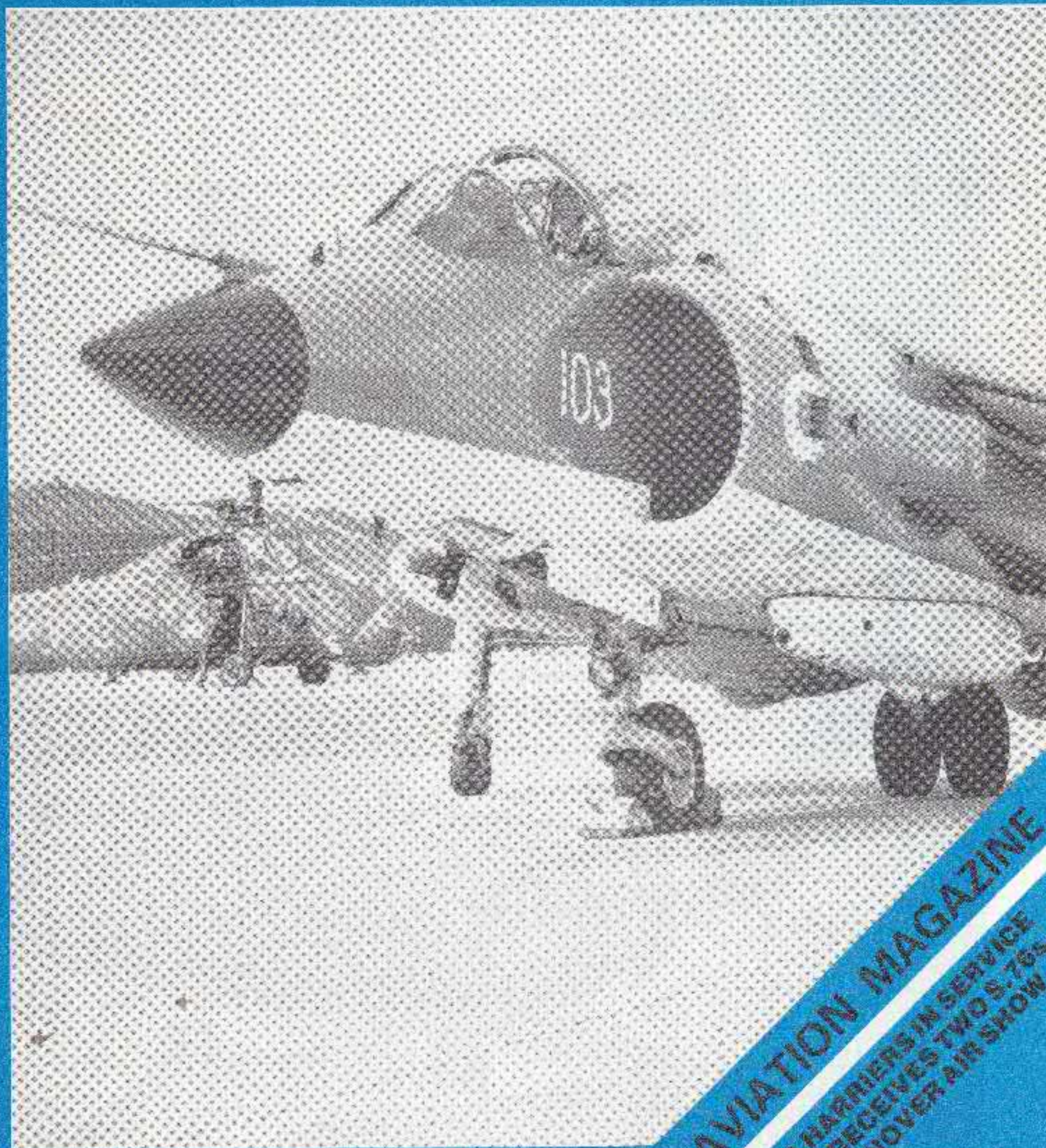


MAY 1960

FLASH



AVIATION MAGAZINE
SEA BARRIERS IN SERVICE
KLM RECEIVES TWO S.76s
HANNOVER AIR SHOW

USS SAIPAN



COVER: SEA HARRIER FRG.1 XZ456/103 OF 700A SQUADRON AT RNAS YEOVILTON ON APRIL 23TH. (B.Bailey-Hickman)



AVIATION MAGAZINE
P.O. BOX 855
5600AW EINDHOVEN
HOLLAND

telephone: 040-525661
telex: 52572 spidy nl
ref. flash 553

Editor:

Peter van de Krommenacker

Assistant Editor

Will van Boon

Civil Editor

Coen van de Heuvel

Military Editors

Frank Blassens

Frank Swinkels

Jac van Tuyn

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Agencies

Berry Bailey-Nickman
27 Hitcham Road
Leamington Spa
Warwickshire CV31 3QE U.K.

Frank Smith
Viale della Pace 164
36100 Vicenza Italy

Gerd Lammers & Georg Böhning
4281 Haasfeld
Weidegrund 26 W.Germany

Stephen Kunz
Altweg 762
4805 Brittnau Switzerland

Contributing reporters

Ben Vllings, Holland

Jacob Struben, U.K.

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EDITORIAL**MISSION IMPOSSIBLE**

The attempt to release 53 hostages from the U.S. Embassy in Teheran by military action, came as a complete surprise, and ended in a big disappointment. When more and more details were published on the action, criticisms broke out over the Carter administration. Internally an old existing dispute escalated and Minister of Foreign Affairs Vance resigned from his office.

President Carter needed a successful action to restore the image of the U.S. as world's leading nation. In certain aspects the action failed military but generally it has been explained as a total U.S. failure. Carter gambled on success for the presidential re-elections in November, but only time will tell whether this gamble had a negative effect on the elections.

Previous successful military operations at Entebbe (Uganda) and Mogadishu (Sudan), made the world-opinion devaluate the Iranian air raid to a 'wild cowboy-ride in the desert'. Certain opinions say such an action would have had a better ending when the operation was done by Israelis. This opinion limps any political knowledge but carries in it the principal problems causing the failure. Details mixed with opinions of experts feeds the idea too many calculated risks had been included in the scenario of the operation 'Blue Light'.

Since operation 'Blue Light' pivoted on the RH-53s and C-130s, FLASH decided to pay some attention on the air raid. Details are given on page 5 & 7, but some aspects of the operation are interesting enough for a closer examination.

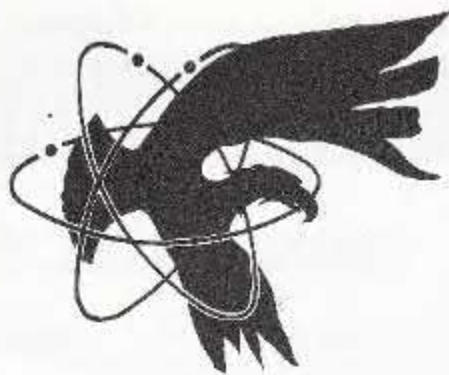
- If the fatal accident would not have taken place once President Carter had decided to cancel the operation, it would have been possible to keep the rescue attempt out of publicity. Although some vague information might have turned up, the world would never have known about the failing attempt.
- Both presence of E-3A Sentry and E-2C Hawkeye radar surveillance aircraft could not detect a sand-gull which would be a key factor in the failure of the entire operation.
- Information given by the U.S. government claims that neither Iranian nor Russian radar posts detected the six C-130s and eight RH-53s, which covered 500 n.mls. over Iranian territory and flew also within coverage of Russian radar posts.
- The biggest miscalculation was the combat readiness of the RH-53 helicopter. Over six years in service this type of helicopter operated with a combat readiness of 40%. During the exercises for this operation in the U.S., all helicopters operated without technical malfunctions. It was decided to use eight RH-53Ds.

To transport all 90 marines and 53 hostages out of Teheran into the mountains, a minimum of 5 RH-53s were needed. Three extra helicopters were added as reserve to meet possible technical malfunction or losses. What happened was that en-route from the aircraft-carrier USS Nimitz to Base 1, three helicopters could not proceed their flight to Base 2 near Teheran. According to plan it had been calculated that another 2 helicopters would have to be abandoned after having spend 24 hrs at Base 2. With three helicopters, it would have been impossible to fly 143 persons from the embassy to base 3, and President Carter decided to withdraw the forces. Much criticism to the address of the planners of the air raid, concerned the fact that only three reserve helicopters were used. Comment on this criticism was the fact that for every extra two RH-53s, another Hercules would have been needed for support, which would have raised the risk of detection.

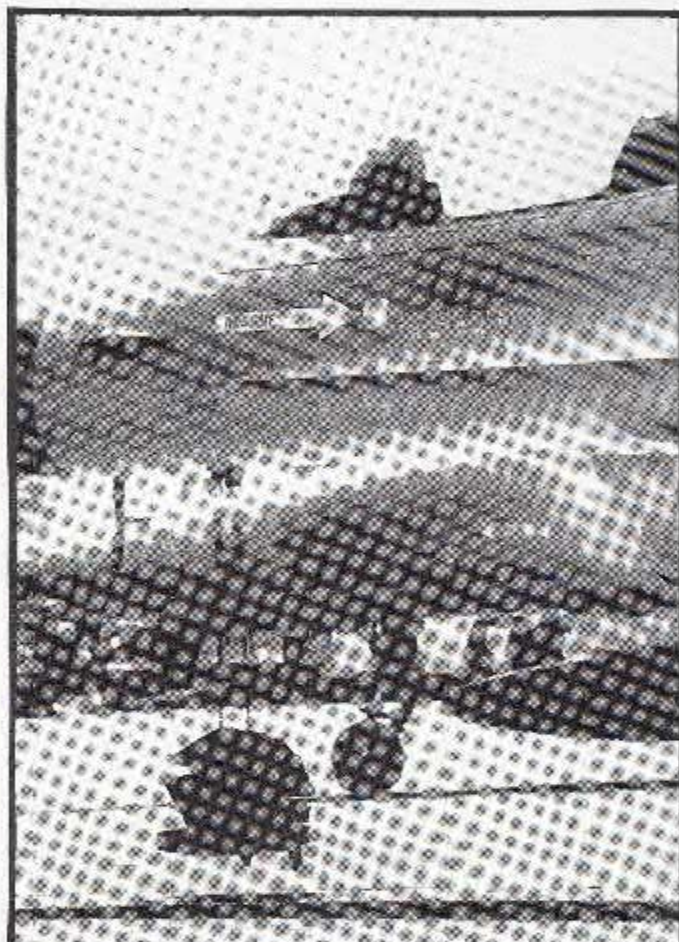
Daily hundreds of helicopter operations are conducted where commercial organisations depend on the reliability of the helicopter. Apparently the preparations for these daily activities are better than for this special operation. If not, the use of helicopters is very doubtful.

