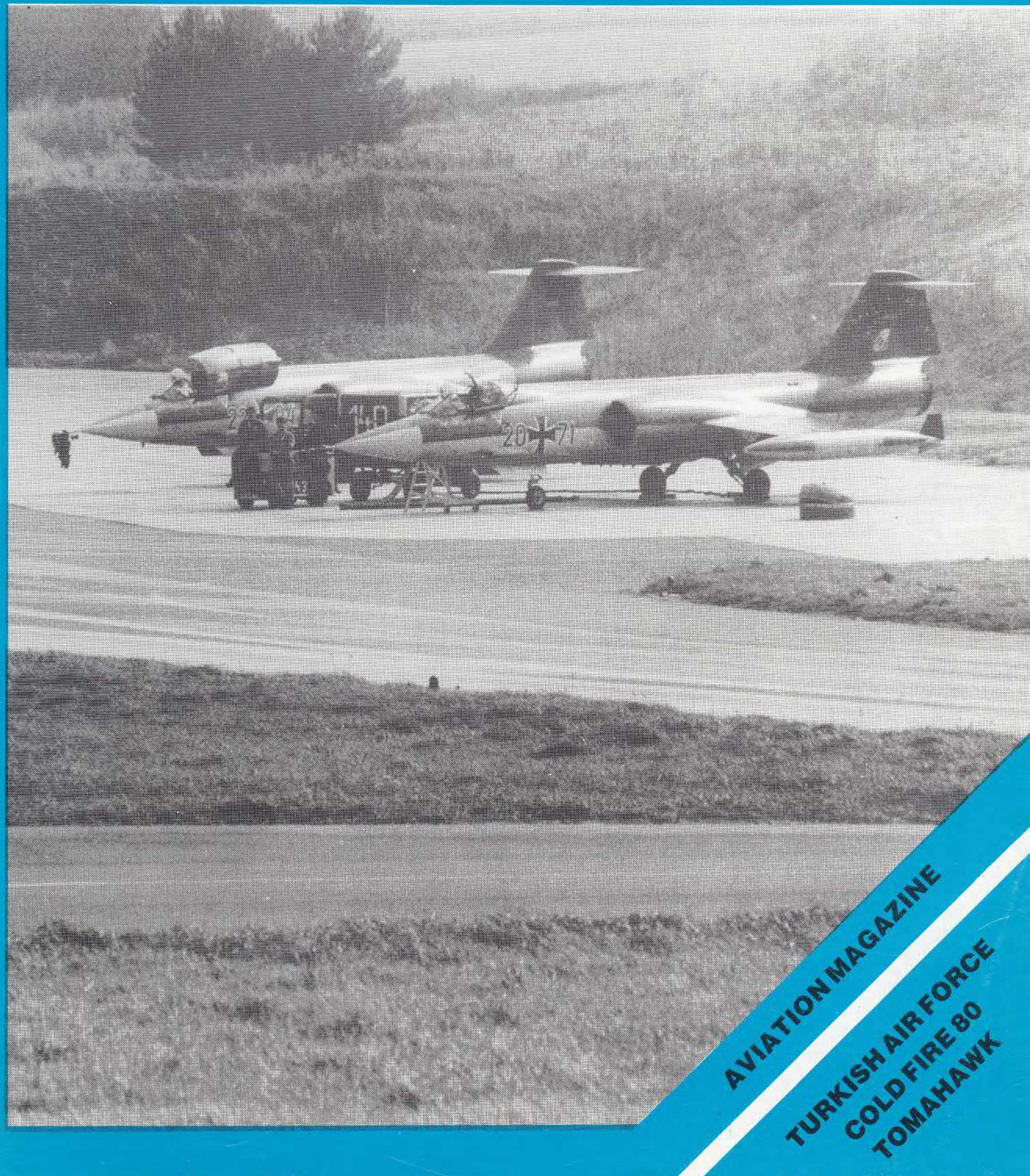
DECEMBER 1980

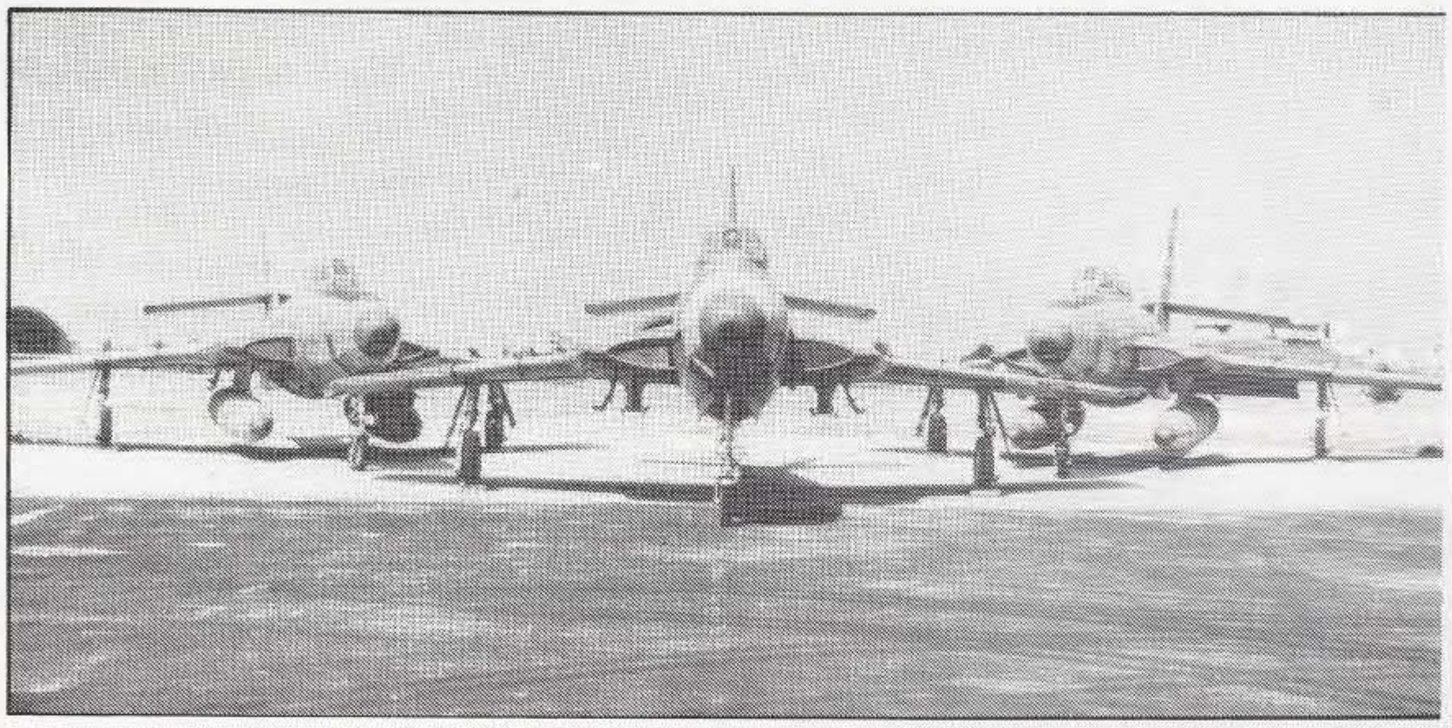
# FLASH



AVIATION MAGAZINE

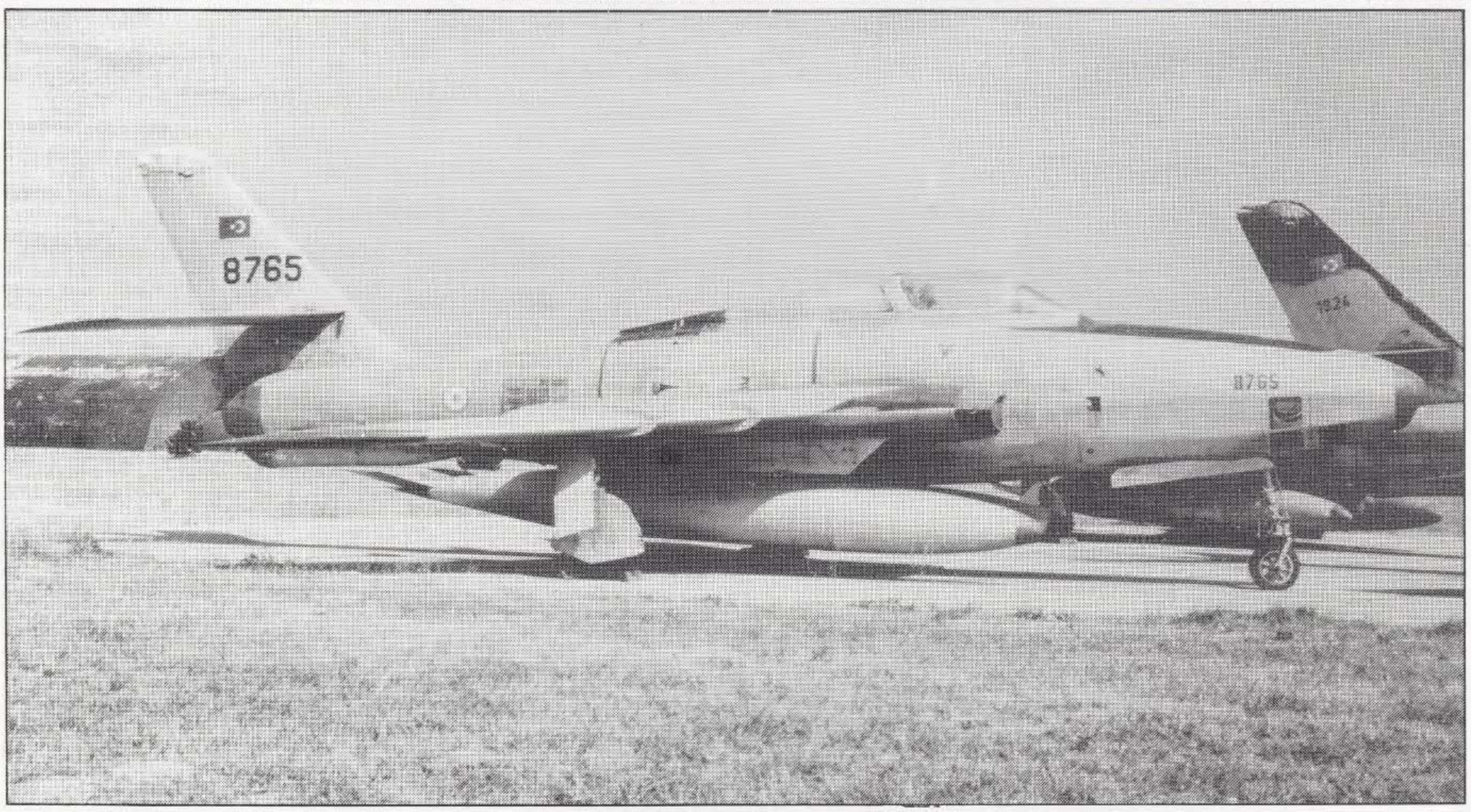
TURKISH AIR FORCE
COLD FIRE 80
TOMAHAWK

# Turkish Thunderflashes withdrawn at Eskisehir



(ESKISEHIR, TURKEY) Photographed in late September were three RF-84F Thunderflashes,parked in a dispersal at Turkish 'base 1' Eskisehir. The aircraft, two uncamouflages (incl. 52-8765) and one camouflaged (51-1924, ex KLu P-24), were withdrawn from service only in August 1980. The RF-84Fs were operated by 113Filo which received F-4E & RF-4E Phantoms recently. The delivery of 8 RF-4Es to 113 Filo is likely to have completed thereplacement of the RF-84Fs of the Turkish Air Force. This could mean these three 'Flashes' are the last to have served world wide.

