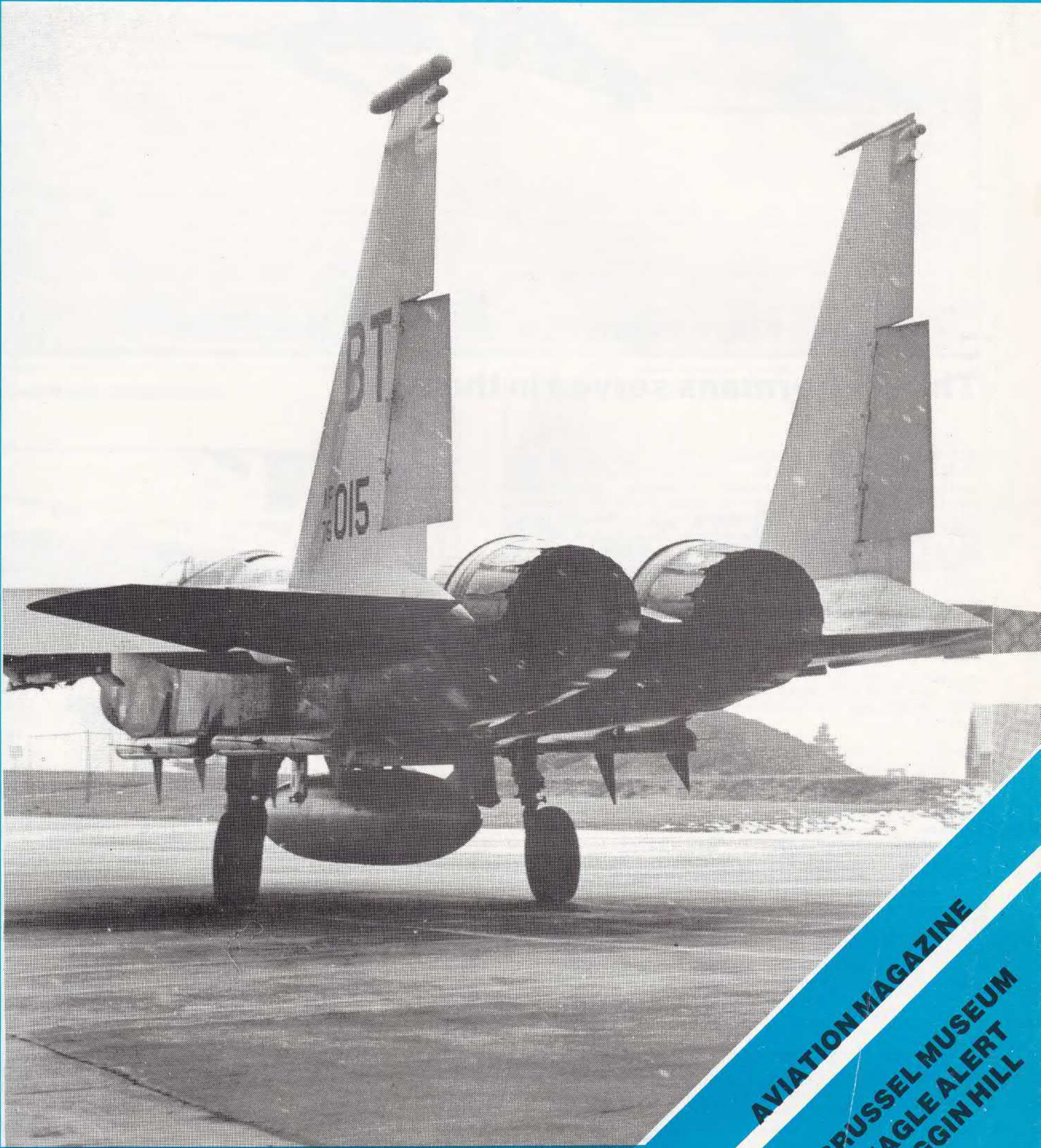


MARCH 1981

FLASH



AVIATION MAGAZINE

BRUSSEL MUSEUM
EAGLE ALERT
BIGGIN HILL



Thirsty Germans served in the air

A photo report by Andre Wilderdijk

RAF Fairford, UK, 15 January 1981. Boeing KC-135A 10318, call-sign Drum 53. Take-off 10.45, flight endurance 4 hrs 45. Route: Norfolk, North Sea, Belgium, Luxembourg, West Germany. Target: "Sandy". Spangdahlem AB, West Germany, 15 January 1981. F-4F Phantom IIs 37+52 and 38+52, call-signs Weasel 25 and 26. Weather: heavy clouds and snow. Target: "Sandy".

"Sandy" is a refuelling area over West Germany, and it was over this area that the three aircraft took a drink together. Undoubtedly they made a toast to one of the first in-flight refuelling missions of a German Jagdgeschwader's aircraft. The two Phantoms were from JG.74 at Neuburg but had landed at Spangdahlem to pick up two USAF pilots.

With a German pilot in the front and a USAF pilot of the 52nd TFW in the back seat, the pair of Phantoms went to "Sandy". At a speed of 750 km/h and a height of 28,000 ft (8500 meters) the USAF pilots instructed their colleagues in in-flight refuelling with a USAF KC-135. Several times the aircraft caught up with the KC-135, refuelled and detached themselves, to familiarize the German pilots with this, for them, new type of flying.

Until now the only known experience of German pilots with in-flight refuelling was when JABOG36, also equipped with Phantoms, crossed the Atlantic with destination CFB Goose Bay, Canada, last year.
CvdH□



COVER PHOTO Two Pratt & Whitney F.100s and F-15A Eagle BT76-015. Captain Dan Griffin, 22TFS, taxiing out in the snow at Bitburg air base during a Tango Alert Scramble. Visible on the photo are the AIM-7 Sparrow radar-guided missiles and a 2727 litre center-line tank. (For a full report see page 14, 15 & 16)

EDITORIAL

Re-engining: big business

What is consumed in vast quantities by engines and what is so expensive these days? The answer is fuel, the lifeline of aviation. A lifeline, though, that is causing aviation big problems.

For airlines the fuel costs rose from 10% of operating costs in the early '70s to the 30% of today. The forecast for airlines is that the fuel prices will increase to 60% of the operating costs by the mid '80s. In Fiscal 1972 the US Air Force flew 5.5 million hours for 2.77 dollar-cents a litre. The forecast for Fiscal 1982 is 3.4 million hours for 33.55 dollar cents a litre.

Fuel price increases in many cases did not keep pace with other economic developments, and created serious problems for large fuel consumers such as operators of aircraft.

Expectations are that fuel prices will keep increasing. For air forces it will no longer be possible to pass these extra costs on to the taxpayers. For airlines it will no longer be possible to pass these on to the passenger or shipper. For the general aviation operator the competition with more conventional means of transport will become dramatic.

Efficient fuel consumption is the only possible solution and as this has been realized, an enormous amount of activities has been initiated in this field. One airline recently studied the possibility of reducing the amount of Coke served aboard. This would allow the reduction of the amount of water carried for the onboard toilets, saving \$1000 in fuel on a transatlantic flight. This is one example of efficiency. Re-engining is another.

CFM International has calculated that based on an aircraft utilization rate of 3,000 hours per year, the re-equipment of a DC-8 with four CFM-56 engines saves 396,000 litres per year. Airlines operating this kind of older aircraft may not be able to purchase new highly efficient airliners. For these companies the investment in the re-engining of a 707 or DC-8 costs \$ 45,000- 60,000 per seat, whereas any new aircraft would take an investment of \$ 100,000 - 150,000 per seat. The CFM-56 saves 13% fuel over conventional engines in the 100 kN (12,000 lbs) - 150 kN (33,000 lbs) thrust range. A similar development is not unthinkable in the future for the 200 kN (44,000 lbs) - 250 kN (55,000 lbs) thrust range. Powered by the current engines in this latter range, the wide-bodies are immense consumers of fuel. New engines saving up to 10% will undoubtedly be commercially attractive to replace the current engines.

While the search for engines consuming less fuel is of high priority for the airlines, the air forces are looking for engines delivering more thrust. More thrust increases manoeuvrability and weapon load. More thrust means a better thrust-to-weight ratio, so for equal thrust the engine can be lighter.

If engine technology keeps developing this way, which is very likely because of the emphasis in this field, the engine might very well assume more importance than even the aircraft itself. American Airlines already proved this trend in early January by selecting the P&W 2037 engine for a short to medium haul airliner without specifying the airframe. Late January American Airlines announced the selection of Boeing 757s, to be equipped with the engine. Compared with American's 727s, the combination 757/PW2037 is claimed to save 40% fuel.

JvT

Another way of saving fuel.....



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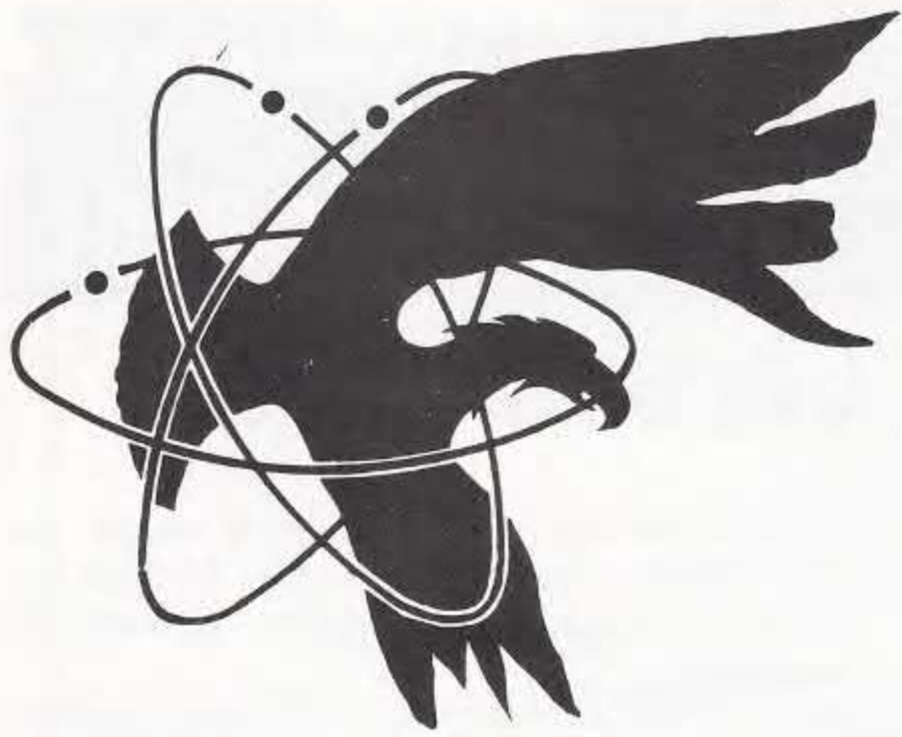
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MILITARY AVIATION NEWS

Sikorsky's Huey successor progresses into service

(STRATFORD, CONNECTICUT, USA) The second major US Army aviation unit to receive the Sikorsky UH-60A Black Hawk, the 82nd Combat Aviation Battalion, took delivery of its first two examples recently. In a ceremony at Fort Bragg, North Carolina, USA, the HQ of the 82nd Airborne Division, the parent organization of 82 CAB, on 9 January, the two aircraft were handed over by Sikorsky. In all thirty UH-60As will equip 82 CAB's Alpha and Bravo Companies. The two aircraft of 82 CAB brought the number of Black Hawks delivered to the US Army to 105, out of a total requirement for 1100. These will at least partially replace the US Army's smaller UH-1H 'Hueys'.

The UH-60A is already in service with the famous 101st Air Assault (Airborne) Division, which has been engaged in proving the Black Hawk's capabilities in various hot climates, in Panama, Puerto Rico, and, most recently, in Egypt. The Egyptian experience was gained during a joint exercise of the Egyptian army and the USA's tri-service Rapid Deployment Force (RDF), last December. A number of useful points arose about desert warfare, and modifications which would make the UH-60A more effective in the desert would include solid or self-sealing tyres. Several UH-60As suffered tyre punctures when making rolling landings on stony soil.

The Black Hawk will need better protection against sand ingestion and rotor-blade erosion, long-range HF radio in addition to the present UHF radio (because of the long distances involved), and Doppler or even satellite-aided navigation as well as night-vision (infra-red) equipment. Navigation in the desert is made very difficult by the absence of almost everything (except sand and rocks).

First of three F.27-200 Maritimes of the Philippine Air Force (Hukbong Himpapawid Ng Pilipinas), flying over a wintry Dutch coastline recently, wearing temporary registration marks. The aircraft left for the Philippines via Athens, Greece, on 9 February as 10602 (Fokker BV)

FROM A FACILE PEN.....

NEW U-2 VERSION FOR NASA

The seemingly immortal Lockheed U-2 family has spawned a new version for research work by NASA's Ames Center in California, the Lockheed ER-2. ER stands for Earth Resources. The single aircraft will be delivered in April, and may remain in service beyond 2001. It is equipped with cameras, an imaging radar, and "other sensors".

JAPANESE 'AGGRESSOR' TRAINING UNIT FORMED

The Japanese Air Self Defense Force is following a US and Canadian example in setting up a squadron which will provide opponents for dissimilar air combat training (DACT). Initial equipment will be five Mitsubishi T-2As and two Lockheed T-33As. It is not clear which Soviet type the T-33As are supposed to simulate.

F-16/101 TESTS RESUMED

The F-16/101 grounding was lifted on 31 January. As reported in FLASH, February 1981, page 5, the tests were halted on 7 January after the prototype, 75-745, made an engine-out landing due to a fuel leak. The F101 engine was originally developed for the Rockwell B-1A.

USAF F-16s AND ANG A-10s DEPLOY TO EUROPE

General Dynamics F-16s of 388 TFW, Hill AFB, Utah deployed to Norway between 23 February and 19 March for Exercise Blackhill. This is the first operational deployment of USAF F-16s to Europe.

Fairchild A-10As of the New York ANG were due to deploy to Lechfeld, West Germany, on 28 February, and to return to Syracuse, NY on 14 March.

FRENCH MILITARY XINGUS ORDERED

An order for forty-one EMBREAR EMB.121 Xingus was placed by the French government in late January. The French-assembled Xingus will be used by the Armée de l'air (twenty-five aircraft) and the Aéronavale (sixteen aircraft) as multi-engine pilot trainers. The first delivery is expected in May.



RAF Chinook arrival leads to fleet changes

(RAF HIGH WYCOMBE, UK/RHEINDAHLEN, W. GERMANY) The entry into service of the RAF's Chinook HC.1s, at least five of which have now arrived by ship via Southampton, UK and Rotterdam, Holland, is leading to big changes in the helicopter fleet of the RAF:

- Wessex HC.2-equipped No.18 Sqn has been replaced at RAF Gütersloh, W. Germany by the Puma HC.1s of No.230 Sqn. No.18 Sqn has been disbanded and will be re-formed on Chinook HC.1s at RAF Odiham, UK late in 1981, to return to Germany.
- The Wessex HC.2s of the former No.18 Sqn have been re-assigned to other Wessex units. Wessex helicopters will replace most remaining Whirlwind HAR.10s before the end of 1981. No.84 Sqn in Cyprus is re-equipping at the moment, and the SAR Training Squadron (SARTS) at RAF Valley, UK has already done so. No.22 Sqn will follow suit. No.2 FTS and No.32 Sqn may also replace their few Whirlwinds with Wessex helicopters, but will certainly phase out their Whirlwinds by December 1981.