Peter van de Krommenacker

MILITARY NEWS



B.707 4X-JYA of the Israeli air force visiting Eindhoven/Brussels airport. (via L. Verpoort)



LIGHT WEIGHT FIGHTER

SCHIPHOL, May 5. Part of a small static display was F-16A J-222 of the Klu. Remarkable were the sandbags attached to the nose of this aircraft. Contrary to most other fighter aircraft, the F-16 is unstable. Previous fighter aircraft were stable which means whatever the aircraft's position, they returned in vertical position automatically.

The F-16 is equipped with a fly-by-wire system and is controlled electrically. The unstable characteristics are a result of the changing gravity center of the aircraft.

Without its pilot and certain fuel cells being empty, it is possible the gravity center of an F-16 moves behind the landing gear. That's why the sandbags.

BELGIUM

• Performing a 'touch and go' at Lille-Lesquin, France, Merlin IIIA CP-03 crashed on April 16th. The accident occurred shortly after take-off when the aircraft overturned to the left. As it hit the ground, fire broke out but was extinguished rapidly. Of the two crewmembers, one was killed on impact and the other died on the way to hospital.

FRANCE

• A new production-line has been set-up at Toulouse for the assembly of a series of 25 new Transall C-160s for the Armee de l'Air. Delivery of the first new Transall has been scheduled for late 1981 and will replace the N.2051 Noratlas of ET.64 at Evreux.

In the new Transalls, the avionics will be updated, the T-O weight increased and in the center section an additional fuel cell will be installed. Also an in-flight refuelling capability will be provided.

• The last day's of Aeronavale's C-47D Dakotas and Armee de l'Air's MD.315 Flamants have been counted. Recently a contract was signed for 35 Embraer EMB.121 Xingu.

The Xingu will service with 568 at BAN Nimes-Garons for navigational training of Aeronavale aircrews. Other Xingu will serve with GE.319 at Avord for twin-engined type conversion.

Selection by the French government of the Brazilian EMB.121 coincides with the intentions of the Brazilian air force to order 50 Mirage 50s.

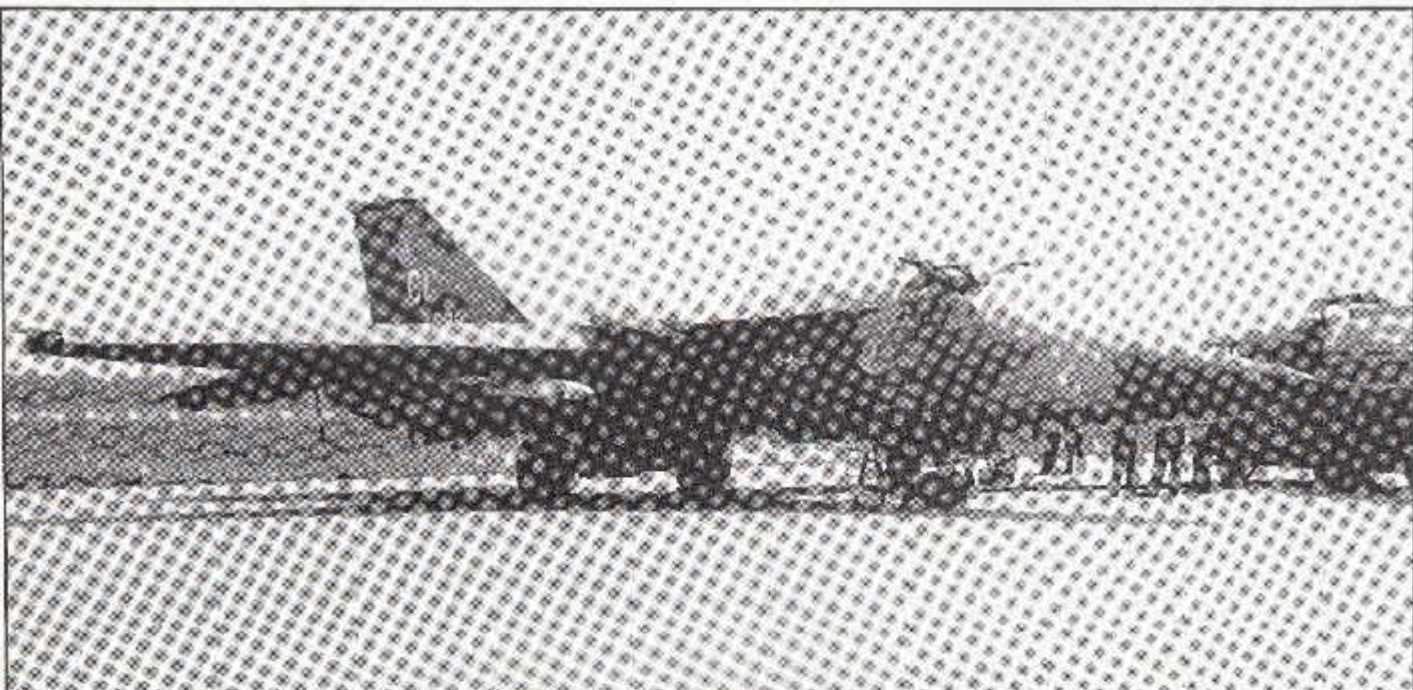
• In June a Grumman E-2C Hawkeye will be evaluated at Mont-de-Marsan by the French test and evaluation unit CEAM.

The Armee de l'Air did not participate in the NATO AWACS programme but has always realized the importance of an Airborne Early Warning defence network. Initially France proposed to contribute financial to AWACS to receive data in return. Now interest is also shown in the Hawkeye and evaluation will include participation in a number of exercises to detect and track high-speed targets at all altitudes.

Apart from France, also Australia is reportedly to be a potential customer of the E-2C Hawkeye. The Israeli air force considers to buy another two E-2Cs bringing their total to six aircraft.

HOLLAND

• Following an aborted take-off, F-16A J-219, returned to its shelter, when the aircraft's brakes blocked and caught fire. Quick reaction of the fire brigade limited the damage to the landing



Diverting from Gilze-Rijen on a cross-servicing flight, were F-111Ds CC68-098 and CC68-165 of 37TFW at Eindhoven on May 23. The aircraft were part of a deployment at Boscombe Down, U.K. (7th Eindhoven)

gear and underside of the fuselage. The incident occurred on April 16 and presently J-219 is being repaired at Leeuwarden.

ITALY

- AMI ordered a new DC.9-30 for delivery to the 31st Stormo. This advanced version including improved range, brings the total of this type in service with the AMI at three.
- Two of the four AB.204Bs of Esercito operated in Lebanon for the United Nations, were destroyed on the ground after an attack of Palestinians.
- An CH-47C of Esercito has been destroyed when it hit a hangar in Abu Dhabi where it was on an official demonstration for the government. In the accident 11 persons, both military and civilians were killed.
- Somali air force has recently ordered 4 G.222s and 4 Piaggio P.166-DL-3s. Six SIAI SF.250Cs have already been delivered.
- Pakistan is negotiating the purchase of an unspecified number of SIAI SM.1019Es.
- The prototype of MB.339K recently made its first flight. The K-model differs from the MB.339A in respect of a new cockpit and the installation of two 30mm guns.
- An 'Aerobatic Patrols Meet' will be held at Rivolto, home base of 'Frecce Tricolori', in September.

UNITED KINGDOM

- On Saturday 17th May, the first BAe Hawk T.1 was lost, after an outstandingly long service history without losses for this type. The Red Arrows had taken off from Biggin Hill to perform at Brighton, a south coast seaside resort. While part way through their display, one of the synco-pair, flown by Flt.Lt. Steve Johnson, caught the top of a yacht's mast, and narrowly missing one of Brighton's two piers, crashed into the sea. Flt.Lt. Johnson ejected from his aircraft safely, suffering only minor bruising, and was flown back to Biggin Hill in an RAF Gazelle helicopter. Less than two hours after the accident, the Red Arrows took to the air again at Biggin Hill using only eight aircraft, giving a superbly improvised show, which if you didn't know that there should have been nine aircraft, looked completely normal and up to the 'Arrows' exceptionally high standard.

FROM A FACILE PEN.....

AVIATION EVENTS

- In addition to the extensive survey given last month, new information has become available:
- The Flugmeisterschaften at Dübendorf will take place on August 22 & 23.
 - BAR reported five Portuguese air bases to be open this year: May 14 - BA Sintro, June 17 - BA Montijo, June 29 - BA Alverna, Oct. 3 - Monte Real, Oct. 25 - Tancos.
 - Remarkable participants of the 'Tag der Offene Tür' at Leipzig on July 13 incl. Swedish Viggen and Draken.

CORRECTIONS

- In FLASH Nr. 114 p.4, it was reported that the F-16s of MOTaE were to arrive at Leeuwarden in late July. This should read June 23.
- In FLASH Nr. 115 p.11, it was reported that operation Red Bean lasted till July this year. If this was to be taken seriously, FLASH would have predicted C-130N CH-12 to have taken off from Kamina on July 9 at 15.00hrs.
- Clever? Not at all, as operation Red Bean took place in 1978.

ABOUT NEW FIGHTERS FOR EUROPEAN AIR FORCES

- Considering the F-5E Tiger and A-7A Corsair, the Portuguese air force selected the latter. Late 1981 delivery will commence of 20 A-7As which will be modernised and redesignated A-7P. The avionics will be brought up to A-7E standards and the engines replaced by the FAW TF30-P-408. Aircraft will be drawn from the stocks stored at Davis Monthan AFB.
- The Swiss air force considers to purchase an additional batch of 40 F-5E Tigers.
- Later this year, five FA-7B Corsairs will be delivered to the Greek AF. The first of this batch, 161219, made its initial flight from Dallas in March.

Military news

● To cope with an expanded training programme for pilots, the RAF purchased 18 additional BAe Hawk training aircraft.

Except for advanced training purposes, 90 Hawks are being fixed with Sidewinder air-to-air missiles to augment Britain's air defence in an emergency. The total of RAF Hawks on order stands at 193 of which 130 are already operational. Total Hawk sales stands at 264 aircraft.

● For two days the British air defence system was tested against a massive threat of air forces simulating both high and low-level air attacks. This NATO exercise 'ELDER FOREST' was the biggest of its kind for the U.K. since WWII. Part of a series of exercises, ELDER FOREST will be conducted biennially.