Photos via AVIAPHOTOS





**COVER PHOTO:** *Luftwaffe F-104Gs 20-71 and 22-04 visiting Pferdsfeld for a cross-servicing during Cold Fire 80.*

FLASH

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EDITORIAL

# Would Reagan support a Tornado?

The impact of the rising oil prices is slowly showing its face. In a disoriented industrialized world, the increase in oil prices has stimulates national protectionism.During the years of economic growth and wealth, there was no need for many internationally established agreements. And what is more, there was no urge to act in accordance to the few that existed.
These kinds of agreements are essential to solving the problem of today's economic recession. The increase in oil prices triggered off a series of problems and is pressing the industrialized world into harsher protectionism every day. And every day the related problems, inflation, unemployment, over-production and energy snortages, grow accordingly.
Restoring the economy of the industrialized world is only possible by means of action in accordance with international agreements and treaties. The European aerospace industry is a good example of this. Born from the need to keep up with the US aerospace industry, the major European companies joined their efforts, and with favourable governmental fundings, launched major projects of which A.300/A.310 and Tornado are the best examples. Divided as it is in two areas of influence and many nationalities,Europe has become experienced in international projects. This experience was applied when leading European politicians forced the aerospace industry to join efforts in these two projects.
The US aerospace industry,like all other industry branches in the US, is based on the old American belief in 'free enterprise'.Much criticism was levelled at President Carter when he took various decisions,which were thought to go against these principles, like restrictions on export sales activities.
In January, the Reagan administration will take office and during his election campaign Ronald Reagan gave the impression of being in favour of less restrictions on exports, and stimulation of the industry's competitiveness. The four years of the Carter administration have often been described as four years of set-back for the US industry.The industry trusts the Reagan administration will restore the 'free enterprise' idea.
The combination of political influence with industrial enterprise is a new path for the European aerospace world but it is proving to be a successful one. Panavia dealt with the disbelief in Europe's ability to accomplish anything on European level, while the sales record of Airbus indicates that it has every chance of becoming a commercial success. The origin of the formula lies in the 1960s when European aerospace was a bad branch of industry to be in. In the 1970s many companies were therefore nationalized, or heavily funded by national governments. As a result the aerospace industry became very dependent on politicians, but it was the pressure from those politicians and the support of favourable governmental fundings that made new aerospace projects possible in Europe.
Parallel to the growth of European aerospace,criticism from the US grew,mentioning unfair competition by Europe because of these favourable fundings. Actually the criticism is based on the different approach by the US and Europe towards industry, the US aerospace being based on 'free enterprise' and the European based on 'mixed economy'. In Europe the latter had to be applied to the aerospace industry, as the relatively small industry was unable to raise fundings for projects like Airbus and Tornado.
Whereas the Reagan administration might restore the old American tradition of 'free enterprise', the question arises whether this will be always applicable in the future. Advanced techniques, complicated societies, and high investments in new projects will gradually demand more joint efforts in a mixed economy. 'Free enterprise' might stimulate the competitive industry but also stimulates protectionism.The results of the latter have proven its negative influence on such a large and complex problem as today's world recession.
It will be interesting to see how President Reagan will be able to restore the US economy by stimulating free enterprise, and what the accompanying effects will be, in particular in Europe. It will prove whether Carter has set back time for four years, or Reagan will have set back time in the long run.

Jac van Tuyn

# MILITARY AVIATION NEWS

*F-104G 3-35/MM6582 of the AMI's 28 Gruppo/3 Stormo at Gilze-Rijen, Holland in October. Four aircraft of the 3 Stormo's tactical fighter squadron visited Gilze-Rijen for a squadron exchange with 316 Sq between 14 and 24 October. (N. van Erek)*

## FROM A FACILE PEN.....

NF-5A CRASHES

K/Lu NF-5A K-3010 of 316 Sq. at Gilze-Rijen crashed near Venlo, Holland on 1 October 1980. The aircraft,flown by a young pilot on training detachment to 316 Sq., stalled when making a slow pass with gear and flaps out near the pilot's parental home. The pilot was killed in the accident.

EdA ORDERS SAR C.212s

Four CASA C.212-200s, to be equipped for SAR duties, have been ordered by the Spanish Air Force (EdA), which already operates three F.27 Maritimes for SAR duties from Palma de Mallorca.

C-141 CRASH IN EGYPT

Thirteen USAF personnel were killed when a C-141 crashed on approach to Cairo West Airport,Egypt on 12 November. The aircraft was participating in the US RDF(Rapid Deployment Force) exercise, which was being held in conjunction with the Egyptian Army. The crash happened during the night-time, but the weather was clear, and no cause was immediately apparent.

AS.332 FOR THE IAAC

The Irish Army Air Corps will lease an AS.332 Super Puma from Aérospatiale for about 18 months from early 1981, reports Aviation Ireland. The report adds that after the lease period a number of AS.332s will be bought in a gradual manner. The IAAC King Air 200s were bought in a similar one-by-one fashion.

## A-10s collide in mid-air

(AYLSHAM, NORFOLK, UK) Two 81 TFW A-10As collided near Aylsham, Norfolk on 18 November. One of the aircraft crashed into the sea and the pilot ejected. A Sea King HAR.3 of No.202 Sq. at RAF Coltishall was scrambled and arrived at the scene soon after. Unfortunately, the A-10A pilot had become entangled in the lines of his parachute, and when the RAF winchman attempted to rescue him, he also became entangled, and the winch cable snapped. Pilot **and** winchman were swept away from the coast by the very rough sea. Because of the bad weather, with winds up to 80 km/h (50 mph), the Sea King had to return to Coltishall, as a landing on the surface was impossible. Five minutes later a 67 ARRS HH-53C from RAF Woodbridge arrived, by which time the A-10A pilot and the RAF winchman had either drowned or died from exposure.

The other A-10A involved in the collision crashed near Itteringham village, and the pilot ejected but was injured. An inhabitant of Itteringham was injured by debris.

*Visiting RAF St.Mawgan in October was a Canadian Forces CP.140 Aurora. The crew of this aircraft 140102, attended the YP-Meet which coincided with the Pinecastle Meet, also at St.Mawgan (see FLASH Nr.122 p.14 and 15). Delivery of 18 Aurora to the Canadian Forces is currently underway,with the last one to be delivered in March 1981. (Barry Bailey-Hickman)*

*RF-4C KE88-433 of the Mississippi ANG's 153TRS was one of eight aircraft of the squadron which deployed to RAF Alconbury, UK between 27 September and 10 October. The deployment had been scheduled to go to Larissa AB, Greece, but came to Alconbury instead* (Barry Bailey-Hickman)

## RAF re-organisation

(LONDON, UK)Amongst the confusion of defence cuts, cash limits, limits on spending rises and new contracts, one fact stands out clearly: the RAF is having trouble making ends meet. According to the undersecretary for the RAF, Mr. Geoffrey Pattie, operational capabilities have not been affected. Nevertheless flying hours and participation in exercises have been cut back, as well as (temporarily) spares purchases.Orders for 14 Jetstream 31s and 18 Hawk T.1s were not placed because of the new-contract moratorium which lasted from 8 August to 8 November, and are not likely to be placed soon. Spares purchases have been resumed, but the gradual phase-out of a number of aircraft was announced on 31 October. They are all Canberras, a type still operated by five squadrons and an OCU.

- No. 7 Sq, at RAF St.Mawgan, will be amalgamated with No.100 Sq., at RAF Marham, to form one standard-sized squadron. The home base is still to be determined. The squadron will continue to provide aerial target facilities with various marks of Canberras.
- No.13 Sq., at RAF Wyton, which operates Canberra PR.7s, will be disbanded by 5 January 1982.
- No.39 Sq., also at Wyton, with Canberra PR.9s, will be disbanded by 5 January 1983.
- No.360 Sq., at Wyton, will reduce the number of Canberra T.17s which it operates for ECM training.

These Canberra reductions do get rid of a number of aircraft which had originally been scheduled for replacement in the late sixties, but now no replacements have been announced,neither for the first-line squadrons ( os.13 and 39), nor for the aircraft taken out of the strength of the training units.

we wish you a happy new year

## Harrier crashes

(RHEINDAHLEN, WEST GERMANY)On 14 October a Harrier GR.3 of No.3 Sq. at RAF Gütersloh crashed near the runway at its home base.The aircraft was returning from a training flight, and, when hovering near the runway at between 50 and 100 feet, rolled to the right and crashed,killing the pilot. Two weeks later, on 28 October, a No.4 Sq. Harrier GR.3 crashed in woods 31 km north of Bitburg AB. The aircraft was temporarily based at Sembach AB for a squadron exchange with an OV-10A unit of 601 TCW. The cause of the accident is at present not known, although a bird strike is a possibility. The pilot ejected safely.

## FROM A FACILE PEN . . . . . .

WOODBRIDGE HUSKIE TO FLY AGAIN !

The ex 67 ARRS Kaman HH-43F Huskie, 62-4535, is being restored at RAF Woodbridge to flying condition, reports BAR. The classic short-range rescue helicopter is expected to fly again soon. This editor, for one,is looking forward to seeing the Huskie demonstrate its capabilities at air shows next year.

SIKORSKY 76 DELIVERED TO ICELAND

The first ever (semi-) military Sikorsky 76 was delivered to the Icelandic Coast Guard on 23 September. The aircraft will be used for both inland and off-shore SAR missions, as well as fishery protection, which is a matter of national security, as virtually all of the country's income arises from fishery. The aircraft will operate throughout the country's 365km (200 nm) national fishing zone, and can land on the larger Coast Guard cutters, which are equipped with a flight deck and hangar. One of these is the "Aegir" which transported the chopper from St.John's, Newfoundland, Canada, to Iceland.

NIMROD CRASH-LANDS NEAR KINLOSS

Nimrod MR.2 XV256 of the Kinloss Wing crash-landed in a wood after ingesting several geese during take-off from RAF Kinloss on 17 November. Twenty people were on board, and except for the pilot and co-pilot,who were killed, they escaped with injuries. Normal Nimrod crewing is twelve,but more people were on board for training purposes

# 81 TFW fully operational on the A-10 since September

(BENTWATERS, UK.) Following the delivery of A-10A 'Warthogs' to 511TFS during the summer, 509TFS was activated and equipped with its first batch of six aircraft in September. With the activation of 509TFS, the sixth and last Tactical Fighter Squadron of 81 TFW to be formed, 81 TFW became fully operational on the A-10.
By the time this is written the remaining 12 aircraft for 509TFS will have arrived, completing the two year conversion programme, replacing 72 F-4D Phantoms by 108 A-10A Thunderbolts.

Another A-10 mile-stone was the roll-out of the 400th production aircraft at Germantown, Maryland. Delivery of the first operational A-10 was in March 1976, and current production plans call for 825 aircraft for delivery through April 1986.

The A-10A was formally developed to improve the USAF's ability to provide highly effective close air support for friendly ground forces, but in the first place it is a 'tank-killer'. In 1977, at the time the A-10 entered the operational stage, Gen. David G. Jones,Air Force Chief of Staff, commented on the A-10: "Amplifying the significance of the 2:1 advance by the Warsaw Pact over NATO in tanks, is the fact that Soviet production rates for tanks and armored personnel carriers have exceeded U.S. rates by 5:1 and 2.5:1 resp. over the last five years and show no signs of abating....The A-10 can help counter this increasing armored threat to Europe."

## 81TFW: 6 squadrons, 4 FOLs, and 108 aircraft

Divided over two RAF stations, Woodbridge (78 & 91 TFS) and Bentwaters (92, 509, 510, 511 TFS), 81 Tactical Fighter Wing operates mainly from the UK. But during war-time many A-10s leave their Main Operating Base to reinforce six Forward Operating Locations (FOL) which are equally divided over 2nd & 4th ATAF. During peace-time only four FOLs are manned, operating 8-10 A-10s which are on TDY from the UK. The latest FOL to have received A-10s was Nörvenich, W.Germany in September, following FOLs Sembach,Alhorn and Leipheim, resp. Geographically divided over Germany,these FOLs allow A-10s to operate from locations close to the battlefield, which increases the time to operate over the battlefield by 1½ hrs. When operating from a FOL, the A-10 can remain over a battlefield for three hrs. Principally FOLs are set up to receive A-10s with the intention to generate a 'Gas and Go', with the aircraft airborne again in 40 minuted after touch down. FOLs are not intended to be self-sufficient operating bases for A-10s.

The introduction of the A-10 with 81 TFW was an extensive operation. The specialized mission requirement for this aircraft produced several new aspects.

Over the past two years, training and target facilities in Europe showed a need for revision in order to accomodate the A-10. Using practice ammunition, the aircraft's 30mm GAU-8A gun destroyed many conventional target facilities. To meet this problem the target facilities on ranges, such as wooden poles or target support apparatus, are now replaced more frequently.

To support the maintenance personnel of the 81 TFW at the FOLs in W.Germany, a scheduled air service was introduced. Every Monday, Wednesday, and Friday, a MAC C-130 Hercules ('Trash Hauler') moves personnel and cargo in a circular pattern between Bentwaters and the four FOLs.