- No.72 Sqn is moving with its Wessex HC.2s from Odiham to RAF Benson, UK later this year. No plans to re-equip on another type of helicopter have been announced yet, but since there are thirty-three Chinook HC.1s on order, and only one squadron (No.18) has as yet been announced as a Chinook recipient, it is not unlikely that No.72 Sqn or one of the two Puma squadrons will get Chinooks. In the latter case, No.72 Sqn may get Pumas.

- The first Chinook HC.1 of No.240 OCU at Odiham, ZA672, was taken on charge by the OCU's Chinook Flight on 2 December 1980.

Neptune scrambled after hoax distress call

(DEN HAAG, HOLLAND) A 320 Sqn SP-2H Neptune was scrambled from MVK Valkenburg, Holland on 18 February after a distress call had been received on a 27 MC (Dutch citizens band radio) frequency. A number of boats also responded to assist a fishing vessel which apparently had broken up on a dam in the Nieuwe Waterweg, the channel between Rotterdam and Hoek van Holland. After an hour it became clear that it was all a hoax. A 17 year old youth was later interviewed by police.

A Dutch navy spokesman later commented that this

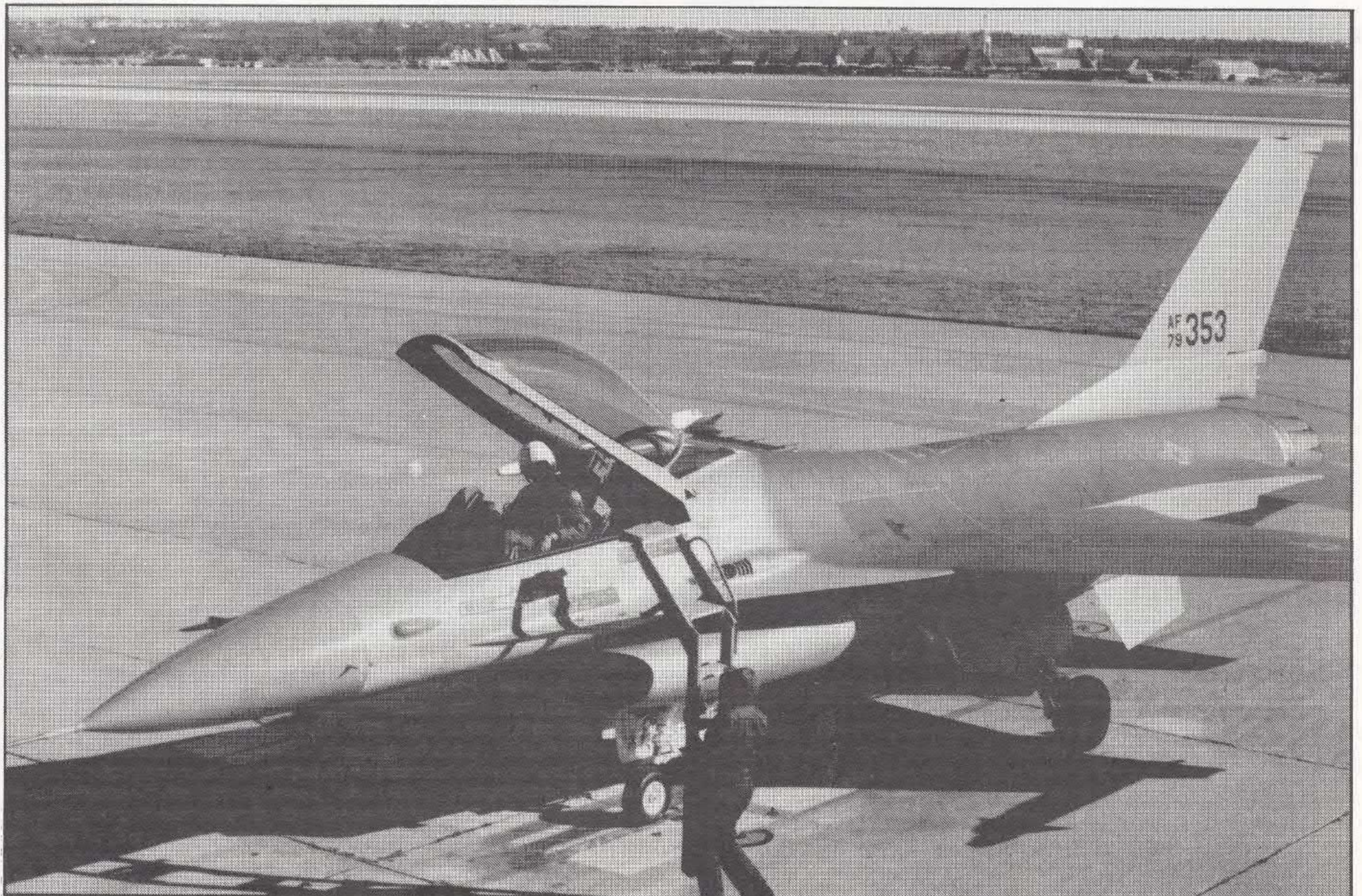


Tornado 43+12 landing at Manching after its first flight on 30 October 1980. This is the twelfth production aircraft for the German military, and the first strike (as opposed to dual-control trainer) aircraft off the German production line.

Service aircrew training started at the Tri-national Tornado Training Establishment (TTTE), RAF Cottesmore, UK on 5 January. The TTTE is equipped with British and German Tornados only for the time being, as no Italian production Tornados have been delivered yet. RAF Cottesmore is the first air base in Britain at which Luftwaffe aircraft and crews are stationed without being war booty... (MBB)

kind of false alarm is rare, and that in the event of a distress call one doesn't hesitate in reacting. It is not a Dutch navy responsibility to check the genuineness of distress calls.

The 300th General Dynamics-built F-16, F-16A 79-353, was delivered to 56 TFW, MacDill AFB, FL last December. This photo, taken at Fort Worth, TX, clearly shows why the F-16 offers the pilot such an excellent view, which is so important in an air-to-air fighter. The pilot sits on top rather than in the aircraft, increasing the distance between his eyes and the lower edge of the canopy. F-16s from 388 TFW, Hill AFB are deploying to Norway in early March. (General Dynamics)



Military news

● Two new Sikorsky models achieved programme milestones recently. On 13 December 1980 the first production CH-53E Super Stallion made its first flight at Stratford, Connecticut. The aircraft, serialled 161179, was handed over to the Naval Air Test Center (NATC) at NAS Patuxent River on 17 December. The USNavy wants sixteen CH-53Es for e.g. "ship-to-ship and ship-to-shore logistics" and mine-sweeping. The USMC, which was due to receive 161180 recently, requires thirty-three Super Stallions for tactical airlift, mostly in the marine assault role.

On 6 February the first YEH-60B Stand-Off Target Acquisition System helicopter lifted off from Stratford for the first time. The SOTAS comprises a helicopter platform for a large rotating radar antenna in a housing not unlike the OV-1 Mohawk's. The EH-60B is derived from the UH-60A Black Hawk.

Two new RNFAA squadrons

(RNAS YEOVILTON, UK) Two new Fleet Air Arm (FAA) first-line squadrons were commissioned recently. On 27 January No.815 Sqn, most famous from the Taranto, Italy, attack on the Italian fleet in 1940, was re-formed after fourteen years in limbo. The squadron is now the parent unit for twenty-three ship-based Lynx HAS.2 Flights. Another twenty-eight Flights are planned, most of which presumably for a second first-line parent squadron. No.815 Sqn takes over this first-line role from No.702 Sqn, which remains active as a small training unit. Both Nos.815 and 702 Sqns are headquartered at RNAS Yeovilton, and will move to RNAS Portland late in 1982.

On 26 February the third first-line Sea Harrier squadron was commissioned. It is No.801 Sqn, which number has not been used since July 1970. The unit, headquartered at RNAS Yeovilton, will be ship-based at HMS Invincible, replacing No.800 Sqn, which moves to HMS Hermes.

Bolivian Friendships delivered

(SCHIPHOL/DEN HAAG, HOLLAND) An export license was granted to the Bolivian government by the Dutch minister of economic affairs for the export of two F.27-400QC Friendships. The two aircraft left Woensdrecht air base, Holland, where they had been stored pending the granting of an export license, for Bolivia on 7 February. As reported in FLASH, January 1981, page 5, the two aircraft, TAM-94 and TAM-95 (not TAM-96 as previously reported), are destined for Transportes Aéreos Militares, the Bolivian air force's domestic airline. Problems arose in Dutch parliament over the possible use of the Bolivian military government might have for these aircraft. Apparently these problems have now been resolved, but the Dutch ministry of economic affairs refuses to discuss individual export licences. There has been little protest or publicity about the departure of the two Friendships to Bolivia.

NATO's first E-3A rolled out . . . again

(SEATTLE, WASHINGTON STATE, USA) NATO's first Boeing E-3A, serialled 79-442, was rolled out at Boeing's Seattle works on 27 January. The airframe had been built in Renton and fitted with its rotodome (rotating radome) at Seattle, and now looks pretty complete. Nevertheless it will take almost a year from March 1981 for Dornier at Oberpfaffenhofen, West Germany, to complete the installation and testing of more equipment, before the aircraft can be delivered to NATO at Geilenkirchen air base, West Germany. Another seventeen E-3As are to follow 79-442.

The green Hunter's active c

(FARNBOROUGH, UK) The Hawker Siddeley Hunter is still in extensive use in the United Kingdom. The Hunter was recently needed to replace the newer, but non-flying Buccaneer. The old Hunter is also needed to gain experience on the latest technologies, like the green coloured Hunter T.12 XE531.

This 25 year old Hunter operates for the Royal Aircraft Establishment (RAE) at Farnborough as Active Control Technology testbed. XE531 is currently flying with an Active Control System (ACS) and an F-16 Fighting Falcon side stick installed. Through the installation of these systems, the RAE is able to get experience with the 'fly-by-wire' system. 'Fly-by-wire' is a flight control system with electric signalling. Thus no mechanical connection exists between the cockpit flying controls and the control surfaces. The fly-by-wire system is already in use in the F-16 which resulted in a considerable reduction in weight.

The fly-by-wire system is likely to be used extensively in future fighters and therefore the RAE installed the ACS and F-16 side stick in XE531 to do research in "task orientated control stick shaping, and gain experience concerning optimal controller (the control system -ed.) design and ergonomic operations." The RAE, in other words, tests the aircraft on its behaviour operating the ACS and F-16 stick, as well as taking a look at the best position of the stick.

Fly by wire flight controls on the one hand, conventional controls on the other

This stick was installed at the right hand pilot station, from which position the aircraft can be flown from take-off to landing in the fly-by-wire mode. The aircraft has a 3-axis analogue quadruplex fly-by-wire flight control system. The system was designed to survive two failures in any one of the aircraft axes. In the event of a third failure automatic reversion to the basic Hunter flight control system at the left hand seat controls occurs. The reversion from fly-by-wire (RH seat) to the standard controls (LH seat) and the other way around is possible at all times during flight, as long as the aircraft is flown by two pilots.

According to Mr. Fulham of RAE, it would have been nice to do the research with a Phantom, but the RAE has only a limited budget, and cannot afford to convert a Phantom. Therefore the Hunter was chosen for this side stick project, as XE531 was already flying in fly-by-wire configuration, so at the minimum of costs an aircraft was available.

SCOPE OF TESTS

The assessment and development of the ACS was arranged in a task orientated manner around 5 sets of manoeuvres which were developed in simulation so as to permit identical formats to be flown in XE 531. These manoeuvres were:

1. General Manoeuvre.
2. Ground handling and take-off.
3. Air to air manoeuvring and tracking tasks.
4. Air to ground manoeuvres and tracking tasks.
5. Approach and landing.

FOR SALE : Patch collector disposing of large part of collection, USAF, USNavy, and USMC, including rare items. International Reply Coupon for list to: Mr.M.W.McClelland, 37 Beards Road, Park Lands, Fremington, Barnstable, Devon EX31 2NT, England.

control system tested



XE531 originally was built as a Hunter F.6, but was converted to a T.Mk.12 doubleseater (using a T.Mk.7 cockpit) for the RAE in 1967. Phase one flight tests with ACS equipment were completed on 26th August 1978. The ACS was removed prior to a 'minor' service inspection lasting 18 months, due to limited manpower and the installation of the F-16 side stick. On 19 February, last year, the Hunter was delivered to Holme-upon-Spalding Moor to conduct phase two of the project. From September to December the aircraft received a second 'minor' servicing at RAE, and this year phase two was continued. XE531 has since been flying in a

rigid configuration, and the Hunter will conclude the first part of excessive analogue fly-by-wire flights during this summer.

When asked why the F-16 stick was used, Mr. Fulham of RAE told FLASH that the RAE's intention was not to show how good the F-16 stick is, but, he said, the stick is a good example of a forced side-arm flight controller. The basic investigations into controller design, like the research into the implications of using a forced stick, is expected to show results on a long term basis, Mr. Fulham added.

CvdH □

SPOTTER'S DAY of the Aviation Society of the Netherlands

This event will take place on Sunday 26 April in the hall of Speelvereniging 'Jeugdvermaak', Kruisweg 812A, De Hoek (a village between Hoofddorp and Schiphol Airport).

The aim is to bring spotters from the entire

country in contact with each other, and to enable them to exchange information, photographs, slides, etc. In the afternoon a number of slide shows will be given, and in the evening guests will be able to show their own slides.

The hall will be open between 1300 hrs and midnight. The entry fee is DFL 2.50 per person, although accompanying ladies needn't pay this. Drinks and food will be available.



It's (air) show time again

More and more dates for air shows, Fly-Ins and Meetings in 1981 are being set. The dates of events currently available, are included in these pages. Name of the event, place and telephone numbers (to check whether the show will go on) are included, as is sometimes a description of the event.

When the prefix 'P' is given to an event, it can be counted on to be open to the general public. For all other events which you may want to attend, please check if the show is open to the public.

More about international shows and meetings will be published in our news columns before the shows are actually taking place.

It's show time again: we wish you a pleasant and interesting season, have a nice time!