UK's Air Defence Force was formed by the ground radar chain, the Shackleton Airborne Early Warning aircraft, all RAF Air Force fighters incl. five Phantom units, two Lightning units, Hawk and Hunter aircraft. Additionally a detachment of F-15 Eagles and F-5E Tigers from Alconbury assisted in the defence of the U.K.

Eight allied air forces launched 800 attacks against a series of prime targets, including RAF stations as Leuchars, Coningsby, Marham and Wattisham.

'Enemy Forces' were drawn from F-111s (USAFE), F-4 Phantoms (USAFE, WGAF), Jaguars (PAF), Drakens (RDANAF), NF-5s (RNethAF), F-100Ds (RDANAF), F-104 (RNethAF, BAF, CAF, WGAF), Mirage (PAF, BAF) and Falcon 20 (RNCAF).

● For perpetration of the first flight in August, BAe Nimrod AEW.3 X2286 rolled out from the assembly line at Woodford, Early 1982, the Nimrod Airborne Early Warning will enter service replacing the Shackleton aircraft. The Nimrod AEW squadron will probably be stationed at RAF Waddington.

Since June 1977, a Comet radar development aircraft has completed several hundreds of development flights with the AEW radar system. Earlier this year, a flight development programme commenced on the AEW communications system which is compatible with both the AWACS and NATO systems.

Following its first flight in August, Nimrod AEW.3 X2286 will continue a flight development programme covering aircraft performance and handling, airframe systems and the new high-capacity cooling system.

UNITED STATES of AMERICA

● The annual series of U.S. deployments started on April 23th, when three B-52Ds (50071, 50080 and 60694) of 22nd Bomber Wing from March AFB arrived at RAF Marham. Using RAF Marham as a temporary forward operating base, the B-52s performed in various exercise rôles ranging from simulated high altitude conventional missions to collateral maritime acti-

On April 30th, Nimrod AEW.3 X2286 was the first to roll out at BAe Woodford from a batch of 11 of these airborne early warning aircraft on order by the RAF. (British Aerospace)

FACTS ON AIR RAID

● NOVEMBER 4th, 1979

Followers of Ayatollah Khomeini storm US Embassy in Teheran and threaten to hold the 53 hostages until despond Shah is sent back to Iran.

● NOVEMBER 6th, 1979:

At Fort Bragg a commando company is alerted. Delta Group starts preparations for a possible military intervention. A wide range of possible rescue missions are exercised on the Arizona-Californian border, a landscape that physically matches the terrain of eastern Iran.

● JANUARY 23rd, 1980

Eight Navy Sikorsky RH-53D helicopters arrive aboard the USS Nimitz.

● APRIL 10th, 1980

Delta Group is kept on stand-by for operation Blue Light. Planners have set April 24 as a date for the operation. The day chosen is a national holiday in Iran. Whereas weather conditions are concerned, April is considered to be the best month, as dust and sand storms generally decrease after a windy winter period. This suggestion would prove a serious miscalculation as it is decided not to equip the helicopters with screens fitted over each engine air-intake. The screens, which are designed to reduce the incident of engine foreign object damage, decrease the helicopter's performances by 34.

● APRIL 24th, 1980

At Fort Bragg, three C-130s Hercules are loaded with 90 marines and three other C-130s with fuel cells for the helicopters. The commando's of which some even gained a knowledge of Farsi, the national language in Iran, are responsible to rescue the hostages in the U.S. Embassy.

The six C-130s fly to Cairo, Egypt, and leave in the late afternoon for Oman. There they refuel, take aboard the fuel for the RH-53s and as dark fell they leave for Desert Base 1. 19.30: In four sections of two, the RH-53 leave the USS Nimitz which is cruising some 50 n.mls of the Iranian coast.

21.00: A main rotor failure forces RH-53 No.6 to land. The crew is picked up by No.8.

21.30: Entering an unpredicted dust storm, No.5 loses visual contact with No.3 & 4. A motor failure occurs which has its effects on the navigational systems. Flying as low as 75 ft, the pilots are unable to see the ground. Knowing mountains are ahead at less than 30 min. away No.5 returns to the USS Nimitz.

23.00: The first of the six C-130s arrives at Desert Base 1, a location north-east of Tabas, 200 mls. from Teheran.

Air raid cancelled due to technical failures of three helicopters





One of the 30 RH-53Ds Sea Stallions of the US Navy is this 158761/COR37 of HM-16. The RH-53s are normally used for mine-sweeping purposes. Note the screen in front of the engine for FOD. (B. Ullings/API)

• APRIL 25th, 1980

00.00: SIX RH-53s arrive at Base 1. About 2hrs after take-off No.2 had indicated a hydraulic system failure but had continued the 600 n.mls. Upon arrival at Base 1 inspection reveals a crack in a servo of a hydraulic fluid pump. It is decided to abort No.2. Information is passed on to Washington that only five helicopters are available to continue the operation. Within minutes President Carter and a staff of advisors decide to cancel the operation.

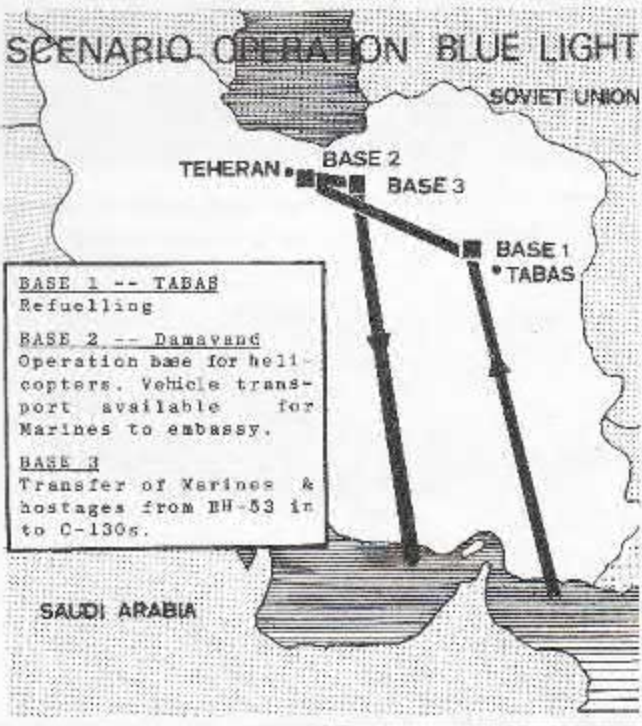
Accident after cancellation of the air raid

02.48: Except for No.4, all RH-53s have enough fuel to fly back to USS Nimitz. The C-130 assigned to No.4 has only little fuel left as the engines had kept running since arrival for 4 hrs. It is decided No.4 to be refuelled by another C-130 of which one of the assigned helicopters hadn't show up. No.3 is directed to clear the area, to make room for No.4. No.3 lifts off but banks about 20 degrees and its rotor blades slice through the fuselage of the C-130. Immediately fire breaks out, trapping most of the cockpit crew in their compartment. Three men in the helicopter and five in the C-130 are killed in the accident.

The commando's aboard the C-130 manage to get out safely. Apart for the fire, there is ammunition exploding all around, and No.1 is struck by a fragment that splits an internal fuel cell. No.3 & 4 also shot down their engines and are evacuated.

03.30: Five C-130s leave Desert Base 1.

This survey has been compiled from various reports in news-papers and Aviation Week & Space Technology. To complete the report on this air raid, a citation of President Kennedy: 'Failure has no friends'.



vities. Before returning to their home base on May 19, flying operations had taken place only on 10 days of their entire deployment.

• On May 7th, 18 F-111Ds of 27TFW from Cannon AFB arrived at RAF Boscombe Down. The aircraft flew non-stop from their home-base and will remain at Boscombe Down till June 9. On May 2, 18 RF-4C Phantoms of 67TFW from Bergstrom AFB participated in readiness exercise 'Salty Bee'. Alternating from Alconbury, this year the RF-4Cs deployed to Aviano, Italy and will remain till June 1.

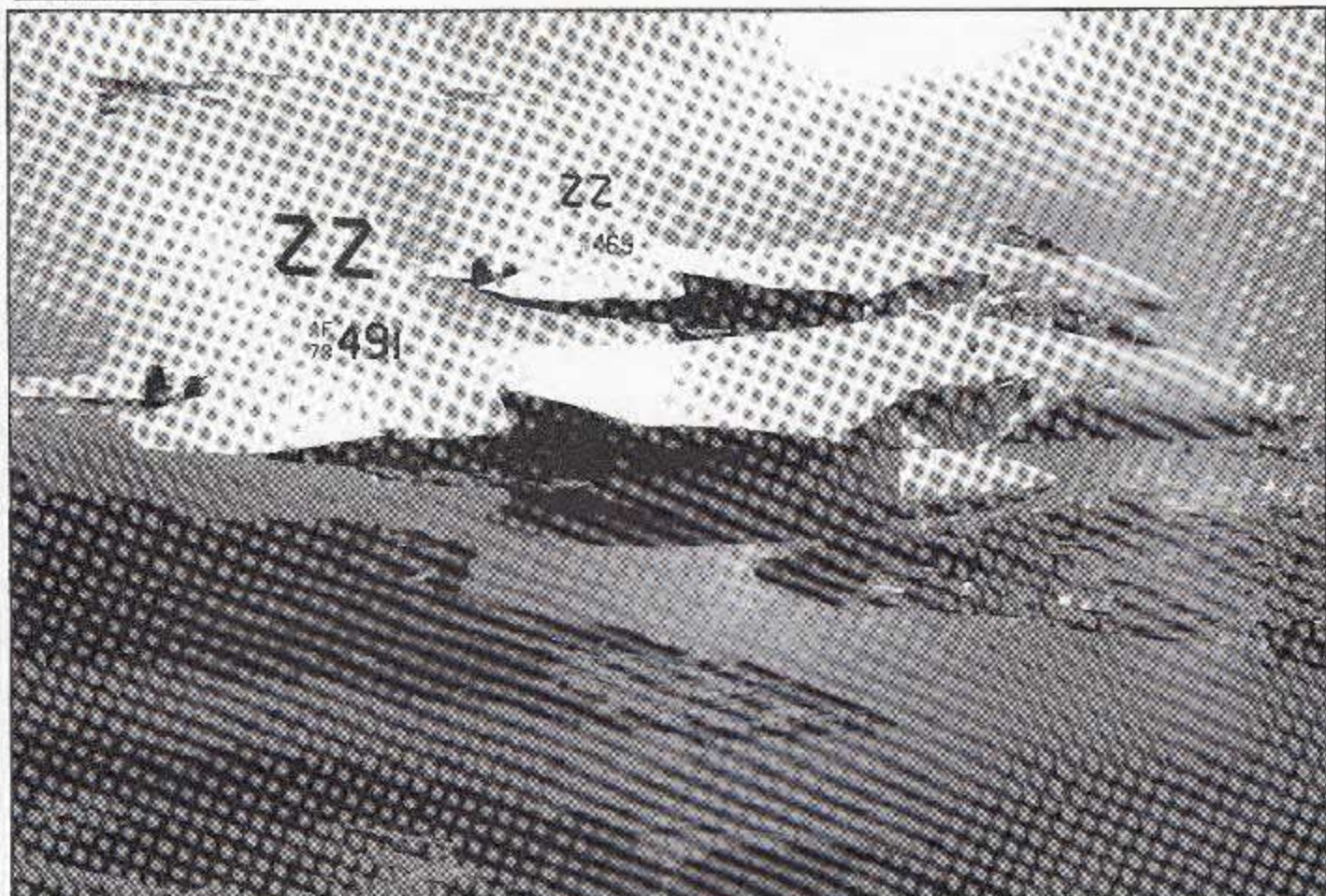
• This summer, the 32nd TFS at Soesterberg, Holland, will start receiving the improved version of the F-15 Eagle, the F-15C & D. These new versions have