Another new aspect with the introduction of the A-10 is the Joint Air Attack Team (JAAT). JAAT is a new set of air tactics in which A-10s team up with USArmy AH-1 HueyCobras in destroying armoured targets. The third element of JAAT is formed by the OH-58 Kiowa scout helicopters,while the fourth element is the UH-1 command helicopter. At the moment the joint use of A-10As and USArmy helicopters is in the conceptual stage with some training being accomplished. Earlier this year a JAAT exercise was conducted from Grafenwöhr, just east of Nürnberg, W.Germany, and also during Cold Fire 80 some JAAT missions were flown.

Although pilot fatigue is a familiar aspect for all types of aircraft, for the A-10A pilot,fatigue is a great problem.Whereas for conventional ground support aircraft the normal 'on target' time is around five minutes, during training A-10 pilots operate within the range area for up to 50 minutes. Often the A-10 pilot has to fly out of the range area to enable him to take a short rest. An

*A-10 'Warthog' WR79-100 arriving at Pferdsfeld, West Germany, for a cross-servicing during Cold Fire 80 on 17 September.*
*Officially the aircraft is known as Thunderbolt II, fitting in the series of 'Thunder' fighters, also built by Fairchild/Republic. Its usual nickname, however, is Warthog, after a truly ugly but efficient wild African hog.*

ex Phantom pilot once illustrated this problem of low-level operations by mentioning that a variation in height when flying at 25,000 feet doesn't matter too much, but "You can't take time to scratch your ass while flying at 200-300 feet". Due to the swift turnaround time between missions, the A-10 can fly up to 4 times in one day. Experience has taught pilots are finding it difficult to concentrate after two missions. To counter the problem, all pilots are given the required amount of crew rest between each mission. JvT□

## 'Export' F-16 first flight

(FORT WORTH, TX, USA) General Dynamics F-16B 75-752 made its first flight in the F-16/79 configuration from Fort Worth on 29 October. The aircraft is a USAF pre-production aircraft which General Dynamics leases from the US Government to serve as a prototype for the F-16/79 "export fighter". This project, which is being paid for by the company, aims at providing, quite literally, a poor air force's F-16, by replacing the standard F100 turbofan of 25,000 lbs thrust with an improved version of the well-tried J79 turbojet (18,000 lbs thrust). The aircraft needs only minimal modification to accept the J79-GE-17X engine, and the only external difference is that it has a longer exhaust pipe and rear fuselage section, because the engine is 46 cm (18 inch) longer than the F100. Performance is obviously not as good as of the F100-powered F-16A and B, but the price is considerably lower as well. General Dynamics hopes to sell the F-16/79 to air forces which otherwise might have bought the Northrop F-5G, the single-engine (F404, which powers the F-18) derivative of the F-5E.

## Hornet is squadron service

(NAS PATUXENT RIVER, MD, USA) Initial Operational Test and Evaluation (IOT & E) with three pilot-production F-18s of VX-4 started in October. The purpose of IOT & E is to evaluate the Hornet in a USNavy squadron environment, which means that flying and maintenance is done by the USNavy, albeit with McDonnell-Douglas technical support. Later this year further IOT & E will be done at NAS Point Mugu, CA, from which missile launching missions will be flown under operational, if land-based, circumstances.

Meanwhile, McDonnell-Douglas has announced that the crash of the TF-18A at Middle Wallop, UK, on 8 September, was caused by the break-up of the low-pressure turbine (LPT) disc in one of the pre-production F404 engines. All F/A-18s were grounded between 9 and 20 September, and all pre-production F404 engines have received LPT discs of production standard, which should be stronger than the pre-production ones. The official accident investigation hasn's been finished yet, and a close eye is being kept on all F404 engines.

Just before closing for press, it was announced that the USNavy had commissioned the first F-18

## NOW YOU SEE A PROVIDER NOW YOU DON'T

(RAMSTEIN AB, WEST GERMANY) A once not very rare type returned to Europe on 13 September when four C-123K Providers of 731 TAS, 439 TAW, AFRES arrived at Stuttgart, West Germany, to participate in Autumn Forge. Aircraft 40635, 40663 (illustrated), 40681 and 40703 were also seen regularly at Ramstein AB. It is unlikely that Providers of this squadron will be seen again, as it was due to convert to the C-130H by the middle of FY 1980.


*Modified C-135B 61-2662 of the USAF's Aeronautical Systems Division at Wright Patterson AFB, seen on final approach to Ramstein AB, West Germany on 18 September. The aircraft was originally modified from a standard transport C-135B for the Air Force Avionics Laboratory for the testing of satellite communications. It now supports other US Defence missile and space programmes. (Paul van Oers)*

squadron at NAS Lemoore,CA. The unit is designated VFA-125, and will train both USNavy and USMC pilots on the F-18. It was also announced that the A-18 dedicated attack version has been dropped,and that the two services will operate F-18s suitable for both air-to-air and air-to-ground missions.

Furthermore, on 14 November the 12th F-18A built, i.e. the first pilot-production aircraft, crashed into Chesapeake Bay, off the Maryland coast. The aircraft, assigned to VX-4, was being flown by a pilot from the squadron for familiarization, and control was lost at 20,000 ft. The pilot ejected safely. The cause may have been an aerodynamic problem, as control was lost during a high angle-of-attack manoeuvre, which hadn't been tested before by a Hornet in the same configuration as the one that crashed (i.e. with two wing-tip Sparrows and an empty centre-line pylon).

## Luftwaffe Alpha Jet entering operational service

(OLDENBURG,WEST GERMANY) LeKG.43 at Oldenburg will be redesignated JABOG.43 in January 1981,but Alpha Jets are already being delivered to the unit. The Geschwader will operate 51 aircraft, ten of which will be dual-control. JABOG.43 will be the first combat wing to become operational on the type. The combat Alpha Jets are identical to the dual-control aircraft, except that the rear seat is removed to make place for an electronic warfare kit, which is operated from the front seat. Other wings receiving the Alpha Jet are:

- JABOG.49, the Alpha Jet "OCU" at Fürstenfeldbrück is expected to reach its full strength of 51 aircraft before the end of the year. These are mainly dual-control aircraft, and 18 of the 51 will be regularly detached to Portuguese Air Force BA.11 at Beja for tactical and live weapons training.
- LEKG.41 at Husum is the next Geschwader to swap the FIAT G.91 for the Alpha Jet, and will be redesignated JABOG.41 in mid-1981.



## Heeresflieger and FAMET receiving Bo.105s

(BUECKEBURG, WEST GERMANY) Thirty MBB Bö.105/PAH-1 interim anti-tank helicopters are being delivered to the Heeresfliegerwaffenschule ( German Army aviation weapons school ) at Bückeburg. A total of 212 Bö.105/PAH-1s are on order, as well as 90 Bö.105/VBH liaison and observation helicopters.

Most Bö.105/PAH-1s will be assigned to three Panzerabwehrregimenten (anti-tank regiments), each of which will dispose of 60 aircraft of the type, which are each equipped with HOT missile launchers and a periscope sight on top of the cabin. Delivery of the Heeresflieger Bö.105s had originally been planned to start in September 1979,but was delayed by problems with the paint used on the aircraft. Originally 227 Bö.105/VBHs had been planned for, but only 90 have been ordered so far.MBB designations for the two types are Bö.105M (VBH) and Bö.105P (PAH-1).

Meanwhile, the PAH-2 project, an Aérospatiale/MBB venture to develop a joint replacement for the SA.342M and Bö.105/PAH-1,looks like breaking down, because of differing requirement details. Bell Helicopters Textron hopes to fill the gap which may appear in the Heeresflieger anti-tank capability if the PAH-2 is cancelled. In September the company showed its Bell 249 Huey Cobra demonstrator (converted YAH-1S 70-16019, see FLASH nr.121, p.6) to the West German Ministry of Defence,the Heeresflieger, and Est.61, Manching. Bell has proposed that any Bell 249s bought by the Heeresflieger be built by Bell and West German aerospace industry jointly, in order to offset purchase costs.

(LOS REMEDIOS, SPAIN) The first ten out of sixty Bö.105Cs assembled by CASA for the FAMET, the Spanish Army's aviation arm, are due to be delivered before the end of 1980. The FAMET's training unit at Los Remedios, near Madrid, has operated eleven MBB built Bö.105s since mid 1980. These aircraft had previously been used by the Heeresflieger test unit, the Versuchsstaffel, at Celle, for operational evaluation purposes, and will continue to be used as trainers. Fourteen of the sixty CASA Bö.105Cs will be used for unarmed liaison duties, eighteen for armed (one fixed 20mm cannon) reconnaissance, and twenty-eight for anti-tank operations (with the 20mm cannon and six HOT tubes). □


*Fantrainer D-EATJ returning at Mönchengladbach, W.Germany on 18 November ending a succesful tour of the US. During the tour the Fantrainer's unique ducted fan propulsion concept was shown to USAF officials.*

# Ducted fan training: a new concept

## RFB and Vought demonstrate Fantrainer concept to USAF

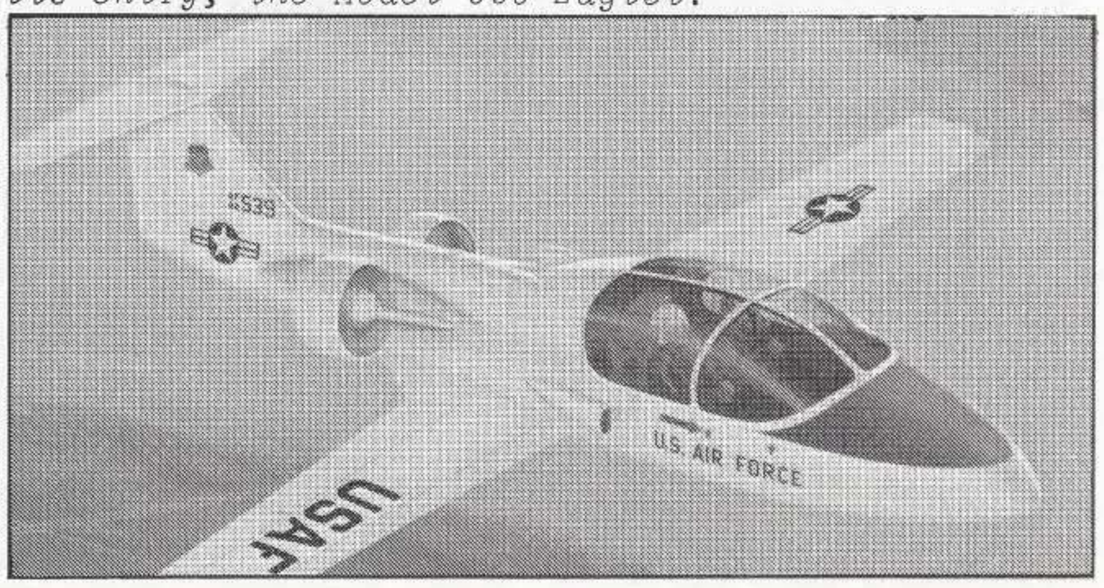
(MONCHENGLADBACH, W.GERMANY). The typical purring sound of the Fantrainer filled the sky over Mönchengladbach airfield in the late afternoon of 18 November. The employees of Rheine Flugzeugbau (RFB) had missed the familiar sound of their aircraft for two months as during this period the aircraft had been on a demonstration tour in the US.
RFB test pilot Helmut Knöpfle was flying Fantrainer D-EATJ/No.D1 on a 20-minute flight in from Köln Bonn. After performing some rolls andnegative turns, Helmut Knöpfle landed the aircraft at its home base, ending a successful demonstration tour.
The Fantrainer had toured the US in order to lobby support for this somewhat revolutionary type of aircraft, the concept of which has been proposed by the Vought Corporation in their entry for the USAF's New Generation Trainer (NGT) requirement.

## Fantrainer as concept demonstrator for the T-37 replacement

The US demonstration tour of the Fantrainer was set up to confront USAF officials with the special handling characteristics of the Fantrainer, which has the unique ability to perform as a jet aircraft although it is propelled by a seven-bladed ducted fan. It is this unique ability which needed a lot of extra exposure as it is used in Vought's entry for the USAF's NGT competition.