FINLAND

May 1981

- P 10 Helsingin Ik. air show
Helsinki=Malmin airport (90-647022/185)
- P 17 Keski-Suomen Ilm. airshow
Jyväskylän airport (941-25 2331)
- P 17 Kouvolan Iy. air show
Selänpään airport Tai Utti (951-10 88 4)
- P 17 Lahden Ik. air show
Vesivehmaa airport (918-62 6375)
- P 23 Pohjois-Satakunnan Ik. air show
Jämijärvi airport (921-72 5240)
- P 24 Hyvinkään Ik. air show
Hyvinkää airport (914-17 47 2)
- P 31 Joensuun Ik. air show
Joensuu airport (973-23 72 7)
- P 31 Kajaanin Ik. air show
Paltaniemen airport (986-24 41 1)

June 1981

- P 07 Etelä-Pohjanmaan Ilmailukerho air show
Ilmajoen airfield (964-58 56 8)
- P 19 Suomussalmen Ik. air show
Suomussalmi Ämmänsaaren airf. (987-11 26 4)
- P 06 Suupohjan Lk. air show
Kauhajoki airport (963-11 01 1)
- P 07 Tampereen Iy. air show
Tampere Pirkkalan airport (931-33 10 0)
- P 13-14 Turun Ik. air show
Oripää airport
- P 28 Varkauden Lk. air show
Joroinen Varkauden airfield (972- 29 11)

July 1981

- P 05 Kärämäen Nuorisoilma air show
Kärämäki airport (984-61 13 6)
- P 12 Kivijärven Ik. air show
Kivijärvi airfield (944-89 10 8)
- P 15 Imatran Ik. air show
Imatra Immolan airport (954-31866/460)

FRANCE

May 1981

- P 31 Meeting nationaux
BA Metz (Paris '533 74 90 ext.41-14)

June 1981

- P 04-14 34e Salon International de l'Aéronautique
et de l'Espace
Le Bourget, Paris
Public days: 6,7,8,10,13 and 14 June
- 04-14 Transatlantic race Paris -New York- Paris
Le Bourget, Paris (0 0331/651 65 50)
- 13-15 11th International Cognac Rally
F-16103 Cognac
- 14-05 4th Transeuropean glider rally Angers-Fa-
yence-Varese-Maria Zell-Angers (2760 km)
- P 21 Meeting nationaux
BA Chateauroux (Paris 533 74 90 ext.41-14)
- 27-28 Fly-In for police officers to Chavenay
F-78450 Chavenay

July 1981

- 19-31 European women's championship gliding
Mantes-Cherence

GERMANY

May 1981

- P 16-17 Flugtag Babenhausen
6113 Babenhausen
- P 17 USAF Open day Rhein Main
Rhein Main AB
- P 30-31 Flugtag Braunfels
6333 Braunfels (0 64 42/56 20)
- P 31 Flugtag Schameder
5927 Schameder (0 27 51/30 31)
- P 31 Flugtag Bad Neuenahr-Ahrweiler
5483 Bad Neuenahr (0 26 41/2 64 43)

June 1981

- 06-08 Int. hot air balloon comp. "Montgolfiade".
4400 Münster Telgte
- 06-08 Gas balloon nightcomp. "Carl-Götze -Pokal"
4000 Düsseldorf
- P 07 Flugtag glider field Gründtstadt
2844 Quernheimer Berg (0 63 59/31 00)
- 12-14 5th International "Wein und Burgerflug"
together with 1st helicopter-rally
5240 Betzdorf-Kirchen
- 13-14 18th Allgäu-Flug Leutkirch-Unterzeil
7970 Leutkirch (0 75 61/47 82)
- P 13 Tiger Meet Open Day Bitburg, USAF
5520 Bitburg AB
- 17-21 German hang gliding championship
reserve dates 26 to 28 June
- 17-20 European powered glider fly in
6250 Limburg-Elz (0 64 31/55 11)
- 20-09 Glider "Blockmeisterschaften der FAI-kl."
6694 Marpingen
- 20-21 Niedersachsen-Rally
2900 Oldenburg (0 44 81/ 4 61)
- P 21 USAF open day Sembach
6751 Sembach AB
- P 21 Flugtag, see 17 June, at Limburg Elz
6250 Limburg-Elz (0 64 31/51320)
- 24-28 "Deutschlandflug", Braunschweig-Straubing
3300 Braunschweig
- 25-28 German championship group parachuting
- 26-12 Glider "Blockmeisterschaften" Hessen
6300 Giessen
- P 28 Flugtag gliding field Welzheim
7063 Welzheim (0 71 81/60 72 30)



P 28 Flugtag Vilshofen
8358 Vilshofen/Donau (0 85 41/84 76)

July 1981

03-05 "Hobbyflug 1981" Homebuilt Meeting
7600 Offenburg (0 2 61/3 70 51)

P 04 RAF open day Brüggen/20 sqn reunion
4057 Brüggen

05 Flugtag Am Waldhorn
6120 Michelstadt (0 61 64/22 14)

05 Flugtag glider field Dorsten
4270 Dorsten (0 2 01/18 44 463)

06-12 German powered glider championship (Int.)
8553 Ebermanstadt/Burg Feuerstein

10-12 Hot air balloon comp. "Pilskronen-Cup"
4600 Dortmund

11-12 5th Intern. senior comp. target-paradropping
3101 Meissendorf

11-12 South East German cross country
7928 Giengen an der Brenz (0 73 22/72 95)

11-12 Emslandflug 81
Rheine-Eschendorf (0 59 71/7 05 30)

11-26 Glider national championship, Hessen (FAI).
Breitscheid

P 12 Flugtag Giengen/Brenz, re-opening field
7928 Giengen an der Brenz (0 73 22/72 95)

18-19 Bavarian powered aircraft competition
8850 Donauwörth

19 Flugtag Mont-Royal
5580 Traben-Trarbach (0 65 41/10 05)

23-02 7th Leverkusener glider comp. flights
5090 Leverkusen (0 2 14/43 334)

P 25-26 Flugtag Hienheim/800th anniv. Kelheim
8420 Kelheim (0 94 45/74 60)

25-02 Glider oldtimer meeting
8553 Burg Feuerstein (0 62 41/2 49 01)

25-09 Glider "Blockmeisterschaften" Berlin
FAI class, Club class and two-seaters
3062 Bückeberg-Weinberg

P 26 USAF Open day Spangdahlem
5561 Spangdahlem AB

HOLLAND

May 1981

16 AOPA Netherlands Fly-In, Lelystad-Eelde
Lelystad and Eelde (0 59 78/60 13)

23 ISACAR Rally (reserve date 24 May)

P 28-30 NVAV Fly-In, homebuilts & antiques
Lelystad airfield (0 30/93 76 28)

June 1981

14-28 Dutch gliding competition, 15m class
Terlet/ Arnhem

July 1981

06-18 Dutch gliding competition, Standard class
Malden/Nijmegen

IRELAND

June 1981

06-07 Ballooning Summer Get-Together
Furness, Kells, Co. Kildare (01-696757)

07 Leinster Aero Club "At home"
Gowran Grange, Naas (01-504601)

P 14 Cork Air Display and Fly-In
Bandon airfield (021-822381)

26-28 Kinair 81-Kilkenny Int. Air Rally and Race
Kilkenny Airport (056-22036)

Show time

11-12 National Aerobatics Competition
unknown (01-976729)

31-02 Castlebar Fly-In
Castlebar, Co. Mayo (094-22007)

UNITED KINGDOM

April 1981

05 Daffodil Rally / Lunch Patrol
Finmere, Bucks. (0 28 06/207)

12 Jodel Fly-In
Popham Airf. near Winchester (02 56 75/733)

P 20 Shuttleworth Flying Day
Old Warden, Biggleswade, Beds (07 67 27/288)

26 P.F.A. Fly-In (Wessex Strut)
Henstridge airf. Somerset (63223/63 215)

P 31 Shuttleworth Flying Day
Old Warden, Biggleswade, Beds (07 67 27/288)

May 1981

03 Vintage aircraft Club Gemini Patrol
Finmere, Bucks. (0 28/06 207)

P 03 P.F.A. NW Strut 1981 Fly-In
Manchester, Barton (02 70/63 930)

P 08-09 CSE Open Day
Oxford (086 75/43 21)

09-10 Flower Fly-In
Fenland Airf., Spalding, Lincs. (09 45/28 91)

10 British Aircraft Fly-In
Popham Airf. near Winchester (02 56 75/733)

P 23-24 RAF Mildenhall Air Fete
RAF Mildenhall (71 25 11 ext. 26 54)

23-25 Vintage Aircraft Club Spring Camp
Boston, Lincs. (0 28 06/207)

24-25 Navy Days HM Dockyard, Chatham
Chatham, Kent (0935/840551 ext 548)

28 Families Day HMS Osprey
Portland, Dorset (0935/840551 ext 548)

P 29 Shuttleworth Flying Day
Old Warden, Biggleswade, Beds (07 67 27/288)

P 31 Manchester Air Show
Manchester, Barton (061/789-47 85)

June 1981

P 05-07 Air Fair Gamston
Gamston (05 32/46 96 11)

P 06 Shuttleworth Flying Evening
Old Warden, Biggleswade, Beds (07 67 27/288)

P 06 Air Day HMS Gannet
Prestwick Airport (0935/840551 ext 548)

06-07 Navy Days HM Naval Dockyard, Rosyth
Rosyth, Scotland (0935/840551 ext 548)

P 07 Vintage Aircraft Club Fly-In
Finmere, Bucks (0 28 06/207)

12-14 Northumbria International Air Rally
Newcastle upon Tyne (06 32/86 13 21)

P 13 Open Day RNAY Fleetlands
Gosport, Hants (0935/840551 ext 548)

14 Vintage Aircraft Club Picnic
Shotteswell, near Banburg, Oxon. (028 06/207)

P 21 Nottingham International Air Display
Tollerton (053/759 34 84)

P 27-28 International Air Tattoo 81
RAF Greenham Common (06 35/300 60)

P 28 Shuttleworth Flying Day
Old Warden, Biggleswade, Beds (07 67 27/288)

July 1981

P 04 Shuttleworth Flying Evening
Old Warden, Biggleswade, Beds (07 67 28/288)

P 04-05 Popular Flying Association Rally
Leicester East Aerodrome (07 917/61616)

10-12 Isle of Man International Air Rally
Ronaldsway (06 24 82/33 11)

P 12 International Fly-In, Air Britain and
Shuttleworth Special Flying Event
Old Warden, Biggleswade, Beds (07 67 27/288)

12 Strawberry Fly-In
Fenland Airf. Spalding, Lincs (09 45/28 91)

12 Biplane Fly-In, Recreational Flying Club.
Popham airf. near Winchester (02 56 75/733)

P 18 USAF Upper Heyford Open Day
RAF Upper Heyford

P 18 Air Day HMS Daedalus
Lee-on Solent, Hants (0935 840551 ext 548)

P 18-19 Open Days Portland Naval Base
Portland, Dorset (0935 840551 ext 548)

P 26 Shuttleworth Flying Day
Old Warden, Biggleswade, Beds (07 67 27/288)

P 26 Air Day: Cornwall Flying Club
Bodmin airfield (02 08 82/419)

P 29 Air Day RNAS Culdrose
Helston, Cornwall (0935 840551 ext 548)



SAAB J-32D Lansen 13-11, serial 32607, at Malsmlätt, the satellite base of F-13 at Norrköping/Bravalla.

Lansen to set world record

A photo report by Jan Schets

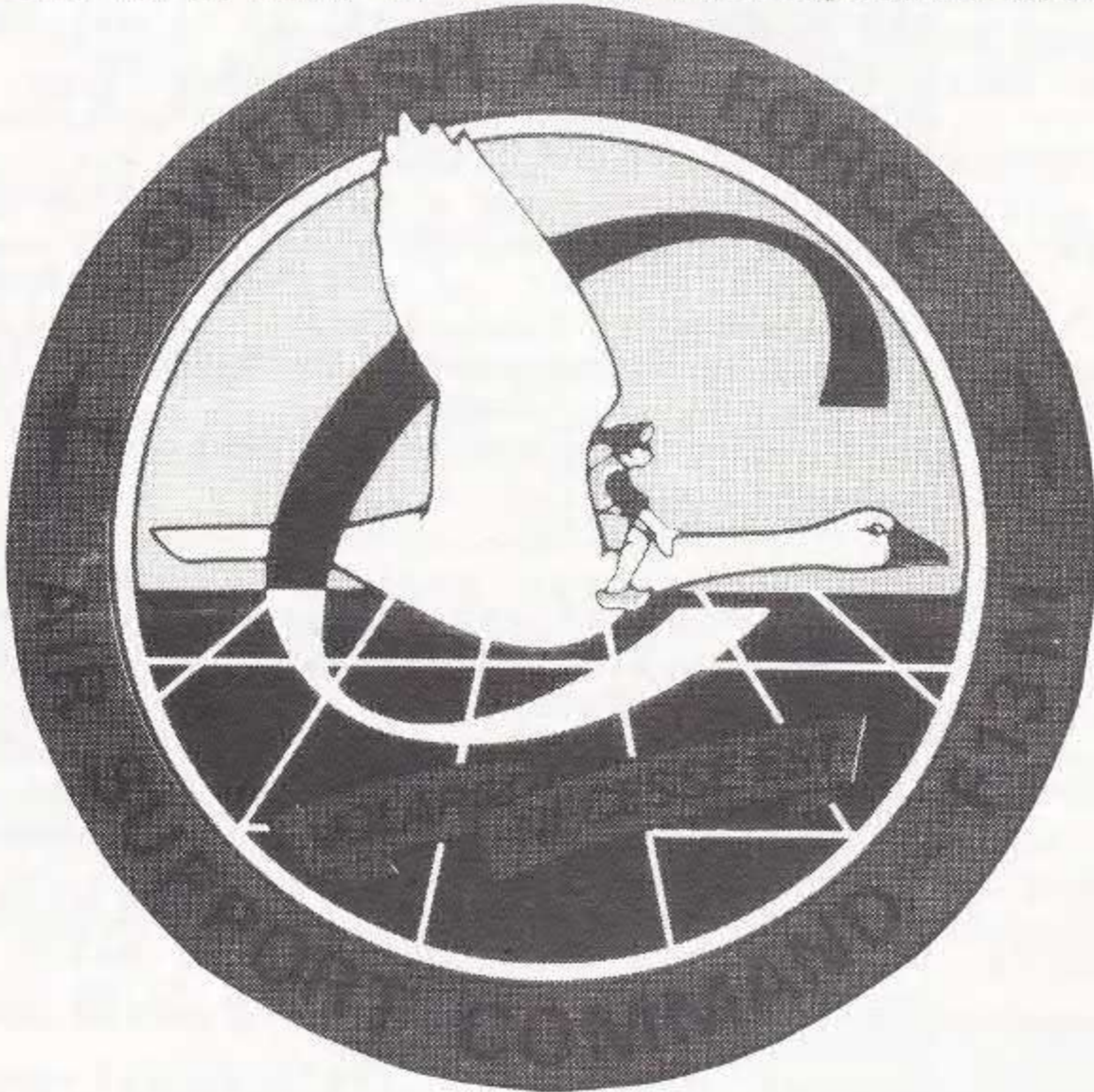
(LINKÖPING/MALMSLÄTT, SWEDEN) Setting a record is very popular today, also in aviation. In aviation most records are based upon time: pilots and designers put the best they have in an aircraft with the purpose of attaining high speeds or the fastest time covering a certain track or distance. Sweden, one of Europe's neutral countries, did not make such attempts. The only 'record' they may have set is building odd aircraft like the Viggen, Draken and Tunnan. These aircraft were designed by Svenska Aeroplan AB (SAAB), the well known Swedish company. SAAB also produced more conventional looking aircraft, like the Lansen. This particular aircraft type is currently busy setting a world record. Of course, this attempt has nothing to do with speed, or it would be in trying to get as close as possible to the magical sound barrier, which can only be attained in a five degree dive (maximum horizontal speed is Mach 0.95). No, the world record the Lansen is to set has nothing to do with being the fastest. On the contrary, the Lansen's record will not be set for years to come.