enhanced radar detection and tracking capability, plus an additional 2,000 pound internal fuel capacity. The landing gear has been strengthened to carry the increased maximum gross take-off weight of 68,000 pounds.

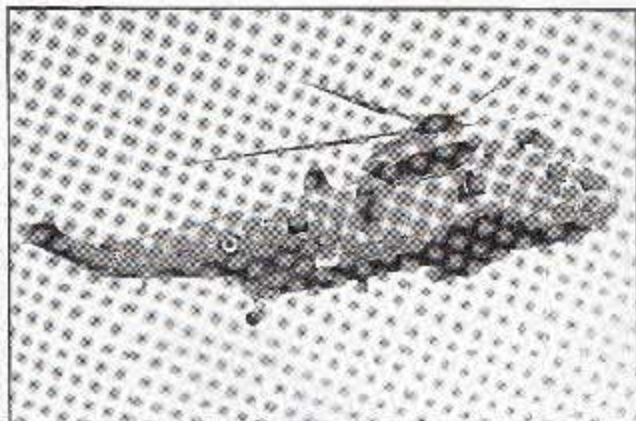
Following the re-equipment of 32TFS, 36TFW at Bitburg will convert to the F-15C & D. The entire conversion is scheduled to be completed by the fall of 1981.

The first wing to have received the C & D-models was 18TFW at Kadena AFB, Okinawa. Delivery of the first two Eagles took place on July 14, 1979 and eventually 72 will be delivered. Ncted F-15C Eagles to be operated by 18TFW: Z278-469, 470, 472, 473 Z278-474, 487, 488, 489, 490, 491, 494, 496, 562 Z278-565.

Military news



Extended range and improved avionics have been included in these P-15C Eagles of 18TFW (McDonnell/Douglas)



An RAF Sea King at Greenham Common. (P. v. Sera)

RAF crew opposes bad weather

On March 27th, the biggest search and rescue operation took place over the North Sea since WWII. Accommodation platform Alexander Kielland capsized in the Ekofisk Oil Field, just off the coast near the Scottish-British border, with 215 people aboard.

The operation involved civilian Norwegian S-61s, RAF Sea Kings from Boulmer, Coltishall and Lossiemouth and Prestwick-based Royal Navy Sea Kings. An RAF Nimrod from Kinloss acted as rescue co-ordination and communication link for the helicopters.

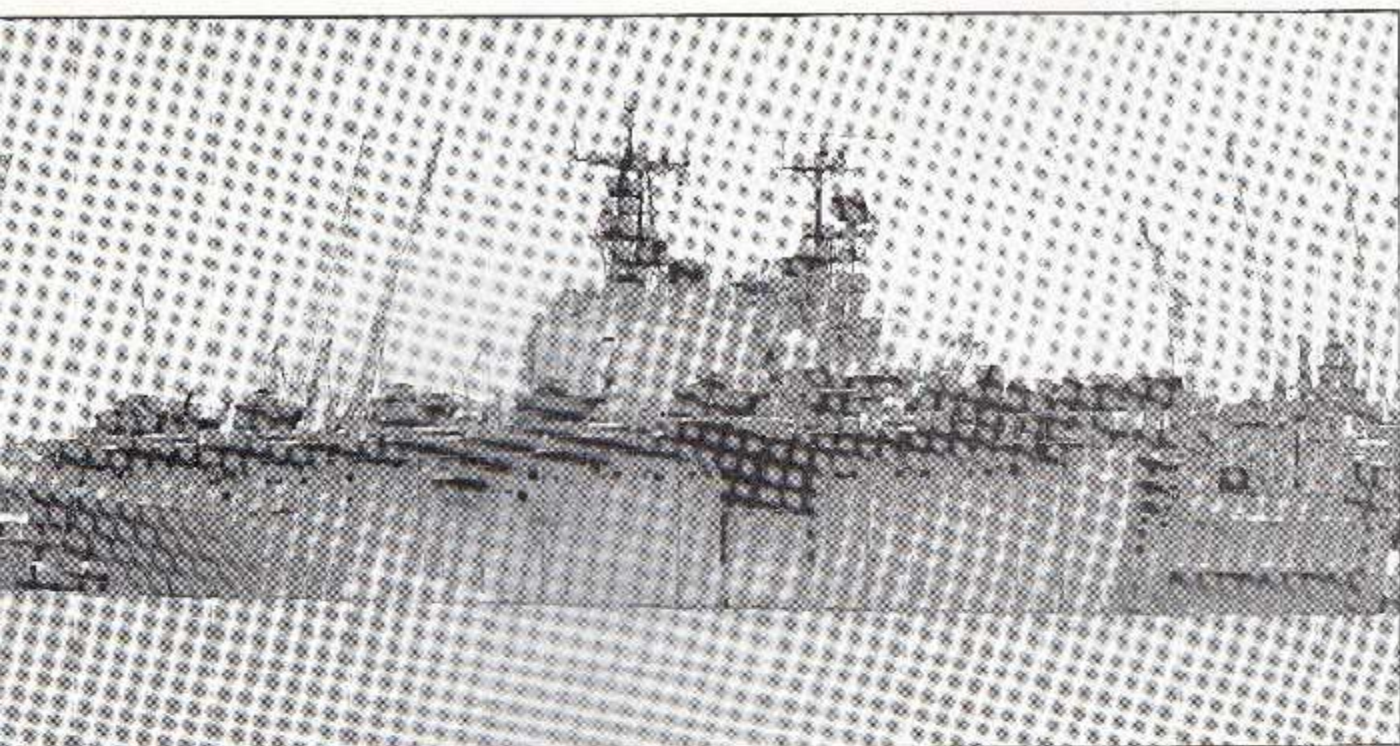
At 18.05 hrs, No.202sqn at RAF Boulmer received the report the Alexander Kielland had overturned. Within eight minutes Flight Lieutenant Neville and his crew were airborne and en-route to the scene of the disaster, some 170 mls north-east of Boulmer.

Approaching the search area, the weather deteriorated rapidly, with wind gusts up to 55kt, cloud base at 200ft, rain and a visibility of 3,200 ft. However, despite still worsening visibility, a life raft with 10 men aboard was soon located. Massive 30 foot high waves prevented a rescue on auxiliary hover trim and Flt.Lt.Neville decided to hover the Sea King in position himself, directed by Flt.Lt.Moody. Attempts to lower Flt.Sgt.Yarwood in the raft failed several times. During the attempts, Flt.Sgt.Yarwood sustained severe bruising of his legs as he was smashed against the side of the bucking liferaft. Unable to get inside the raft while connected to the winch cable, he unlocked himself, swam to the raft, and climbed aboard. With a safety line still connecting him with the helicopter, he was able to recover the winch cable and assisted the 10 survivors to safety.

Having brought the survivors to a nearby oil rig, the search was continued and a lifeboat with 26 men was located. The weather had become even worse and the task to keep the Sea King on station was extremely difficult. Exhausted and in pain from the battery, Flt.Sgt.Yarwood was winched down for a second time, this time with more success. Since there were no injured men in the lifeboat, Flt.Sgt.Yarwood was winched back up, and a surface vessel was directed to the boat.

Six hours after take-off, Flt.Lt.Neville landed on a nearby oil-rig for a deserved rest. The search and rescue mission continued for a further three and a half hours, totalling nearly 10 hours in the search area before returning to Boulmer.

Braving mountainous seas and gale force winds, the Sea King crew received gallantry awards: the Air Force Cross for the pilot Flt.Lt.Neville, the Air Force Medal for winchman Flt.Sgt.Yarwood, and the Queen's Commendation for Valuable in the Air for navigator Flt.Lt.Lahey and winch operator Flt.Sgt.Moody.



USS SAIPAN ON EXERCISE IN NORWAY

One of the aspects of ANORAK EXPRESS was to test the ability of U.S. Forces to be deployed in an unknown European area with extreme weather conditions to operate there alongside combat units of other allied forces. An assignment tailor made for the profile of the USS Saipan being that of an amphibious assault vessel.

Exercise scenario divides forces in North & South Union

Countries of the participating NATO forces are aligned into a North- and South Union. In January tension grows between these two Unions as a result of an alleged increasing threat by the South Union in Northern Norway.

As one of the steps taken to protect its interests North Union embarks the 36th Marine Amphibious Unit of the U.S. Marines on board of the USS Saipan, instructed and prepared for a potential employment in extremely cold areas.

With about 1900 'leathernecks' on board, supported by helicopters, amphibious assault vehicles and a wide range of armament, the USS Saipan is subsequently called to Europe to prepare for immediate intervention. It is joined on this mission by the USS Ponca, an amphibious transport dock and by the USS Newport, a tank landing ship.

The Task Force reached the Norwegian waters by early March at which time the tension between North and South is reaching its climax.