In 1988 the USAF intends to replace its T-37B 'Tweety Bird' basic light jet training aircraft. Fatigue, age, fuel consumption and limited performance of the T-37 urged the USAF to start looking for a replacement. The air force drafted the specifications for such a replacement, and the US government recently issued a Request For Proposal (RFP) for the NGT to five US aerospace companies. One of these was Vought which proposed an aircraft using Fantrainer technology, the Vought Model 538 Eaglet.
The Vought Eaglet is a twin ducted fan side-by-side basic trainer. Because of its unique propulsion system, the Eaglet can perform like a jet aircraft, but purchase and operation costs are similar to those of propellor aircraft. According to Mr.Christof Fischer, RFB's chief designer, the current basic jet training aircraft costs $ 500/hr, whereas the Fantrainer costs only $ 250/hr.
The fact that the NGT will be bought in large numbers by the leading air arm in NATO, will, if the Eaglet is selected, mean a breakthrough in acceptance of the Fantrainer concept. In order to convince the USAF that a ducted fan aircraft does indeed have jet-like handling characteristics, RFB was eager to tour the Us with the Fantrainer to have USAF officials fly the aircraft, and USAF technicians inspect it.

*Amongst the five US companies to have received a Request For Proposal (RFP) for the NGT, is Vought. In co-operation with RFB, Vought is now refining its entry, the Model 538 Eaglet.*




## Two months of touring the USA in a Fantrainer

On 5 September D-EATJ/No.D1 left Mönchengladbach for for Köln-Bonn. Its wings and horizontal stabilizer were seperated from the fuselage, and the Fantrainer was loaded on a Luftwaffe Transall, and flown to Dallas IAP, Texas, USA. At the Vought Corporation plant there, the aircraft was fitted together again, and some test flights were made, also to get FAA permission for this German registered prototype Fantrainer to make demonstration flights in the US.


## RFB AND FANTRAINER

Rheine Flugzeugbau is a subsidiary of VFW, and itself holds 100% of the stock of Sportavia-Pützer. The company's head office is located at Mönchengladbach, and plants are to be found at Mönchengladbach, Köln-Bonn, and Lübeck.

The history of the Fantrainer dates back to 1960, when RFB intorduced the ducted fan propulsion in the RF-1. Continuing the development of this propulsion system, two Caproni gliders were equipped with a ducted fan engine.
In the late 1960s, the idea rose to develop a ducted fan propulsion airplane: the Fanliner. Standard wings were used for the American Aviation AA-5 Traveller as well as the aircraft's steering system. An NSU Wankel engine was selected to propel the ducted fan.

In October 1973 Fanliner D-EJFL made its first flight and performed very well. However, problems occured when NSU stopped the Wankel engine project, and the AA-5 Traveller production rights were sold to Grumman. RFB decided to stop the Fanliner programme, and concentrated on a contract for the Luftwaffe to build two prototype Fantrainers, to meet the Luftwaffe requirement for a Piaggio P.149D replacement. One prototype (D-EATJ/No.D1), designated AWI-2, was powered by two NSU Wankel engines, and the other (D-EATI /No.D2), designated ATI-2, with one Allison 250-C20B 313kw (420shp) turboshaft. In 1978 D-EATJ was also equipped with an Allison engine, while D-EATI was lost in an accident.
Two months prior the US tour, D-EATJ was equipped with an uprated Allison 250-C30 448KW (600shp) turboshaft.

*Fantrainer D-EATJ in its Luftwaffe camouflage scheme on display at Hannover in May 1980.*


The tour had been arranged by Vought, whose test pilot Don Wilson had been checked out on the Fantrainer in Germany, and who instructed four other Vought pilots during the Fantrainer's initial flights from Dallas International Airport. The tour had a very tight schedule and required two pilots, while three more were checked out on the aircraft so that they could be on standby. To save costs and because Vought's pilots were familiar with American flying procedures, no RFB test pilots were used to fly the aircraft.
The first Air Force base visited by the Fantrainer was Wright Patterson AFB, Ohio. At Wright Patterson the Fantrainer was evaluated by the Aeronautical System Division (ASD). Although the Eaglet is still on the drawing boards, RFB and Vought were able to show the ASD technicians the jet handling characteristics of the ducted fan propulsion, characteristics which include:

- Speed and glide management with air brakes
  (No propellor brake effect)
- Symmetric flight
  (No propellor torque effect)
- Rudder is fully in normal airstream
  (No propellor-generated airflow over the rudder)
- Jet-like reaction with sudden application of power
  (No propellor-caused pitch-up effect)
- Time lag between the application of power and the start of the take off roll
  (No immediate propellor-generated thrust available. Like a jet engine, a ducted fan first needs to built up an airflow before it can deliver thrust)

From Wright Patterson AFB the tour continued to Andrews AFB, Maryland, to give Air Force officials from the Pentagon the opportunity to fly the Fantrainer. According to Mr.Hanno Fischer, RFB's chief engineer who accompanied the Fantrainer to Andrews AFB, here the Fantrainer was also tested on integrity. Out of a total of 50 demonstration flights flown from Andrews AFB, 25 had been flown by generals, some of which had lost some of their touch, and as a result the Fantrainer proved that it is able to sustain a series of bumpy landings.
The third and last station for the Fantrainer to visit was Randolph AFB, Texas, where the headquarters of USAF's Air Training Command is located. Within the tight time schedule of the tour, the Fantrainer had flown 117 demonstration flights with many USAF officials on board. The aim of the tour, to confront USAF officials with the Fantrainer's unique propulsion system, was fulfilled, and according to Mr.Hanno Fischer with success. This success was confirmed by a statement of an USAF official on the occasion of the completion of the tour: "The tour has been very positive for the

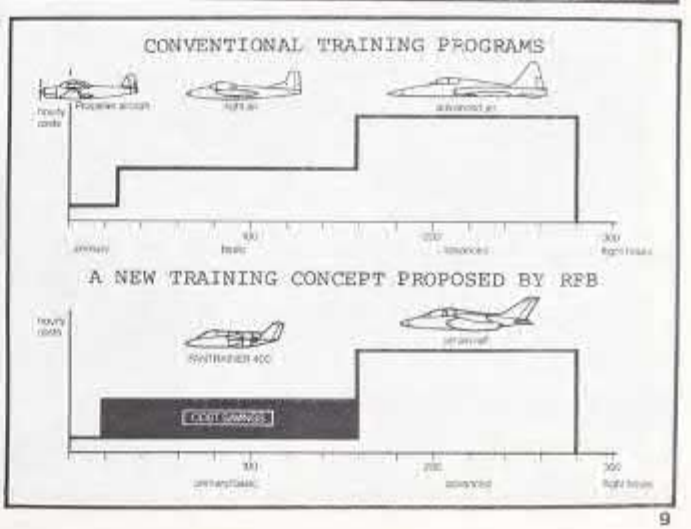
USAF. Several individuals commented that prior to the tour serious doubts existed as to the technical capabilities of the Fantrainer propulsion application to NGT and the liability of the program concept. The tour has very positively established the Vought/VFW program's technical credentials for the USAF NGT".

## Can Fantrainer break the tradition in jet pilot training ?

The NGT requirement is widely discussed in the US, and a mixture of problems is making the NGT a complicated affair. First of all there's the 'two-way street', the unwritten agreement between Europe and the US to buy each other's products. This made it possible for RFB and Dornier/Dassault (Alpha Jet) to enter the NGT competition. The US government added a problem by urging the USAF and USNavy to select a similar replacement in both the NGT and the VTX requirements (see FLASH Nr.122, P.8&9). Another major complication is the fact that changes in the jet pilot training syllabus are being considered. One of the reasons could be a new approach towards a training syllabus because of the Euro-NATO Joint Jet Pilot Training project. The latter complication adds an extra advantage for Rheine Flugzeugbau's Fantrainer concept. The Fantrainer not only offers jet flying against propellor operations costs, but also allows a complete innovation in jet combat, and military & commercial jet transport training. The most widely used jet training syllabus at the moment, comprises three phases. Phase One is the elementary training on a propellor aircraft, followed by Phase Two which entails basic training on a light jet aircraft, while Phase Three is advanced training on higher performance jet aircraft. Application of the Fantrainer concept allows the reduction of the training syllabus to two phases. The Fantrainer could be used as an elementary/basic trainer, after which the student would progress to only one more jet aircraft for advanced training.

According to Mr.Christof Fischer, jet pilots would no longer need to get their elementary training on a propellor aircraft. This would reduce costs and time otherwise needed to familiarize student pilots with specific flying characteristics of jet aircraft. This is why the Luftwaffe considered the Fantrainer as a potential replacement for the Piaggio P.149D. Lastyear, in a three-month's fly-off against the Beech T-34C Turbomentor and Pilatus PC-7 at Manching, the Fantrainer proved to offer the best value for money. With similar purchase and operating costs as the competitors, the Fantrainer additionally offers jet handling characteristics. The cockpit lay-out of the Fantrainer can be changed easily to be identical to advanced jet aircraft. Presently the cockpit lay-out is identical to that of the Alpha Jet. For German Air Force student pilots this would allow a smooth conversion from the Fantrainer to the Alpha Jet. The cockpit lay-out is easily replacable by a cockpit lay-out identical to an F-16, Tornado, or any other advanced jet aircraft.

Although RFB had the knowledge and capability to produce an all-plastic aircraft, the company was aware of the marketing problems such an aircraft would create. The propulsion system is a great innovation, which automatically raises questions on reliability. An all-plastic Fantrainer would reduce weight and costs but would make the aircraft nearly impossible to sell. Therefore RFB found a compromise in that the Fantrainer's fuselage was made of metal, and only the wings of plastic.
Even so, during the Fantrainer's tour of the US, a USAF officer knocked on the plastic wing of the aircraft, and a serious doubt marked his face, as he wondered how that plastic-winged aircraft could possibly replace the T-37. The incident is typical for the Fantrainer. RFB offers air forces a great innovation in jet pilot training, but because of this, will have to fight precedents. One thing is clear, RFB is one of the few companies which will benefit from the ever rising oil prices. JvT□

# Turkish air fo

**A photo report by AVIAPHOTOS**

(ESKISEHIR, TURKEY) Located be
the Turkish air force base Eski
is divided into the 1st Tactica
and the 3rd Tactical Air Force
ational air force units report
visitors attend Eskisehir.Based
craft for the command,and F-4E
Photos on this page were all mad
ber 1980, and show:

- Transall C.160D 030 (ex Luftw
- Lockheed T-33A 58-454
- Douglas C-47 TK-11
- Republic F-84G Thunderjet 109
- Lockheed T-33A 58-640 (ex Luf
- F-104S 6855 of 142 Filo (from
  is RF-4E 77-312 of 113 Filo w
- Beech T-11B Kansan '34' still


# rce pictorial

ween Ankara and Istanbul is
ehir.The Türk Hava Küvvetleri
Air Force based at Eskisehir
t Diyarbarkir.Since all oper-
to these two commands, many
at Eskisehir are liaison air-
nd RF-4E Phantoms of 113Filo.
at Eskisehir in late Septem-

