

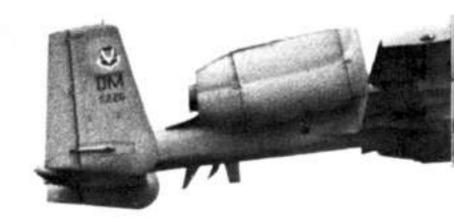
TAC's A-10 academy in Arizona

Photo report by Frank B. Mormillo

USAF Tactical Air Command's A-10 combat crew training programme is centred on Davis-Monthan AFB, Ariz where the task is the responsibility of the 355th Tactical Fighter Wing. For the 355th the advent of the Fairchild Republic close air support aircraft and its subsequent naming completed a memorable 35 year, 'Thunderbolt to Thunderbolt' history as the then 355th Fighter Group flew its first combat missions over occupied Europe in September 1943 in the original fighter to carry the name — the Republic P-47. The unit later progressed to the P-51, F-86, F-105 and A-7 before starting to re-equip with the T-bolt's descendant, the A-10A Thunderbolt II in March 1976.

The 355th TFW has four flying squadrons assigned to it the 333rd, 354th, 357th and 358th Tactical Fighter Training Squadrons. The 333rd TFTS, known as the 'Lancers', was the first USAF squadron to convert to the A-10 and its primary mission is to conduct pilot upgrade training on the aircraft. With the phasing out of the Wing's previous training mission on the A-7D Corsair II — the last course was completed at Davis-Monthan in June 1979 — the activities of the 354th TFTS (the 'Bulldogs') and the 357th TFTS (the 'Licking Dragons') were temporarily combined under the command of the latter in March 1979, but the 354th is scheduled to re-activate in 1980 and the 357th meanwhile began training A-10 student pilots in October 1979. The Wing's squadrons are completed by the 358th TFTS, the 'Lobos', which became a training squadron on 1 January 1976 and converted from the A-7 to the A-10 in 1977.

One of the key features of the 355th TFW's Thunderbolt II training during the past 18 months has been Operation 'Ready Thunder', the programme for training the A-10 pilots assigned to the 81st TFW at Bentwaters/Woodbridge, England. The aircraft destined for the 81st came directly to Davis-Monthan from the manufacturer's plant, and suitably bearing the unit's 'WR' fin code they were flown to Europe by the graduates of the 355th's training programme, the latter having been re-named 'Ready Bentwaters' in November 1978. By the time of the programme's formal completion in September 1979, 100 pilots and 74 A-10s had passed through TAC's 'A-10 academy' in Arizona and the 355th's support of USAFE's acquisition of



the Thunderbolt II had achieved its initial objectives — four of the 81st TFW's planned complement of six A-10 squadrons had been established in England and the modern namesake of the legendary P-47 was well into the first year of its residence in Europe.

Above: Two 355th TFW A-10As, s/n 77-222 (lead) and 77-226 (wing) depart Davis-Monthan AFB on a training sortie.

Right: Forward air control (FAC) support for A-10 training at 'DM' is provided by the Cessna O-2A 'Ducks' of the 27th Tactical Air Support Squadron.

Far right: AGM-65 Maverick missile seen on its transporter with 'WR' coded A-10s for the 81st TFW in the background.

Below right: Two-tone grey-painted A-10 (s/n 75-304) on the ramp at Davis-Monthan AFB.

Below: With its split trailing-edge allerons operating as airbrakes, 76-518 rolls-out after landing at Davis-Monthan.

