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# ASIAN AIR ARMS NEWSLETTER

June/July 2019

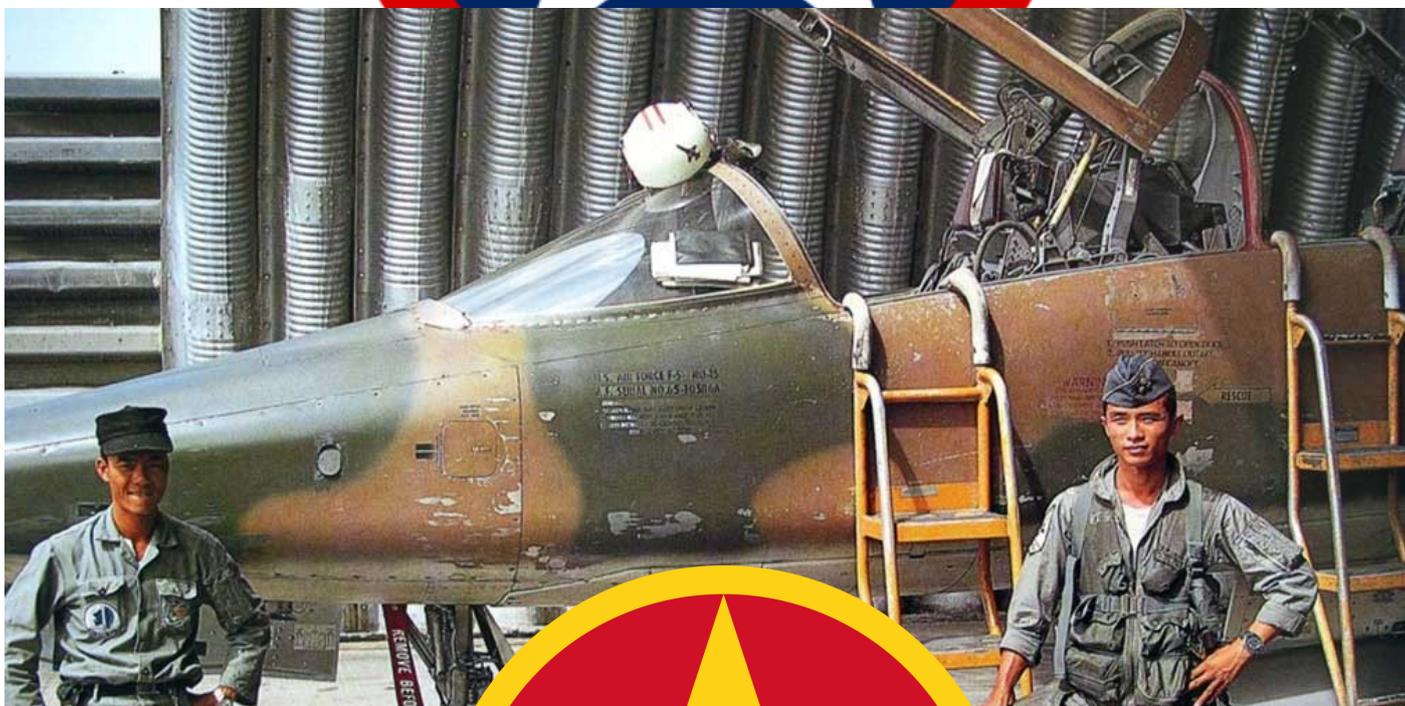
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ASIAN AIR  
ARMS



**NORTHROP  
F-5**

**IN  
VIETNAM**

## Inside this issue:

<a href="#">Asian Air Arms Update</a>	<a href="#">Northrop F-5 in Vietnam</a> by Mark Attrill	<a href="#">Airmark Modelling Guides</a>	<a href="#">Singapore's Javelins, Meteors, etc.</a> By YK Goh	<a href="#">The Video Walkabouts of Eric Moya</a>	<a href="#">Curtiss Commando 1/72 build</a> by Carmel Attard	<a href="#">"Umegumi Eagle" JASDF F-15J</a>	<a href="#">The Huns of Taiwan</a>	<a href="#">Change Alley &amp; Iliad L-19 Bird Dog</a>	<a href="#">Military Aviation in Laos. Final Part</a>	<a href="#">Coastal Kits Display Bases</a>	<a href="#">JASDF F-104J in 1/144</a> by Alan Smith	<a href="#">Asian Hotspot-South China Sea</a>	<a href="#">Join IPMS</a>
2	3-7	8	9-12	13	14-16	17	18-19	20	21-22	23	24	25	26



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## UPDATES AT ASIAN AIR ARMS RESEARCH GROUP



7

### A New Air Arm

First off—let me introduce you to an addition to our Asian Air Arms—East Timor. I was unaware they had an air component until I stumbled across some photos recently. Look for East Timor on the website.

2

### An apology!

Following my piece in the April/May Newsletter concerning the Aero L-39, I put out an appeal for photos of certain former-Soviet Asian examples. One of you kindly sent these photos of Tajik L-39s but to my embarrassment, I can't find the accompanying e-mail! So, whoever you are, a big thanks and a bigger apology!

3

### Many more photos!

I've been really busy the last month, adding enormously to the photo collections on the website.

So far, I've added more shots to: Nepal, Brunei, East Timor, Malaysia, Myanmar, Papua New Guinea, Thailand, Hong Kong, North Korea, South Korea, Abkhazia and Chechnya. Click on the References tab for each country to see them all.



4

### Showing Off!

Asian Air Arms has recently been represented at the following shows: Poole Vikings, ModelKraft Milton Keynes, Tangmere, Torbay, Salisbury and the Northern Model Show at North Shields—thanks to all who manned the tables. Our next shows will be at North Somerset Helicopter Museum, Avon, East Ridings of Yorkshire and Farnborough. **DO** bring some models along and let your colleagues have a pee/purchasing break!

5

### Group Build Anyone?

Member Craig Godwin is now running a Group Build "1980s Frontline Asia" on Britmodeller. It starts on July 6th, so still time to sign up and join in the fun!

6

### Asian Air Arms Annual Modelling Competition News

We've been very lucky in gaining the support of NINE sponsors who have all agreed to put up prizes for the three Class Winners (1/144, 1/72, 1/48 and larger).

One of the Class Winners will be declared Best In Show and will receive not only the coveted "IPMS/Asian Air Arms Trophy", but also the "Star Prize" kindly donated by SHESTO—manufacturers of top class lighting and magnification tools.

This prize will be the superb Lightcraft Classic LED Magnifier Lamp (rrp. £114.95).

Other Sponsors include: Guideline Publications; Scale Aircraft Modeller International; Helion & Co (via member Tom Cooper); Coastal Kits Display Bases; BookWorld WS; Mr Decal Paper; Modelling Tools; and Airmark.



**BEST IN SHOW  
PRIZE**

**Total value of all these prizes exceeds £500!!!!**

As some of these Sponsors are new to Asian Air Arms, I've added some further information about them in this Newsletter.

Several Sponsors are also offering discounts to members of Asian Air Arms—see their adverts for information on how to claim your discount.

7

Some of our Sponsors will also give you a discount at shows — **on production of an Asian Air Arms membership card.** I didn't know we had such a thing! But I can fix that easily. If you'd like a membership card to help you get discounts, just let me know and I'll e-mail you one.





## The Northrop F-5A/B Freedom Fighter and F-5E Tiger II South Vietnamese Air Force (VNAF) 1967-75 By Mark Attrill



Against the backdrop of a perceived threat from Communist China and North Vietnam, the South Vietnamese Government and leadership of the embryonic South Vietnamese Air Force (VNAF), which was formed in 1955, had started to lobby the US authorities for jet fighters and bombers in the late 1950s but it was not until the mid-1960s that the VNAF received their first jet aircraft.

An early experiment with the Martin B-57B Canberra medium bomber did not go well and it was determined that the VNAF needed to be equipped with smaller, less complex fighter-bomber aircraft to counter the very real threat posed by the North Vietnamese. Fortunately, the US Government under the auspices of their Military Aid Programme (MAP) had directed the US aerospace industry to develop cheap and simpler fighters and fighter-bombers in large quantities with which to equip a number of air forces in developing countries that had allied themselves to the United States, but could not afford the larger, more complex fighter aircraft that had been developed for the USAF and USN.

One such aircraft was the diminutive Northrop F-5A Freedom Fighter which was supersonic yet simple and affordable. The USAF, which was already operating the T-38 Talon trainer derivative of the F-5A, also ordered a small number of F-5s since it was concerned about attrition rates for its more complex and costly aircraft types. These aircraft were deployed to South East Asia in order for the USAF to conduct an operational evaluation with the F-5C\* in South Vietnam under the codename SKOSHI TIGER, during which the utility and ease of maintenance of the aircraft were proven, although there were minor concerns with regard to the aircraft's suitability for specific missions within the Close Air Support (CAS) and Counter Insurgency (COIN) roles. Such was the urgency of need for effective combat aircraft in South East Asia, that the VNAF inherited the 17 F-5Cs and 3 F-5B two-seat operational trainers from the USAF's 10<sup>th</sup> Fighter Commando Squadron at the culmination of the SKOSHI TIGER trials in June 1967. At the time, US plans had been drawn up to begin the conversion of six Douglas A-1 Skyraider-equipped Squadrons, which had borne the brunt of VNAF combat operations, with two Squadrons of F-5As and four with the Cessna A-37A/B Dragonfly.

Unlike the A-37B, which was viewed as a direct replacement for the ageing A-1 Skyraider fleet, the supersonic F-5A was originally optimised for the air defence and interception role, to counter the growing threat from North Vietnamese MiGs, with a secondary role in ground attack. The first delivery of 20 aircraft was made to the 522<sup>nd</sup> Fighter Squadron at Tan Son Nhut AFB in June 1967, before the unit relocated to Bien Hoa AFB, which would later become the principal operating base for the VNAF F-5 fleet. The first losses were recorded within a year, which included several aircraft that were damaged or written off on the ground during the Tet Offensive of January/February 1968. Some attrition replacements were subsequently provided by the US government so that by the end of 1969 official records confirmed the delivery of a total of 25 aircraft (23 x F-5A and 2 x F-5B) with five losses. Introducing the F-5A to the ground-attack role in VNAF Service proved to be problematical and took longer than expected so the ageing fleet of A-1 Skyraiders, bolstered by significant increases in the



\* The F-5C variant was outwardly very similar to the F-5A but with minor equipment changes.