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7 (preserved)
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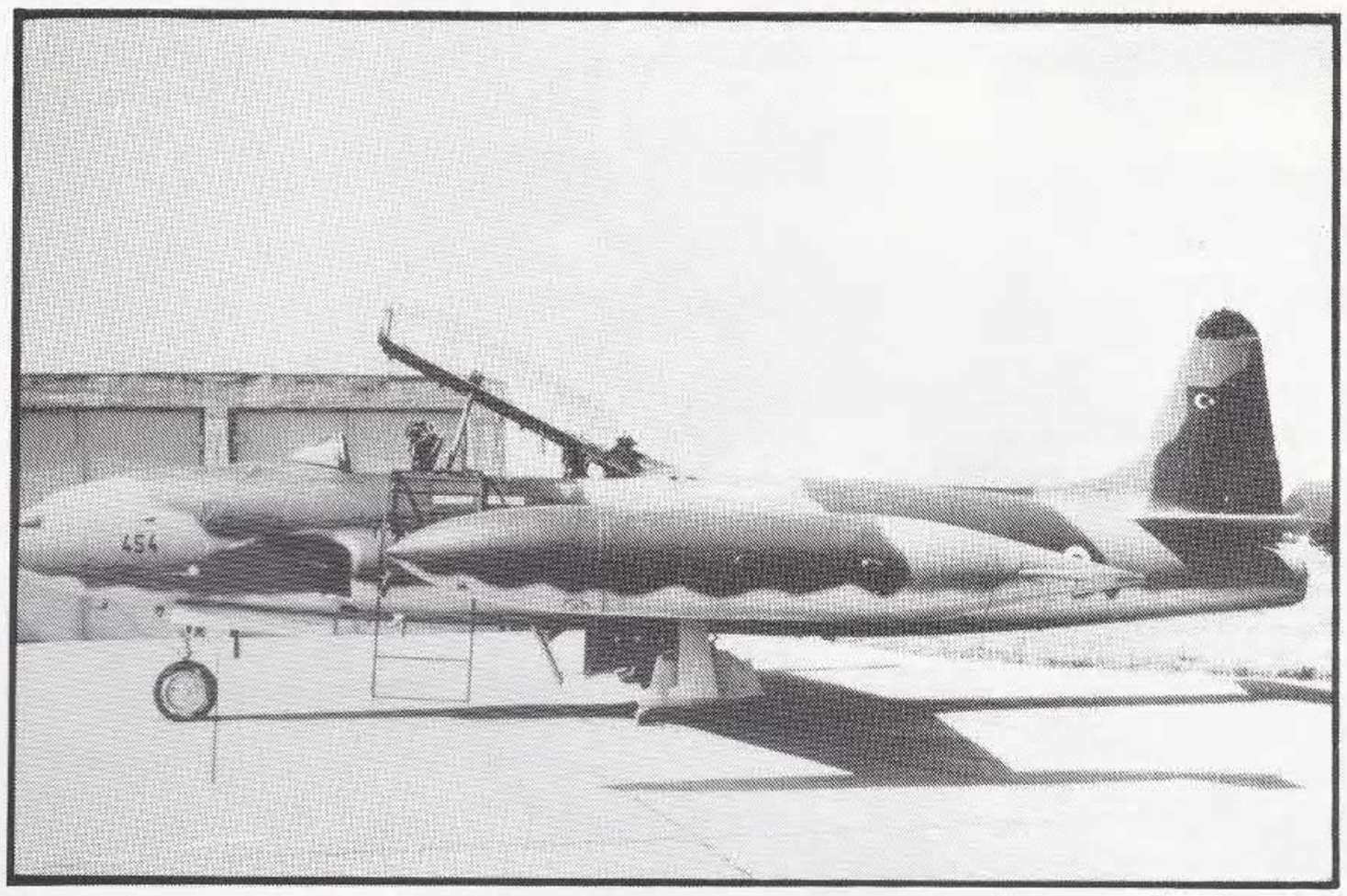
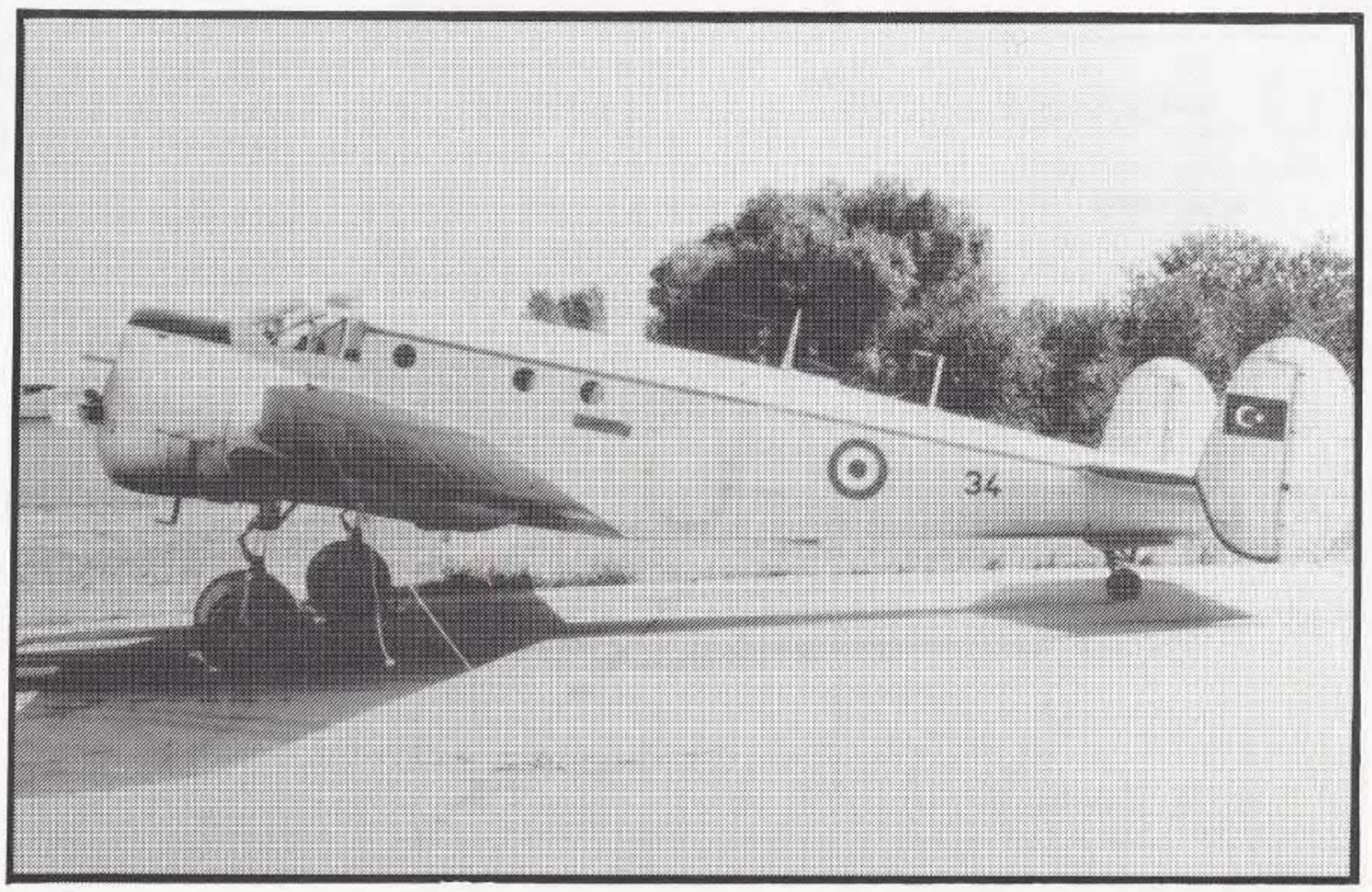
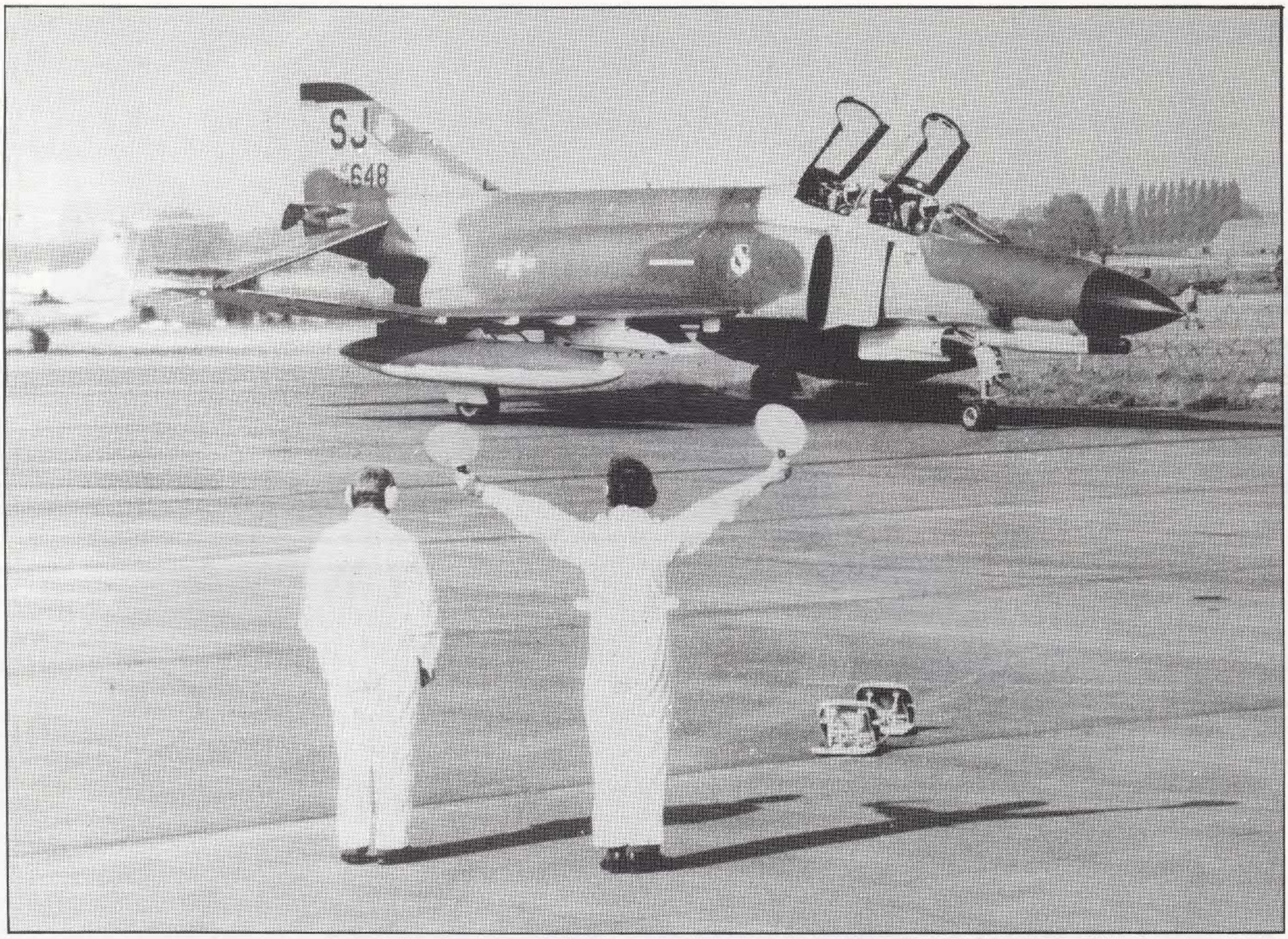
Mürted AB). In the background
ich is based at Eskisehir.
serving for liaison duties. □






*Attending the official inauguration ceremony of Autumn Forge 80, at RAF Gütersloh on 9 September, was F-4E Phantom SJ74-648 of 4TFW. On deployment at Ramstein, 48 F-4Es of 4TFW participated in Cold Fire 80.*

# Cold Fire seen from the planning side

(KALKAR & RHEINDAHLEN, W.GERMANY). Each year NATO conducts a series of exercises under code name Autumn Forge. The October issue (FLASH Nr.121, p.10-16) described three exercises of Autumn Forge 80. The reports described what happened resp. up in the air, out on the sea, and down in the field. But there was more to these exercises, and FLASH visited Kalkar and Rheindahlen to talk to NATO officers on how these exercises were coordinated.

## ATOC: NATO's nerve center for air operations

During Spearpoint 80, ATOC Kalkar supported the Blue Forces. Luftwaffe G-91Rs and F-4 Phantoms, USAFE A-10s and F-4 Phantoms were directed via an entry corridor into the battelfield area just south of Hannover, W.Germany. Unlike during normal routine air operations which fall under national command, Allied Tactical Operations Center (ATOC) is the responsible command organization during NATO exercises.

AAFCE comprises four ATOCs divided equally over 2nd and 4th ATAF. Because it was held in 2nd ATAF's operating area, Spearpoint was coordinated by ATOC Kalkar and ATOC Maastricht. During the most busy times of Spearpoint 80, every two minutes an aircraft entered the battle zone, via a narrow corridor. Within the zone the aircraft performed their mission and left via another corridor to return to their home base, sometimes running into a Combat Air Patrol (CAP) station of 'enemy' aircraft. Divided in Blue and Orange forces, the fighter aircraft supported the ground movements according to their assignment, which was received recently from one of 2nd ATAF's ATOCs.

ATOC assignments can originate from two sources. When it deals with offensive counter air, air interdiction, and air defence operations (see panel) it generally deals with requests for air operation from AAFCE, AFCENT or SHAPE command posts. The commands can issue a certain strategy, which, via the responsible ATAF, arrives at one of the ATOCs, depending on the nature of the operations. At the ATOC the requests are analysed and taskings are dispatched to the air force units responding to

## NATO AIR OPERATIONS TERMS

Offensive Counter Air
Attacks on enemy air bases, SAM sites, radar sites, or other important elements in order to eliminate the enemy air force.