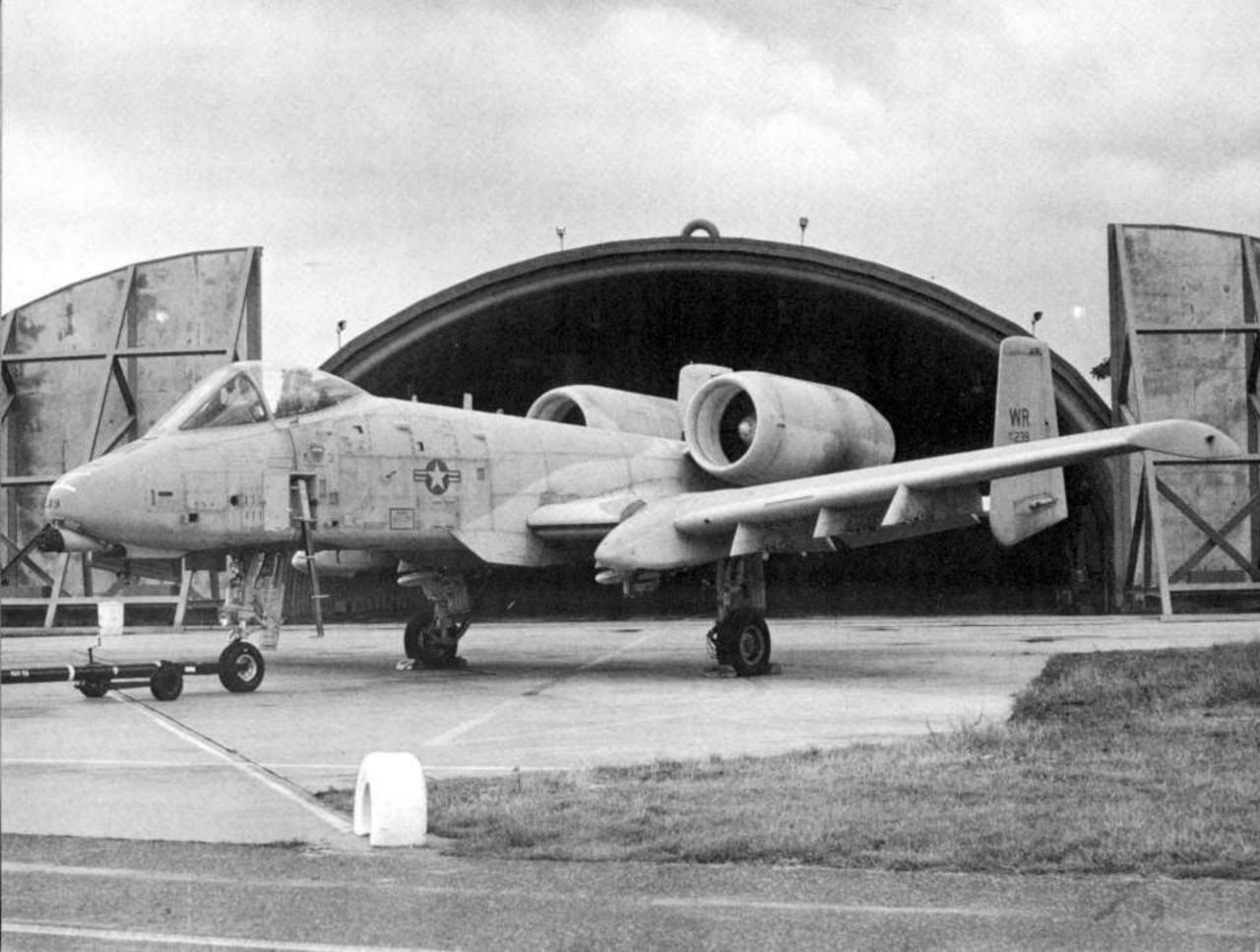














The 81st Tactical Fighter Wing



Roger Lindsay

*WORDS OUT, it's the most fun airplane to fly right now'. These particular words were spoken by the commanding officer of the 'Bushmasters', sometimes known as the 'Cobras' - otherwise the 78th Tactical Fighter Squadron, Lt-Col Mike Harris USAF, and it says much for the aircraft that can engender such enthusiasm when its popular name is "Warthog". This is the affectionate service appellation for the Fairchild Republic A-10A Thunderbolt II close air support aircraft.