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## The Northrop F-5A/B Freedom Fighter and F-5E Tiger II South Vietnamese Air Force (VNAF) 1967-75



number of A-37A/Bs delivered to the VNAF, continued to provide the vast majority of air support to South Vietnamese and U.S. Ground Forces. In the meantime, the VNAF acquired a limited high speed tactical reconnaissance capability when the first of six Northrop RF-5As were added to the inventory in 1970. These aircraft could

perform daylight Visual Flight Rules (VFR) missions only.

Training in the Air Defence role also proved to be problematical for the F-5A: a shortfall in the delivery of training on employment and tactics, combined with the political restrictions placed on the VNAF for operating close to or over North Vietnamese territory, limited the effectiveness of the F-5A Freedom Fighter in this role. It was not until early 1972, with the growing threat of North Vietnamese air strikes, that the VNAF established a limited Air Defence capability, rotating detachments of 522<sup>nd</sup> FS F-5As from Bien Hoa to Da Nang AB to stand alert using pairs of AIM-9E Sidewinder equipped aircraft. The 522<sup>nd</sup> FS maintained this duty at Da Nang AB until March 1973 when the newly established 538<sup>th</sup> FS assumed the role.

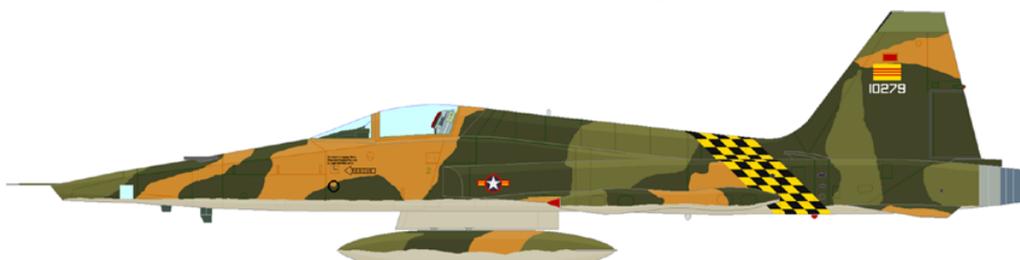
Until the introduction of the F-5E Tiger II, the VNAF only had approximately 40 F-5A airframes equipped with wingtip launch rails for the AIM-9 AAM, so these were ultimately distributed among three of the six F-5 Squadrons by 1974. At the same time, the North Vietnamese armed forces had improved and enhanced their anti-aircraft artillery capability which necessitated the adoption of revised tactics for the use of the F-5As and A-37Bs in the Ground Attack and Close Air Support role, dropping ordnance from higher altitudes with limited effectiveness. In spite of these early challenges and faced with mounting domestic pressure the US Government initiated plans for the modernisation and expansion of the VNAF under the so-called "Vietnamization" initiative and the F-5A featured heavily in these plans.



After the second Tet Offensive in 1972, which broke the first Peace Agreement with North Vietnam, the US launched Program 'Enhance' in an attempt to not only bring the VNAF back up to effective strength but also to overcome some of the deficiencies with the F-5A Freedom Fighter by procuring the more capable F-5E Tiger II in order to improve capability for interdiction in a high threat environment and enhance overall air defence capability.

Despite the obvious commonality between the F-5A and F-5E, the complexity of the latter variant was underestimated and it

would take the VNAF longer than anticipated to introduce the type to service and, more importantly, use it effectively in a deteriorating security environment. In the meantime, and to counter these delays, the US government-instigated Project 'Enhance Plus' which involved the large scale transfer or re-direction of F-5A and RF-5A aircraft from other allies to bolster the capability of the VNAF during 1973-74. In all some 130 additional airframes were delivered to Bien Hoa AFB including 44 F/RF-5As destined for South Korea, 32 F-5As from Iran and 48 F-5As on loan from Taiwan. The U.S. government had also supplied small quantities of F-5As, some of which were embargoed examples originally bound for Libya, whilst others were delivered directly from the USAF, probably from the 425<sup>th</sup> Tactical Fighter Training Squadron that had been previously established at Williams AFB to train foreign F-5 pilots.





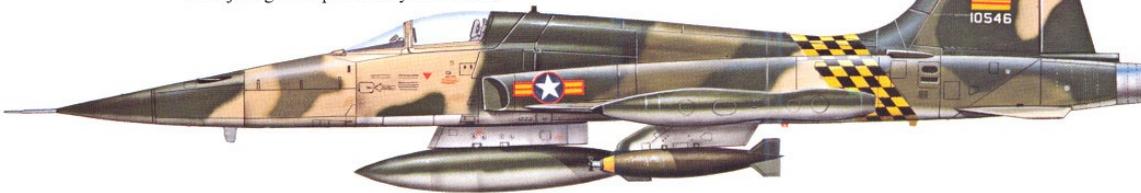
## The Northrop F-5A/B Freedom Fighter and F-5E Tiger II South Vietnamese Air Force (VNAF) 1967-75

Unfortunately the pace of delivery of these additional airframes could not be matched with the availability of either Northrop-contracted or VNAF maintenance personnel to reassemble and check the completed aircraft or the training system's ability to generate suitably qualified personnel to operate and fly the aircraft. As a result, by mid-1974, the VNAF had equipped an additional three Squadrons with 72 F-5As with at least 36 other airframes in storage. Surprisingly, the problems with later F-5A deliveries to the VNAF did not affect the plan to provide the much more capable F-5E Tiger II to the VNAF and the first four aircraft of this type were handed over to South Vietnam in March 1973.

The early aircraft were part of an order for the Imperial Iranian Air Force and one full Squadron had reportedly been equipped and formed by the end of May 1974, to replace the F-5As operated by the 538<sup>th</sup> Fighter Squadron at Da Nang. The F-5A Freedom Fighter and its later derivative, the F-5E Tiger II would ultimately equip six fighter-bomber squadrons of the VNAF and contribute to a composite reconnaissance unit with the RF-5A, making the VNAF in numerical terms, the largest operator of the F-5A/E family of lightweight fighters in the world. The number of F-5 aircraft operated by the VNAF could have been even higher since a total of 126 F-5E/F Tiger IIs had been originally ordered although only 54 had been delivered by the time South Vietnam fell in April 1975.

As a result of the acceleration of the "Vietnamization" initiative, by the summer of 1974 the VNAF had received almost 170 F-5 aircraft which, together with the very capable A-37 Dragonfly, should have

Northrop F-5A Freedom Fighter of the 522nd Fighter Squadron, 23rd Tactical Wing based at Tan Son Nhut during October of 1967. The F-5A was the first jet fighter operated by the VNAF.



been ample to provide an effective counter to the growing threat from North Vietnam and increasing incursions into South Vietnamese territory. While progress was made with overcoming the difficulties of delivering ordnance effectively from the F-5A variant in the ground-attack role, and optimising the enhanced capability which the newer F-5E Tiger could provide, the VNAF continued to be hampered by the availability of resources. In time, the aircraft did prove itself and was heavily involved in supporting the Army of the Republic of Vietnam (ARVN) during the major North Vietnamese offensives in 1973 and 1974. In challenging circumstances, the VNAF F-5s performed admirably, particularly in the interdiction of enemy lines of communications and against military convoys but the operational tempo and lack of trained maintenance personnel began to exact a price.

By late 1973, almost fifty F-5As had to be grounded due to corrosion and airframe fatigue, with some F-5 units reporting 30% availability of aircraft for tasking. The dire situation with the VNAF F-5 operational status was partially alleviated when the ROCAF, which had previously supplied a number of aircraft to the VNAF under Project 'Enhance Plus', agreed to undertake urgent overhauls on some of the airframes in Taiwan and an aggressive training programme in Vietnam produced more suitably qualified VNAF maintenance personnel to work on the aircraft.

Six months later, in 1974, the situation had stabilised and the VNAF enjoyed better serviceability and availability rates with the operational F-5 airframes but were still insufficient numbers of trained personnel to generate, service and operate the growing VNAF F-5 fleet and vital spares, including aero engines, which were still in short supply. The Northrop contracted personnel who were primarily responsible for generating new airframes had been withdrawn from Vietnam as part of the U.S. dis-engagement policy. As a result the potential that the F-5 units could have offered to the ARVN was not fully realised during the closing stages of the Vietnam War and it was the A-37 Dragonfly that largely became a symbol of the VNAF's desperate attempts to stem the flow of a rampant North Vietnamese Army during the latter part of 1974 and early 1975, flying operational missions right up until the fall of South Vietnam in April 1975.

Guideline Publications



## The Northrop F-5A/B Freedom Fighter and F-5E Tiger II South Vietnamese Air Force (VNAF) 1967-75

By the time South Vietnam officially capitulated on 30 April 1975, some 25 VNAF F-5s had escaped to U Tapao Air Base in Thailand, including a reported 22 F-5E Tiger IIs and 1 x RF-5A. At the time it was reported that some 87 F-5A/Es were abandoned in South Vietnam, many of which were still held in storage as there had been insufficient time or resources to generate operational aircraft. This figure included an estimated 27 examples of the newer F-5E variant. Those former VNAF F-5E Tiger IIs that arrived in Thailand were eventually recovered to the United States where the majority were refurbished or reconditioned for further service with the USAF/USN or for export.