Air Interdiction
Attacks on bridges or supply routes to stop reinforcements before they can be deployed.

Offensive Air Support
Operations in the battlefield zone, subdivided in:
- Close Air Support (with FAC assistance)
- Battlefield Interdiction (without FAC assistance)
- Tactical Air Reconnaissance

Air Defence
Operations to prevent enemy aircraft from entering friendly air space.

the ATOC. At squadron level the preparations for the aircraft missions are restricted to navigation and logistic problems only.

The other possibility for an ATOC assignment to originate is directly from the battlefield itself; this is generally a request for offensive air support. When a battlefield commander needs assistance of ground support aircraft, he contacts the ASOC (Air Support Operations Center) which is attached to his corps. The ASOC evaluates the request for air support and takes subsequent action, as not all ASOCs operate in a similar way. Normally an ASOC is attached to a corps and reports to an ATOC, but e.g. during Spearpoint 80, the Harrier Force was not tasked by an ATOC but directly by the ASOC attached to the 1st British Corps. Because of the mobility of such a unit, the ASOC can operate fairly independent and can form a direct link between an army corps and the Harrier Force itself. However, during Spearpoint 80 most air support requests came through the ASOC of the 1st British Army Corps, where they were selected and passed on to ATOC Kalkar and ATOC Maastricht, depending on whether the request came from Blue or Orange forces. Responsible for all G-91R, A-10 and F-4 Phantom operations was ATOC Kalkar, while all other types of aircraft (including USS Nimitz based aircraft) operated on assignment of ATOC Maastricht. This way ground forces were able to identify an aircraft over the battlefield as friend or foe by its type. ATOC Kalkar's air operations were in support of Blue forces, and ATOC Maastricht's air operations in support of Orange forces.

Adding target information, 1st BR Corps' ASOC passed on the request of the battlefield commander to one of the two ATOCs. Here the request was analysed and interpreted in order to select the most effective weapon system to fulfill the request. Having selected the weapon system taskings were dispatched to air force units responding to 2nd ATAF.

## RAF Germany's key role in Cold Fire 80

This year's Cold Fire was of special importance to RAF Germany, as it played a key role in the British sponsored field exercise Spearpoint. Nearly all air operations of 2nd ATAF conducted during Cold Fire concentrated on this exercise. A total number of 2,700 sorties was flown for Spearpoint, of which RAFG flew 1,100. In the rotation of nations contributing to the Northern Army Group it was the 1st British Corps' turn to sponsor a large scale field training exercise in 1980. The preparations for this exercise started two years ago, as Britain decided to have it coincide with the largest British reinforcement exercise ever held. Crusader 80, as the whole British exercise was called, comprised a reinforcement phase (Jog Trot) and a deployment phase (Spearpoint).

Because of its extent, the exercise required 400 to 600 air support operations per day. Since the organization was in the hands of the British, and Spearpoint coincided with Cold Fire, RAF Germany played a key role in Cold Fire 80.

In Spearpoint's battlefield zone RAFG's Harriers, Jaguars, and Buccaneers provided offensive air support, Harriers and Jaguars provided tactical air reconnaissance, while Wessex helicopters transported troops straight into the actual combat areas. In order to make RAFG able to generate the required amount of sorties, reinforcing squadrons deployed from the UK. No.1 Sqn (Harriers) operated out of RAF Gütersloh, No.54 Sqn (Jaguars) out of RAF Wildenrath, and 10 Wessex HC.2s of No.72 Sqn out of RAF Gütersloh.

The Harrier force of Nos.3 and 4 Sqn deployed out into the fields near Paderborn close to the combat areas of the Spearpoint exercise. Since the combat areas didn't shift too much the Harriers remained on their sites for the length of the exercise. Because of their positioning close to the combat zone, the Harrier force was directly tasked by the ASOC of the 1st British Corps. Again the concept of the Harrier proved successful, although younger pilots still seem to have navigation problems when returning from a sortie. As their landing sites are well camouflaged to prevent enemy detection, it is hard for the less experienced pilots to locate their landing site.

According to Sqn.Ldr. Beadnell, planning officer for Cold Fire, the exercise was a success within its limitations. Many of the planned sorties had to be cancelled or postponed as on two days there was heavy morning fog in the target area, and two other days heavy morning fog at the airfields. Since many military actions take place at sunrise, the aircraft were unable to fly their planned sorties.

Some were cancelled, while others were postponed till after 1100 hrs, by which time the morning fog had cleared.

Two factors determine the shape of an exercise like Cold Fire. Air space coordination is a key element of the planning phase because of a limited battle zone and because of the enormous amount of flight safety considerations become even more important. The other factor was the weather, which during Cold Fire 80 was as unpredictable as ever.

## Joint military-civil airlift practised furing Jog Trot

Objective of this exercise was to test how quickly and efficiently Britain can reinforce the 1st British Corps should a crisis arise. Part of Jog Trot was an airlift managed jointly by 38th Group Staff, British Airways and the Army movements organization. In 96 flights 14,029 troops were flown into RAF Gütersloh and Düsseldorf, West Germany, while in 85 flights 14,700 troops were flown back to the UK after participating in Spearpoint. The aircraft used for this joint military-civil airlift operation were RAF VC.10s, British Airways 737s, 747s, Super VC.10s and TriStars, and British Caledonian BAC 1-11s. No RAF Hercules participated because of other commitments.

As Jog Trot took place during the British summer holiday period (September) it took a lot of juggling and shuffling for British Airways and British Caledonian to have aircraft available for the airlift. This was mainly achieved by changing the aircraft's maintenance schedules, while British Airways withdrew three Super VC.10s from storage at Prestwick, Scotland. Of the 30,000 reinforcement troops, some 20,000 were drawn from the Territorial (reserve) Army. Because of their normal civilian work these troops had only limited time off to participate in Spearpoint and were therefore mainly moved by air. The peaks in air movements were subsequently in the weekends. On Friday 26 September when Spearpoint had ended and the reserves had to return to the UK to resume their civilian work on Monday, RAF Gütersloh dealt with 3,851 homeward bound troops between 0950 GMT and 2330 GMT. The airlift of these troops required 18 flights involving four 747s, four TriStars, one 737, five Super VC.10s and four RAF VC.10s.

Sqn.Ldr. Conners, planning officer of RAFG, said the airlift had worked very well. The weather was good, the aircraft remained serviceable, and only a few flights had some delay. To handle the wide-bodies of British Airways, the Air Handling Terminal at RAF Gütersloh had been upgraded to ensure rapid turnarounds. It had been projected that the turnaround time for a fully loaded Boeing 747 would be 45 minutes, with passengers and baggage disembarked in 25 minutes. In fact the disembarkment proved to be possible in 19 minutes.

The UK Government's estimate of the success of Crusader 80 was mentioned during question time in the House of Lords, when Lord Strathcona and Mount Royal, Minister of State for Defence, answered some questions from which it became apparent that the British Government considers that "the exercise did demonstrate that there is an ability to provide the necessary transport to do the kind of reinforcing which is required." JvT □

# AIRLINE NEWS

## Martinair Hadj flights: phase two

(SCHIPHOL, HOLLAND) The second phase of the Hadj flights which Martinair flew under subcontract to Garuda ended on 20 November when the last of 27,000 Hadjis was flown back to Indonesia. After a 12 day break, during which the Hadjis performed the religious duties associated with the Id al Adha, the Islamic holy week, Martinair started flying the Hadjis back to Medan and Surabaya on 26 October. 150 Martinair personnel were involved in the 72 flights which all went according to plan.
Contact between cabin crews and passengers was improved considerably by the fact that, for the first time since Martinair started flying Indonesian Hadjis, Indonesian air hostesses were employed for the duration. Fourty Indonesian hostesses with previous DC-10 experience were given two weeks of intensive training in Martinair procedures. The decision to employ these temporary hostesses was taken when it became apparent that the last summer holiday flights would overlap with the first few Hadj flights in late September, which would lead to a shortage of regularly employed (mainly Dutch) hostesses. An additional advantage was that the employment of Indonesian hostesses solved the language problem, which in previous years had been dealt with, less satisfactorily, with interpreters.
With reference to FLASH No.122, page 16, we have been told that Martinair's cargo flights to Hong Kong were operated by the single remaining available DC-10-30CF of the airline, and not by Boeing 707s of Korean Airlines.

## First AUA DC-9-80 delivered

(LONG BEACH, CA, USA) Austrian Airlines (AUA) took delivery of its first DC-9-80 on 3 October. The aircraft is the second of this version to be delivered to a costumer. AUA has eight DC-9-80s on order, for delivery by the end of 1983.

## Dan-Air plans to fly West Berlin-Amsterdam

(LONDON, UK) The CAA has given Dan-Air London permission to start services with BAC 1-11s between West Berlin and Amsterdam. If the French, US, and Soviet authorities, who together with the UK administer air traffic to West Berlin, approve of the plan, Dan Air will start operating the flights in April 1981. KLM and Lufthansa can not operate services between the two cities as Dutch and West German aircraft are not allowed to fly to West Berlin. Neither are any other aircraft except those belonging to the governments of, or registered in, the USA, USSR, France and UK.

## Aeral halts operations

(ROMA, ITALY) After 18 months of Cargo and passenger charter operations Aeral has had to stop flying because of financial difficulties. The company's management has blamed the Italian Ministry of Transport for its problems, stating that the Ministry had unjustly denied route licences to the company, and given them to foreign airlines instead. The Ministry of Transport, meanwhile, has indicated that a government take-over, or other financial backing, which would lead to a resumption of services, is unlikely. Aeral operated two DC-8s : I-ALEC, a DC-8-54F all-freight aircraft, which the company owns, and N9110V, a DC-8-55F convertible aircraft previously owned by Balair, and leased from Overseas National Airways. The latter was returned to its owner in September when Aeral could no longer pay for the lease.

*DC-10-30CF PH-MBN of Martinair taking off from Runway 01 Left, Schiphol, Holland, on 29 November for a scheduled cargo flight to Hong Kong and other Asian airports.*

## AIRLINE ACCIDENTS

A KOREAN Airlines Boeing 747 burnt out after a landing accident at Kimpo Airport, Seoul, South Korea on 19 November. The aircraft landed off or short of the runway after a GCA approach in thick morning fog. Apparently the outboard right hand engine struck a barrier. The undercarriage collapsed and fire broke out in the fuselage. Approximately 200 passengers and 14 crew were evacuated safely. Unfortunetaly six crew members, including the captain and co-pilot, and seven passengers died before they could be evacuated. The fuselage was destroyed beyond repair but the wings were reported to be virtually intact after the fire had been put out. This was the worst ever accident to happen at Kimpo Airport or involving a Korean Airlines aircraft.

The SAUDIA TriStar 200 which burnt out at Riyadh Airport on 19 August was HZ-AHK, and had been delivered a year earlier, in August 1979. Reports are still appearing which seem to shed more light on the course of events which led to the death of all 301 people on board. A pilot based at Riyadh has suggested that the aircraft stopped at the end of Runway 01 immediately after landing on that runway. After a short time the aircraft left the runway at the last exit, without backtracking, and taxied back (in direction 19) for a short distance over the parallel taxiway.

Another report, from the crew of an American registered DC-8 which was holding off Runway 01 for take-off clearance when HZ-AHK landed, says that they monitored the radio conversation between Riyadh tower and HZ-AHK, and that as soon as the TriStar halted its captain told the tower that things were under control and that he was ordering an emergency evacuation on the runway. The tower then advised him that a flight carrying a member or members of the Saudi Royal Family was waiting for take-off, and ordered or suggested that he clear the runway, which he, being a Saudi subject, did. These reports have neither been confirmed, nor denied by Saudi authorities.

## AIRLINE MARKET

AIRBUS sold eight A.300s during October, all to unannounced costumers. The first order was for three, the second one for five, the latter being converted options.

AIR PORTUGAL at last made official its order for three TriStar 500s in October. All three aircraft will be delivered in 1983. The airline also took out options on two more aircraft of the type for delivery in 1984. The TriStar 500s will operate services to Africa and the Americas replacing Boeing 707s, and the purchase costs will be partially offset by the promotion of sales of Portugese wines and machinery in the USA and Britain by Lockheed and engine supplier Rolls-Royce.