The 78th is one of the four squadrons of A-10s that currently comprise the USAF's 81st Tactical Fighter Wing which is headquartered at RAF Bentwaters. Suffolk. The Wing's 92nd and 510th TFSs are based there while the 78th and 91st TFSs operate out of Woodbridge, just a few miles to the south - here the A-10s share the airfield with the HH-53C Jolly Green Giant helicopters and HC-130 Hercules of the 67th Aerospace Rescue and Recovery Squadron. During 1980 the addition of the 509th and 511th

Squadrons will bring the 81st TFW up to its designated full strength of six squadrons of A-10s, totalling 108 aircraft.

The majority of the Wing's pilots come from either UPT (Undergraduate Pilot Training) or are former Air Training Command instructor pilots, who are 'experienced' in the eyes of the Air Force, since most have a considerable number of flying hours to their credit - but because this has generally been accumulated on T 37s or T 38s, these pilots usually lack any fighter or combat-type experience. Only about 25% of the Wing's current pilots previously flew F-4Ds with the 81st. so I was particularly pleased that not only was the 78th's 'boss', Lt-Col Mike Harris, in this somewhat exclusive category, but that the group of younger pilots he had gathered around to talk with me embraced a variety of other experience.

Outside, his squadron's factory-fresh, lizard-camouflaged 'Warthogs' blended in well against the Woodbridge pine trees as they sat at their dispersals and stoically endured the elements of an English summer's day - thunder, lightning, and Above: 'Lizard' A-10A 77-263 with a pair of Maverick missiles beneath each wing is cleared from a pre-runway, lastchance check. Photo: 81st TFW

Facing page: 'Grey' Thunderbolt II 77-239 outside its shelter at Bentwaters, Photo: Roger Lindsay

torrential rain! While the rain lashed the windows of his office, housed in a surprisingly cosy Nissen hut ('Quonset' in American parlance) I asked the Colonel to outline his own experiences during the conversion process from F-4 to A-10, and the subsequent work of the squadron after its return to Suffolk. To be eligible for the conversion course at Davis-Monthan AFB near Tucson, Arizona a pilot was required



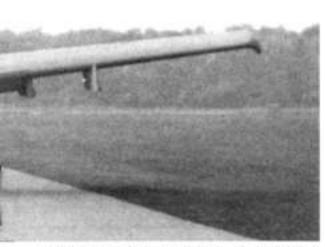
to have a minimum of one year's 'retainability' by the squadron upon his return to the Wing in England. In the case of Lt-Col Harris he had served two years of his three year tour (for unmarried or unaccompanied pilots a tour lasts only two years). The first week at Davis-Monthan was spent in ground school learning about the A-10's systems, and becoming au fair with the aircraft's instrument layout with the aid of simple cockpit procedure trainers; there was no full flight simulator at Davis-Monthan although it is expected that one will be installed at Bentwaters in 1980.

Next came the supervised start using the Auxiliary Power Unit (APU), and with the pilot under conversion sitting in the cockpit of an actual A-10 while the IP (Instructor Pilot) stood on the ladder. A thorough briefing by the IP is the prelude to the new pilot's first 'launch-out', and during this initial flight he explores the

parameters of the A-10's handling and performance. Mike Harris described his own impression of that first A-10 flight thus: 'Yeah, well for an ex-F-4 pilot it was kinda high water! Like . . . what happened to the afterburner?' During the next five rides, totalling about ten flying hours, the new pilot becomes familiar with the handling characteristics of the aircraft before going on to to practice some gunnery with the A-10's primary armament - the incredible sevenbarrelled General Electric GAU-8/A cannon which can spew out 30mm shells at either 2,100 (for training) or 4,200 rounds/minute. Small practice bomblets and rockets are also used at the weapons ranges in the desert which surrounds Davis Monthan. 'Throughout all this period the IP sticks to you like glue, commented Mike Harris, amazingly still showing signs of Arizona suntan after more than two months of English summer. 'in fact it feels as though he's welded to you; if anything you're over-supervised. In a training element of four A 10s, two would be flown by IPs.'