**VNAF F-5 Deliveries – 1967-75**

Type	Number	Date	Notes
F-5A Freedom Fighter	7	1970	
F-5A Freedom Fighter	5	1972	U.S. (Embargoed Libyan Examples ?)
F-5A Freedom Fighter	36	1972	Diverted ROKAF (South Korea) order
F-5A Freedom Fighter	48	1972	On loan (via U.S.) from the ROCAF (Taiwan)
F-5A Freedom Fighter	32	1972	Transferred from the IIAF (Iran)
F-5A Freedom Fighter	9	1972	U.S. (425 <sup>th</sup> TFTS USAF ?)
F-5B Freedom Fighter	8	1967-75	Includes 3 x Ex SKOSHI TIGER a/c
F-5C Freedom Fighter	17	1967	Ex 10 <sup>th</sup> ACS SKOSHI TIGER Trials a/c
F-5E Tiger II	54	1974-75	
RF-5A	10	1970-75	
Total	226		

**VNAF F-5 Freedom Fighter/Tiger II Units – 1967-75**

Unit	Wing	Location	Variant
522 <sup>nd</sup> Fighter Squadron	63 <sup>rd</sup> Tactical Wing	Bien Hoa	F-5A/B/RF-5A*
536 <sup>th</sup> Fighter Squadron	23 <sup>rd</sup> Tactical Wing	Bien Hoa	F-5A/B/F-5E Tiger II**
538 <sup>th</sup> Fighter Squadron	41 <sup>st</sup> Tactical Wing	Da Nang	F-5A/B/F-5E Tiger II
540 <sup>th</sup> Fighter Squadron	82 <sup>nd</sup> Tactical Wing	Phu Cat	F-5A/F-5E Tiger II
542 <sup>nd</sup> Fighter Squadron	23 <sup>rd</sup> Tactical Wing	Bien Hoa	F-5A
544 <sup>th</sup> Fighter Squadron	23 <sup>rd</sup> Tactical Wing	Bien Hoa	F-5A
716 <sup>th</sup> Reconnaissance Squadron		Tan Son Nhut	RF-5A***

\*522<sup>nd</sup> FS maintained Air Defence Detachments at Da Nang AB between January 1972 and March 1973

\*\*536<sup>th</sup> FS relocated to Da Nang after re-equipment with F-5E Tiger II in June 1974

\*\*\*RF-5As reportedly operated with both 522<sup>nd</sup> FS and as part of the Composite 716<sup>th</sup> Reconnaissance Squadron

**Note:** These Tables have been compiled using a variety of references and sources to deliver as accurate a picture as possible on VNAF F-5 deliveries and Unit allocation. Since the majority of VNAF F-5 Units were formed in the latter stages of the Vietnam conflict and there is a paucity of authoritative official in-country documentation following the disbandment of the VNAF, the information may not be 100% accurate. The South Vietnamese authorities were overwhelmed with the type and number of aircraft delivered to the VNAF, with frequent changes to the Organisation and Structure of Air Divisions and Tactical Wings in particular, so the movement of Units and their equipment was also difficult to track in the ever-changing security situation that evolved during 1974 and early 1975.



# F-5 in Vietnamese People's Air Force (VPAF) 1975-1982

## By Mark Attrill

The Vietnamese People's Air Force (VPAF) lost no time in trying to incorporate hastily abandoned F-5A/B and F-5E aircraft into service, since the two types appeared to be readily available and had also been deemed to be relatively easy to fly and maintain. In reality, a lack of spare parts and documentation for the aircraft made the initial task difficult. VPAF pilots and groundcrew were only versed in Russian doctrine, tactics, procedures and language, although there were indications that former VNAF personnel, now loyal to the new regime, helped to overcome some of the initial difficulties. A number of aircraft were assigned to the newly formed 935<sup>th</sup> 'Dong Nai' Air Regiment, which was established at Bien Hoa AB, less than a month after the fall of Saigon, to perform principally in the air-to-air combat and air defence role. Although details of post-Vietnam War VPAF air operations remain sketchy, the breakdown in diplomatic relations between Cambodia and Vietnam in the aftermath of the war resulted in skirmishes along the southern border during 1976, which may have involved the use of VPAF F-5 assets including attacks against shipping in the Mekong River in early 1977. Unofficial sources also suggest that a 935<sup>th</sup> Air Regiment's detachment of F-5A/E aircraft was deployed to Wattay AB in Laos during May 1977 to assist the Laotian authorities with a Hmong tribal rebellion.

There was further use of VPAF F-5s against Cambodian targets throughout 1978-79 with the 935<sup>th</sup> Air Regiment reportedly receiving the title "Hero of the People's Armed Forces" for its collective actions in Cambodia, on 20 December 1979. The VPAF also operated briefly against military units of the



People's Republic of China (which had also intervened in Cambodia during 1979) with a number of F-5A and RF-5As re-deployed from Bien Hoa AB to Noi Bai AB in the vicinity of Hanoi in February 1979. It would appear that the 935<sup>th</sup> Air Regiment was the only official unit of the VPAF to operate the former VNAF F-5 fleet but difficulties in obtaining certain spare parts in the early 1980s compelled the VPAF to withdraw the majority of the remaining F-5 aircraft from service in 1981/82, by which time the Regiment was re-equipping with MiG-21MF Fishbeds. A flight of VPAF Northrop F-5s, in company with MiG-21s did, however, take part in a commemorative flypast to mark the 10<sup>th</sup> Anniversary of the end of the Vietnam War and re-unification in April 1985. Due to US Foreign Military Sales restrictions, mainly related to the receiver, the VPAF were unable to sell or transfer any of their F-5 aircraft but it has been reported that much of the surplus ground support equipment and spare parts were later sold to both Ethiopia and Iran which, themselves, had been subjected to arms embargoes but still operated the Northrop F-5.

**Footnote:** In the late 1970s and 1980s, there was much speculation surrounding the foreign exploitation of US manufactured combat aircraft after the fall of Saigon and the re-unification of Vietnam, particularly with regard to the former Soviet Union and her Warsaw Pact allies. As a relatively new type, operated by a number of Western orientated Air Arms, it was anticipated that

the Northrop F-5E Tiger II would be viewed as a highly prized asset. After the collapse of the Soviet Union and Warsaw Pact in the late 1980s, the extent of this exploitation became a little clearer and it is now known that at least three examples of the former VNAF F-5E Tiger IIs found their way to Research Institutes or Aerospace manufacturers in the former Soviet



Union, Czechoslovakia and Poland during the late 1970s. One Northrop F-5A Freedom Fighter, of Vietnamese origin, is also on display in a museum in the People's Republic of China but it is not known whether this was gifted directly or inherited from the People's Liberation Army Air Force or a Government-sponsored research institute.

### Asian Aircraft Markings A History

#### 22. East Timor



2002 to date



#### 23. China



1936-49



1946-49



1946-50



1950 to date



1950 to date—Lo-Vis

#### 24. Taiwan



1949-91



1991 to date

Ref: Military Aircraft Insignia of the World—Cochrane/Elliot



**NOTE WELL**

Airmark is one of our official sponsors for the Asian Air Arms Annual Modelling Competition at ScaleModelWorld, Telford in November. Each Class Winner will be able to select two titles from this great, up-to-the-minute range.

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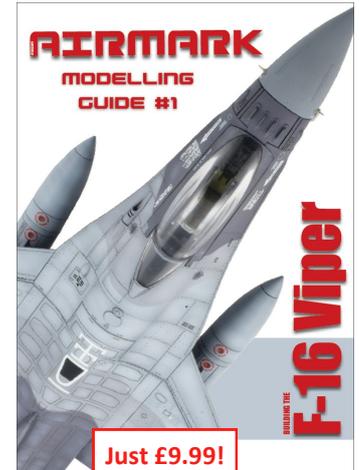
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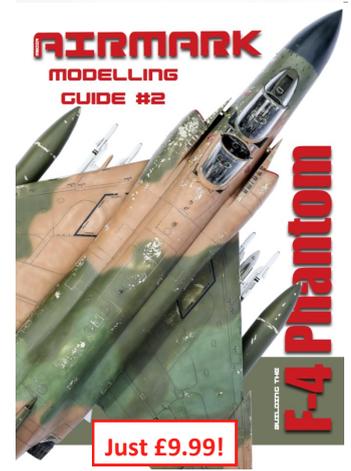
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## Ground Instructional Airframes of the Singapore Air Defence Command

### By YK Goh

Ever seen Javelins and Hunters in Singapore markings? Member YK Goh has written for us a fascinating account of former RAF aircraft that were repainted with SADC markings and used as Ground Instructional Airframes. Now [here](#) are some schemes that cry out to be modelled—and will have heads scratching at your next club meeting!



When the Singapore Air Defence Command (SADC) was officially formed on 1 September 1968, the RAF was in the midst of a total pull-out from the east of Suez. Upon independence on 9 August 1965, the Singapore Armed Forces (SAF) had only two infantry regiments, two outmoded patrol craft for seaward defence and no air element. The setting up of an air defence capability was thus an urgent undertaking for the newly independent island state to fill the vacuum that would be left by the RAF.

The newly formed SADC began an intensive recruitment programme for pilots, technical specialists and airmen to fill the various vocations. The pioneers were sent overseas, mainly to UK and New Zealand whilst training schools were being set up locally. For aircraft maintenance, the Air Technical Training School (ATTS) was formed in Seletar and came under the SAF Technical Training Institute (SAFTECH) which included schools for the army and naval vocations.

With the impending deliveries of Strikemasters and Hunters into the SADC Orbat, a Jet Provost T.3 and a Hunter F.4 were purchased for ground instructional training in ATTS. The Jet Provost T.3 (XN597) was purchased through Airwork Services Ltd which was engaged to assist in the set-up of the maintenance capability for SADC. The Hunter F.4 (XF311) was provided under the contract with Hawker Siddeley and was previously used by the Royal Navy as an instructional airframe.

With the withdrawal of the RAF from Singapore and the rapid disbandment of its squadrons, the RAF transferred two Meteors, a Belvedere and six Javelins to ATTS as well. Both Meteors last served with 1574 Target Towing Flight at Changi, and the Belvedere was a 66 Squadron machine based at Seletar. The 6 Javelins were among the serviceable aircraft of 60 Squadron that took their last flight from Tengah to Seletar on 1 May 1968, a day after the squadron was formally disbanded.

#### Gloster Javelin FAW.9 XH793 SAF-TECH8

Served with 23, 64 and 60 Squadron before being struck off charge in Singapore. The blue of the roundels and the serial were overpainted with Singapore Air Force colours at Seletar in September 1970 and it was used as an instructional trainer at Changi Air Base. Eventually scrapped



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## Ground Instructional Airframes of the Singapore Air Defence Command by YK GOH



See the Belvedere tail in the background. Anyone got photos?