USS Saipan, airborne element without Harriers

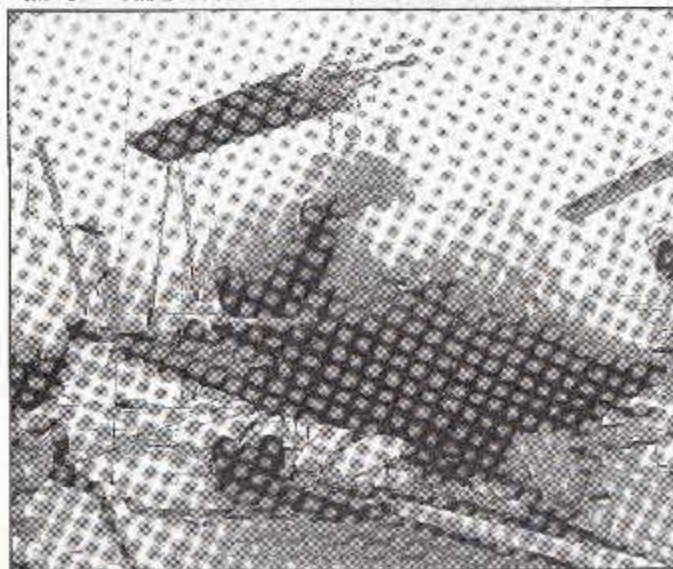
The composition of the force deployed to Northern Europe had already been adapted to the predominated tasks and circumstances. Harriers were not joining the mission as these were to be provided by the British Forces. Instead more helicopters were taken aboard to cope with the increased space-requirements of soldiers in a winter battle-dress and the extra equipment to be landed ashore.

The airborne element of the 36th MAU for 'Anorak Express' on board the USS Saipan consisted of the following choppers:

- 7 CH-53D Sea Stallions - heavy lift helicopters primarily assigned for transport of equipment.
- 4 CH-46E Sea Knights - mainly used for carrying troops.
- 4 AH-1 Cobras - serving in the attack rôle, two of which were T-versions equipped with TOW anti-tank missiles.
- 3 UH-1N HueyCobras -- used for a wide range of missions including command/control, liaison and medevac.

Almost all these helicopters were painted in the mate olive-drab finish, now being applied to all U.S. Marines helicopters. Those still wearing the old glossy dark green finish, will be sprayed-over during the next major overhaul. However, the color renovation is of such tactical importance, that it will be immediately applied in case an actual war situation arises.

AH-1N 'Cuba Cobra' 180107/48 aboard USS Saipan.





CH-46E 153028/33 in front of Rotterdam's Euromast.

Maintenance facilities are available on board to provide for almost any imaginable repair for these machines, which is one of the vital necessities to enable the Task Force to perform independent missions.

Time moving across the Atlantic is spent to check and check again for any faulty parts that might hamper optimal functioning when called upon for action. Helicopter pilots update their night-qualifications which, lacking all points of orientation available in daylight, is a most demanding activity.

The USS Saipan's flight-deck has 9 landing positions for simultaneous operations. Six of those are situated over the full length of the vessel on the port-side, requiring the pilots first to hover alongside the deck and then move in sideways 'as if it would be a car parking in a busy street'. One would imagine that the huge 'Stallions' might find life more difficult there, but surprisingly their pilots claim themselves to be ready to challenge their Cobra-colleagues whereas manoeuvrability is concerned.

36th MAU hits the beach D-Day

On March 14th, the 36th MAU hits the beaches on the pre-designated landingzones in the vicinity of Rossfjord. The day before, reconnaissance teams already went ashore to obtain the necessary details in order to prepare the landing and to guide the preceding attacks by the Cobras.

As soon as the fleet of Armtrak amphibious troop-carrying vehicles has reached the shores, the transport-helicopters commence their shuttle flights to and from the USS Saipan moving in more troops and equipment for the attacking forces. 36th MAU's Service and Support elements is responsible for the logistics backing of the troops in the field as well as for activities such as food supplies and medical assistance.

The battle continues for four full days by which time the 36th MAU, operating alongside the 3rd Commando Brigade of the British Royal Marines, successfully reaches and seizes the city of Bardufoss thereby accomplishing their pre-set tasks.

Even though all in 36th MAU agree that ANORAK EXPRESS was a most satisfactory exercise, there was one major disappointment: 'It was not cold enough.....'

AIR FORCE ELEMENTS IN ANORAK EXPRESS

PHASE I (Febr.28 - March 4) WARNING & ALERTING

Since early January, the North Union has been complaining about an alleged build-up of South Forces in Western Europe. Late January, the North Union writes to the Norwegian government that the armed forces in Northern Norway are far too large for the defensive requirements. In February, the attitude of North Union becomes hostile and newspapers & broadcasts protest against the 'south threat' in North Norway. An ultimatum is issued demanding a complete demilitarization of that area within 4 weeks.

PHASE II (March 5th - March 13th) DEPLOYMENT

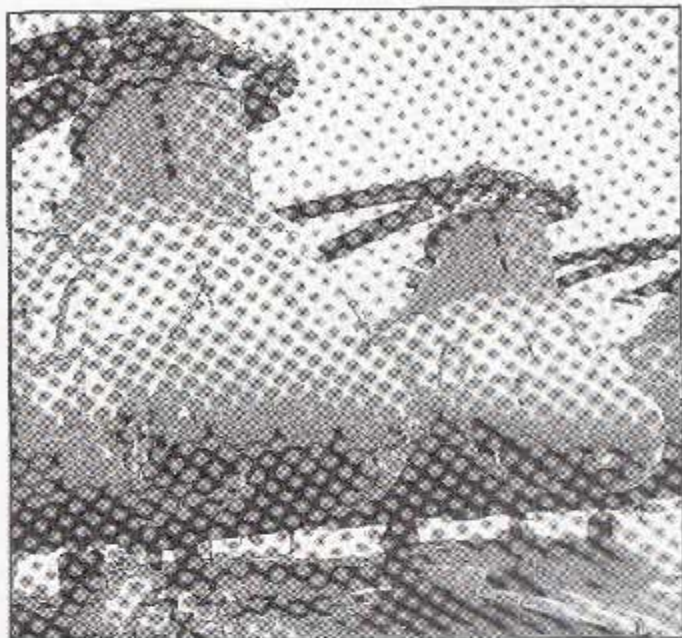
Allied Mobile Forces (Land & Air) deploy to the contingency area and commence deterrent operations. Alongside Royal Norwegian army elements, AMF(L) is responsible to defend Norwegian territory. AMF(A) elements providing air coverage include 53TFS/36TFW (USAFE) F-15 Eagles, 10TFS/50TFW (USAFE) F-4E Phantoms, 314Sqn (RNethAF) NF-5s, No.1Sqn (RAF) Harriers, 433/434Sqn (CAF) CF-5s. Additionally Norwegian air force units are involved: 331skv F-104G, 719skv DHC-6 Otter, 335skv Falcon and 339skv UH-1B.

PHASE III (March 14th - March 19th) EMPLOYMENT

When the Norwegian government denies the ultimatum North starts hostile activities and launches an amphibious assault. The assault force is formed by British Marines of 3CDO BDE and US Marines of 36th MAU. Air Force elements covering the assault are 53TFS/36TFW (USAFE) F-15 Eagles and Norwegian air force units 334skv CP-104, 336skv RF-5, 338skv F-5 and 335skv Falcon.

A remarkable incident during the operational phase is the presence of a real enemy aircraft which wants to watch two Dutch NF-5s of 314sqn practising during the exercise. About to start firing at a target being towed by a British frigate, a warning from the frigate is received to hold fire. At 600ft a Russian Badger looms up in front of the two NF-5s. Only by making a sharp turn, a collision could be prevented.

PHASE IV (March 20th - March 27th) REDEPLOYMENT



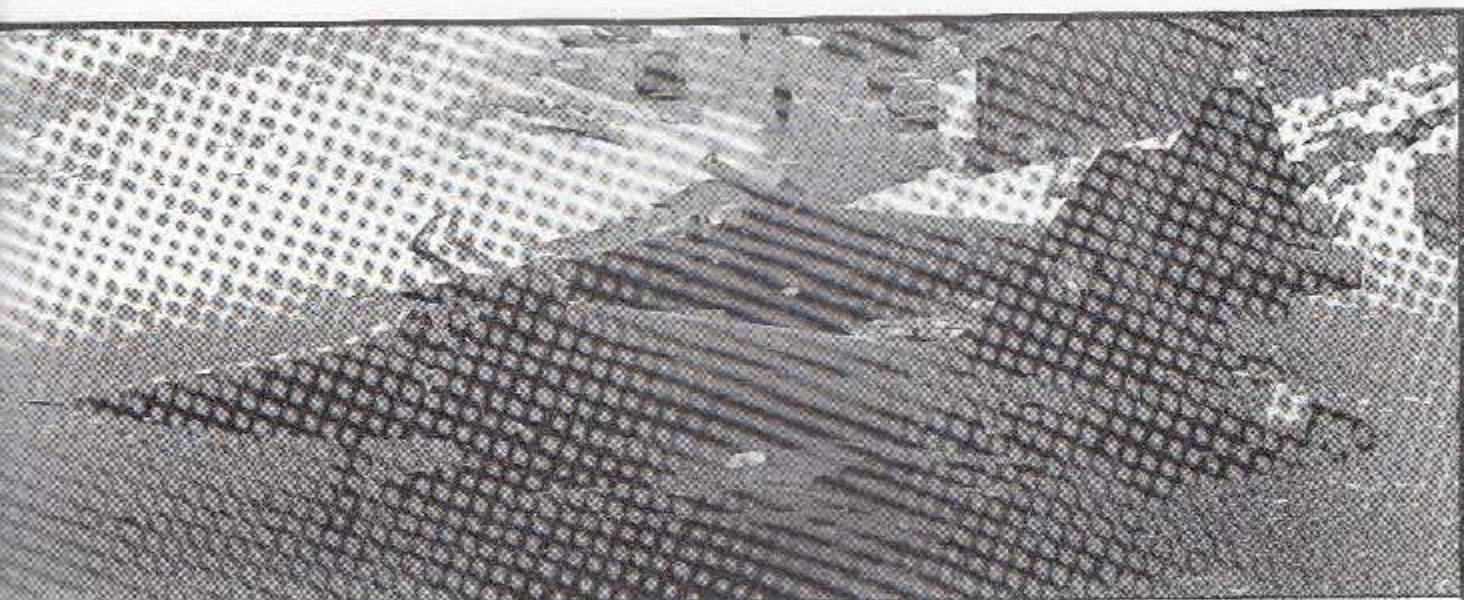
Prepared for just about anything, the Marines found the Norwegian circumstances less extreme than expected, and in fact inferior to those met during their training in the Colorado Heights where the higher altitudes demand extra efforts. Arrangements made to pre-heat the engine oil for the helicopters before bringing them on deck, did not have to be utilized. Moreover, the Marines did not suffer a single case of frost-bite.