From almost the start of the conversion course the new A-10 pilots have to find their way around the rugged Arizona countryside using LATN - Low Altitude Tactical Navigation, and this is continually practiced, even on the way to and from the weapons ranges. Mike Harris explained 'The basis of LATN is good map reading, and for ex-F-4 guys who've gotten used to having a whole lot of avionics on board and a "whizzo" in the back, this doesn't come easy! It throws you back to basic pilotage, but when you've achieved that, it gives great flexibility. To begin with at Davis-Monthan we often got hopelessly lost, but by the time we finished the course we didn't even need maps. The need for absolute familiarity with the ground over





Left: A-10s seen on arrival in England after their trans-Atlantic ferry flight, and with two 600 US gall auxiliary tanks fitted to their wing centre section pylons. Photo: 81st TFW

Below left: Right-hand side view of the 'Lizard' paint scheme — its components are FS36081 Dark Grey; FS34102 Light Green and FS34092 Dark Green.

Photo-Bob Warner

Below: View showing the open flight refuelling recepticle on 77-241: note the off-centre position of the nose gear leg to facilitate accommodation of the GAU-8/A cannon and its ammunition drum. Photo: Roger Lindsay

which you're operating is essential, especially from FOLs (Forward Operating Locations) in West Germany. We will go only to Ahlhorn and we'll be rootin' around all over that territory until we know it like the back of our hand'. At that juncture the Colonel must have noticed my quizzical expression, for he paused, then explained: 'Rooting — 'cos you have a Warthog'. It seemed perfectly apt.

At Davis-Monthan the low flying starts at 500ft and then as pilots gain experience it goes down to 300ft, although very low level attacks at 50ft are simulated, using terrain masking approaches to the targets. Towards the latter part of the course the attacks are also conducted in a simulated high-threat environment, at both controlled and then uncontrolled tactical ranges, some with mock-up tanks others with real tanks. Finally comes the 'Top Off' training, run by a special detachment belonging to the 81st TFW, which is

intended to make A-10 pilots mission-ready prior to their assignment to, or return to Europe. This final phase includes similar and dissimilar ACT (Air Combat Training) using such aircraft as A-7s, F-5s, and F-15s to intercept the 'Warthogs'. Mike Harris asserted that the A-10 was by no means easy meat. At the conclusion of the course he had acquired 100hrs at Davis-Monthan in three months. Pilots from Air Training Command or UPT have a longer course, generally about five months.

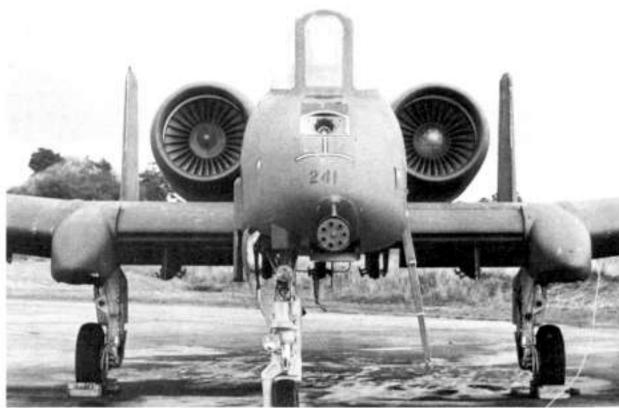
I then went on to ask about the ferry flight to England, Lt-Col Harris was among a group of eight pilots who collected brand new aircraft for their squadron at Davis-Monthan, where each plane has to clock-up a minimum of ten flying hours, often acquired during 'Top Off' training, before it is deemed fit for its trans-Atlantic hop. From Arizona the aircraft fly to Myrtle Beach, the South Carolina home of the A-10 equipped 354th TFW, where they and their pilots are checked out and rested for 36hrs before the big flight. The first stage is from Myrtle Beach to the Azores, which requires two air refuellings from KC-135 tankers and can take from 9½ to 10½hrs depending on headwinds. Lt-Col Harris's group encountered strong winds which forced them to turn back to Bermuda where they were obliged to 'suffer' a delay of two days!

In ferry flight configuration the A-10 carries a pair of 600 US gallon underwing tanks (these are actually F-111 drop tanks), which impose limitations of 2.5G and 250kts maximum speed. Air refuelling is accomplished at 210kts and because the KC-135 is faster it has to formate on the A-10, which is contrary to normal practice with other types of receiver aircraft. The second stage of the ferry flight, from the Azores to Bentwaters, takes only 5½hrs and one refuelling.

