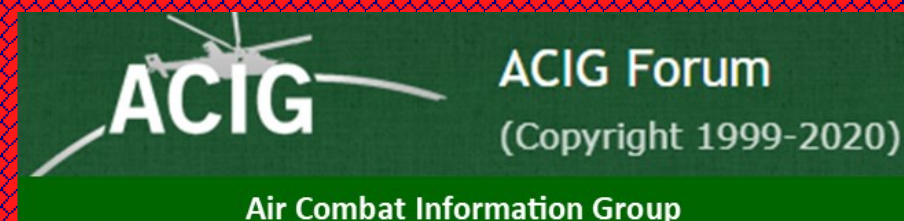
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