The first SAAB Lansen entered active service with the Flygvapnet (Swedish air force) during 1956. At that time there were three versions in production, the A.32A (attack), J.32B (fighter) and S.32C (reconnaissance). A total of 287 attack Lansen's was built, and the aircraft remained in front-line service up to 1978. In February of that year the Kungliga Västgöta Flygflottilj, F.6, the attack wing at Karlsborg withdrew the Lansen.

Of the 120 J.32B fighter aircraft some thirty were converted for target-towing purposes (J.32D) and for electronic counter-measures training (J.32E). Both versions are still in use with the Flygvapnet at Linköping/Malmslätt. Alongside two Sud Caravelle 3s, three Dakotas and a number of Viggens F.13M, the target-towing and training squadron of F.13, still operates J.32D and J.32E Lansen's.

Back to our subject, the world record which will not be set for years to come. The aircraft have already flown more than twenty years. The Lansen still has time, if F.13M keeps on flying the aircraft. According to the Flygvapnet the Lansen is expected to remain in service with F.13M into the next decade. The Flygvapnet intends to claim a world record for long use of military jet aircraft if there will be no change in the plans. After all, the number 13 (denoting F.13M's 'ownership' of the aircraft) is painted on all Lansen's of the unit, which could bring bad luck, according to some people. However, if the Swedes are neutral concerning numbers too, the world record will come.

CvHD



Top: Squadron badge of F-13M, the 'M' stands for Malsmlätt, home base of F-13M.

Middle: Alongside the Lansen's, SAAB SK.60B/Cs (SAAB 105), Dakotas and SF-37 Viggens are in use with the squadron, a Viggen is illustrated.

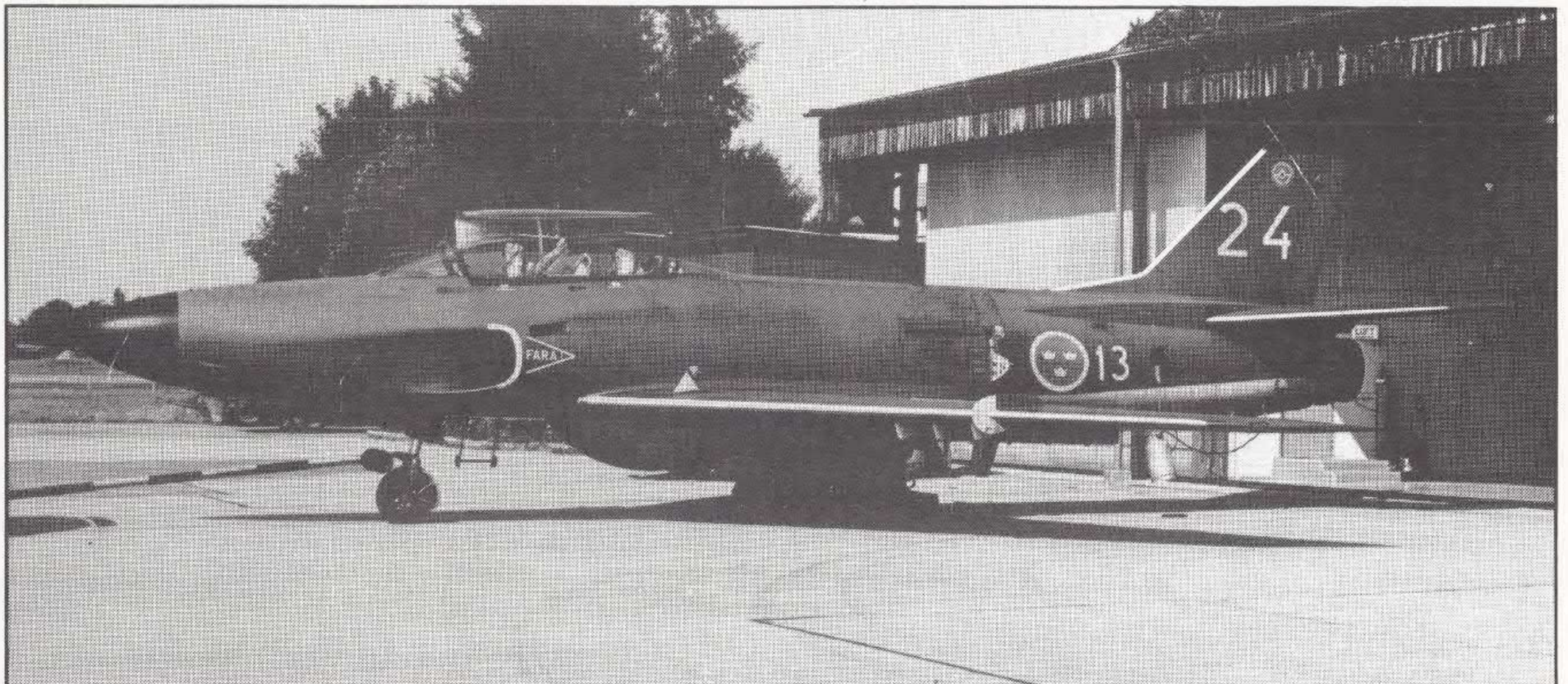
Bottom: One of the three Dakotas an oldie used for transport duty's.



SAAB J-32D 13-02, the J-32D is the target towing version of the Lansen. The code '13' refers to the squadro



Although this Lansen, 13-04/32515 is likely to be used into the next decade, others are already in musea, one is at the Flygvapen Museum (air force museum) at Malms lätt.

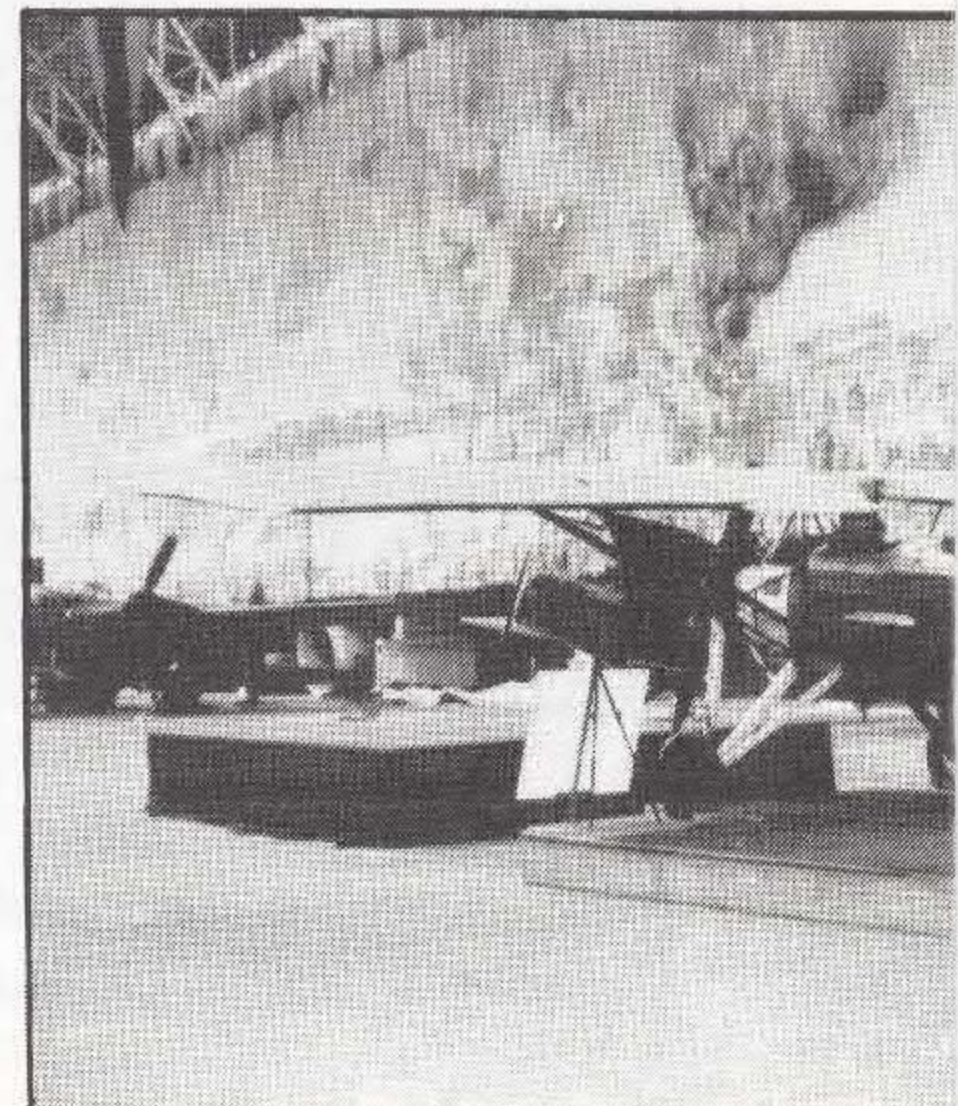
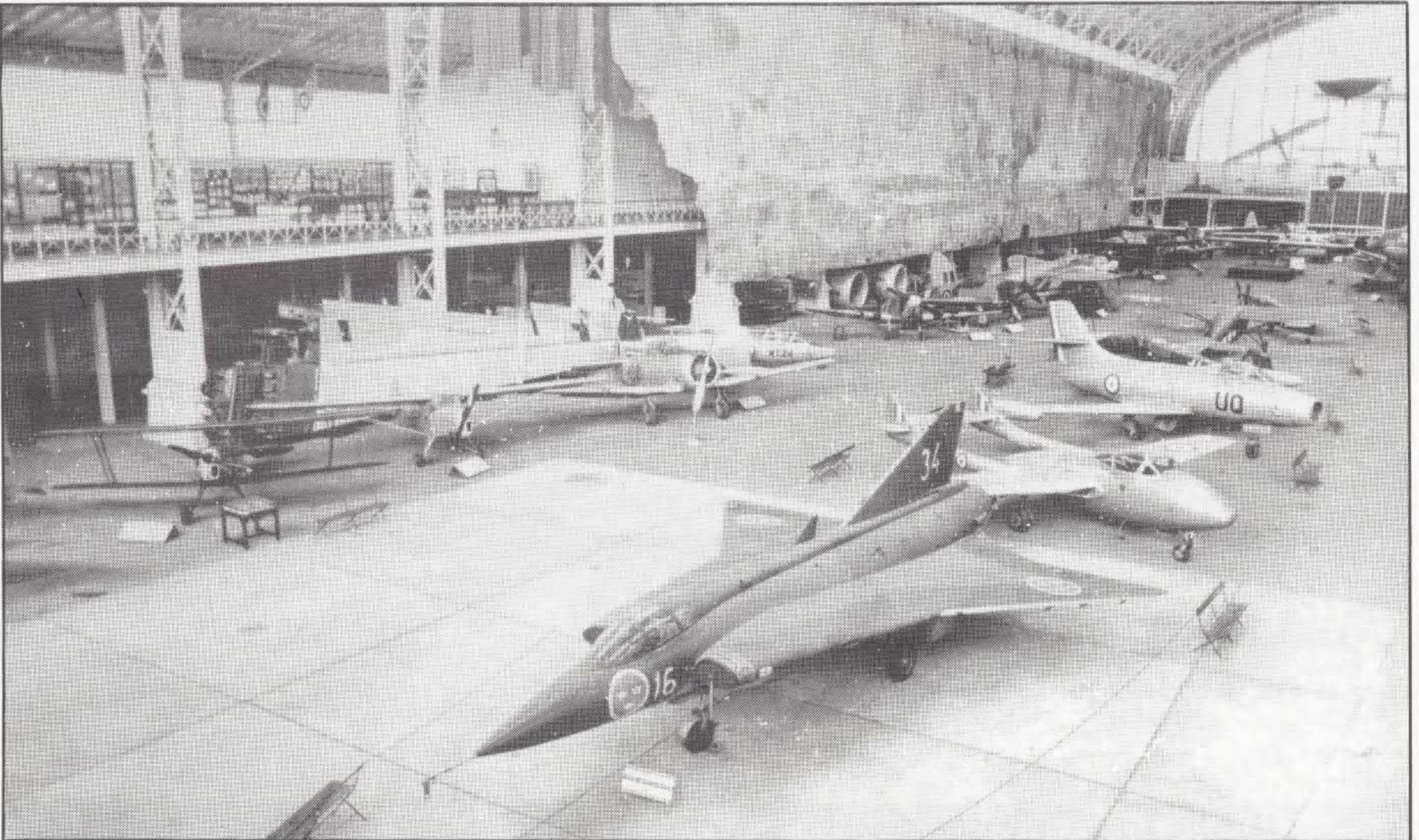


Except for the J-32D, also J-32E Lansen are used by F-13, for electronic counter measures training. No J-32Fs exists.

Brussel's aviation a

(BRUSSEL, BELGIUM) A vast hall, finally vast collection of aircraft and aviation. The most modern aircraft present are the SAAB Draken, both types still in action from before 1914. Although the museum is the Legermuseum (Royal Army Museum), it has a policy of acquiring as many different types as possible, limiting itself to aircraft with Belgian connections. More recent arrivals are a French Morane collection of Jean Salis for an aircraft and a former Swedish air force J. 29. Aircraft present in the hall are being restored. The museum is located in the Afdeling AELR, Jubelpark, 1040 Brussels. Section AELR, Parc du Cinquantenaire.