In theory this refuelling is unnecessary but it has become standard practice following the experience of the first mass delivery flight to England by 18 A-10s in January 1979, when strong winds unexpectedly sprang up and a KC-135 from Mildenhall, had to be alerted just in case any of the 'Warthogs' couldn't make it on their own fuel.

After arrival in the UK new pilots spend the first weeks getting used to the local area, and becoming familiar with British, and then European, air traffic procedures, which one of the 78th's pilots described as 'mind boggling' compared to their previous experience in the US. The vast majority of flying is done in the designated low level areas, which in Britain permits military aircraft to fly as low as 250ft. In





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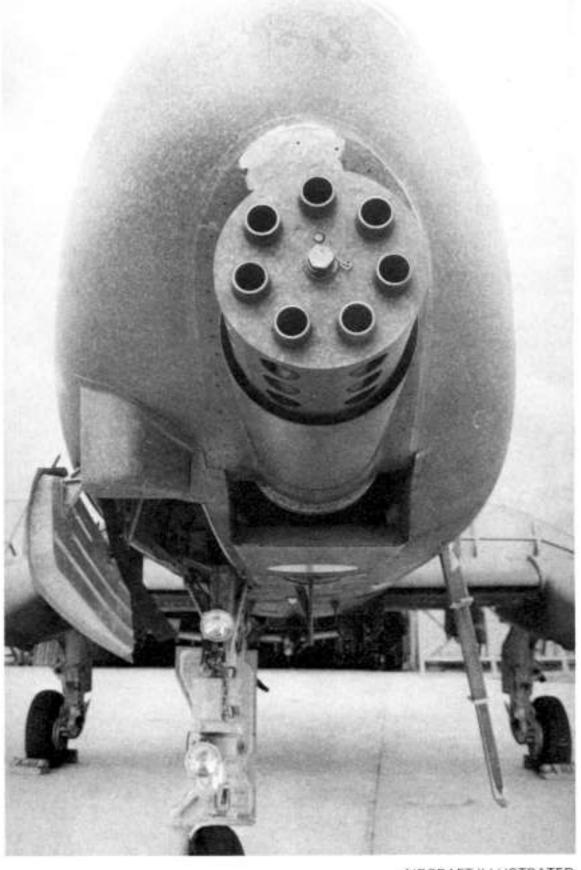
West Germany the lowest permissible height for USAF aircraft is 800ft — which is anything but low for A-10 operators, and the 81st are hoping this can soon be revised, at least down to the 500ft level to which Luftwaffe and RAF aircraft are permitted to operate. Apparently the 800ft minimum was largely self-imposed by USAFE several years ago for the sake of good public relations, but as Lt-Col Harris pointed out, that was in the F-4 era, and the A-10 is very much quieter, although it's a larger aircraft and people often think it's flying lower than it actually is,

Normally A-10 pilots operate in pairs termed 'tactical partners', who do their own flight scheduling, on average a pilot will fly one trip a day, on two or three days a week. Briefing starts about 14hrs before the sortie, which is of 2-24hrs duration, followed by a de-briefing. One week's night flying is practiced each quarter, and pilots are expected to do two air-refuellings every six months. Mike Harris said how much easier this was in the A-10, where the large refuelling receptacle is right on top of the nose, compared with the location on the F-4, which is behind the cockpit. I asked about the A-10's single engined performance, to which Mike replied 'It flies good on one engine, and we regularly practice single engine approaches, but we never actually shut an engine down, just cut the throttle to "idle"