All these aircraft were given SAF-TECH numbers and the blue on the RAF roundels and fin flashes were painted over in red as the SADC had adopted the red/white/red roundel as its insignia.

As the Javelins and Belvedere were not similar to those that were in SADC service, they could not be used effectively by ATTS. Parts from the Javelins that were suitable for use as training aids were removed and gifted to the Singapore Polytechnic in 1972. The airframes were either scrapped or used for fire practice. Parts from the Belvedere were removed in 1977 to help

in restoring another one, XG452, at the International Helicopter Museum in Weston-super-Mare in UK. Thereafter the carcass was disposed off.

Meanwhile, in 1970, the Royal Navy transferred a Sea Vixen FAW.2 XJ490 to SADC. The aircraft was one of two shipped to Singapore as replacement aircraft for 899 Squadron but found to be severely corroded and unsuitable for service after inspection at Tengah. The SADC could find no use for this airframe and subsequently donated it to the Singapore Polytechnic in September 1972 for their use in the Aeronautical Engineering Course at its Ayer Rajah Campus.



SAF-TECH No.	Type	Serial	Code	Remarks
SAF-TECH 1	Jet Provost T.3	XN596		Purchased through Airwork Services. Scrapped.
SAF-TECH 2	Meteor F(TT).8	WA880		Last served with 1574 TFF. Currently with QAM.
SAF-TECH 3	Meteor F(TT).8	WH410		Last served with 1574 TFF. Scrapped.
SAF-TECH 4	Belvedere HC.1	XG448	A	Last served with 66 Sqn at Seletar. Scrapped.
SAF-TECH 5	Javelin FAW.9R	XH895	G	Last served with 60 Squadron at Tengah. All scrapped.
SAF-TECH 6	Javelin FAW.9R	XH893	V	
SAF-TECH 7	Javelin FAW.9R	XH872	MH M	
SAF-TECH 8	Javelin FAW.9R	XH793	J	
SAF-TECH 9	Javelin FAW.9	XH777	R	
SAF-TECH 10	Javelin FAW.9	XH839	W	
SAF-TECH 11	Hunter F.4	XF311		Last used as instructional airframe A2566 by Royal Navy. Received by ATTS in 1970. Currently with QAM.



## Ground Instructional Airframes of the Singapore Air Defence Command by YK GOH



The Meteors all wore "target-tug" black/yellow diagonal stripes underneath.

The remaining aircraft - the Hunter, the Jet Provost and two Meteors - were retained. One of the Meteors was cut-up, with only the nose section preserved for cockpit and ejection seat training. By the end of 1972, technical training in the SAF was reorganised and the respective services took over the training of their specialist vocations. ATTS came under the SADC and was renamed as the Air Engineering Technical Institute (AETI), moving all its training facilities to Changi. In 1974, SADC was also renamed as the Republic of Singapore Air Force (RSAF).

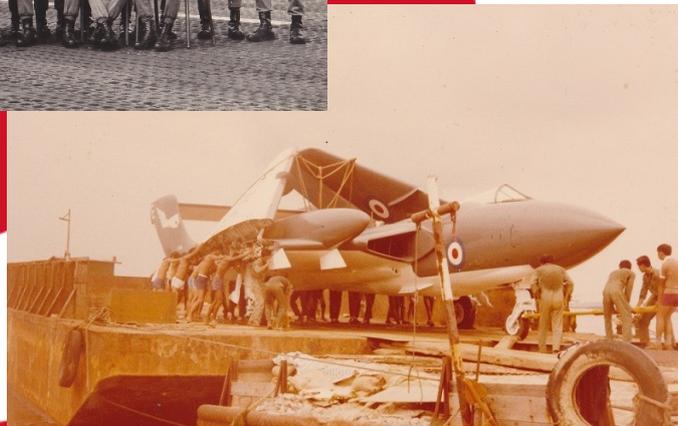
In 1979, an idea was mooted to have an aviation display at the island resort of Sentosa. The RSAF donated the remaining and redundant training airframes towards this initiative. This included the Hunter F.4, the remaining Meteor, the Sea Vixen from the Singapore Polytechnic and an EC-47 that has another story of its own. These four aircraft were cleaned up and the Sea Vixen was given a new coat of paint. AETI instructors and trainees took up the challenging task to transport the four aircraft across the sea by barge and towed up the narrow winding roads to the display site. The exhibits while generating curious interest unfortunately deteriorated over time under the hot and humid climate, besides being subjected to vandalism. An embarrassing episode came about when it was featured on the TV game show, "Treasure Hunt", screened on national TV in 1987 which show the appalling state of the aircraft, particularly the EC-47.



<http://www.AircraftSlides.com>



## Ground Instructional Airframes of the Singapore Air Defence Command by YK GOH

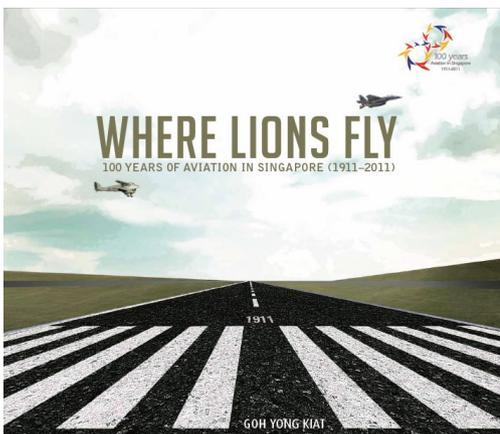


The Sea Vixen did not receive SADC insignia.

The decision was then taken to remove the aircraft from Sentosa and, despite much public interest to preserve them, they were destined for the scrap heap with a scrap dealer who successfully tendered for the job. The Queensland Air Museum got to hear about the plight of these aircraft and negotiated a deal to buy the Meteor, Hunter and Sea Vixen (the EC-47 had already been cut up by then). The three fighter jets were removed from Sentosa in March 1989 and shipped to Australia. All three are now well preserved in immaculate conditions and on display at the Queensland Air Museum. As for the Jet Provost, it was at some point disposed of when the RSAF phased out its Strikemasters.

YK Goh

**NOTE: YK is preparing an article for us on the mysterious EC-47 —where it came from and what happened to it! Read all about it in the Aug/Sept issue.**



YK Goh served in the RSAF for 23 years and has written and co-authored many books on military aviation in Singapore.



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# The Video Walkabouts of Eric Moya



Eric is an ATR-72 Captain with Wings Air (Lion Group) of Indonesia. He comes from Honduras, and he and Mrs. Moya have a six year old son, Eric Jnr. He says that he has been a scale modeller since he was fifteen but always found the kit instructions gave too little information to enable an accurate replica—so, he took up his camera! He says that most Walkabouts tend to comprise static photos and so, wanting to improve on this, he's now made and published over 100 Walkabout movie videos of military aircraft. Eric's kindly agreed to make his work available to other members of Asian Air Arms and for this, we're extremely grateful. To see a small selection of his great work—just click on the images below.

**See more of Eric's videos on his Facebook pages.**



F-15SG



Beech T-34A



HAL Tejas



MiG-17



A-400M



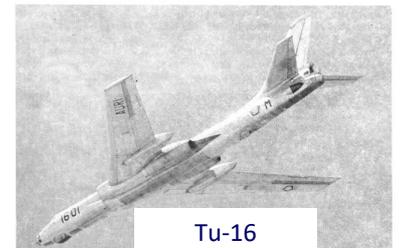
Agusta A-109



NA T-6 Texan



P-51D Mustang



Tu-16



Bell UH-1H



BAC Strikemaster



A-4S Skyhawk



FFA AS-202 Bravo



CASA/IPTN C-295M



F-5E Tiger II



# The Curtiss Wright CW20 (C-46 Commando) By Carmel J. Attard



On 26<sup>th</sup> March 1940 Curtiss Wright flew the prototype of a 36-seat commercial airliner which had the Company designation CW-20. Its large capacity fuselage aroused the US Army's interest in the type for cargo/transport & casualty evacuation. A militarised version with 2,000 hp Pratt and Whitney R-2800-43 engines was ordered into production under the designation C-46 and named Commando.

When the first of three models entered service in July 1942 they were the largest and heaviest twin engined aircraft to serve with the USAF. It proved such a valuable transport in the Pacific operations that 3,180 Commandos were built before production ended.

The C-46A, which followed, had a large cargo door on the port side of the rear fuselage, a strengthened cargo floor, and folding seats for 40 troops. Pratt and Whitney R-2800-51 engines of equivalent power replaced the R-2800-43 of the C-46s, their having better performance at altitude. This proved of great importance, and the C-46As 'humping' vital supplies over the Himalayas to China from India after the loss of the 'Burma Road' were found to have better performance than the C-47 at the altitudes involved. They made a vital contribution to the success of the airlift of essential war materials into China. The crew who manned cargo flights were the unsung heroes who kept the essential war and logistic supplies reaching the war zones at the right moment and played an important part for the positive outcome of the war in Asia.

In the Pacific, the Commandos played a significant role in the island-hopping operations, which culminated in the Japanese surrender, and the 160 R5C-1 aircraft (similar to USAF C-46A) supplied to the US Marine Corps made an important contribution. Later versions included the C-46D personnel version with an extra door on the starboard side (1,610 built).



Some Commandos were still serving with the 1<sup>st</sup> Air Commando Group of USAF Tactical Air Command in the mid 60s, for counter-insurgency duties. Others remained in service in a number of foreign air forces including those of Brazil, Nationalist China, Dominican Republic, Honduras, Japan, South Korea, Peru, and Uruguay, mostly of C-46A, D and F variants.



The USAF employed C-46s operationally during the Korean War as well as in the early stages of hostilities in Vietnam, and a very small number possibly remain in service with civilian operations, chiefly as freight-haulers in Central and South America.