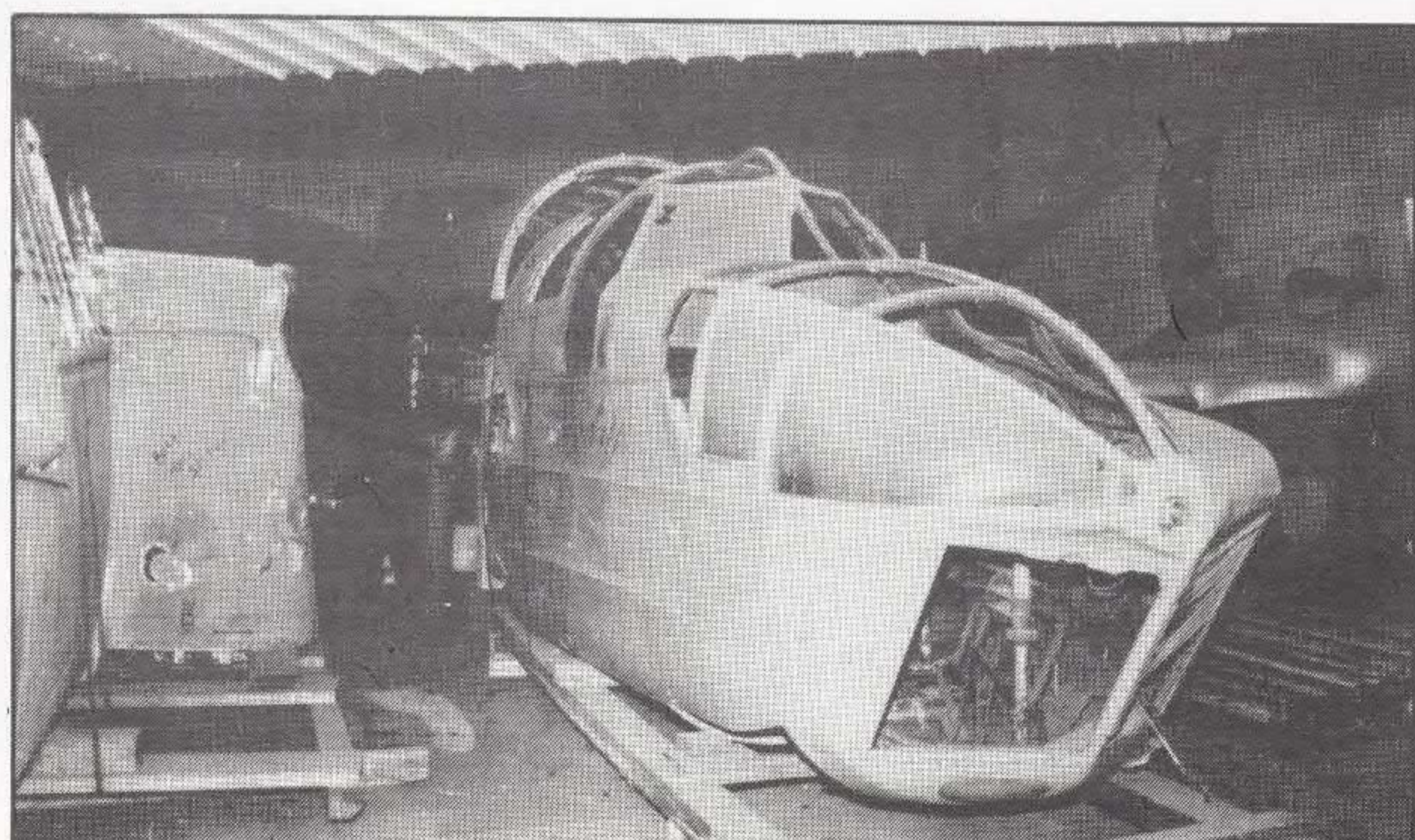
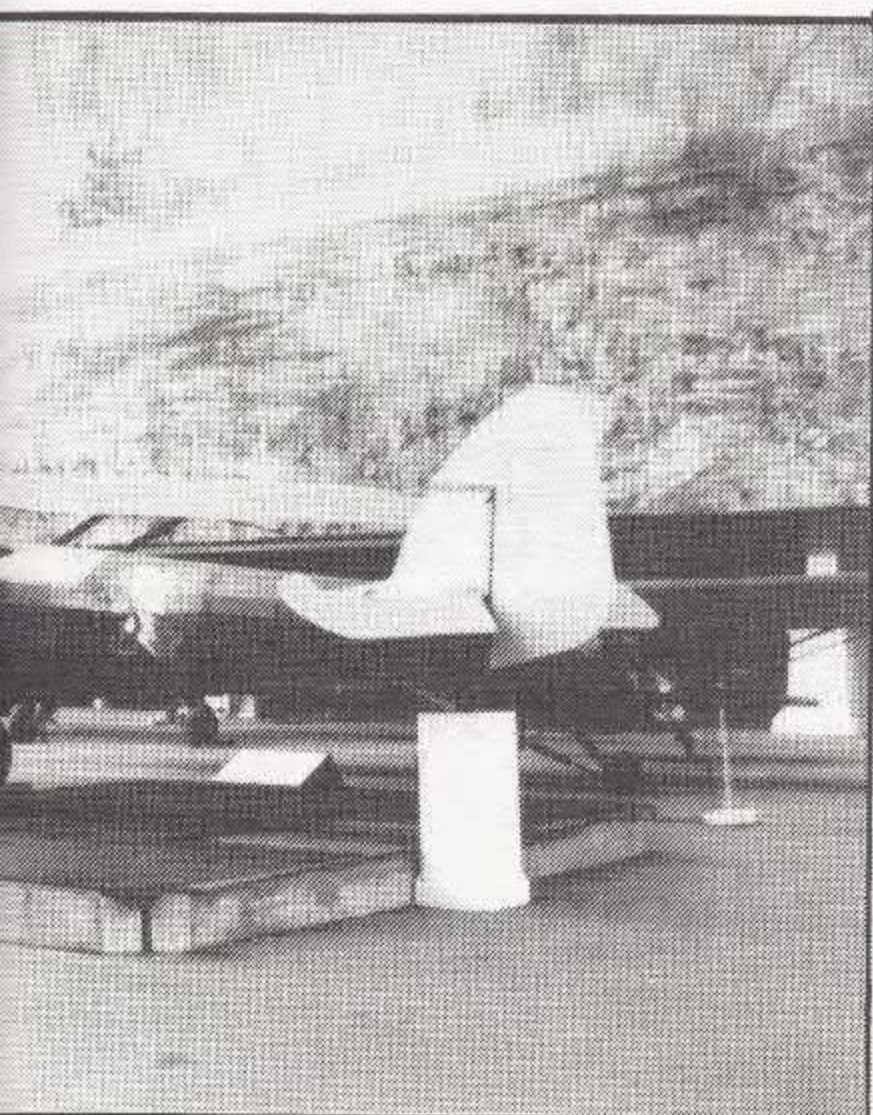
Illustrations: CM.170R Magister (left), Airspeed Oxford O16 FAB, F-84G (F-84G), Morane MS.315 ex F-BCNT, and Bolivar (restoration). The two general views (left) and the workshop (right) at the museum.

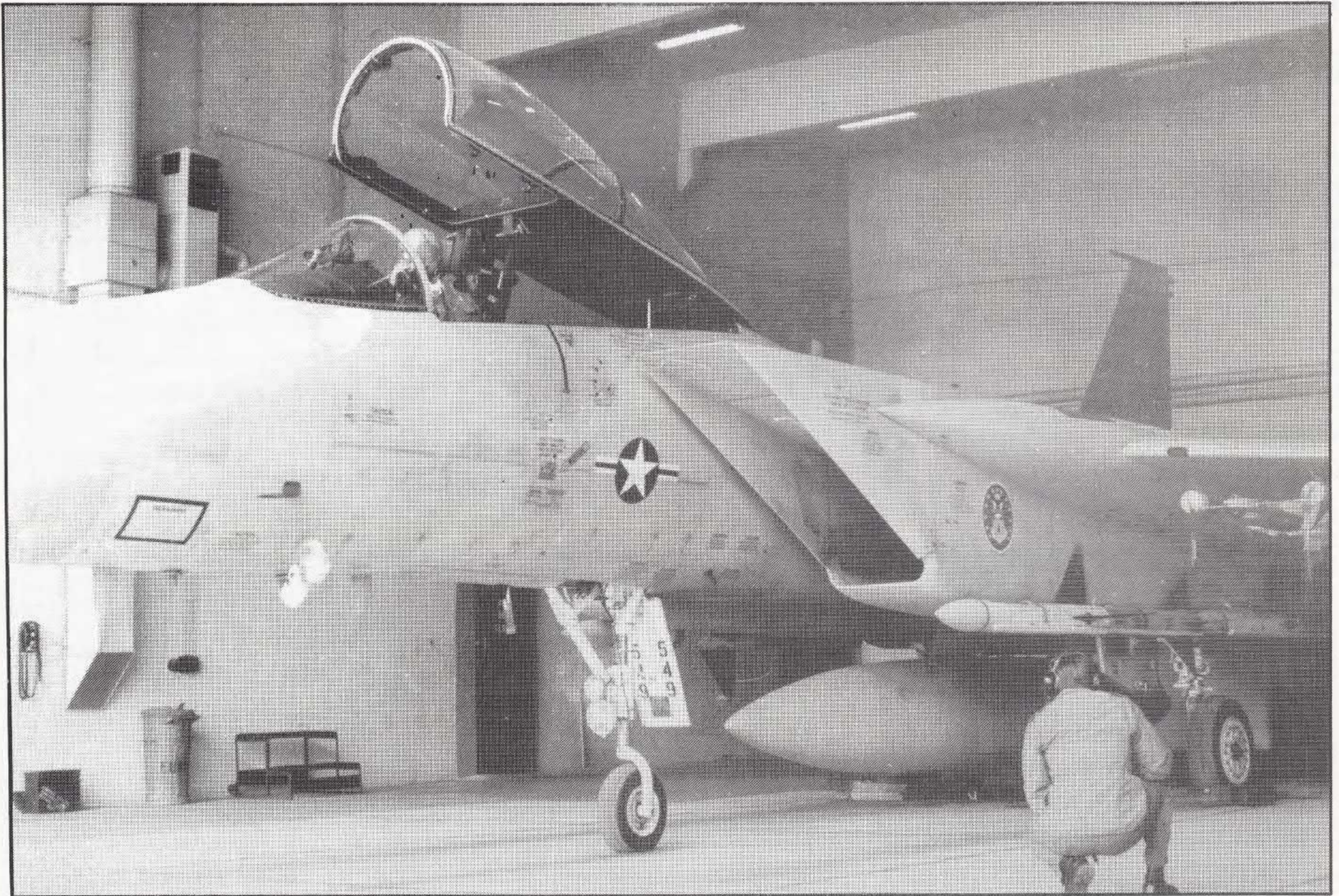


nd space museum

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t the Koninklijk Legermuseum,
ssel/Musée Royale de l'Armée,
1040 Bruxelles.

T24 FAB (Belgian air force),
71 FAB (painted as "FZ132"),
qbroke 9895 RCAF (awaiting
ws show the exhibition area
he northern end of the hall.
JJSD





Alert at an Eagle nest

(BITBURG AIR BASE, WEST GERMANY). "If a Warsaw Pact fighter aircraft were to come this way, it will take ten minutes to get here. Here at Zulu Alert we are on a five minutes' stand-by, which gives us another five minutes to intercept the threat", commented Captain Mike Farmer when asked about the readiness of 36TFW.

Air superiority has a high priority in NATO's current defence planning. Over the past few years NATO commanders have warned time after time that if a war should break out, it would be at very short notice. As a result of the awareness of this possibility, NATO's air defence systems have been upgraded considerably. As far as aircraft are concerned this has included the purchase of eighteen E-3A Sentrys by NATO, as well as the introduction of F-15 Eagles and F-16s.

In gaining air superiority NATO's air defence aircraft on Quick Reaction Alert (QRA) can play an important role as these aircraft can be airborne in five minutes. As Captain Farmer already pointed out, this can be of crucial importance.

Normal peace time operations, but prepared for anything

At the 24 end of Bitburg's runway, four F-15 Eagles of the 36th Tactical Fighter Wing are kept on QRA for 24 hours a day. Manning these aircraft are four pilots who are drawn from their normal squadron duties every two months. The day FLASH visited the QRA, the crew comprised Captains Mike Farmer and David Anewalt, both of 53 TFS, and Captains Dan Griffin and Robin Doria of 22 TFS.

Every morning at 9.00 a.m. a new crew settles in the Zulu Alert, as this area at Bitburg AB is normally referred to. The pilots and maintenance crews stay on stand-by here for 24 hours, and pass the

time by watching television and movies, reading, studying or sleeping. During the day-time the pilots have to wear their G-suits at all times.

As he is an F-15 instructor pilot, Captain Doria passed his time teaching two new pilots the procedures to be followed when assigned to the Zulu Alert. After a new pilot arrives at the Wing it takes about one or two months before he can go on alert. First the pilot has to become familiar with many procedures to act in a manner appropriate to the various situations he might find himself in.

The German Air Defence Identification Zone (ADIZ) and the Buffer Zone, for instance, are areas which are wrapped up in such procedures. Often this is the operations area for the Eagle pilot on QRA, as a scramble may occur if an aircraft is nearing the East German border unaware of this because, of radio and/or instrument failures. Before entering the ADIZ an aircraft enters the Buffer Zone, and five minutes prior to entering the Buffer Zone any pilot has to report his intentions to the appropriate Air Traffic Control centre. If this doesn't happen it might cause a scramble at Bitburg's QRA. This also depends on the location of the distressed aircraft, as other NATO aircraft on QRA might be closer to this location.

The operations at Zulu Alert are all peace-time operations. Most reasons for a scramble are identification of aircraft suffering from radio failures, of off-course airliners, or of defectors from Eastern Europe. If the Ground Controlled Interception (GCI) controller spots a blip on his radar scope that won't identify itself, it might be another reason for an Eagle scramble. Many times there is quite a reasonable explanation for such 'strange' behaviour: a flock of birds, unaware of NATO's standard reporting procedures.

At Zulu Alert two types of scrambles are known. An Alpha Alert means real action. A real intercept has to be made for whatever the reason may be. Such a scramble occurs once or twice a month. Therefore, to keep the skills of pilots and maintenance crews at the Zulu Alert honed every day a Tango scramble takes place, which is only a practice take-off.

When the claxon goes off



ABOVE: Captain Robin Doria climbs into the cockpit of his F-15C Eagle BT78-549. The race against the clock has started.

BOTTOM: Five minutes later, the aircraft taxis out into the snow.

Although this doesn't happen regularly, sometimes a scramble order is given at night. According to Captain Robin Doria it is very difficult to awake one minute and to be airborne within the next five. When half asleep people tend to keep bouncing into each other while finding their way to the aircraft. One night there was this guy sliding down the pole to the ground floor, and he fell on... Unfortunately this story was left unfinished as Captain Doria has disappeared all of a sudden. The claxon had gone off, causing an obviously organized 'panic'.

At 13.10 the claxon went off. Maintenance personnel and pilots rushed to their aircraft. Above the hangar door a green light indicated that the scramble was still on. The claxon had been triggered off by a push-button at the Wing's command post. If for some reason the scramble has to be canceled, a red light replaces the green lights in all four hangars of Zulu Alert.

But this one was on. Captains Doria and Griffin were on alert, while Captains Farmer and Anewalt acted as stand-bys.

Assisted by the maintenance crew, the pilot buckles himself in first, and puts on his helmet. His next actions are starting up the engines and plotting the co-ordinates of Bitburg AB in the Inertial Navigation System (INS). Meanwhile the pilots are briefed on their mission, including tactics, emergency procedures, weather, the area for intercept, initial outbound vector, etc. With the aircraft almost ready to go, the safety pins are removed from the missiles, as well as the wheel chocks. Five minutes after the claxon went off the two Eagles at Zulu Alert taxied out to runway 24, the threshold of which is only 1000 ft away.