Much attention is also given to weapons training, particularly firing the 30mm cannon, and the A-10s are an increasingly common sight at the dozen or so ranges. scattered around the British Isles, as well as those in Germany. One shortcoming in Britain is the general lack of acoustic scoring - though fortunately for the 81st one of the nearest ranges, at Holbeach in the Wash, is so equipped, and Mike Harris paid tribute to the collaboration which his squadron had received: 'Those range guys are great and with the acoustascore the range controller calls you with the score almost as soon as you've pulled up from your firing pass ... "4 hits, lead". We use dummy bullets but even so they tear up the target supports. It's not uncommon for all the (wooden) supports to be shot down in a single pass by a succession of four or five A-10s.' Other ranges which are visited frequently include Otterburn, in Northumberland, a tactics range, and Salisbury Plain where Mike had obviously enjoyed 'a very neat scenario, with tanks moving all over the place . . . of course we didn't fire any live bullets, just made dummy attacks!" A mix of explosive incendiary and armour piercing ammunition is carried, and generally very few shells are expended in a burst, which must call for a very light touch on the trigger with a gun that fires 70 rounds a second. With obvious pride Mike Harris confided 'At Davis-Monthan I made 80 bullets last for 12 passes — it's costly ammo!' Mike went on, 'Recently at Otterburn I was able to shoot off 370 rounds, I really had my act together and got a convoy of vehicles, Really tore them apart!'.

All the pilots evinced great enthusiasm for the 30mm gun. 'First time you fire it kinda waters your eyes, and you can actually smell the acrid fumes from the smoke. That gun, coupled with the airplane's super manoeuvrability is a tremendous advantage. The problem with most other weapons is that you have to fly right over the target ... and that's not good!' There was universal acclaim too,

for the reliability of the GAU-8. Later on. in the Wing Commander's office I saw a hunk of metal at least two inches thick through which a 30mm shell had punched a hole as neatly as though it was cheese ample testimony to its effectiveness. It takes just one shell to kill a tank, and at least in theory an A-10 pilot with a steady aim and a light trigger finger could dispose of up to 45 tanks with a drum of ammunition. Another of the A-10s stand-off weapons is the Maverick TVguided missile, which can be mounted three to an underwing pylon, and this is just one of a bewildering array of ordnance that can be accommodated on its hard points, which in total offer a



maximum offensive payload of 16,000lb. Despite the original concept of keeping the A-10 relatively free of black boxes, new equipment intended primarily to improve its strike accuracy and including an inertial nav-attack system (INAS) is now planned for introduction starting in 1980, and in fact the newest 'Warthogs' reaching the Wing have detail improvements, such as a dispenser which sprays fluid over the canopy to wash off any deposit from the gun's gases.

As the squadrons work-up to their full operational strength of 18 aircraft apiece, with 24 pilots, plus the CO and the Operations Officer, so more time is being spent at the FOLs — one is assigned

Below: Groundcrewman drives an A-10 ammunition drum out to the flight line area; the drum can hold 1,350 rounds.

Below left: Business end of the Warthog
— the General Electric GAU-8/A 30mm,
seven barrel rotary cannon.

Photos: Roger Lindsay

Below right: Racking-up a pair of Maverick missiles on to an A-10's wing pylon. Photo: 81st TFW

between the FACs (Forward Air Controllers) who fly in USAF OV-10s and O-2s and direct A-10 close air support missions. Special techniques are required for the success of joint exercises such as these, where several aircraft of different types and tasks are all concentrated in one area and it obviously makes great demands on all the participants, but I was assured by Mike Harris that 'Everybody's doing good now'. I asked about the effectiveness of the A-10's new lizard camouflage which was specially developed for European use. It was left to one of the 78th's youngest pilots to provide the classic reply, 'Outstanding!'.

The first 30 or so of the Wing's Thunderbolt IIs are still painted in the twotone light grey scheme - referred to as 'greys' by the pilots, but 'whites' by the maintenance people, and these will all eventually be transformed into 'lizards', by the application of the very matt light green, dark green, and dark, almost purple, grey finish. Squadron markings on the aircraft are strictly taboo, so that nothing should compromise the superbly efficient camouflage - just how efficient was demonstrated by a remark from Lt. Greg Lewis, who said that during a low level tactical exercise he actually lost visual contact with his wingman, even though he knew where his aircraft was, Greg Lewis was unusual in being among the first six pilots selected to fly the A-10 straight from undergraduate pilot training. His route to flying the aircraft operationally was by way of Holloman AFB where he trained on T-38s with guns



specifically to each of the 81st's four squadrons. Each squadron is organised into three Flights ('A', 'B' and 'C'), one of which is detached to a FOL for three weeks, followed by six weeks at Bentwaters/Woodbridge.