Some of Tom Cooper's Artwork



PAF F-6A 110

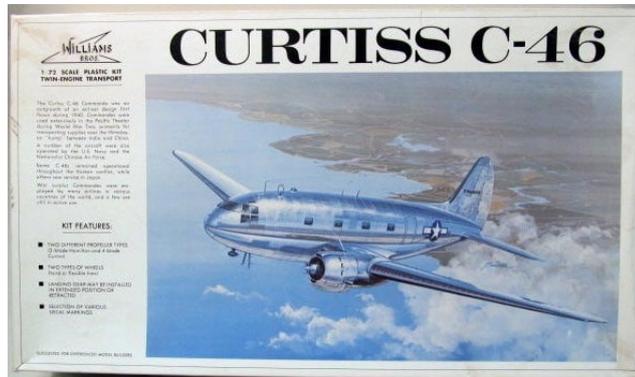
PAF F-104A 56-804



# Building the Curtiss Wright CW20 (C-46 Commando) By Carmel J. Attard (Part 1)

**The Kit:**

Kit No: 72346  
 Price: \$46  
 Scale: 1/72  
 Make: William Brothers  
 Notes: rare kit these days.



This is the first and only 1/72 scale model of the C-46 and was released by William Brothers and has always been favoured by modellers. (Some time after 2000, it was re-boxed by S&M Models.) Moulded in medium gray styrene, it has a total of 37 parts. There are 13 clear parts which are the cabin and cockpit windows. It is quite a sizeable kit as compared to the popular C-47 Dakota. In spite of its spacious fuselage it lacks detail at the interior cargo compartment, while detail to crew cabin is acceptable, having two crew seats, instruments and bulkhead as well as a floor. The engine nacelles are cumbersome and although the wheel wells are spacious, they lack detail on the inside walls. There is nice interior door detail.

The kit is packed in a robust box having a cover art depicting a C-46 flying over clouds and a coastline. It carries WWII style US star and bars and the black numbers 2968093 positioned on tail fin. Otherwise it is overall bare metal apart from the black de-icing boots to leading edges and tail fin. Decals also include those for Nationalist China with blue and white insignia and stripes to position on the rudder, that also has a white serial C-46289. Another option is for a Flying Tiger Line with a red, white and blue livery. This also incorporates a shark mouth on an oval white area. There is a dark blue registration N67981 on the tail unit and a red/ white/ blue horizontal stripe above it. Instrument panel is included as are also the black walkways. Finally there is a USAAF C-46 example in olive drab top and neutral gray lower, and early US white star insignia with a blue circle and red spot centre. Tail number is 15159 in white.

The kit has large folded instructions. On one side there is a history and an explanation of how to go about building the model. On the reverse page there is an exploded view complete with painting instructions for any of the chosen colour schemes. The instructions have no part numbers but with a little experience it's easy to identify the items from their shape alone.

**Construction**

One has to decide from an early stage which of the options to build in view of slight differences there are between versions. I preferred to go a step further and build a Japan Self Defense Force Air Force version. This offered a most colourful livery for a military type and also features the 4-bladed propellers instead of 3. The assembly itself went together fairly well but items like cockpit interior seats (with crew figures added), instrument panel and control wheels were barely



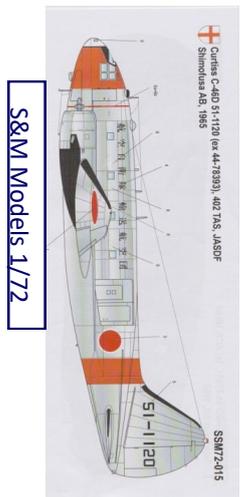
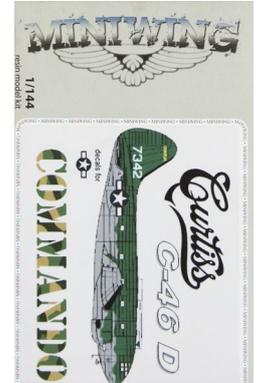
visible through the otherwise clear canopy that was also treated with Klear before fitting in place.

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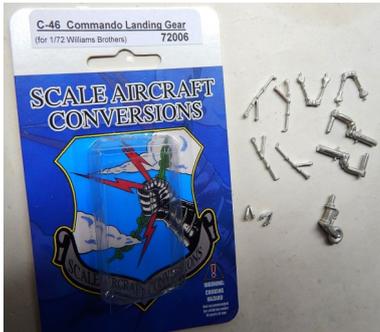


MORE KITS!



# Building the Curtiss Wright CW20 (C-46 Commando) By Carmel J. Attard (Part 2)

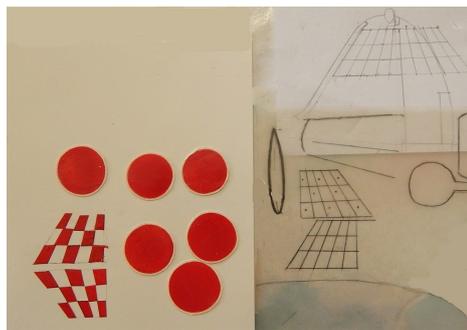
The spacious wheel wells were almost bare, and adding structural webbing from strips of plastic card made a difference. The only areas that required a little filler were the wing roots and around the cockpit canopy. For the Japanese aircraft I had to drill a round opening to take the top astrodome that I also moulded from clear acetate.



With the model now in one piece, I gave it an overall coat of light gray, which revealed a few surface marks that required a little filler, plus the necessary sanding and polish, and all was done. Careful study of photos of the type revealed the exact position of a number of aeries and antennae all around the forward fuselage. Engine exhausts were drilled at their ends and cowling flaps were carefully marked and scribed. Realising how heavy the kit was, I went for a set of SAC robust metal legs that replaced the kit plastic ones: this was beneficial as the continual handling of the model during the elaborate masking process could easily have snapped the kit-supplied plastic ones.

### Colour and markings

The Japanese livery was quite inviting but a complex one too. It had areas on fuselage and on wings, which were light gray while the rest was metal. Besides, there were areas on the wings and fuselage that were day-glo red/orange and large day-glo arrows on the fuselage sides. These areas were first airbrushed white, the arrow was marked with a paper arrow pattern at each side of fuselage and Tamiya masking tape marked the outline. Having completed the airbrush work on the day-glo areas, the model was allowed to stand for a couple of days.



For the large Japanese insignias I used rubber and insertion washers as blanks to provide the red centre when these were placed on white decal sheet, (see photo), thereby producing three double sets of different sizes for all that was required. The tail decal motif of red and white chequers was also designed and hand painted.

The complex areas around the engines were airbrushed black. Wheel wells were zinc chromate. All areas painted so far were now masked and a coat of light gray applied. This was again allowed time to set. Following that, the gray areas were masked and the final silver mix was

air brushed. One can only imagine how time consuming the delicate masking was to be.

### Conclusion

A long painting process on a rare type, which I think was worthwhile, as the final result turned out into a pleasing model. Looking back, in hindsight, I could have made a C-46 ECM with additional nose and ventral and dorsal radomes but then it was less colourful. A C-46D in same livery now stands as a plane guard at the Hamamatsu Air Base, Japan.

Carmel J. Attard





# NO EXCUSE—JUST TOO GOOD TO MISS! (Thanks to Paul T)

## “UMEGUMI” EAGLE SPECIAL MARKING



左写真：胴体下面に装備されたALE-45Jチャフフレア・ディスプレイベンダーからフレアも射出しながらパレードから上昇する記念塗装機。F-15Sなどの高世代機種の能力が豊富にある一方で、初号機の導入から40年近くが経過するF-15Jは、相対的にそのフレアシステムが低下してきている感はあるが、高い加速・上昇性能や卓越した機動性、そして何れも大規模な兵器搭載量は、今もってトップクラスのファイトマークを誇っている。

2機のフォーメーションによるタイトターン。今回の空演習シミュレーションは飛行隊員の奥村佐治が自ら記念塗装機の操縦桿を握った。これまで第305飛行隊の記念塗装機はパイプフレームを基にした比較的にシグネイジのデザインが多かったが、今回は一転してデジタルなデザインが採用されている。塗装作業は年明けから開始され、完成までには約1ヶ月半の期間を要している。



フレイクで下面を見せ66記念塗装機。今回の記念塗装は機体の下面には施されていないが、翼下に搭載されたドロップタンク(増槽)の色が白くアクセントを添えている。



今回の塗装デザインは、白地に赤と黒のグラデーションを現代的なデジタル塗彩の手法で描いたもの。歴代の塗装機で機体上面に大きく描かれてきた飛行隊エンブレムのデザインコンセプトを継承しているほか、同隊の航空自衛隊50周年を記念する塗装機で描かれた梅の木を再びデザインに取り入れている。

### 第305飛行隊40周年記念塗装のデザイン・コンセプト

両側のエアインレットの側面には自衛方針「速 速 美 試実」の文字が並び、左側面には塗装担当メンバーの名前が記入されている。

中央のF-15のプラントにデジタル塗彩で「40th ANNIVERSARY 305th IFS」の文字が記入された。なお「4」の文字はF-15の垂直尾翼をアレンジしたものが描かれている。

乗降用のラダーも特別に白く塗られて「第三〇五飛行隊 創設四十周年」の文字が空母で記入された。カラー「機庫止め」も赤に塗り、飛行隊マークと「梅組」の文字も白で記入した。

記念塗装デザイン審査者の浦積真一尉(中央)と塗装担当クルーたち。向かって左から野村一尉2曹、深川大徳士長、金澤裕樹3曹、神田寛士3曹、水原俊也3曹。そしてチームの佐藤一郎2曹。写真には写っていないが、前席武2曹も作業に協力した。

創設40周年を迎える第305飛行隊では、記念塗装機の制作にあたり、隊内でデザイン案を募集した。応募されたデザイン案の中から投票により数点の候補が選ばれ、最終的に隊長の奥村2佐が部隊マークのカラーにもなっている白と赤を基調にしたデザインを選定した。

このデザインは同隊の飛行班に所属するパイロットの浦1尉によるもの。日本を象徴し、第305飛行隊のカラーでもある白と赤をベースに、梅の花の色でもあるピンクを使ったデジタル塗彩のグラデーションを機体全面に大胆にあしらい、主翼の上面には飛行隊のエンブレムと梅の木を大きく描いている。