BRISTOW Helicopters ordered ten additional Sikorsky S.76s in September for delivery in 1983. The company, which operates scheduled and unscheduled oil field exploitation support flights in the North Sea and the Gulf of Mexico, now has thirty-eight S.76 delivered or on order. Total S.76 sales stood at 418 at the end of September.

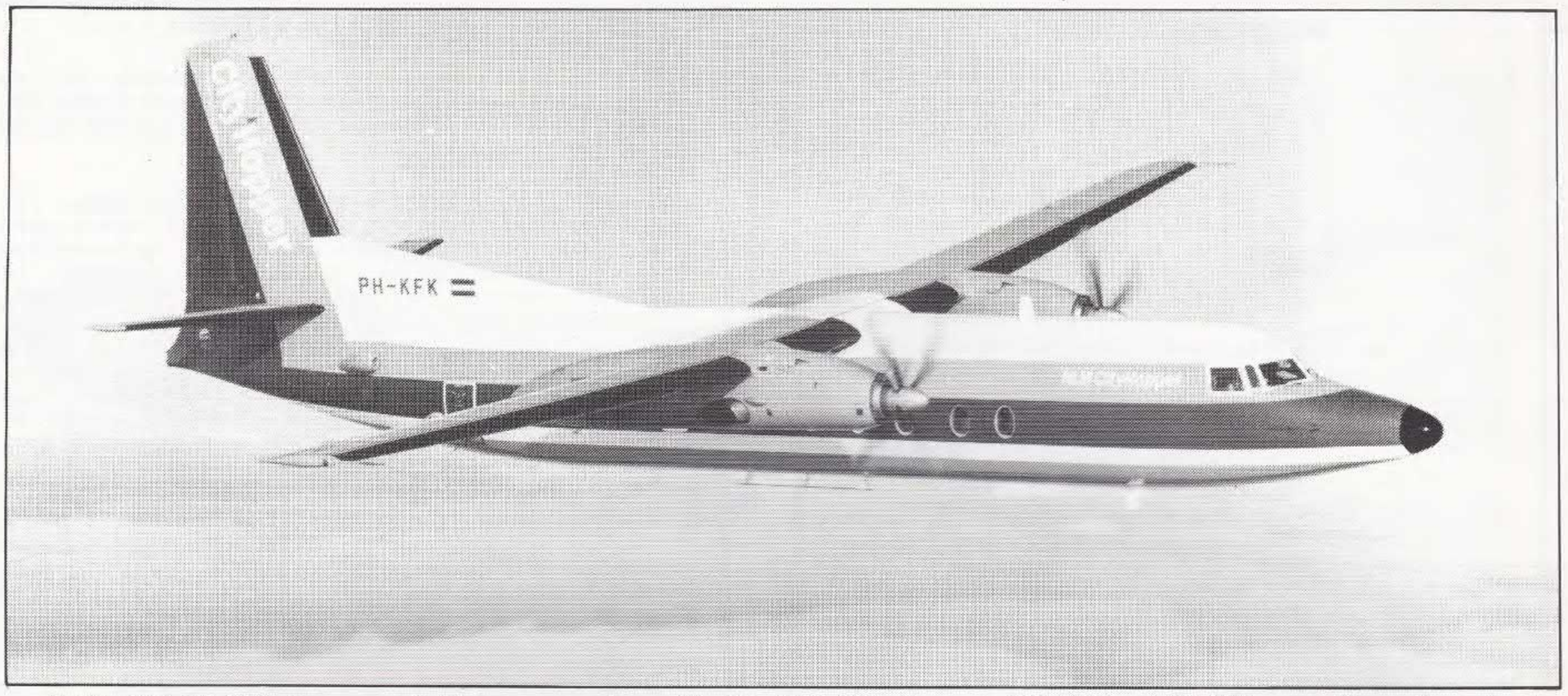
DELTA Airlines ordered sixty Boeing 757-232s on 14 November. Total value of the contract is expected to be more than $ 3 billion, which makes this the largest single order for civil aircraft in history. The aircraft will be delivered between late 1984 and 1990, replacing 727-200 series aircraft and DC-9s. Other 757 orders placed recently are three for Transbrasil and three for Aloha (Hawaii). Total orders stand at 112.

EL AL Israeli Airlines is leasing two Boeing 737-2M8s fitted with long range tanks from TEA ( Trans European Airways ) to replace the airline's two 720s on, among other routes, the Tel Aviv-Brussel-Amsterdam service.

JET CHARTER Airlines, based at Sydney, Australia, ordered four Shorts 330s in November. The first aircraft will be delivered in December, the other three during 1981.

OLYMPIC Airways, which uses two Boeing 747s on North Atlantic routes, intends to buy a second-hand 747 so that the airline can resume services to Australia. A fourth 747 will be bought new from Boeing in 1983.

*F.28-4000 PH-EXW of Fokker BV painted up in St. Nicholas colours for the arrival of the benevolent saint and his foreign assistant at the Fokker works at Schiphol-Oost on 29 November.*




*F.27-500 PH-KFK is one of three new aircraft for NLM-CityHopper (PH-KFI and PH-KFL are the other two), the first of which was delivered on 17 November. These 52-seat aircraft will replace 3 44-seat F.27-200s and 400s before the end of 1980. It has been reported that PH-ARO, the F.27-400 leased from Danish Aero Leasing will be returned to the owner, and that F.27-200 PH-KFD has been sold to Cimber Air. (Fokker BV)*

## American Airbus A.300 operations

(BLAGNAC, FRANCE) Eastern Airlines are preparing for A.300 services between New York/La Guardia and Washington/National Airports. National Airport lies near the Washington, DC city centre and up to now no wide-body aircraft have been allowed to use the airport. However, recently the FAA decided, against protests from the US Airline Pilots Association (ALPA), to allow L.1011 TriStars, DC-10s, A.300s, as well as Boeing 767s and A.310s into National Airport from 1 January 1981. The ALPA claims that wide-body aircraft would cause excessive wake turbulence, but the FAA has announced that the standard seperation of 3 miles between aircraft will be increased to 5 miles behind wide-bodies. The other ALPA claim is that in bad weather one of the approach patterns to the airfield is "one of the most difficult and demanding approaches in the US". To what extent wide-bodies would be more affected by this circumstance is not clear.

The increasing interest in the A.300 in North and, especially, South America has led to an improvement in maintenance support for the type in the area. British Aerospace, Inc., at Washington/Dulles Airport, is setting up a spares centre to support A.300s in North and Central America, while Eastern Airlines is offering A.300 maintenance facilities to other American airlines. VARIG operates an A.300 of Cruzeiro do Sul into Miami, the Eastern Airlines home base, and will receive two A.300s of their own by June 1982 (see Airliner Market).

Meanwhile, on the other side of the Pacific, Toa Domestic Airlines (TDA), so far the only Japanese airline to have ordered the A.300, recently took delivery of their first aircraft out of an order for nine A.300B2-200s. TDA have adopted a new colour scheme for their A.300s, which incorporates the multi-colour scheme of F-BUAD, the manufacturer's demonstrator, superimposed by TDA titling and logo. □

*F.27-200 G-BHMZ of Air UK seen at Leeds-Bradford Airport, U.K., in September. A massive migration of F.27s from TAT to Air UK has been taking place over 1980, which is a result of Air UK's decision to standardize on the F.27, and TAT's to standardize on the FH.227. G-BHMZ is the former F-GBRY, and it didn't spend much time with TAT.* *(Don Murgatroyd)*

# Independent and specialized

MIDDLE: Aer Turas CL.44J EI-BGO making a hot (no-flaps) crew training approach to Runway 26, Dublin Airport, shortly after delivery to the airline in May 1979. Aer Turas flies general cargo charters, but specializes in livestock flights. In late July 1980 EI-BGO flew a single load of sheep from Mineral'nyye Vody, USSR to Delhi, India.
TOP: Transmeridian Air Cargo's CL.44-O N447T, seen at Luqa, Malta in November 1977. The aircraft was converted to carry larger than usual cargos.
(J. Visanich/Aviation Photos International)
BOTTOM: DC-8-55F A40-PA, leased by CargOman from Air Gabon since early 1977, seen at Schiphol, Holland in August 1978. This privately owned airline operates only this aircraft on general cargo flights between the Arab Gulf and Europe.


# The Tomahawk's teething troubles have been solved

It is strange how things can go ; negative reactions to a newly introduced aircraft are spread and talked about all over the world within second, while positive reactions are submerged in the flow of negative ones, and surface only years after.

## Rumours caused a decrease in Tomahawk sales

The latter is the main reason for the drop of interest in the Piper Tomahawk. It was said that the noise level in the cockpit was too high, the propellor-to-ground distance too small, the door latches too weak and its T-tail would break off in flight. This, added to the temporary suspension of airworthiness of the Tomahawk ( a half year after introduction in 1978 ) due to failures of the Slick magnetos installed in the engine, caused the closing of the European production line and the 75% decrease in aircraft production at Lockhaven ( Pennsylvania, USA ) over 1978-1980.

Indeed, some of the rumours were true; e.g. a different nose gear has been installed in new aircraft and the door latches have been improved too, but these changes were due to the teething troubles which every aircraft has, but became more apparent as the Tomahawk was a completely new concept on the market. Or, to be precise, a completely new concept as far as the T-tail was concerned, an application which hadn't been used before on any such light aircraft when the Tomahawk was introduced, but had been tested extensively by Piper and NASA. The Tomahawk was and is fully approved by the Federal Aviation Administration in both the normal and the utility catagories for intentional spins. It is not for us to say whether the aircraft is capable or uncapable, unsafe or safe, therefore we decided to publish a flight report by Mr.N. van de Mortel, chief instructor of the Stichting Vliegmaterieel Rotterdam (Aeroclub Rotterdam) in which he describes his experiences with the Tomahawk.

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*Top: PH-EDY, PA-38-112 in the Flite Center colour scheme, at Lelystad recently.*

*1980-built PH-TMG has been used at Hilversum for some time. This picture clearly shows the T-tail.*

## 600 hours on the Tomahawk

**A report by N. van de Mortel**

When the Tomahawk was introduced here in Holland a few years ago, one could soon hear that the kite wasn't as good an aircraft as the manufacturer pretended. People, who in a spare moment had had a brief look at the cockpit or had been told about it by others, felt qualified to sum up so many disadvantages, that it seemed that the aircraft might well be a very dangerous machine, and certainly not be suitable for training purposes.
It is not my intention to review all the disadvantages that have been mentioned and to refute them one by one. I will only give a brief description of the aircraft, a description which is based on the six hundred hours of instruction flying I referred to above. Afterwards the reader can judge for himself.

Walking up to the aircraft one's attention is immediately attracted to the slim T-tail. Although this doesn't look strong, tests and practical experience have shown that in fact it is very strong. Furthermore, the Tomahawk has a long, rather slim wing, which is responsible for the aircraft's good flying characteristics, especially at low speed, more about which below. Apart from this it is an ordinary low-wing monoplane. When boarding one's attention is drawn to the large doors, which have latches which, one might think, wouldn't last a day. But make no mistake about it, they work perfectly and have never given any grounds for complaints. (Later Tomahawks, however, have improved door latches -ed.) The next thing one sees is the really excellent cockpit lay-out. This has always been one of the Piper hallmarks, but this time perfection seems to have been achieved.
As soon as the engine is running one notices that the noise level is quite high, but not so high as to be a distraction. Taxying is a very straightforward operation, thanks to the very direct nosewheel steering; when turning one has to give the appropriate pedal a fair kick. Take-off proceeds normally, not unlike any other light aircraft, although it must be said that, when a rough stretch of grass is used, a lot of noise is made by the nosewheel. Later Tomahawks have a different nosewheel leg fitted, which solves the problem. Climb-out after take-off is normally at the rate of 500 to 700 ft. per minute at 75 knots. During the climb-out one can already luxuriate in the fantastic all-round view. A fighter pilot would be jealous. A negative point is the trimming system, which is effective enough, but reacts rather slowly, because it does not use a trim tab but by means of springs. In horizontal flight a comfortable cruise speed lies between 90 and 95 knots. The aircraft flies smoothly at this speed, and stability has been well designed: nicely stable but still sensitive to steering. Also when entering or leaving a turn the firm use of the feet is still necessary. Up to now, then, we are not dealing with anything unusual, except for the view from the cockpit and its lay-out. The exceptional quality of this aircraft lies in its flying characteristics at low speed. This is the only modern trainer that I know, which has stall characteristics such as they ought to be according to the textbooks. When instructing, it is possible to show, without cheating a little, that the ailerons lose in effectiveness as one slows down and even, near stalling speed, start to have inverted effect. A neat recovery from a stall requires some skill, while recovery is also fairly easy even if little care is applied; it does look pretty messy then, though. In both cases loss of altitude is very limited.