For the maintenance crews there is not much work to be done during the scramble. The F-15 Eagle is an aircraft well equipped to operate autonomously. An onboard Auxiliary Power Unit (APU) provides electric and hydraulic power, and the pilot can start both engines independently from any ground equipment, by first pulling the Jet Fuel Starter, and then moving two levers mounted on the throttles. During the scramble the maintenance crew assists the pilot with buckling in. The only job left to do afterwards is to watch for external disturbances on the aircraft, and to give a signal to the pilot that everything is clear for taxiing out.

The real work for the maintenance crew is prior to the scramble, in keeping the aircraft in good shape. For this the crew relies mainly on the Built-In Test (BIT) system. Operating the BIT the crew can monitor various avionics systems, and when there is a failure, the system isolates the area and tells them the source of the problem. Since most of the aircraft's avionics systems are located in the nose in black boxes, the maintenance crew can easily take out the troublesome black box and replace it with a new box.

Contrary to standard peace-time procedures, the F-15 Eagle on Zulu Alert is constantly live armed with four AIM-7F Sparrows on the fuselage, and



Eagle alert

four AIM-9L Sidewinders attached to the flanks of the inner underwing pylons. Also contrary to standard procedures, all avionics systems in the aircraft are switched on.

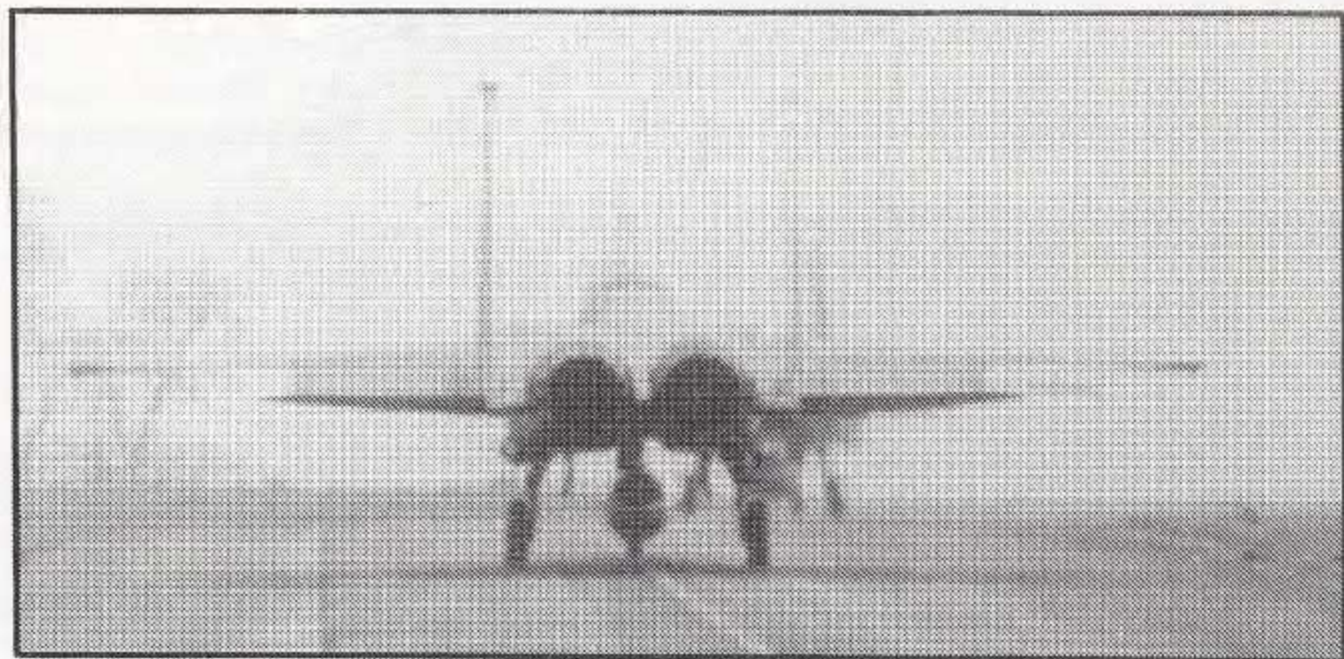
When asked about the difference in reaction time between the F-15 Eagle and previous air defence fighters, Captain Dan Griffin mentioned the advanced systems incorporated in the F-15. It may well have been possible in the old days to scramble an air defence fighter in, say, two minutes, but what could it do once it was airborne? With the Eagle it is possible to operate in very foul weather and the navigation system is very autonomous, which is a great advantage for the pilot in finding the target quickly, and, what is more, locate the target very accurately.

Straight-in intercepts only

Five minutes after the claxon went off the Eagles arrived at Runway 24 for take-off. But then the odds turned against Captains Griffin and Doria. Operating on a Tango scramble, the aircraft had no priority over inbound traffic with five miles or less to run, and the minimum flying conditions for a practice scramble are 500 feet cloud base and 1½ miles Runway Visual Range (RVR). After asking clearance for take-off from Runway 24, the two wait for landing traffic on Runway 06. While several F-15 Eagles were being recovered, a three miles snow front closed in on Bitburg, reducing the RVR to a few tens of feet.

After the snow front cleared, the sun broke through again, and with some delay the two Eagles were cleared for take-off from Runway 24, flying in the opposite direction of the normal traffic. Contrary to standard flying procedures, the afterburners were used during take-off. Once airborne the aircraft started heading north for sixteen miles, climbing to 7,000 feet. This outbound procedure is necessary to avoid the dense airline traffic around Bitburg.

When on alert the Eagles make only a straight-in intercept, without any dogfighting. When on an Alpha scramble to find a distressed aircraft, they close in on the aircraft from the back. By turning, wing rocking (day), or light flashing (night) they



First there was this inbound traffic, then there was this three miles snow front. Finally Captains Robin Doria and Dan Griffin could take off to find themselves a 'target of opportunity' to practise a straight-in intercept.

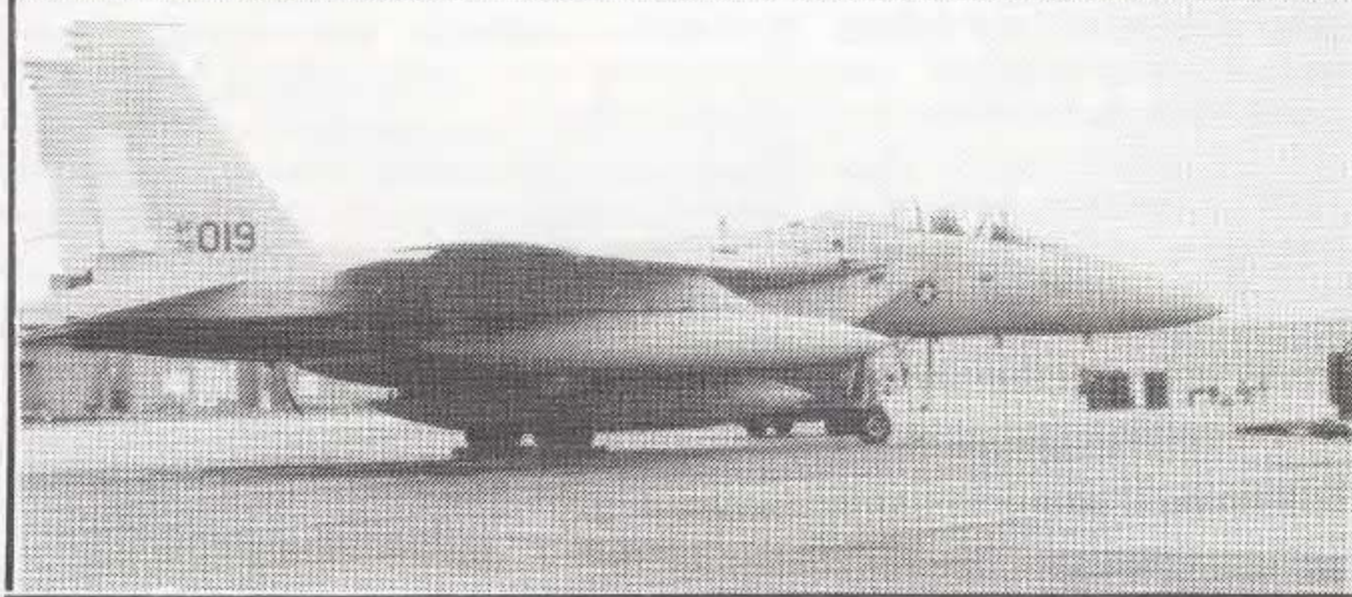
(All photos: Paul van Oers)

QUALITY FOR QUANTITY

NATO's air defence is based on quality rather than on quantity. Future air defence fighters, like the F-15 Eagle, F-16 and Tornado F.2, are replacing older aircraft types like the F-104G Starfighter and F-4 Phantom. The manoeuvrability of the F-16, the avionics of the Tornado F.2, and the combination of both in the F-15 Eagle, provide NATO with a high standard of air defence fighters.

According to a West German defence paper, published in 1979, it was estimated that the Warsaw Pact operated about 2,800 combat aircraft in East Germany, Poland and Czechoslovakia, and 1,100 in Western Russia. To meet this threat, NATO has 800 air defence fighters at its disposal. (Note: this number does not include the other types of NATO combat aircraft).

In Belgium the F-16 is replacing the Starfighters of 1ère Wing and recently the Wing's 349ème Escadrille was the first European based air force unit to become operational on the type. Neither the Netherlands nor Denmark will use their F-16s purely for air defence. The Netherlands will no longer operate specific air defence units, while Denmark will replace the F-100 Super Sabre with the F-16, keeping the Starfighter for air defence. Norway will replace its F-104G Starfighters of 331 Skv with F-16s. The United Kingdom will replace its air defence Phantoms and Lightnings with Tornado F.2s in the mid-1980s. USAF Europe (USAFE) flies F-15 Eagles, F-4E Phantoms and F-5E Tigers in the air defence role. At Hahn AB the first F-16s are due to arrive in October of this year. West Germany intends to keep its current air defence equipment, the F-4F Phantom, in service till the 1990s, to be replaced by the TKF-90. But, although research and development for this new fighter aircraft is still in progress, the financial consequences of this project are reported to have become unacceptable to the West German government.

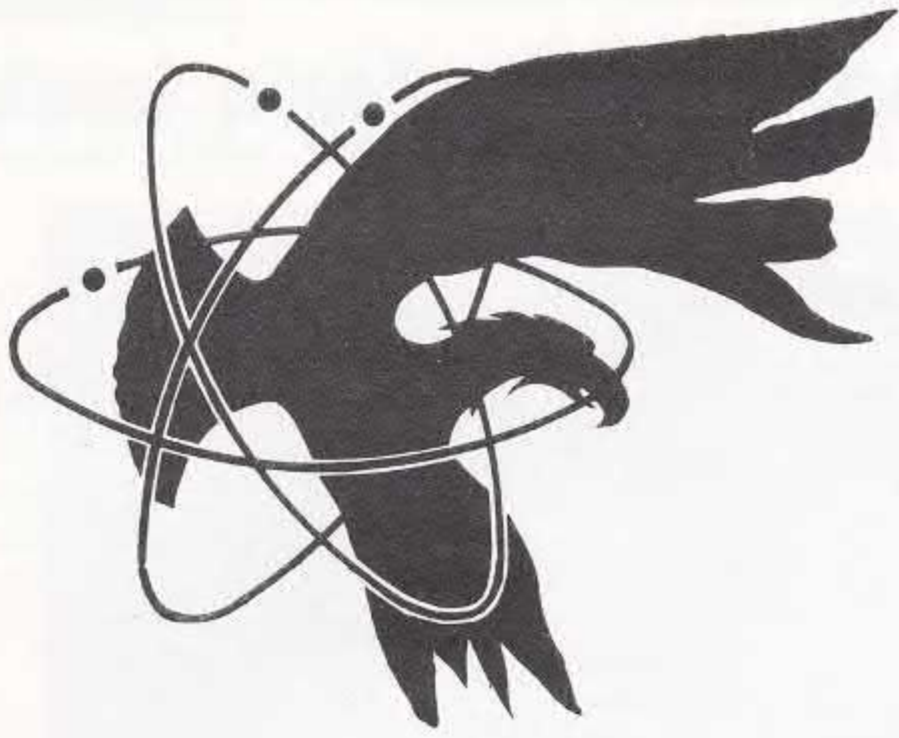


can signal the distressed aircraft to follow. When on a Tango scramble the Eagle pilots try to find themselves a 'target of opportunity', which can be anything hanging around near Bitburg.

If necessary the Eagle pilot can select three kinds of weapon systems to engage a threat. For long-range work, the Eagle is armed with four radar-guided Sparrow missiles. Within a range of 20 miles (32 km) of the target, the pilot can lock the radar on the target and launch a Sparrow missile. The missile maintains radio contact with the Eagle's radar, which provides the missile with updated information on the target's position. The pilot can also select the four Sidewinders to engage the threat. If having closed in on the target to five miles (8 km), he can launch these heat-seeking missiles. After activating the heat-seeking element in the nose of the Sidewinder, the pilot hears a tone in his helmet head-set when the missile has made a lock-on. The missile is then launched, and flies with Mach 4 speed to the heat source it has locked onto. The third alternative for the pilot is the 20mm Vulcan gun mounted in the starboard wing root.

With the two aircraft airborne, Captains Anewalt and Farmer could shut down the engines of their aircraft. The hangars at Zulu Alert were shut. The organized panic was over.

JvT□



AIRLINE NEWS

Korean Air Lines takes over Saudia cargo contract

(SCHIPHOL, HOLLAND) Korean Air Lines (KAL) will start flying scheduled cargo services for Saudi Arabian Airlines (Saudia) on 1 March 1981. KAL, which already operates scheduled cargo and passenger services between Korea and Saudi Arabia, and which wet-leases two Airbus A.300B4s to Saudia for domestic services, has taken over the contract from Seaboard World Airlines. The latter was recently merged with The Flying Tiger Line. Korean Air Lines will be operating a schedule similar to that of Seaboard World, leasing one Boeing 747F to Saudia as well as two DC-8-63CFs and a DC-8-55F, the latter for ad hoc charter flights. The DC-8-63CFs will be leased by KAL from Icelandair, while the DC-8-55F is American owned.

● From 1 March, Saudia's cargo schedule between Saudi Arabia and Schiphol will comprise three weekly flights. On Monday and Wednesday the flight will be operated by a DC-8-63CF, and on Fridays by a Boeing 747F.

Concorde London-New York now 'profitable'

(LONDON, UK) British Airways Concorde services between Heathrow and John F. Kennedy Airport, New York, are expected to make a £ 4 million 'profit' for the financial year 1980-1981, which ends 31 March 1981. This figure is based on operating expenses and total income, as the aircraft's purchase and research and development costs have all been paid for by the British government. In all, British

Airways' Concorde operations for 1980-1981 will show a loss of approximately £ 6 million. The Heathrow-Washington/Dulles route will have a loss of about £ 2 million, while the (now abandoned) route to Singapore via Bahrain has caused an £ 8 million loss. The Singapore route was flown in co-operation with Singapore Airlines (SIA). It should be noted that, had British Airways bought its six Concorde on a commercial basis, and all other things being equal, the £ 4 million profit on the New York route would not have been possible.