そしてエンブレムにかかると、同隊のモットーである「その強きこと闘犬の如く 速やかなこと雷光の如し その美しきこと梅花の如く 試実なることまた梅花の如し 第三〇五飛行隊 創設四十周年」の文字をゴールドで記入した。

梅の木は、当初は水墨画のような淡い藍色を想定していたが、全体の色バランスの中に埋没してしまうため、明確な黒に変えたという。また機体の各部に散りばめられた梅の花は、40周年にちなんで全部で40個描いている。

細かな部分では、機首/バルコニーの境界線は幅6mmのテープでマスクアップし、あえてグレーの色を活かすことで、プラモデル風のモールドラインのようなイメージを出したとのこと。

記念塗装機にも採用された白とピンクのデジタル塗彩をモチーフに制作された。飛行隊創設40周年記念ロゴ。通常の訓練では白カラー。

垂直尾翼には梅の木が描かれた。枝の形や花の色、デジタル塗彩のパターンは左右で異なる。

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## North American F-100 in ROCAF Service

Taiwan took delivery of 119 F-100As, 4 RF-100As and 14 F-100Fs, and lost a number of F-100As and Fs in the course of service, but never lost a single RF-100As in either combat or accident. Some of the F-100As were retro-fitted with the vertical tail of the F-100D, featuring the AN/APS-54 tail warning radar and equipped to launch Sidewinders. The four RF-100As were never sent on reconnaissance missions over mainland China as they could only produce photographic images of mediocre quality at best. Moreover, after each flying hour, the ground personnel had to spend over a hundred hours on the aircraft maintenance. All of the RF-100As were returned to the US after just under two year's service in Taiwan (1 January 1959 - 1 December 1960).



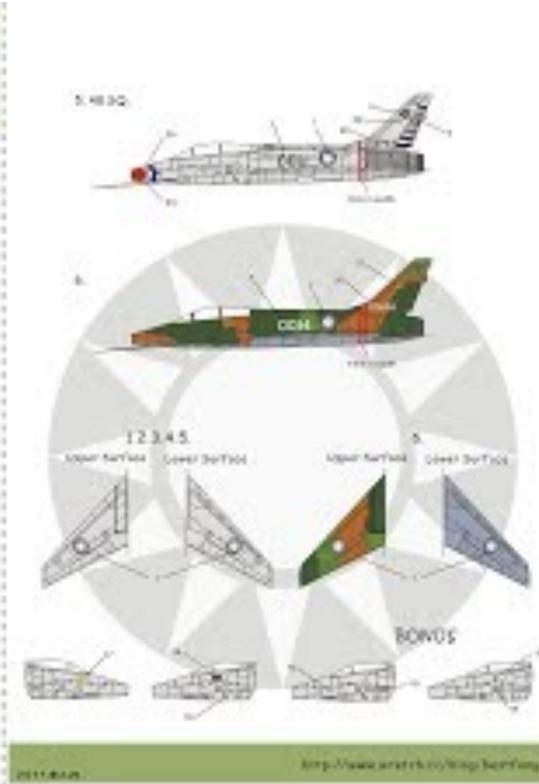
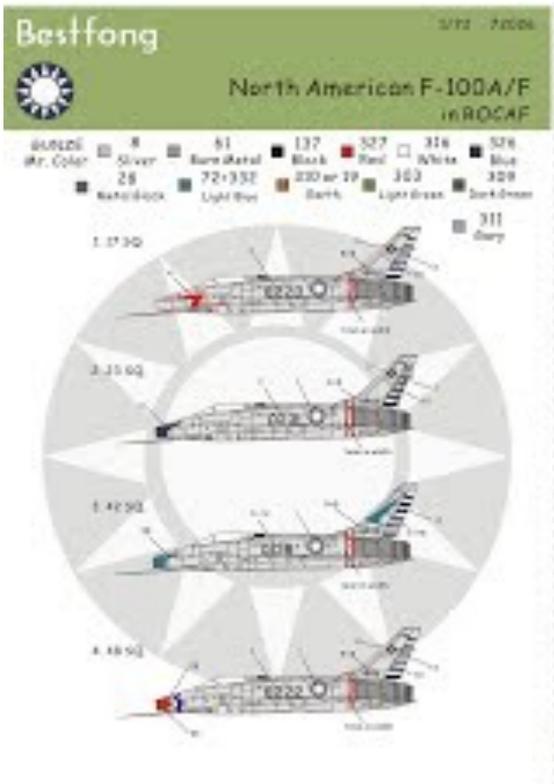
## NEW MEMBERS

We welcome the following new members: Albert Lohr, Olav Lange and Thomas Gausmann from Germany; Jaap vd Laan from the Netherlands; KJ Chua and Anthony Chia from Singapore; Mark de Bortoli from Australia; and Gavin Stratford, Toby Griffin, Stephen Wearmouth, Chris Buscombe, James Willie and Stephen Baillie from the UK. We now have 272 members from 41 countries!



# Decals for North American F-100A/F

Please pardon the poor reproduction of these sheets—I just couldn't find any better!



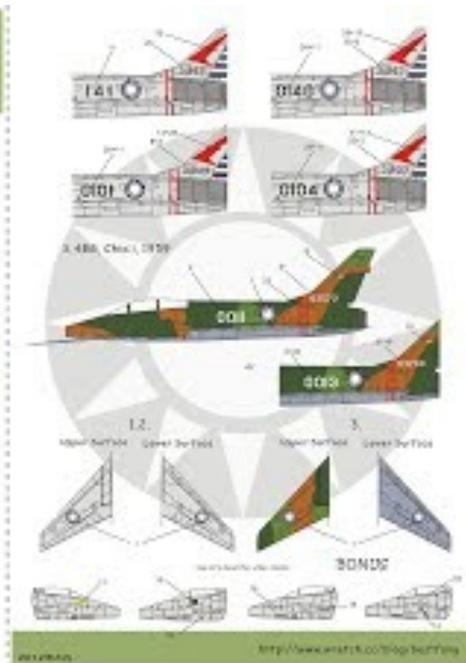
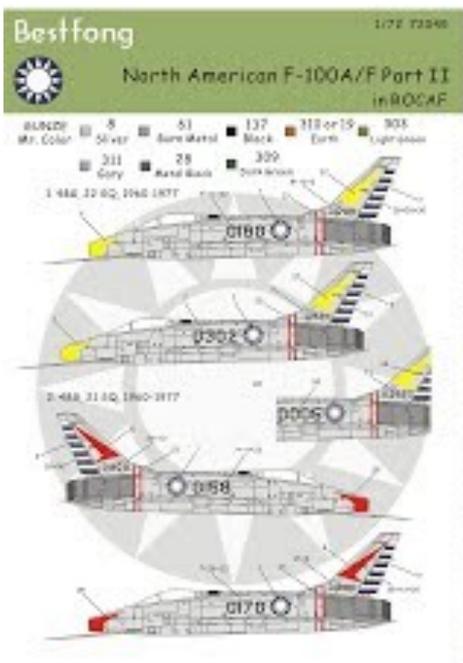
Being based in Taiwan, Best Fong has a very extensive range of ROCAF decals in 1/144, 1/72, 1/48 and 1/32 scales.

**Early Period** includes: Polikarpov I-16, Fiat Cr.32, B-25, P-51.

**Middle Period** includes: B-26, T-33, F-5, T-38, U-2, Century series, Albatross, F-84, F-86, RB-57.

**Current Period** includes: E-2C, AIDC AT-3, F-16, C-130, S-2E, S-70, P-3C and Mirage 2000.

**Non-Taiwanese** subjects include some modern Chinese.





# CHANGE ALLEY (Members' Wants)

Looking for a particular kit, book or information?

Gary Wenko, who runs the excellent Japanese Aviation SIG, says that one of his members has a Mania B5N2 and would like to build it as a B5N1. He asks has anyone got a spare cowling and maybe engine from the Airfix kit which apparently comes with both? And another of Gary's members is after a canopy for the Airfix Dinah, should you have one going spare.

Craig Godwin (who's running Britmodeller's Group Build "1980s Frontline Asia"), wants to know the colour scheme worn by Bangladeshi F-7MBs when they were introduced to service. He has the decals for the Thundercats squadron and wants to know if they wore that scheme when they entered service in 1989.



If you can help out with either please drop me a line at [asianairarms1@outlook.com](mailto:asianairarms1@outlook.com).

**PLEASE NOTE: "Change Alley" is for aircraft/books/information connected with Asian aircraft/air forces only. Commercial organisations should contact me for details of how to advertise.**

## HOT OFF THE PRESS FROM ILIAD DECALS!

Today, in my postbox I received the latest 1/48 sheet from Iliad Decals in Canada, the subject this time is the Cessna L-19/O-1 Bird Dog. Beautifully printed, as always, this sheet provides us with some most interesting Asian examples. You'll find a Pakistani Army L-19, featuring (correctly!) the fin flash that's incorrectly facing the wrong way! This inconsistency is not in the least unusual for the Army, but rarely seen on Air Force or Naval aircraft; a South Korean Navy L-19 light grey overall; and an all-yellow Japanese L-19, featuring that most attractive Hoantai (pink cherry blossom) marking that was worn on the fuselage on many early trainers. For US fans the sheet also provides marking for two O-1A Bird Dogs and one L-19, in the colours of the US National Guard, US Army and US Army Reserve. SIG member Bob Migliardi of Iliad Decals is to be congratulated for his consistently original choice of subjects. Go to the [Iliad Decals website](http://iliaddecals.com) to see Bob's full range and how to order (please mention Asian Air Arms SIG!)

The decal sheet features the following markings and callouts:

- USAR (United States Army Reserve):** Includes 'USAR 14617' and 'USAR 14617' markings.
- U.S. ARMY:** Large 'U.S. ARMY' text markings.
- KANS-NG (Kansas National Guard):** Includes 'KANS-NG 14856' and 'KANS-NG 14856' markings.
- ROK FLEET (Republic of Korea Navy):** Includes 'ROK FLEET 10021002' and 'ROK FLEET 10021002' markings.
- USAR (United States Army):** Includes 'USAR 14617' and 'USAR 14617' markings.
- Hoantai:** Includes 'Hoantai' markings and cherry blossom symbols.
- Other markings:** '0-12744', '751751', 'H-1001', 'H-1001', '48035 L-19/O-1 Bird Dogs', and various national insignias.