One interesting aspect of operations in the field is that the Marines still swear by the use of snow-boats rather than skis as used by their European allies. Claiming not only to be more vulnerable on skis, but specially that intensive utilisation of the helicopter, if necessary only to move a mile or so, makes them faster in the end.

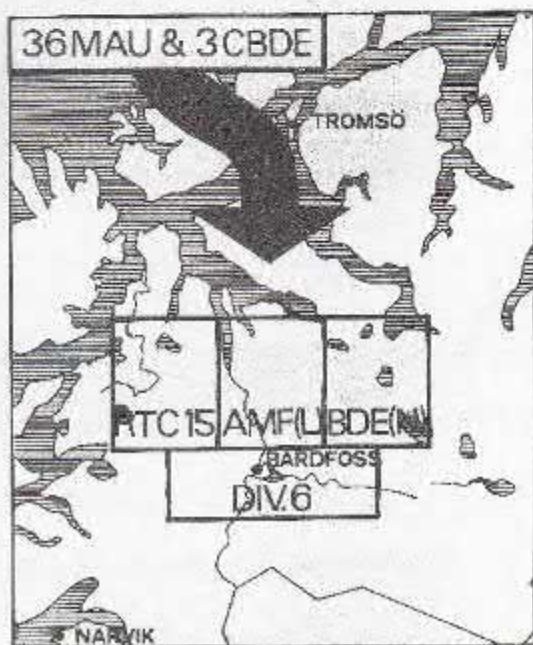
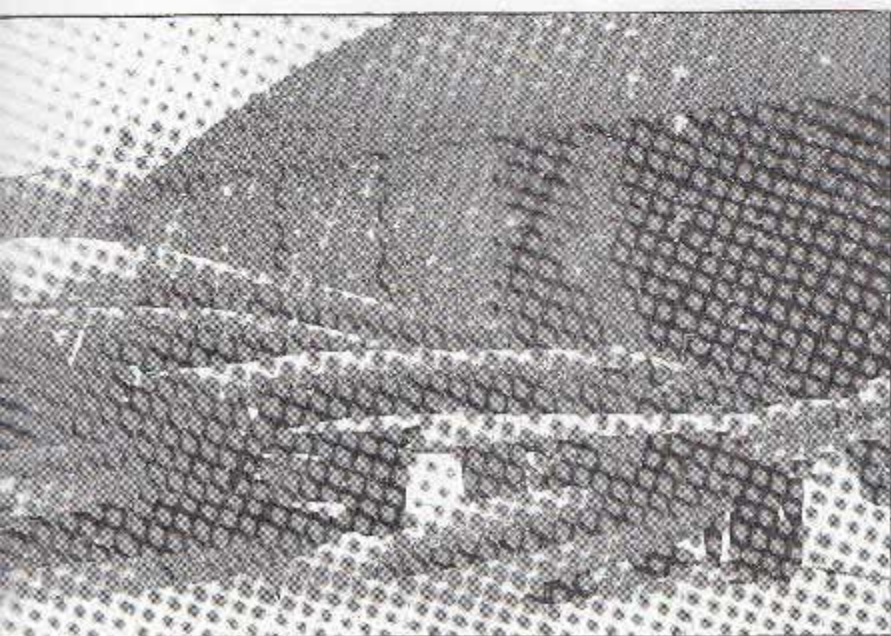
ANORAK EXPRESS did not give an answer to the question which method is best, but for sure it took away any doubts that might exist with respect of the capability of U.S. Forces to meet the challenge of a deployment in Northern Europe's winter arena. □

Photos were made when USS Saipan visited Rotterdam Harbour between March 28th and 31st, homebound following its participation in ANORAK EXPRESS.

Articles and photos by Dan Ullings



AV-8s of 31stqn, 22ndMAF, on deployment at Bodø, Norway (71b, Rindhaven).

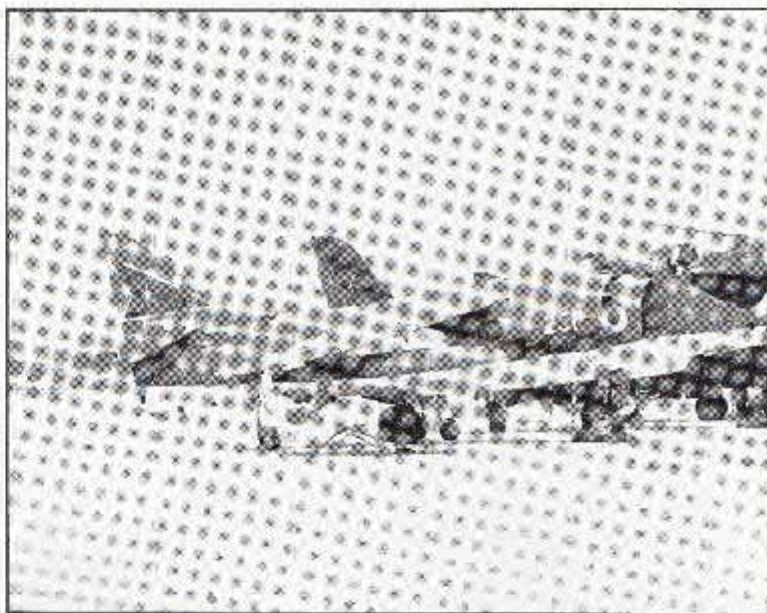


On April 23rd, St. Georges Day in England, a new fixed-wing aircraft formally entered service with a Royal Navy squadron. The Sea Harrier FRS.1 and No.800sqn, were brought together to carry on the tradition of carrier operations which died with the HMS Ark Royal.

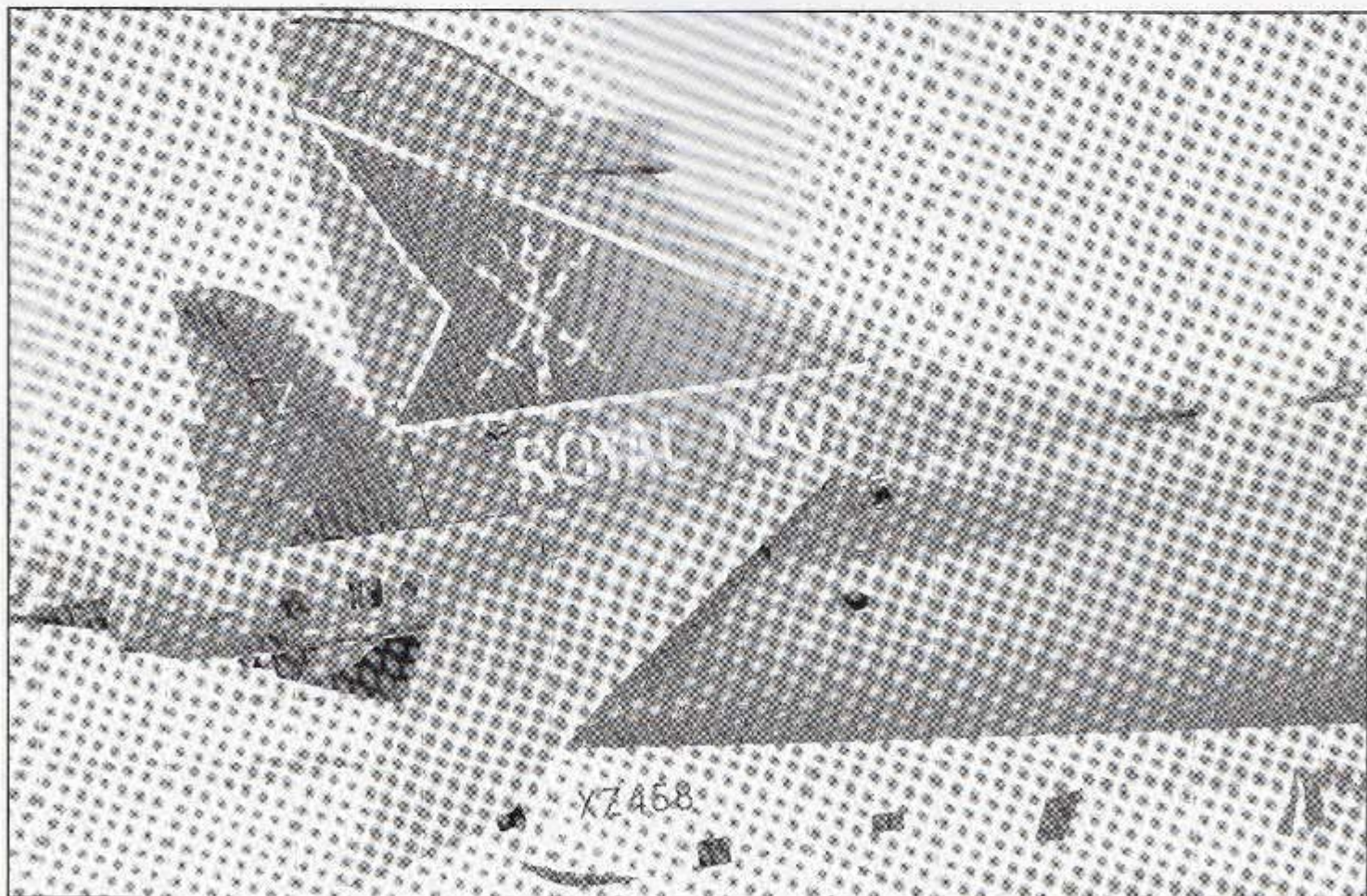
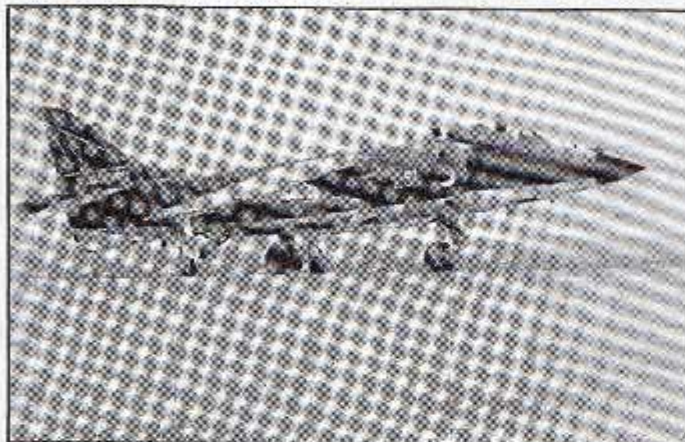
Such was the importance of the occasion, that First Sea Lord, Admiral Sir Henry Leach, GCB, ADC attended, making the observation that, '800 squadron is dedicated to keeping peace throughout the world'. He predicted that, 'there is no doubt that marine VTOL operations are here to stay, and that most navies throughout the world would see their application in some form'.