In order to make the Concorde a slightly less exclusive mode of transport, British Airways has requested governmental approval for a reduction in the standard return fare to Washington of £ 139, and the introduction on the New York route of a no-reservation weekend fare, which would be 20% lower than the standard fare. These new fares are to be introduced on 1 March, and they are expected to increase load factors and revenue.

Monarch to buy Boeing 757s and 737s

(LUTON, UK) Monarch Airlines, the Luton based holiday charter airline, has announced that it will order four Boeing 757s for delivery from 1984, and two additional 737s, making a total of four. Two 737s were delivered during late 1980. The 757s will be Rolls-Royce RB.211 powered, initially by the RB.211-535E version. Acutely aware of rising fuel prices, the airline has ordered RB.211-535E4 engines, which will be installed in 1985, and which will be up to 10% more fuel-efficient than the RB.211-535Es. The 228-seater Boeing 757s will replace Monarch's Boeing 720 fleet, while the airline's BAC 1-11s will presumably be phased out as the 737s are delivered. The 737s currently in service are based in Berlin. They did not replace any of Monarch's 1-11s.

British Airways fleet modernization

(HEATHROW, UK) British Airways is adapting its fleet to meet its financial problems. These have been eased somewhat by increased borrowing limits, but an increase in fuel efficiency and the weeding out of excess capacity are considered to be important in making British Airways a financially healthy airline. The following fleet changes now seem likely:

● Two Boeing 747-136s, reported to be G-AWNG and G-AWNI, have been sold to Trans World Airlines (TWA), and are likely to be delivered to TWA in March. The two 747s are some ten years old. More 747-136s of similar age may be sold, although three new 747-236Bs, powered by more fuel-efficient RB.211 engines, are now stored at Boeing's Seattle works. British Airways apparently cannot, at present, spend the money needed to take delivery of and put into service these potentially money-saving aircraft.

● Two Lockheed TriStar 200s, due for delivery this year, have been cancelled. This reduces the amount of TriStar 200s on order to two, both aircraft destined for British Airways' subsidiary British Airtours Ltd.

● Three Boeing 707-336C all-freight aircraft, operated by British Airways Cargo, are to be withdrawn from service in April, and hopefully sold.

British Airways expects to record a pre-tax loss of approximately £ 105 million for the financial year up to 31 March 1981. Approximately £ 1 million in revenue was lost during a one-day maintenance strike on 23 January, causing the cancellation of all British Airways flights to and from Heathrow. The strike was to force higher wage increases than British Airways management says it can afford.

FROM AN AIRLINE PEN.....

NORTHWEST ORIENT 727 SWEEPSTAKES

In an effort to promote Northwest Orient's scheduled flights between the US Midwest and Florida, the airline is running a "Win a Jet Sweepstakes", the winner of which gets a free three-day inclusive tour flight for a maximum of 92 persons (the capacity of Northwest Orient's 727-100s) to Fort Lauderdale, FL, and back.

SIA'S ONE-ARMED BANDITS

Singapore Airlines (SIA) intends to introduce silent one-armed bandit gambling machines on its trans-Pacific Boeing 747 flights in July. They will be in a screened-off area in the back of the passenger cabin.

IATA FARES TO GO UP AS MUCH AS 10%

IATA members are requesting passenger fare and freight rate increases of up to 10%. Most of these increases are likely to be introduced at the start of the summer season, or as soon as governmental approval is granted. European services are to cost an average 5% more, while flights to the USA will cost 7% more and to Canada 10% more. The increases for flights to the Far East are to be about 3%. Canadian fares and rates are more fully fuel cost linked than others.

Finnair replaces Caravelles

(AMSTERDAM, HOLLAND) Finnair is replacing its remaining Caravelle 10Bs with three DC-9-41s. The DC-9-41s have been bought from the Japanese airline Toa Domestic Airlines (TDA), and will be delivered in July, October and November of this year. TDA is in the process of receiving eight DC-9-81s, the first of which, JA8458, was delivered during late January. Finnair's DC-9-41s will have a 112 passenger two-class layout, and will be used on domestic and international flights.

Finnair's two remaining DC-8s may be withdrawn at any time now, especially if a buyer can be found. One DC-8 has already been taken over by Karair. A third DC-10-30 is expected to be delivered in August. This DC-10 will have a longer range and more powerful engines, as well as improved avionics and aerodynamic refinements, compared to the two six year old DC-10-30s already in Finnair service.

Abelag route application rejected

(BRUSSEL, BELGIUM) Abelag Aviation, the Belgian general aviation company and member of ACE, has applied for Belgian government permission to fly the Brussel-Luxembourg/Findel route. Permission was refused because of the fifty-eight year old law which gives SABENA in effect a monopoly on routes flown by Belgian airlines. SABENA has abandoned the Brussel-Luxembourg route as unprofitable, and apparently refuses to allow other Belgian airlines to fly it. Abelag Aviation is appealing against the decision to the EEC, as the company considers the 1923 law to be contrary to the Treaty of Rome which set up the EEC in 1957. Abelag sees this route application as a test case for European air route deregulation, which is an important aim of ACE.

Saudia A.300s to be Pratt & Whitney powered

(LONDON, UK) With reference to FLASH No.125, p.17, Saudia has now decided to buy Pratt & Whitney JT9D-7R4H1s of 56,000 lbs maximum thrust to power its eleven strong fleet of A.300B4-600s from early 1984. This means that Rolls-Royce's RB.211 still has not been launched as an Airbus engine, although Kuwait Airways and MEA have ordered A.310s but not

yet selected an engine to power them. MEA especially is seen as a good possibility for Rolls-Royce.

Jetstream 31 launched

(PRESTWICK, SCOTLAND) The Scottish Division of British Aerospace has started production of the Jetstream 31 commuterliner and general aviation aircraft. British Aerospace sees an immediate market for twenty-two Jetstream 31s, and another thirty to forty may be sold fairly soon. The only known customer is Air Ecosse (see page 19). The first production batch will be of only ten aircraft, and deliveries are due to start in July 1982.

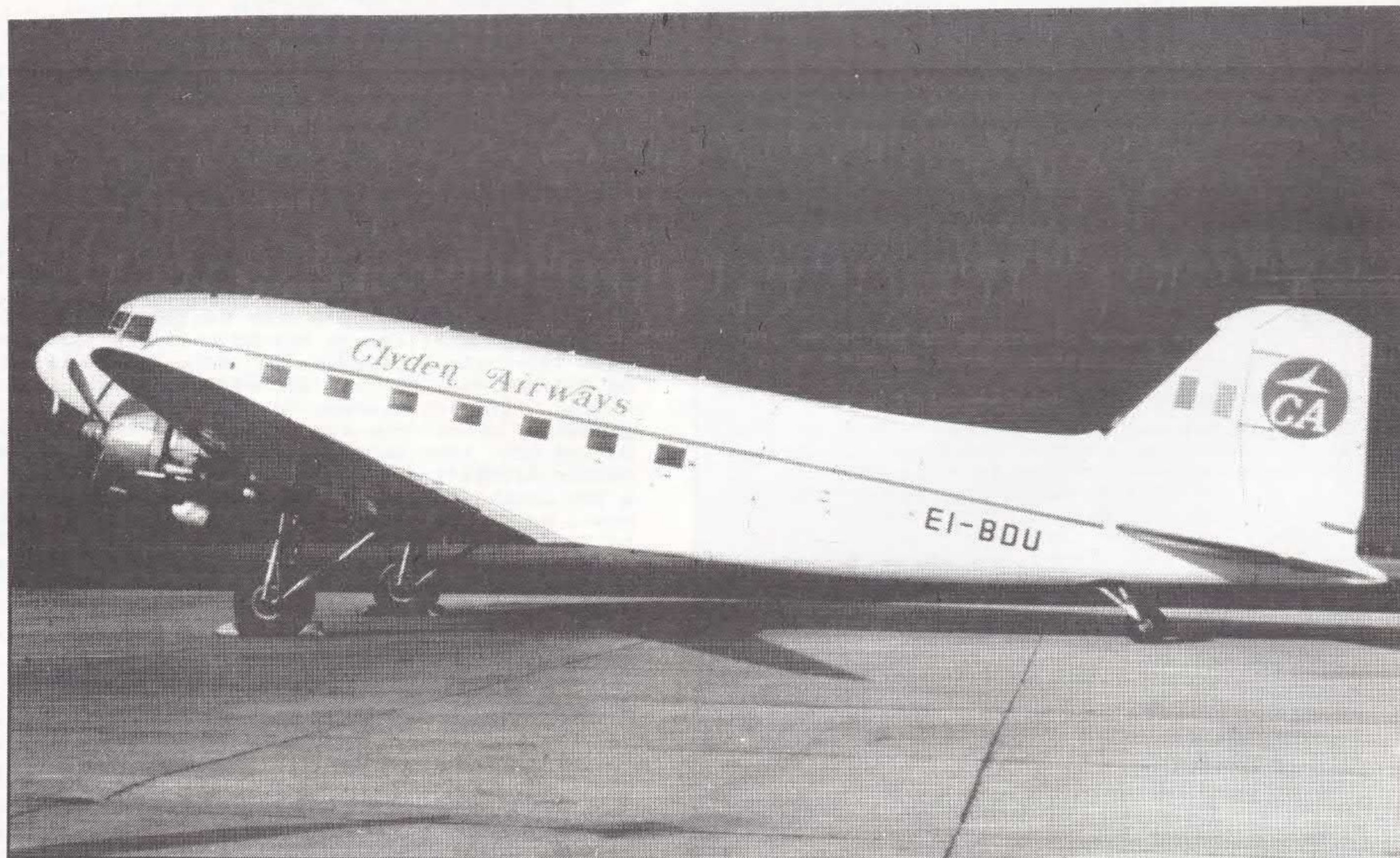
Itavia saved?

(ROMA, ITALY) Itavia may start flying again soon, as a company has been formed to take over the equipment of the defunct airline. Itavia stopped operations in December 1980 after making heavy financial losses and losing a DC-9 in a rather mysterious en-route accident last summer. The new company is mostly owned by Alitalia, the partially state-owned national carrier of Italy. Italian trade unions have been protesting that the government had forced Itavia out of business, and should take over the airline to safeguard the jobs of the Itavia employees.

● A new privately owned Italian airline was founded in November. Altair, based at Venezia's Tessera Airport, is a low-budget charter airline, which hopes to start flying in March. Altair has bought three Caravelle 3s from French domestic airline Air Inter. The first is I-GISA, a twenty-one year old example.

In late January the Irish independent airline Clyden Airways ceased flying. Founded in August 1978, the airline used two Dakotas for mail flights between Dublin and Manchester, as well as geological survey work. The mail flights are temporarily being flown by the Dakotas of Eastern Airways, the British charter company. The contract, however, may be let to another Irish company. The two Clyden Airways Dakotas, EI-BDT and EI-BDU (illustrated), are currently stored at Dublin Airport.

(Tom Vaughan)





Illustrating two extremes in Fairflight's activities: Bandeirante G-BGNK and Learjet 35A G-ZEAL seen sitting outside Fairflight's hangar at Biggin Hill on 3 January. (All photos by Frank Struben.)

(BIGGIN HILL, UK) In spite of its French name, Air Ecosse is a British company, owned by Fairflight Charters Ltd., which is based at Biggin Hill Airport in Kent, just south of London. Air Ecosse is a good example of what the oil boom has meant to a number of operators from countries bordering on the North Sea. Until the mid 1970s Fairflight operated a few Doves, as well as the odd Heron and Navajo, on general charter work. However, riding on the boom caused by rapidly increasing oil exploitation off the Scottish coast, the once sedate company formed Air Ecosse in June 1977, and has now grown into a thriving Bandeirante operator. Fairflight has five EMB.120 Brasilias on order, and offers executive/corporate charter services with a Turbo Commander 690B (painted in a pinstripe colour scheme) and a Learjet 35A.

Air Ecosse uses most of Fairflight's ten-strong Bandeirante fleet for its scheduled services linking the major Scottish oil boom towns to Glasgow and Manchester. A Trislander and a Twin Otter provide services to the smaller strips in Northern Scotland. The Air Ecosse aircraft are usually based at Aberdeen's Dyce Airport, but come to Biggin Hill regularly for maintenance.

Air Ecosse may buy Scottish Jetstreams

Although the Bandeirantes are now at most three years old, Air Ecosse is considering replacing at least some of them from 1982 onwards. Discussions with British Aerospace's Scottish Division (at Prestwick, considerably closer to Aberdeen than São José dos Campos, EMBREAR's home) have reached the stage where Air Ecosse has taken out options on two Jetstream 31s. According to Air Ecosse, these two aircraft will replace Bandeirantes on some of its longer routes. The Jetstream 31 carries nineteen passengers, compared to the Bandeirante's twenty-one passengers. But the former has a pressurized cabin, and would probably be more economical on these longer routes than the Bandeirante, as cabin pressurization allows the Jetstream 31 to fly higher, where fuel consumption is less. Air Ecosse has made clear that it may order as many as ten Jetstream 31s, replacing all of Fairflight's Bandeirantes. This leaves open the question whether Fairflight will continue its contracts with the General Post Office and newspaper shippers. Flights for these customers are mainly flown by Bandeirantes, but also by Navajo Chieftains, nine of which were in service early last year (1980), but some of which have been sold. JJS□



Air Ecosse has a Trislander and a Twin Otter for flights to and from short strips in the Highlands and Islands of Northern Scotland. G-STUD (top) is a DHC-6-310, and is seen undergoing maintenance at Fairflight's Biggin Hill base during the quiet period just after New Year's Day (1981). The Trislander, G-BEDR (middle), sits outside the Fairflight hangar awaiting its turn for maintenance.

Another 'subsidiary' of Fairflight is Air Shetland, which is really Air Ecosse by another name. Air Shetland's Bandeirante G-BSVT (bottom) is the oldest example of the type on the British register, dating from late 1977.



A photo report by Frank Struben

Biggin Hill Airport lies 274 meters (900 ft) high in the North Downs of Kent. During the First World War the site, on top of a reasonably flat hill, was selected for a fighter base to protect nearby London against German bombers. Its main advantage was that Biggin Hill was virtually always free of smog.

Biggin Hill's hour of fame came in September 1940, when it was one of the major RAF bases from which the Battle of Britain was fought. The RAF has over the years reduced its presence, and now the airfield is rarely used by military aircraft. It is operated by the London Borough of Bromley.

Illustrating some of the many aspects of Biggin Hill, these photos show:

(Top) G-ATII, a Beech S.35 Bonanza of Yankee Rose Air Charters Ltd., shortly after receiving a brand new red and black paint job.

(Middle) Scandinavian aircraft frequently visit Biggin Hill. Robin HR.100/250TR OY-POD of P.L. Hansen A/S was there on 3 January.