Part of a squadron's operational training is also geared to rapid deployment to the forward base in Germany, a process that Mike Harris described as 'packing a pallet in a hurry', which involves the transfer of extra support equipment and personnel by C-130 'Trash Hauler', while the assigned pilots wing their way over the North Sea, normally at their 25,000ft transiting altitude. A 50-strong maintenance team from the 81st TFW is being established at each FOL, but initially at Ahlhorn all servicing turnrounds had been accomplished by Luftwaffe personnel, who have done a 'super-job'. While in Germany the Wing has also put the A-10's short field performance to the test by operating from US Army 4,000ft and 5,000ft landing strips. There is operational collaboration, too, with the Army's AH-1S Cobra gunship helicopters, which fly in an anti-aircraft suppression role in concert with strikes by the A-10s, and this close co-operation also applies



strapped on', then to Davis-Monthan where he completed his conversion training on the A-10 and was posted to the 354th TFW at Myrtle Beach, SC. During his tour with the 354th he took part in two Red Flag tactical exercises at Nellis as well as the FOL test at Nordholz in Germany. Greg told me that five out of the original six UPT pilots are now based in England. He maintained that more embryo pilots are now putting the A-10 at the top of their 'dream sheet' of aircraft types they would most like to fly operationally. 'It's the most fun-type airplane in the Air Force, and it offers me the freest kind of mission' is how Greg summed up his own enthusiasm for the 'Warthog'.

A little later I was staring into the beady eyes of another kind of Warthog, this time a wooden carving of the original species, the African wild pig, which sat on the desk of Lt-Col Sandor (Sandy) Babos USAF, the Assistant Deputy Commander for Maintenance.

With over 5,000 flying hours to his credit Sandy Babos is one of the Wing's most experienced pilots yet, unusually, he began his career with the USAF as a navigator on B-47 bombers in the early 1960s before qualifying as a pilot in 1965. Subsequently he flew F-4s from Da Nang. Vietnam and Udorn in Thailand and notched up 243 combat missions in South East Asia. In 1975 he took the Air Warfare Course at RAF Cranwell, and in March 1977 Sandy returned to England to command the 92nd TFS at Bentwaters. While in Sandy's charge the 92nd was the first squadron in the 81st TFW to convert from F-4 to A-10, and also the first A-10 squadron in Europe to be given an ORI (Operational Readiness Inspection) undertaken by a team from USAFE HQ at Ramstein. This wealth of flying experience places him in an excellent position to appreciate the importance of providing the best maintenance back-up for the Wing's aircraft, which are operated on a pooled basis. Lt-Col Babos said that 'serviceability with the A-10 has been very good for a new type of aircraft', adding that 'It's good to have an airplane whenever it's required, and to be able to count on that. This is especially important when your source of spare parts is several thousand miles away on the other side of the ocean!". He attributes this partly because the A-10 has very few of what he called 'cosmic units', meaning black boxes, and also because of its good accessibility which makes for rapid repairs. Compared with the F-4, the A-10 requires about six fewer maintenance 'men' to look after it -5 or 6% of the 4,200 military personnel at Bentwaters/Woodbridge are women, and quite a few can be seen at work on the flight lines, although it has to be said that the standard USAF olive drab dungarees do little to further the cause of femininity!

A comprehensive centralised job control system is employed by which aircraft are scheduled a month in advance by tail number for whatever maintenance is applicable. The minor, 25hr inspections include fuel system checks, and are done in the hardened shelters variously called hangarettes or TAB-VEEs: the bigger inspection, at 200hrs (recently extended from 100), constitutes a phased docking and the aircraft is towed into Hangar 74 at Bentwaters: most servicing activities are duplicated at Woodbridge. The aircraft are also washed every 60 days (whether they like it or not!) and this includes a thorough scrub down and a corrosion control inspection necessary because of the high salinity of the Suffolk sea air in which the A-10s spend so much of their lives.