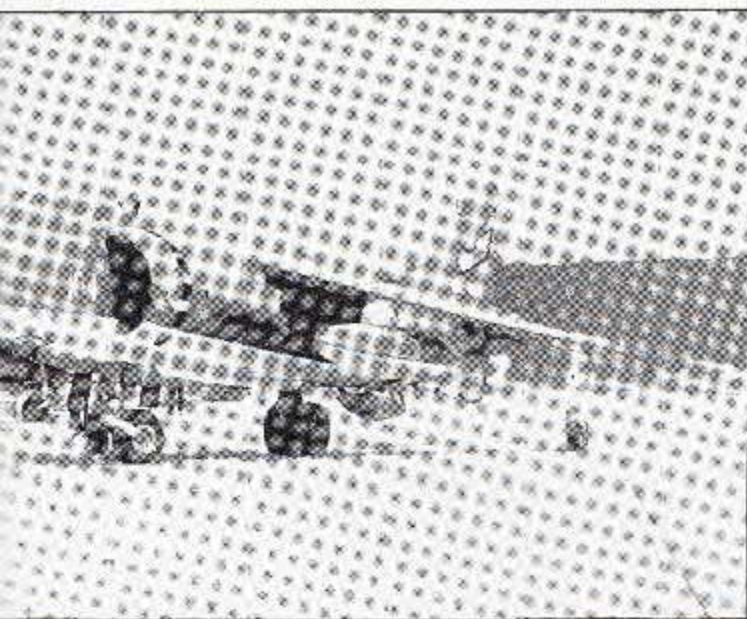
Squadron markings for 800sqn consist of a red triangular marking, edged in white with a trident and crossed swords superimposed in gold. Headquarters squadron for the Sea Harriers will be 899 squadron, and already 700A's aircraft have been applied with the familiar black and white mailed fist.

Article & photos by Barry Bailey-Hickman



SEA HARRIERS AT

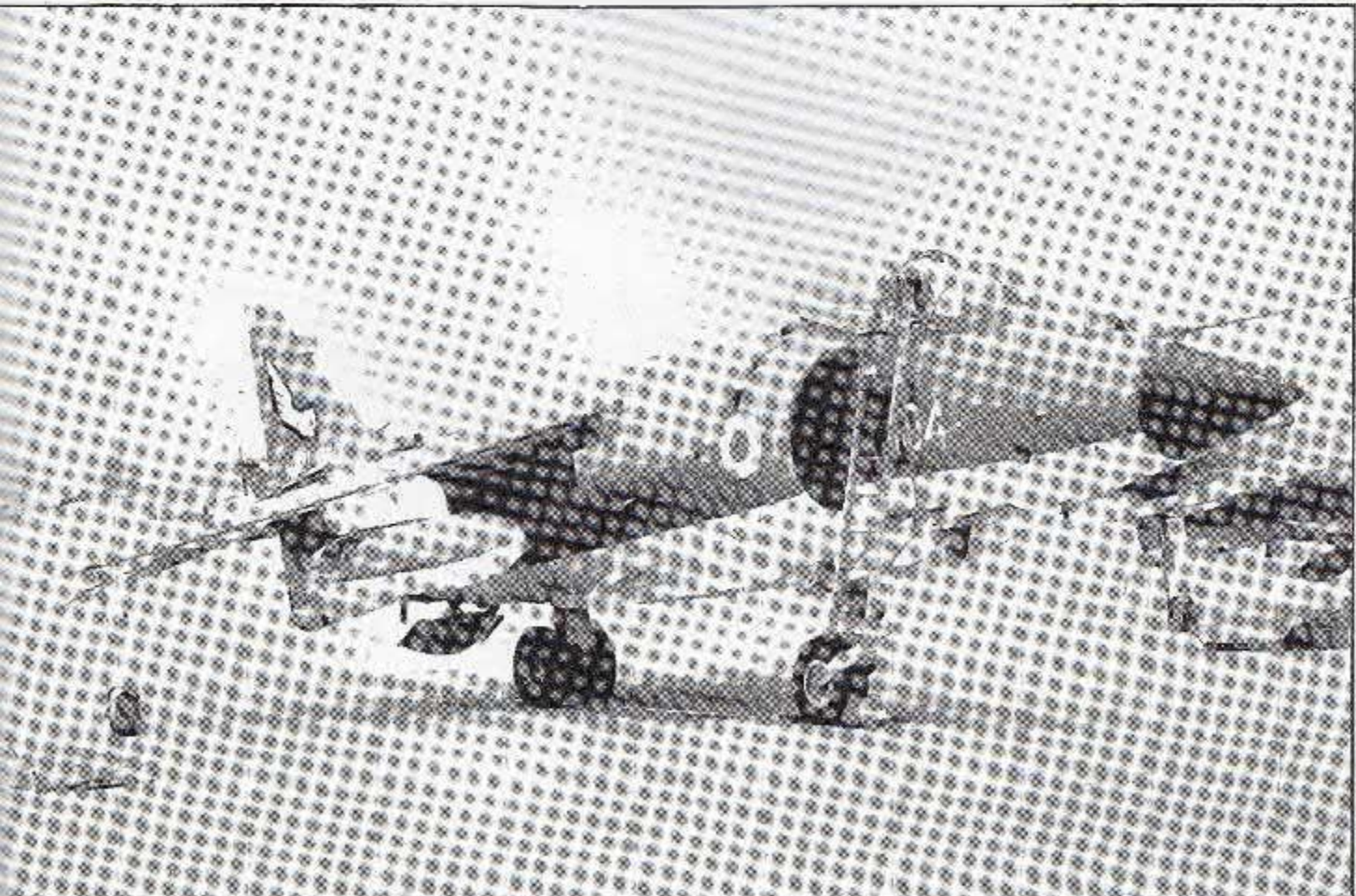
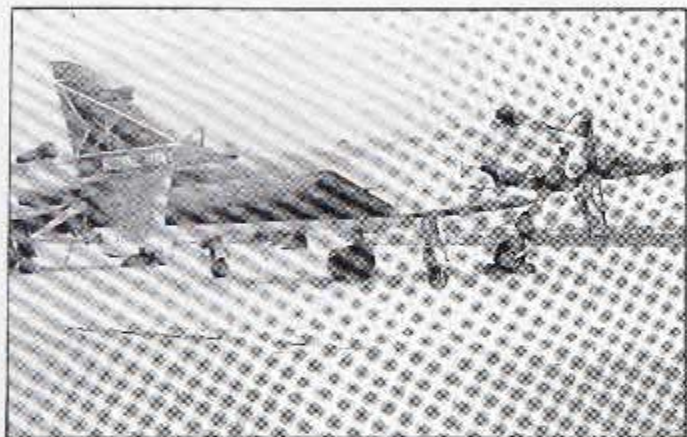




RNAS YEOVILTON

Sea Harriers present at RNAS Yeovilton on April 23rd and illustrated on these pages are:

XZ451	'100'	Sea Harrier	FRS.1	700A Sqn
XZ456	'103'	Sea Harrier	FRS.1	700A Sqn
XZ457	'104'	Sea Harrier	FRS.1	700A Sqn
XZ453	'105'	Sea Harrier	FRS.1	700A Sqn
XZ454	'250'	Sea Harrier	FRS.1	800 Sqn
XZ458	'251'	Sea Harrier	FRS.1	800 Sqn
XZ147	'Z'	Harrier	T.4	233 OCU
XZ445	'Q'	Harrier	T.4	233 OCU





ABOVE: Herds of general aviation aircraft were present at Hannover as illustrated by this view on the "Piper corner". BELOW: Military top attraction was the Boeing E-3A Sentry 79353 of 522ABW4CN playing over during the weekend.

Internationale Luftfahrt-Ausstellung Hannover 1980 24.4.-1.5. ILA'80



HANNOVER, APRIL 23rd - MAY 1st. For two years there were certain doubts about the utility of the International Luftfahrt Ausstellung (ILA). The larger aircraft companies which used to exhibit their products at Paris Air Show showed decreasing interest in ILA due to decreasing commercial results.

In General Aviation, however, the organisers of ILA were very successful and it seems this kind of aviation is finding its way to ILA.

ILA'80 confirmed this tendency and events as an 'Old-time rally' and 'Starnflug' confirm the increasing success to appeal for companies in the General Aviation sector to display their products at Hannover.

Of course ILA is also a showwindow for the German aircraft industry. Since this aircraft industry is expanding rapidly, their exhibition areas increase accordingly. Moreover, the German industry often seeks co-operation with foreign industries. As a result these foreign aircraft industries involved in German products, also attended ILA with extensive exhibition areas e.g. Airbus, Aerospatiale, Dassault and British Aerospace.

Much effort was made to attract companies in the General Aviation sector. All display areas had open connections to the taxi-tracks and runway. If a company wanted to demonstrate one of its aircraft to a potential customer, they get the key of the aircraft, start the engine and ask permission from the control tower for a demonstration flight.

Closely related to these efforts are the attractive air displays which are an essential part of ILA. This year three national aerobatic teams displayed during ILA80. Including the Red Arrows with their new Hawk aircraft.



**Less aircraft on display
compared to 1978**



Two German products in use of two German operators, Luftwaffe Alpha Jet 40-22 in front of Lufthansa A300 Airbus D-AIBG.

The 13th ILA had 128 registered aircraft, compared to 168 in 1978. Of this number the major part were general aviation aircraft incl. 10 Beech, 19 Cessna and 20 Piper aircraft. New aircraft displayed by these companies were the Cutlass RG, C.335 and Piper's new Saratoga family.

Remarkable was the presence of the Polish aircraft company PeZetel with licence-built versions of the Ralley 100 (PZL-110 Warszawa) and PA.34 Seneca (M.20 Mewa). Other aircraft of this company present at Hannover was a PZL-104 Wilga, and helicopters Pezetel Kolibri and PZL Kania.

Some companies showed their intentions to set foot in the Maritime Patrol Surveillance aviation. So far only small aircraft have successfully been sold for these requirements. Therefore present at Hannover were IAI's Sea Scan, Beech's Maritime Patrol, and Piper Surveillance Cheyenne.