## WINGS OVER THE LAND OF A MILLION ELEPHANTS

### Military Aviation in Laos 1949-75—Part 5

The following article has been re-printed from *Air Enthusiast* March/April 1998 with kind permission from author Ken Conboy (See April Newsletter for Part 2)

of pin-pointed targets. As the USAF AOC commander looked on in frustration, the RLAFF's standard morning order amounted to little more than "All T-28s go [north], all day."

That June, USAF Colonel Robert Tyrrell was reassigned to Laos as Air Attaché after a three-year break. To his dismay, he found T-28 sorties to be at their lowest monthly rates in four years. Worse, the Lao aircraft were being written off at a rapid pace. In Luang Prabang, for example, a total of 17 T-28s had been destroyed on the ground during North Vietnamese commando attacks over the previous year.

Not all the news was bad. One of the few bright spots was afforded by a new programme to train Hmong T-28 aviators. A hill tribe minority, the Hmong were a fiercely independent tribe favoured by the CIA as guerrilla warriors. In an effort to boost morale, one senior CIA official in 1966 arranged for a handful of Hmong to receive light aircraft training in Thailand. Three small contingents had passed this course by the summer of 1967. However, when the CIA attempted to send them to T-28 training under *Waterpump* auspices, the generals in Vientiane balked. Only after some firm lobbying did they eventually give permission for two Hmong to be commissioned into the RLAFF and sent to Udorn.

Given their earlier experiences in light aircraft, the two Hmong impressed their *Waterpump* instructors. In January 1968, both graduated near the top of their class. Within weeks, however, one of the two pilots entered a cloudbank and slammed into a mountain top. Alone, the remaining Hmong aviator, Captain Ly Lu, quickly became a legend. Fearless in combat, he chalked up nearly 1,000 missions in 18 months, sometimes flying a dozen missions a day. Though eventually shot down and killed in July 1969, his successful precedent convinced Vientiane to allow a steady stream of Hmong for *Waterpump* training.

#### Coming of Age

Hmong pilots aside, the RLAFF was consistently failing to show gains commensurate with the huge infusion of US assistance it received. There were many reasons for this. For one thing, morale among the T-28 contingent was exceedingly low. "A T-28 pilot was lucky if he lived two years", said one USAF advisor. "I never knew a T-28 pilot who lived three years if he continued to fly fighters." Indeed, after five years of *Waterpump* classes, the net total of T-28 pilots had barely increased. And although T-28s had showed some sortie gains — 522 were flown in December 1968, an 18-month high and nearly triple the January figure — the increase was a result of excessive US advisory assistance.

The last point was proving to be the RLAFF's undoing. In mid-1968, the USAF detachment at each AOC (five AOCs were in operation, one for each military region) increased to ten men, putting Americans in charge of nearly all support functions and thus depriving RT personnel of the luxury of making mistakes from which they could learn to operate on their own. (USAF personnel assigned to the AOCs were ostensibly attached to the Air Attaché's office. By December 1969, some 140 officers and enlisted men were under the attaché, the vast majority of them assigned to the AOCs. Added to this number were ten USAF armament specialists who flew from Udorn to Wattay every morning to help load bombs on *Firefly* T-28s.) Added to this was the fact that the Thais were still flying most T-28 operations in the northeast, and USAF spotter aircraft were performing FAC duties in all parts of the kingdom.

Such a high degree of assistance clearly could not be perpetuated, especially given Washington's declared policy of gradually withdrawing its military from South East Asia. Ambassador Sullivan, in particular, was eager to put in place a more responsive and efficient RLAFF. As early as September 1968, he had pushed the Air Attaché to begin conceptualising a centralised command centre to co-ordinate RLG air and ground operations.

Slowly, Sullivan's idea grew. By the autumn of 1969, USAF Lt Colonel William Keeler, who had recently completed work in Bangkok on a Combined Operations Centre (COC), was assigned with making a similar system in Laos. The result was plans for a Lao Military Tactical Control System that would encompass five Joint Operations Centres (JOCs) at the regional level and one COC in Vientiane. The COC, headed by the commander of the armed forces, theoretically exercised control over all RLG military assets, though he normally delegated this responsibility to the regional commanders. In addition, the COC would be notified of all RLAFF sorties before they were flown and have the power to move airlift assets from one military region to another.

Aside from these last two functions — the mandatory reporting of RLAFF sorties and tighter control over transport aircraft — little was set to change under the proposed COC system. Still, many quarters offered strong protest. The French, for example, thought it would erase what little

influence they wielded. The US Army Attaché and elements of CIA, too, were against the plan because they thought it was a ploy by the USAF to grab more control. And the Lao ground forces were wary of any concept to give the RLAFF more power.

Despite such opposition, the plan was pushed through. Much credit went to the two Lao officers who spearheaded efforts to win approval: Prince Mangkra Souvanna Phouma, a French-trained RLAFF major, and Bouathong Phothivongsa, an army lieutenant colonel recently returned from a stint at the French War College. Significantly, Major Mangkra was the son of the prime minister, which greatly aided his lobbying effort.

By February 1970, every military region commander had given his approval to the COC scheme. The following month, an official dedication ceremony was held. The armed forces commander-in-chief opened the proceedings:

*The COC will function as my voice and will be the vehicle with which I will communicate with all military forces of our country concerning tactical military matters...*

Despite such stated importance, the COC was physically sited at an uninspiring two-floor wooden annex outside the General Staff building. There, regular updates were supposed to flow in from the regional JOCs. In part, this translated into reality, with some JOCs maintaining contact some of the time. At the national level, however, the COC never expanded beyond a passive reporting facility for aircraft deployment.

Besides work on the COC, other programmes were speeding the RLAFF towards self-sufficiency. Between April and September 1969, for example, the USAF qualified the first two RLAFF officers as FACs. That August, a 21-man USAF detachment, codenamed *Combat Wombat*, was dispatched to Udorn to restart C-47 training, which the Lao itself had been trying with marginal success at Savannakhet since early 1965.

Effort was also given to forming an effective RLAFF helicopter section. Helicopters had long been in the Lao inventory, the first being a pair of Sud Alouettes donated by the French in 1960. These were dropped from the RLAFF inventory by 1963. The following year, the US turned over a single Sikorsky H-34, for which there were three qualified Lao pilots. To train additional crews, a US Marine Corps instructor team operated from Udorn until late 1966. Beginning in 1967, they were replaced by a US Army detachment.

While the number of H-34s slowly grew, the RLAFF remained reticent about using them in combat. Much of their reluctance was due to the fact that Air America and the USAF provided generous *chopper* support, removing pressure on the Lao to do it itself. In fact, not until early 1969, after heavy coaxing from the US Air Attaché, did RLAFF H-34s significantly contribute to an air mobile operation.

Coaxing, too, was needed in the T-28 programme. This became particularly important after the *Firefly* programme was terminated in September 1970. Various methods were used in an attempt to squeeze better results from the Lao fighter pilots. Some of the programmes fell flat. For example, the Air Attaché's Office tried starting a per diem fund for the RLAFF by collecting spent brass bullet casings and selling them. The Lao, however, had long been doing this itself and, in protest, cut the number of sorties it was flying. As a result, the attaché was forced to cease collecting the casings and instead turn to the CIA, which agreed to use its own funds to provide an extra \$1 per mission flown (a substantial increase in pay given the RLAFF's low base salaries).

A second programme was more successful. This involved a Survival Training



A T-28 at Long Tieng airbase prepares to depart on a bombing run, early 1970s. On many occasions, the battlefield was no further than the far side of the ridge visible in the background. (via Author)



## WINGS OVER THE LAND OF A MILLION ELEPHANTS

### Military Aviation in Laos 1949-75—Part 6

Course established at Hua Hin, Thailand. Groups of T-28 pilots were sent there, ostensibly to enhance their escape-and-evasion skills. Hua Hin served an added, more important purpose. According to one US advisor, "The course was actually an excuse to give RLAf pilots a much deserved rest on a Thai beach."

#### Enter the Gunship

Perhaps the biggest development during this period was the introduction of the AC-47 *Spooky* gunship. The AC-47 dated back to late 1964, when it was introduced by the USAF to South Vietnam. Armed with three side-firing 7.62mm miniguns, these USAF aircraft had been flying in support of the RLG since early 1969. By mid-1969, as part of the US drawdown from South East Asia, the RLAf was slated to take several of the ex-USAf ships. The first three arrived at Wattay on September 5, 1969 and were used that same night on a pre-selected target near the capital. Immediately, a wealth of problems became evident — as one US advisor remembers:

*The first three aircraft arrived in bad shape, with holes and broken instruments. We got them airborne, then found out that the Lao didn't understand the gunship concept; instead of banking the aircraft and, in effect, letting the pilot ride the bullets into the target, the gunners in the rear were trying to move the entire mounting while firing continuous bursts to sight targets. Very quickly they burned out the guns.*

Guns were not the only problems with the AC-47. (To help alleviate gun problems, the AC-47 miniguns were fired at 3,000 instead of the normal 6,000 rounds per minute.) For one thing, the RLAf had no experience with night flying. For another thing, the RLAf had no separate AC-47 pilot roster. This meant that all gunship crews were pulling additional duty as transport pilots in the day. Moreover, just as the T-28 pilots had discovered, there was a market for spent brass casings — something the AC-47 produced in abundance. On more than one occasion, the gunship crews circled just beyond Vientiane and expended all their ammunition in order to get the brass!

With a slow start, then, the RLAf gunships took to the skies. By January 1970, however, improvement was clearly evident. With a monthly sortie rate initially set at 30 missions per month, this had increased to 50 by early spring. Much of this was due to the exceptional quality of the Lao pilots. Among the oldest and most experienced in the RLAf, many had over 7,000 flying hours.