Since the A-10s also live low down where there is a high incidence of bird strikes I enquired how the aircraft and its GE TF-34 turbofan engines cope with these 'unguided missiles', and was told that both airframe and engines are highly resilient — to the extent that the evidence of feathers during the post-flight inspection is often the first indication that an aircraft has even sustained a strike. With such a discovery it is standard practice to boroscope the TF-34s as a safety precaution.

Maintenance was one of the main talking points when I had the privilege to speak with Col Gordon E. Williams USAF, who had been appointed Commander of the 81st TFW just a couple of days prior to my visit. He was formerly the Wing's Vice-Commander, and because he had served at Bentwaters in that capacity since September 1977, I asked him to outline some of the more important implications of the changeover of the Wing to A-10 operations.

It all began with the arrival at Woodbridge during the latter part of 1978 of a Field Training Detachment, a cadre of 120 maintenance people who were experienced on the A-10, and the first four NOA (Not Operationally Assigned) aircraft which were used for 'hands-on. training'. This retraining of servicing personnel continued up to April 1979 when the 81st's last Phantoms departed for Torrejon and re-assignment to the 401st TFW. The change of aircraft type has been reflected in a shift in the balance of the ground trades, with, for example, specialists on the F-4's INAS being posted out and the posting in of more 'Armament lads' as Col Williams referred to them. Additionally the change in composition has been accompanied by POMO. The USAF it seems, can't live without acronyms - deciphered, the letters refer to Production Orientated Maintenance Organisation, the objective of which was summarised by Col Williams when he told me 'It's designed to get more people closer



to the airplanes on the flight lines. With POMO we're breaking down the rigid maintenance skills which applied with the F-4, so that, for example a radio repairman is cross-trained to refuel a plane, or can be part of a team doing an engine change. This ability to do several other jobs on the flight line applies equally to the crew chief'. Smiling, he added 'It sounds simple, but the doing's harder than the talking!" then continued, "It gives us the flexibility we need with the A-10, especially where we need it most - in and out of the shelters and in the turnround'. He described the stage setting for this activity among the ramps and revetments. most eloquently when he said 'It's a ballet out there - a well orchestrated action by a lot of people'.

Col Williams, a graduate of West Point who gained his wings in 1957, has been in the close air support business almost ever since, and flown F-100s and F-4s. including a combat tour in Southeast Asia on exchange with the US Navy, flying from the USS Ranger. Afterwards he went back to the carrier as part of the USAF team which made a combat evaluation of the A-7, and this in turn led to him becoming a project officer for the A-7D, while during a spell at the Pentagon he became involved with planning the requirements for the then forthcoming tactical aircraft, including the F-15, F-16, and prophetically, the A-10.

'With the F-4 we were taught that fast was beautiful, and the A-10 may be slow but it's the first airplane we've had that's been specially designed for the close air support job here in Europe, and I believe it's just super.' When I questioned Col Williams about the A-10's lack of INAS he had this to say: 'I'm glad we didn't have



it in the airplane to start with. Its omission teaches pilots to read maps and go back to good basic airmanship. By the way, you should see the way those pilots fold their maps! Everyone has their own technique, and some guys cut and fold them in their own special ways — like the most elaborate paper dolls you ever have seen! On the new tasks facing the 81st TFW Col Williams concluded, 'Mobility . . . that is the key factor to our operations; its a real challenge, and it takes a lot of practice. We're writing the book on how this thing should be done, and we're making good progress.'

Acknowledgement:

The author would like to thank Capt David Schmidt, 81st TFW Public Affairs Officer, and Sgt Joe Piesco, as well as all previously mentioned personnel for their time and assistance in the preparation of this article.



Top: A-10 plus ECM — an AN/ALQ-119 pod fitted to one of the 'Greys' at Bentwaters. Photo: Roger Lindsay

Centre right: Rearming an A-10 with 30mm ammunition during an operational turnround, with the pilot remaining in the cockpit.

Right: A-10 77-231 touching-down at Bentwaters. Photos: 81 st TFW

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