(Bottom) Piper Apache 160 G-ATJP and ex RAF Bassett CC.1 G-BCJF are two of about forty inactive aircraft to be found at Biggin Hill. □





(BIGGIN HILL, UK) Air Touring Services Ltd has been selling the basic French light aircraft to the British for twenty-two years now. The Aérospatiale Light Aircraft (ALA) Rallye series of aircraft now comprises ten different models, nine of which are currently available from Air Touring Services (ATS). The tenth, the TB.20 Rallye Trinidad, is still in the flight development stage.

How did it come about that Air Touring Services has made a lasting commercial success at such a difficult venture as selling French aircraft to a Cessna and Piper obsessed general aviation community, such as the British?

From Auster to fly-off competition

One needs to delve back in history, to Croydon Airport, 1958, to find one answer. In that distant year, when Eisenhower and Cruschov ruled the world, Mr. Bob Cleary, the current managing director of ATS, joined a group of other private pilots to buy a second-hand Auster. This group, the Air Touring Club, quickly grew to a fifty-member organization, owning three Austers. The Air Touring Club moved to Biggin Hill Airport soon, as Croydon Airport was being turned into a much needed housing estate.

Soon the need arose to replace the Austers, as there was a lack of hangarage at Biggin Hill. The club decided that an all-metal aircraft, which could be left outside even in winter, was needed. But to find out which type was the best the club arranged an intensive 'fly-off' competition, foreshadowing the US military fly-offs of the 1960's and 1970's. A US-built Piper Cherokee 160 and a French Morane-Saulnier MS.885, equipped with a 145 hp engine, were bought and operated in the ordinary club flying role during one year, 1958-1959. A close eye was kept on all aspects of flying the aircraft, such as costs, maintainability and flying characteristics.

The MS.885 was selected because it was deemed safer to fly, easier to maintain, and 50% cheaper to operate than the Cherokee 160. The MS.885 was then a very new design, and the Air Touring Club was the first British customer for the type, and its less powerful stablemate, the MS.880B. This meant that in 1959 there was no British company which imported the Rallye types into the UK, or could do avionics installation design and work on them. As Mr. Cleary was a qualified design engineer, he decided to set up a commercial company, linked to the Air Touring Club. This was to be Air Touring Services Ltd.

A game of musical chairs with aircraft names

In 1959 the new company obtained the exclusive distributorship for Morane-Saulnier aircraft in Britain, Northern Ireland and the Channel Islands.

In the twenty-two years since then aviation has seen many companies come and go, including Morane-Saulnier and its two successors, SEEMS (Société d'Exploitation des Etablissements Morane-Saulnier) and SOCATA (Société de Construction d'Avions de Tourisme et d'Affaires). The SOCATA name has been superceded by ALA (Aérospatiale Light Aircraft), and Air Touring Services now describes itself as "Sole U.K. Distributors for Aérospatiale" (sic). At any rate, the Rallye series have been known in Britain as Aérospatiale types for quite some time now.

This business of names is indicative of the sort of problem facing ATS in its mission of selling Rallyes to the British public. The introduction of names, for marketing purposes, instead of numeric designations, by SOCATA a few years ago did not go down too well with the British general aviation community. They couldn't figure out which Gabier, Galérien or whatever belonged to which airframe-engine combination. ATS refers to all Rallyes as Rallye 100ST, Rallye 235GT, TB.9, etc.

The Rallye types do not sell as well in the UK as the equivalent US-designed aircraft. The Cherokees and Cessna 172s are much more popular. Nevertheless, the classic Rallye types, which have been in production now for more than twenty years, are well established in Britain. Roughly speaking, Rallyes are about 10 to 20% more expensive than the US types. This does vary with the changes of the pound sterling relative to the US dollar and the French franc. Furthermore, it is very difficult to express differences between aircraft of entirely different design philosophies in percentages. Far more important to the customer is what particular characteristics he expects from an aircraft. For Rallye buyers, the fact that the Rallye is very easy to fly must rank very high. Air Touring Services and

the Air Touring Club are not the only organizations which use Rallyes as training aircraft.

In 1980, ATS sold three new Rallye 235GTs and two Rallye 180Ts. Four renovated and guaranteed Rallye 110STs, previously used by ATS and the club as trainers, were also sold. However, the majority of new aircraft sold by ATS in 1980 were TB.9s and TB.10s, also known as Rallye Tampicos and Rallye Tobagos. About twenty-five of these were sold. The reason why many of these were sold, according to Bob Cleary of ATS, is that the type was new on the British market, and fitted into that market very well. The TB series of aircraft is soon to be expanded by a retractable gear version with a 235 hp engine, the TB.20 Rallye Trinidad, which ATS expects to start offering for sale from September 1981, when an example is to be on show at Cranfield.

JJSQ

Delivering Golf Sierra Golf



Top: Learjet 35A G-JJSG was delivered to Dublin, Ireland, on 30 August 1980. The flight from Denver was flown with just one fuel stop, at Gander, Canada.

Bottom: G-JJSG seen from the front.
(both photos by John Colvin)

Mike Coady and Chris Blomfield report on their transatlantic flight delivering their company's Learjet

(DUBLIN AIRPORT, IRELAND) The putting into operation of Learjet 35A G-JJSG ostensibly began when G-BBEE, the Learjet 25B of the Dublin based Jefferson Smurfit Group, was flown back to Dublin by us from its last flight for the company. We had dropped six passengers in Palma de Mallorca, Spain, on 7 August 1980, having departed Dublin that morning.

On Sunday, 17 August we boarded Pan American's flight PA01 at London Heathrow for New York. The executive class was full, so we were forced into First Class! From New York we flew to Tucson, Arizona, via Dallas with American Airlines.

We started ground school on Monday 18 August, and finished four days later. This was followed by four

days simulator and flight training. This ended on the 25th with a flight to Denver, Colorado, to have a specially designed Learjet video cassette player installed in G-JJSG.

Denver-Dublin in two days

Denver, 5 a.m., Saturday 30 August saw the start of G-JJSG's delivery flight. Gander, Canada, was the first of only two stops on the delivery flight, the second being its home base. The distance Denver-Gander was 2,200 nautical miles (3,960 km), which tested the aircraft's long range capability. Flying a new aircraft on a long sector for the first time shows a crew some of the idiosyncrasies that may not come to light on short training flights. One of these idiosyncrasies was the right engine low oil pressure warning light coming on. This is an optional piece of equipment, to back up the oil pressure light on the main warning panel. We decided to ignore it, and it went out on approach to Gander. For the next month it was like a neon sign, flicking on and off when the fancy took it. No fault could be found to explain it, and it is now working normally.

THE JEFFERSON SMURFIT GROUP AND GATES' LEARJETS

Based in the northern suburbs of Dublin, the Jefferson Smurfit Group comprises a large number of printing, paper manufacturing, and packaging firms. The Group does a lot of international business in Europe, which makes the availability of a bizjet a necessity. The first British registered Learjet, G-BBEE, was used by Jefferson Smurfit for 5½ years, until the machine was replaced by the more fuel-efficient G-JJSG in August 1980. G-BBEE was sold to a company in the USA. Jefferson Smurfit's aircraft are British registered because it would cost too much to obtain an Irish type certificate. G-JJSG is registered to a British company, Smurfit Ltd., which is owned by the Group.

The take-off weight at Denver had been 17,000 lbs (7,710 kg), which is 1,000 lbs (454 kg) below maximum take-off weight. The climb to FL 410 (41,000 ft) took twenty-two minutes. Fuel was full tanks 6,100 lbs. When the tip tanks emptied, fuel was transferred from the fuselage tank, a spare tank which hasn't been used since, to the wing tanks. On checking the gauges they were found to be indicating 7,000 lbs in each tank and 7,000 lbs total. It had been heard that the Garrett TFE.731 'made' fuel, but this was ridiculous. However, after various positioning of the fuel system switches, the gauges returned to normal. This malfunction did occur again, but was corrected by the installing of a new gauge.

Gander has no entertainment value at all

Before landing in Gander it was decided to check out the High Frequency (HF) radio, regardless of frequencies used and stations contacted. No replies were received. We had hoped to meet somebody who was going eastbound who could relay for Sierra Golf. Arrival in Gander was four hours and fifty minutes after starting an 'uneventful' flight,



and there was still one hour's worth of fuel left .
 You don't delay in Gander. It just isn't that sort of a place. Service was good and within an hour G-JJSG was airborne again on its final sector. While on the ground at Gander, we encountered a Gulfstream II crew going east to London. And so the HF problem was solved. Talking to the Gulfstream crew broke up the monotony of Oceanic flying, since in Europe the average sector was one hour, much shorter and more entertaining than across the Atlantic. The take-off weight was the same as on the Denver-Gander sector. The take-off run was much shorter though, as Denver is at an altitude of 5,330 ft. The cruising level was again FL 410 and the Oceanic track to Ireland was 53° North, approximately, all the way. It was on this sector that the VLF (Very Low Frequency) -OMEGA GNS 500 navigation system came into its own, and did a marvelous job. Having punched in the Oceanic clearance waypoints, the automatic mode in the GNS was coupled to the autopilot and bingo... We just sat back and talked to the Gulfstream II. We did of course look at the instruments once in a while and had a bite to eat. 1,800 nautical miles (3,336 km) and four hours flying time later G-JJSG landed at its new base, Dublin Airport. That last sector had been very uneventful: no red lights, no fuel gauge problems, and it was a beautiful night to see Galway Bay as we flew over.

Bottom: G-JJSG shows off its wide passenger door-cum-airstair.
 (Both photos by John Colvin)



On Monday, 1 September Sierra Golf was flown to Stansted, UK, for British certification. When we informed the radio engineer that the HF radio was duff, he said: "See this switch here on the pedestal, which has a placard saying "HF"? Well, I have another one here in my hand which says "INTERPHONE".

When the switch is in "HF" the boss can speak via his telephone at the back, to his office. When it is in "INTERPHONE" you can talk to wherever you want to on the HF."
 If only pilots could design aircraft.....□

DUTCH REGISTER JANUARY 1981



Left: PH-VHO and PH-LET were recently delivered to the U.K., they will be followed soon by the two other Super Cubs of Hoogeveen, PH-GER and PH-PSW.
 Right: PH-IND has been replaced by a Super King Air.

Reg.	RLD.No.	C/n	Remarks	
PH-ALA	3099	Piper PA-31T	31T-8020088	Netherlands European Air Serv. ex N2320X (new)
PH-APA	2396	Piper PA-18-135 Super Cub	18-3814	Rainbow Aviation to E.R. Boshoff
PH-ARW	2899	Piper PA-28-236 Dakota	28-7911187	H.G. Fial to NN Kranenhandel BV
PH-DGG	3100	Cameron N-77	699	M. Jurg (new)
PH-EDI	2669	Reims Cessna FR.172J	0352	H.E.M. Smit to Air Service Holland
PH-IND	1637	Beech 65-A90	LJ285	Philips' Gloeilampenfabrieken NV to Gulf Air (out)
PH-JBG	3098	Reims Cessna F.172P	2072	Air Service Holland BV ex PH-AYE (III) (new)
PH-KFK	3079	Fokker F.27-500 Friendsh.	10605	Fokker BV to K.L.M.NV (NLM)
PH-KFL	3080	Fokker F.27-500 Friendsh.	10606	Fokker BV to K.L.M.NV (NLM)
PH-LET	2461	Piper PA-18-135 Super Cub	18-3853	Vliegclub Hoogeveen to U.K. 06/12/80 (out)
PH-NAS	2208	Piper PA-31P	31P-7400216	Business Air Service BV to N805PC (out)
PH-OII	2325	Cessna 182P	182-62722	G,C.J.H. van Hest to Heva Verkoop/Verhuur
PH-PRO	2079	Reims Cessna F.172M	1039	Air Service Holland BV to Air Towing Air Serv.
PH-SWT	3097	Thunder AX-6-56Z	328	Fokker BV (new)
PH-TSM	2762	Piper PA-31-350	31-7852161	Tractor Service Marienberg BV to Rijnmond Air Service
PH-VHO	2378	Piper PA-18-135 Super Cub	18-3868	Vliegclub Hoogeveen to U.K. 06/12/80 (out)
PH-ZBJ	3096	Fokker F.28-3000	11163	Fokker BV ex PH-EXW (new)
PH-ZCT	2382	Piper PA-18-135 Super Cub	18-3859	Zweegvliegclub Texel to E.R. Boshoff
PH-248	565	Rhonlerche 2	166	L.H.F.M. Goossens to ZVC "Vleugellam"
PH-294	962	K 8 B	8121	KNVvL to Eindhovense Aero Cl.
PH-594	2652	Mini Nimbus HS7	49	D.M. Pare to C.J. v/d Meyden
PH-628	2736	Mosquito B	130	J.W. Ratelband to J.G.H.M. Jonkers

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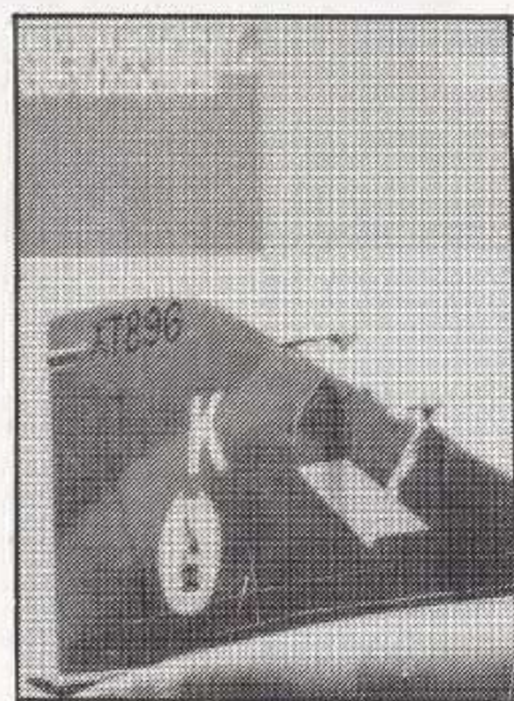
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British Military Aircraft Serials And Markings DFL.59,75
This vast BARG publication required the efforts of four authors and numerous assistants to produce. The aim of the BARG team was to list, one by one, every single serial ever allocated since 1950, or rather since XA100. This aim was achieved in 230 pages, on which brief historical information about the batches shares space with a line by line listing of the serials, stating the type of aircraft and, if applicable, fate (though not crashes and other write-offs). There is space for the spotter to enter details as to sqn/unit, code and 'where & when seen'. The remainder of the 420 A4 sized pages is taken up by background information, e.g. on unit markings, as well as listings of pre-1950 serials still in use, preserved aircraft, and post-1950 instructional frames. Photos illustrate almost every type of aircraft (and hovercraft) mentioned in the book. Serial spotters and historians specializing in British military aircraft will find this book a very useful tool in their particular pursuit of happiness.



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FAMOUS AIRCRAFT OF THE WORLD

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New titles available are:

- NR.103 B-52 Stratofortress**
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