#### Last Legs

By late 1972, history was set to repeat itself. Just as the French had tried to augment the ANL at the eleventh-hour in 1954, the US, facing an imminent ceasefire, was now trying to bolster the RLAf with one eye on the clock. As part of this, in January 1973, Air America turned over ten Fairchild C-123K Providers — with pilot and maintenance training set to begin by spring. Preparations were also made for H-34 training to be shifted from Udorn to Savannakhet.

In the end, all of these attempts came too late. By the time the ceasefire went into effect on February 22, the 2,200-strong RLAf was ill-prepared to handle the RLG's military aviation requirements.

Worse for the RLAf, General Thao Ma, in Thai exile since 1966, decided to reappear on the scene. His return to Laos was prompted by the steady encroachment of Pathet Lao forces across the country. The ceasefire, as it turned out, was being manipulated by the communists to their political and military advantage. By the summer of 1973, many Royalist generals were panicking. Rumours began to fly that a coup was in the air, and Thao Ma's name started to surface with regularity.

Despite this, when Ma crossed the Mekong by boat at 0500 hours on August 20, he achieved total surprise. Accompanied by 60 followers, including six pilots, he seized Wattay without difficulty. Reaching into bags filled with blue and white armbands and shoulder patches, they began handing them out to airport personnel. After that, Ma and his six pilots boarded T-28s and took to the sky. Fulfilling a personal vendetta against key officers on the General Staff, he started to dive-bomb the regional military headquarters.

Fighting back, the army generals sent a task force towards Wattay. For a time, confusion reigned. To help diffuse the situation, the US Air Attaché drove to the house of the RLAf commander, Major General Sourith. There he found the commander with a rebel armband. Despite pleas from the attaché, the general insisted on remaining at home.

Back at Wattay, a truck-mounted machine-gun managed to strike Thao Ma's T-28. Streaming smoke, it crashed on the runway. Ma was dragged alive from the wreck and loaded in the back of a truck. He was summarily executed later that morning. With the downing of Ma's aircraft, the

coup attempt soon fizzled. Even before this, plans were under way to significantly downsize the RLAf. This was due to two reasons. First, the US Government was looking to slash the funds appropriated for the Lao military. Second, the ceasefire had theoretically brought peace to Laos, negating the need for a large air force.

In line with this reasoning, the US Embassy in March 1973 had drawn up plans for a reduction in the number of RLAf aircraft and a lowered overall sortie rate of no more than 2,000 flights per month. Accordingly, the T-28 fleet, which numbered 56 at the time of the ceasefire, was to be reduced to 40, with the extra aircraft given to the Philippines. (Over the previous years, the number of T-28s available for Laos fluctuated greatly. As of 1969, an average 75 T-28s were available, which included the aircraft used by *Waterpump*, the *Fireflies*, and RLAf. As of mid-1970, with the *Firefly* programme set to be cancelled, the RLAf counted 44 fighters, plus another five under *Waterpump* control.) Meanwhile, the AC-47s were reduced from eight down to six aircraft, with the miniguns removed and placed in storage at Savannakhet.

To lower training costs, all undergraduate pilot training had shifted by April 1 from Udorn to the Air Training Command (ATC) at Savannakhet. *Waterpump*, retained at Udorn for more advanced training, was renamed the Training and Liaison Detachment.

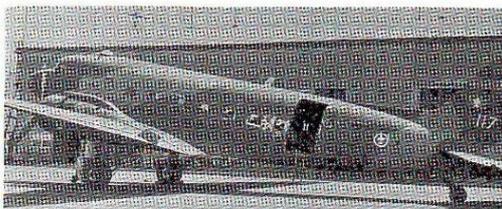
While smaller, the RLAf on paper remained a viable force. Just as had been the case since 1968, it was divided into composite wings, with each respective base commander in control of all aircraft at his locale — prior to 1968, each aircraft type came under a separate command. (The 101st Wing was located at Luang Prabang, the 202nd Wing at Wattay, the 303rd Wing at Savannakhet, and the 404th Wing at Pakse. The large detachment at Long Tieng was not given a number.) Besides the reduced number of T-28s and AC-47s, the RLAf's inventory included ten C-123s, ten Cessna T-41 Mescaleros, 11 C-47s, 15 O-1F FAC aircraft, and 32 H-34s. (Two of the C-47s were provided by Australia.) Of these, the ATC was allotted six T-28s, one C-47, four H-34s, and five T-41s.

Behind the scenes, the RLAf's already limited capabilities were eroding at a fast pace. Because of fuel rationing, Lao aviators rarely flew. By early 1975, T-28 pilots were in the air only two hours a month. Exacerbating matters was the fact that the Prime Minister, sensing an eventual communist victory, kept the air force on a tight leash despite open communist violations of the peace agreement.

The Prime Minister had reason for pessimism. By the spring of 1975, the vast bulk of the countryside belonged to the Pathet Lao. On April 14, communist forces seized a key road junction north of the capital. Having called the RLG's bluff for months, the Pathet Lao did so with little fear of a counter-attack. This time, however, it was wrong. Without waiting to consult the Prime Minister, the RLG Defence Minister ordered nine T-28s to strafe and bomb the Pathet Lao column.

This proved to be the RLAf's last offensive operation. Hearing of the strike, the Prime Minister publicly berated his subordinate. This effectively grounded the air force, which, along with the rest of the Royalist military, watched with concern as neighbouring Cambodia fell on April 17 to communist forces. Thirteen days later, South Vietnam succumbed to similar pressure.

While Laos was not far behind, the end would be different. Unlike the brutal final offensives against Phnom Penh and Saigon, Vientiane was being swallowed by slow but steady Pathet Lao encroachment. Realising the end was near, RLAf transports spent the first two weeks of May whisking passengers across the Mekong to the safety of Thailand. Finally, on May 17, communist sympathisers within the RLAf staged a protest at Wattay. Taking the hint, General Bouathong, the same officer who had helped create the COC and had been promoted to air force commander the previous year, crossed the Mekong. By month's end, the RLAf had effectively ceased to exist.



RLAf AC-47 with the miniguns removed and placed in storage, circa 1974. (via Author)

MARCH/APRIL 1998 No. 74



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## JASDF Starfighter in Mini 1/144 Form! By Alan Smith



Image from <http://www.j-hangarspace.jp/>



**Member Alan Smith—a veritable master of 1/144—has kindly allowed us to reproduce some of the reviews he wrote for HyperScale. We'll start with his JASDF F-104J.**

**Kit:** Revell F-104G, mod very slightly

**Scale:** 1/144

**Decals:** MYK National Markings + MYK Caution Data

**Basic Construction:** Nothing remarkable. Took the bulges off the main gear doors, as this was originally going to be an F-104G, but saw a last minute change of heart - don't ask why. If doing again, I'd scratch a JASDF fit missile catamaran. For the observant, I'd also fill in the pylon attachment points under the wings, but I'm frightened that doing that now would mess it up!

**Masking:** Bare Metal Foil (canopy) + Tamiya Tape. Don't even think about doing this scheme unless you are marginally disturbed at the outset, and actually like applying hundreds of little bits of masking media, in umpteen layers. FWIW, if anyone else is thinking on doing one, make sure that you mask the canopy frames as they should be, not as per the framing - or lack of it - on the kit part. I had to do the canopy twice.

**Paints:** Alclads: Aluminium, White Aluminium, Burnt Iron, Pale Burnt Metal, with some built up in over-sprayed, multiple, thin layers. Xtracolour: ADC Grey. Revell: White. Various Humbrol Enamels. All followed by a coat of Klear as a base for decals.

**Decals:** Very nice, and go on fairly well, with no adverse reactions to Microsols. I don't use the MYK 'film' system - can't see any benefit in it - but you have to make sure you remove the film from individual items before applying water, otherwise they tend to adhere to it. Follow up coat of Klear as base for weathering.

**Weathering:** Humbrol Enamel Washes. Dark grey and Blue Grey, in patches and streaked as gently as I could manage, to try to create a variable shine. Done multiple times until it looked just about passable. In service, most JASDF front line a/c tend to look a bit worn.

**Final Finish:** Humbrol varnishes, Satin all over, with Matt applied lightly in places to give a mix of shiny and less shiny panelling.

Alan Smith





## ASIAN HOT SPOTS—2: SOUTH CHINA SEA

### South China Sea disputed claims



Woody Island: Four Chengdu J-10 fighters are Deployed on the Apron



#### People's Liberation Army Naval Air Force

H-6	30
J-7	30
J-8	47
J-10	25
J-15/Su-30/33	45 (+50)
JH-7	34
Q-5	30
Challenger 870	2
Ka-31	9
SH-5	3
Y-7	18
Y-8	33
Y-9	4
Z-18	3
AS.365/565	6
Ka-27/28	18
Z-8	29
Z-9	33

#### Republic of China Air Force

F/RF-5E	25
F-16A/V	113
F-CK-1C	102
Mirage 2000-5E1	46
C-130H	20
E-2B/K	6
P-3C	12
C-27J	(+6)
H.225M	3
S-70/UH-60M/R	76(+10)
AH-1W	62
AH-64E	29
CH-47SD	8
OH-58	38
UH-1H	83
MD-500	7

#### Philippines Air Force

EMB-314 (A-29)	(6)
FA-50PH	12
OV-10	8
Cessna 208	2
C-130	5
C-295	3
Nomad	3
AH-1F	(2)
AW.109	13
Bell 205/212/412	15
MD-500	25
S-76	9
UH-10/H	28
W-3	6
BN-2	6
AW.159	(2)

#### Vietnam People's Air Force

Su-22	35
Su-27/30	73
An-28/M28 (MPA)	1
An-26	30
C-295	3
NC-212	2 (+1)
MiG-29	36
Ka-32	2
Mi-8/17	87
Mi-24	25
UH-1H	15
DHC-6 Guardian	6
H-225M	2
Ka-28	8

#### Royal Malaysian Air Force

F/A-18D	8
Hawk 208	13
MiG-29	13
Su-30	18
C-130	9
A-400	4
CN-235	6
H-225M	12
S-61	24
S-70	4
AS.555	6
Super Lynx 100	6

#### Royal Brunei Air Force

C-130J	(1)
CN-235	1
Bell 214	1
Ba.105	6
S-70i	12
Bell 206	3
PC-7 Mk. II	4



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