The spin, which because of the aircraft's forgiving behaviour will never happen by accident, and which can only be entered deliberately, proceeds entirely according to the book. Even more interestingly, after countering the spin with the rudder the aircraft keeps spinning for a very short time and then stops abruptly; rudder back to centre and it's all over. Should one be much late in centering the rudder, there certainly won't follow a spin in the other direction; no, one will just leave the spin in a somewhat lopsided attitude. Afterwards it will become clear that loss of altitude was only some 100 to 150 ft per 360° . Before we take a closer look at the landing it would be a good idea to discuss the flaps. They are very effective, but it is odd that the horizontal stall speed virtually does not change when flaps are applied. According to the type's handbook the difference is one knot. Of course this makes it a very safe aircraft, but people who want to progress from the Tomahawk should realize that many aircraft react differently. All kinds of landings are easy if one is easily pleased with oneself. For those, who are a bit more critical about their own performance it can be a real sport in itself to make neatly polished landings.

In conclusion I would like to make the following remarks: the Tomahawk is a very safe training aircraft; it is easy to fly; it is difficult enough to require some effort to be flown smoothly; it shows up pilot mistakes immediatly, but does not punish them. It is a very attractive trainer and the little aerodynamic noise which it does produce, as well as the slowly reacting trimming system are well compensated by the low price.

## Flite Centers set up in the Benelux

Some readers might find that the Tomahawk has been described in quite positive terms in this article, and they might wonder why the Stichting Vliegmaterieel Rotterdam currently hasn't any Tomahawks in its inventory anymore. There were various reasons for phasing out the three Tomahawks, according to N. van de Mortel. In the first place each had flown a few thousand hours annually, and therefore had to be replaced, as the aeroclub continually updates its aircraft. In this case they sold the aircraft almost at the original purchase price. Secondly the aeroclub has always been in favour of French built aircraft, and also required aerobatic capabilities. Thus cheaper Robin 2112s have been bought instead of new Tomahawks.
Currently the Piper distributor in the Benelux, New European Air Services, is setting up Flite Centers based on the Tomahawk, proving that Piper is still confident of the aircraft's primary role, flight training.

CvdH

*One way of publicity attraction is demonstrated by this Belgian Tomahawk. The aircraft was placed in the town centre of Spa, Belgium two years ago and people were asked to name the differences between the two sides of the aircraft shown here.*


*PH-HAC is the only Aerostar flying in Holland. Designed by Ted Smith, production is now in the hands of Piper.*

# Netherlands European Air Services has grown up

Netherlands European Air Services recently took over the service centre from Schreiner. This move came a few years after the Dutch sales rights had moved from Schreiner to the same company.
So now Netherlands European Air Services is able to serve and maintain aircraft, as well as selling Piper aircraft and spare parts. Having this large range of services, the only four and a half years old company can be considered to have "grown up".

## A new hangar to house Cheyenne IIIs

The service centre of Schreiner was taken over by Netherlands European Air Services on 1 November. The company felt the need for a service centre at their homebase, Rotterdam, when it became apparent that sales of Piper aircraft were increasing. Rotterdam airport was also choosen as the company expects that the airfield will become the business centre of Holland as Schiphol is likely to increase their facilities for airliners only.
The service centre at Rotterdam, however, will be temporary only, as the Netherlands European Air Services is to rebuild part of their hangar in which currently the Stichting Vliegmaterieel Rotterdam ( Aeroclub Rotterdam ) and KLM Aerocarto are situated. One half of the hangar will become higher and larger and will house the sales department, spare parts storage and service centre. The rebuilt hangar is likely to be taken in use at Netherlands European Air Services' fifth anniversary, during May next year, and the company will then be able to serve aircraft as large as Cheyenne IIIs, and Super King Airs.

Netherlands European Air Services is owned half by the Moorkens group and half by Moorkens group subsidiary New European Air Services. The former company is specialised in vehicles, from scooters to cars, boats, and planes since the latter became a member of the Moorkens group. New European Air Services is the distributor of Piper aircraft for the Benelux, and currently sells more than fifty aircraft annually. This year twenty of these were sold via Netherlands European Air Services in Holland, six of them being variants of the well-known Navajo twin. Mr. Frank Surrink of the Dutch company said that their main income comes from their sales activities, and most profitable for them are twins, like the Navajo and Cheyenne.

## Prices for 1981 will be up twelve percent

Furthermore he stated that seventy to eighty percent of the current twin market in Europe is in hands of Piper. Therefore Mr. Surrink trusted that next year will be profitable too, although prices of the Piper aircraft will increase by twelve percent. "We have to sell as much as this year if we want continue existing. " Mr. Surrink added when asked what 1981 will bring: " Anticipating orders from costumers we already ordered 1981 models of the Tomahawk, Archer, Warrior, Seneca, Seminole, Arrow, Dakota, Saratoga and Cheyenne. "

Apart from the new service centre, Netherlands European Air Services is continuing its previous activities, which means importing, selling, servicing King and Collins avionics, and Rolls-Royce and Lycoming engines, all of which are used in Piper aircraft. The company, for example, regularly delivers spare parts to missionary organisations in Africa which are related to the Netherlands.
Concerning spare parts, and now maintenance too, a computer unit is used, which guarentees efficient service. Service is the key word in the company's name, and the word has been applied very well in all activities of the Netherlands European Air Services. It is the main tribute to their succes, which is happening in spite of, or perhaps because of, these times in which everyone is being much more careful in choosing where to spend one's money.

CvdH □

# DUTCH REGISTER - OCTOBER 1980


*G-COCO (ex PH-SMO) is one of many Dutch Cessnas sold to the UK.*


*New Navajo PH-JGM was present, as N3534U, at the Rotterdam air show recently.*

| Reg. | | Type | C/n | Remarks | |
|---|---|---|---|---|---|
| PH-ASH | 2157 | Reims Cessna FRA.150L | 0239 | A.J. de Graaf | to Stichting Aerobatics |
| PH-CAT | 2435 | Cessna 182P | 182-64129 | Air Service Holland BV | to Card & Giftshop Utr. |
| PH-CEW | 1960 | Reims Cessna F.150L | 0826 | Air Service Holland BV | to G-BIFT dd16/10 (out) |
| PH-CEZ | 1963 | Reims Cessna F.150L | 0829 | Air Service Holland BV | to G-BIFY dd16/10 (out) |
| PH-DAK | 3082 | Piper PA-28-236 Dakota | 28-8011110 | Netherlands European Air S. BV | ex N1267, OO-HKA (new) |
| PH-EVF | 3081 | Reims Cessna F.152 | 1770 | Air Service Holland BV | ex PH-AYI (III) (new) |
| PH-HHE | 2600 | Reims Cessna F.172N | 1617 | Stichting Vliegschool Schiphol | to J.W.van der Vlies . |
| PH-ILT | 2757 | Dasssault Mystere 10 | 1 | Philips' Gloeilampenfabrieken NV | to Dassault 30/10 (out) |
| PH-IBU | 2753 | Morane Sauln.Ralley 235E | 13125 | Ralley Flight Centre BV | to Aviation FrancaiseBV |
| PH-JGM | 3083 | Piper PA-31 | 31-8012077 | ERDNA BV | ex N3534U (new) |
| PH-KFK | 3079 | Fokker F.27-500 | 10605 | Fokker BV | (new) |
| PH-KFL | 3080 | Fokker F.27-500 | 10606 | Fokker BV | (new) |
| PH-LDB | 2847 | Piper PA-28-181 | 28-7990353 | Mondileder BV | crashed 20/9 Hilv.(out) |
| PH-LEB | 2847 | Reims Cessna F.150M | 1353 | Stichting Vliegmaterieel Lelystad | crashed 4/10 Dront.(out) |
| PH-LOO | 2993 | Reims Cessna FRA.150M | 0282 | Air Service Holland BV | to OO-KWE 8/10/80 (out) |
| PH-PLO | 2361 | Reims Cessna F.172M | 1370 | Air Service Holland BV | to Aero Materials Ass. |
| PH-RCF | 3078 | Reims Cessna F.172N | 2034 | Air Service Holland BV | ex PH-AYO (III) (new) |
| PH-RLC | 685 | SAAB S.91D Safir | 91.369 | Directie Rijksluchtvaartschool | stored (out) |
| PH-SMO | 2376 | Reims Cessna F.172M | 1373 | Seine Meubelen | to Air Service Holland. |
| PH-SMO | 2376 | Reims Cessna F.172M | 1373 | Air Service Holland BV | to G-COCO (out) |
| PH-SRG | 2031 | Robin DR.400/160 | 807 | W.J.Muilwijk & G.E.v.d.PLas | to N.A. Smith |
| PH-TGA | 2690 | Reims Cessna F.150M | 1394 | Air Service Holland BV | to Aero Company TeugeBV |
| PH-YET | 2660 | Reims Cessna FRA.150M | 0312 | General Package NL | to Central Air Teuge BV |
| PH-364 | 1195 | Ka 6 E | 4171 | Eerste Zaanse Zweefvliegclub | to J.J. Bekker |
| PH-368 | 1199 | AS-K 13 | 13064 | Eerste Limburgse Zweefvliegclub | (out) |
| PH-411 | 1574 | AS-K 13 | 13202 | Koninklijke Nederlandse Ver.v.L. | to Gilzer Lvc Illustrious |
| PH-697 | 3086 | Grob G.103 Twin 2 | 3577 | Zeeland Soaring BV | (new) |

*The clean lines of PH-LDB have unfortunately been disturbed by an accident at Hilversum airfield, Holland,*

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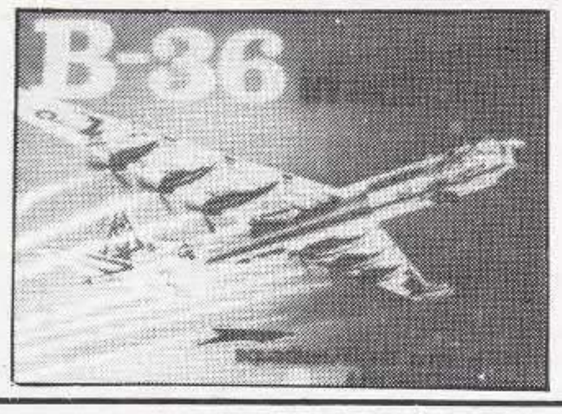


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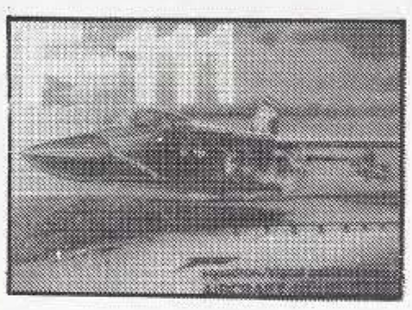

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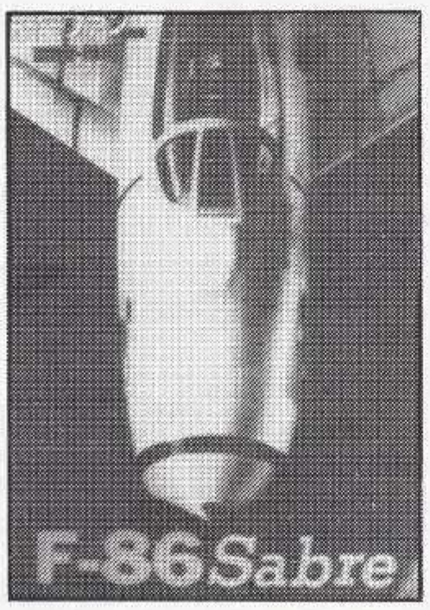


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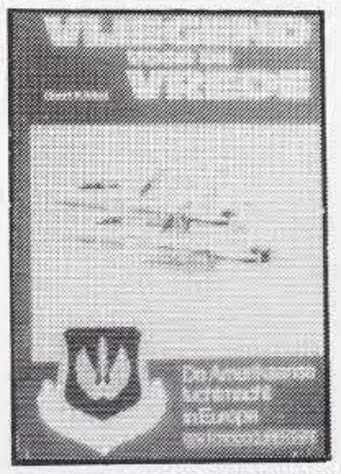


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