The continuous success of MBB's Bo.105 helicopter traditionally draws all competing companies to ILA to demonstrate their achievements in this part of aviation. Present were Aerospatiale with the SA.365 Dauphin and AS.350 Ecureuil. Bell showed their increasing efforts made for long-range helicopters for the commercial market which is needed badly to cover up the decreasing market share on the military scene. Present were the first Bell 222 delivered to Europe, prototype of Bell 214ST, a Bell Long Ranger and a Bell Jäger Jet. Although announced, the Bell 412 didn't show up. The French aircraft industry showed to be well represented in business and light aviation. Robin displayed five aircraft and Socata had sent four different Rallye versions to Hannover. Dassault lined up its three Falcon versions: Falcon 10, 20 and 50.

In the list of military attending aircraft, the Boeing E-3A Sentry was the biggest attraction. Participating in NATO exercise Greek Sentry, it was on detachment at Ramstein and attended Hannover during the weekend.

Flying twice a day was RFB's Fantrainer 400 D-EATJ. Around this two-seat, turbo-fan powered, training aircraft it has been remarkably quite the last two years. The Luftwaffe showed great interest in this aircraft as a replacement for the Piaggio P.149D. Although announcing several times to make a final selection, the Luftwaffe issued some modifications to be included in the Fantrainer in stead. Confirming the intentions of the Luftwaffe to order the Fantrainer, Rheine Flugzeugbau shall have to wait a little for a definitive contract. Meanwhile also the USAF is showing increasing interest in the Fantrainer. At times of raising fuel costs, the low fuel consumption of the Fantrainer in combination with flying characteristics of a jet aircraft the Fantrainer's future looks promising. Missing aircraft at the Hannover air show were De Havilland's DASH-7 and Fokker's F.27 & F.28, but both companies announced to prefer Farnborough later this year. Also failing to appear was Canadair's Challenger but due to the crash of prototype No.1, the company had to revise the test programme and more priority was given to obtain a Canadian type certification.

German aircraft industry started production in three major programmes



Reporting on ILA'80, automatically includes a report on the achievements of the German aircraft industry. This year it could proudly announce that it's three major companies are involved in the production of Europe's three major aircraft programmes: MBB in Tornado, Dornier in Alpha Jet and VFW in Airbus.

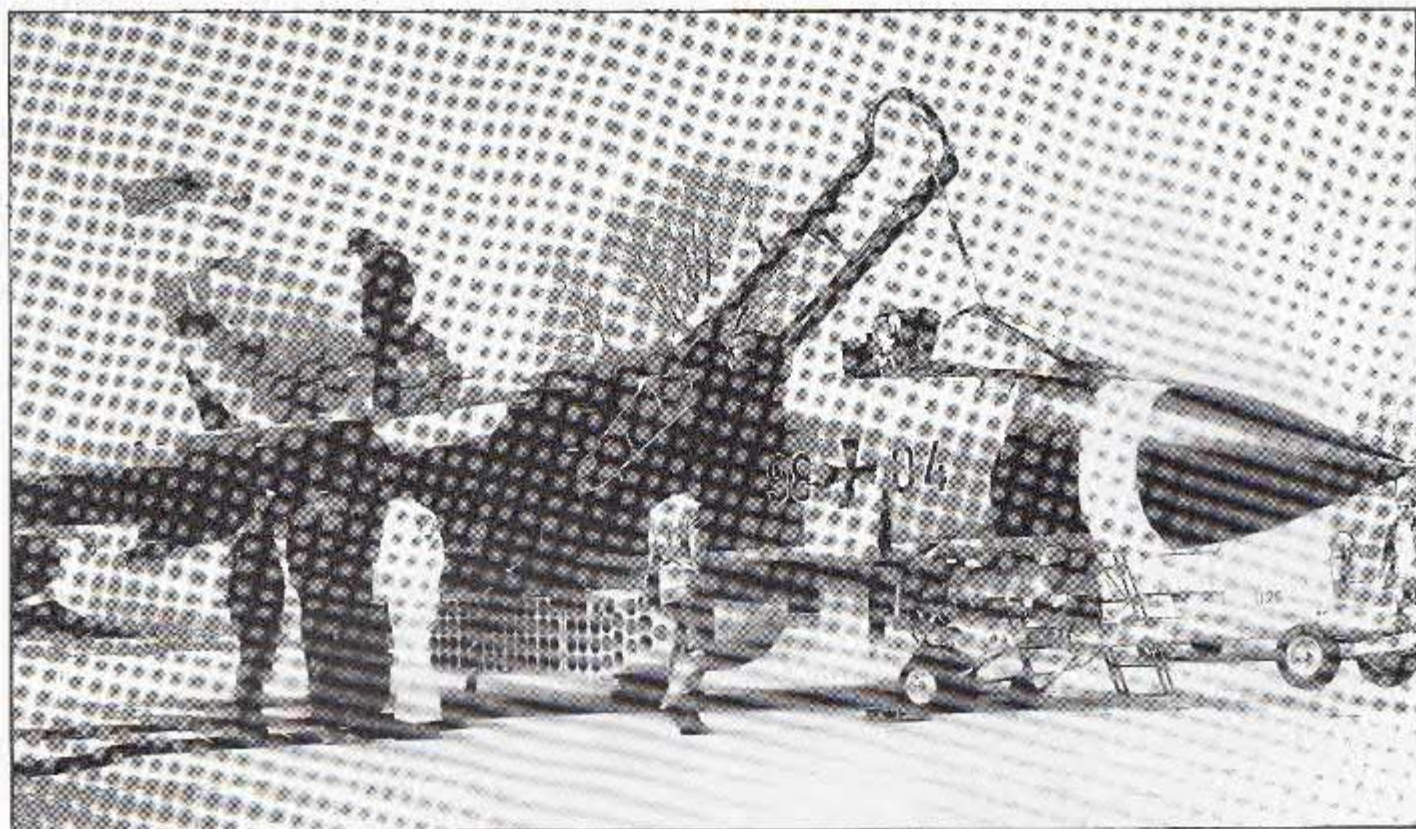
The Tornado is in full production and MBB Augsburg recently started work on the 100th wing-box and MBB Manching started assembly of the 15th Tornado for the Luftwaffe/Marine. The Alpha Jets for the Luftwaffe are on Dornier's assembly-line at Oberpfaffenhofen. All Airbususes are first flown to VFW Bremen to be furnished prior acceptance flights and delivery to the customers.

Meanwhile development and market research are continued for new programmes. MBB's Military Aircraft Division is trying to assure Germany's interests in the new European Combat Aircraft programme. MBB's Helicopter Division launched a new derivate of the Bo.105, the BK.117. In co-operation with Kawasaki, Japan, this new helicopter offers an extended passengers capacity. Displayed at Hannover was the 2nd prototype D-HDLR.

Dornier's efforts appear to concentrate on the promotion of the Alpha Jet and the launch of new DO.28 versions for short-haul requirements. The latter includes the introduction at ILA of two new DO.28 versions and two stretched versions.

The de-merge of VFW from Fokker, Holland, is facing some juridical problems and could not be realized on February 29th. Later this year, once the de-merge will be a fact, VFW is expected to merge with MBB soon. VFW's main aircraft programme is the Airbus and as owner of Rheine Flugzeugbau also the Fantrainer.

An unpleasant occurrence during ILA was the absence of a Tornado during the official opening ceremony on April 24th. Panavia's intentions were to display a Tornado with the MW-1 rocket dispenser pod. For this reasons only P.01/98-04 was suitable for display but according to the programme's time schedule it first had to complete one other test-flight. But due to heavy snow fall in Southern Germany, Manching was closed at the time ILA was opened and P.01/98-04 could neither complete that single test-flight nor appear at Hannover. Three days later, the officials of Panavia could relief as for 30 minutes the weather conditions at Manching allowed production Tornado 43-02/GT.002 to take off and fly to Hannover. Later this aircraft was replaced by P.01/98-04 and Tornado air displays could be included in the Flying Programme.



Tornado 99-04/P.01 showed up at Hannover on April 28th. Note MN-1 rocket dispenser pod under fuselage.

COMMUTER AIRLINE OPERATIONS

SAAB and De Havilland are presently refining designs of their resp. commuter aircraft which should enter production in the next three years. Initiatives for these kind of aircraft grew from the expectations that in the 80s there will be a great demand for short-haul flights with 30-40 passengers.

Whereas the amount of passengers is concerned, this kind of aircraft is in the top of the commuter market as 40 or more passengers is considered to be the airliner market.

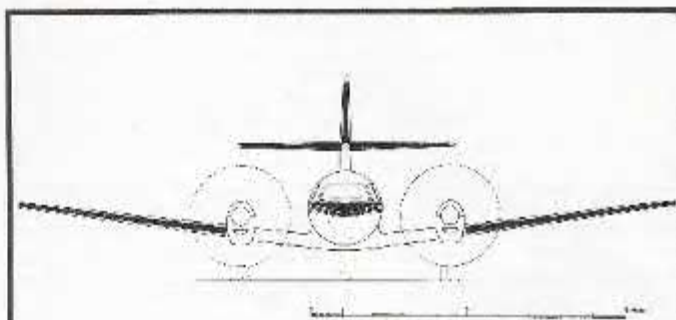
The demand for a short-haul 30-40 passenger aircraft has been estimated at 1,900 in the near future. To meet this enormous demand, only four versions are known today: Short 330, Embraer EMB-120, SAAB Commuter Airliner, and DASH-8. Of these versions only the Short 330 is in production and presently the orders for this aircraft stand at 58, mainly to be delivered to U.S. operators. Therefore it can be concluded that the demand for this kind of aircraft will soon spread to other contingents.

The EMB-120 is a logical expansion of Embraer's commuter aircraft versions. Embraer has been very successful in the smaller aircraft so far and the sales records are very good even in Europe.

De Havilland has announced to start promotion of their DASH-8 at Farnborough. SAAB, however, started promotion of their Commuter Airliner design at Hannover.

Commuter Airliner. This Swedish aircraft company has a rich history whereas military aircraft are concerned but recently it decided to start also in the promising commuter aircraft sector.

Lacking experiences, SAAB contacted Fairchild, of which Swearingen is a subsidiary. A combined project team was formed and launched the first real European aircraft project from the initial definition phase. The model shown at Hannover was a low wing design, two turbo-prop engines and 34 seats. The Commuter Airliner has been designed for short hauls of 30-35 minutes logging 3000-4000 hours per year. For this purpose SAAB aimed at simplicity in the systems, operations and maintenance in combination with fail safety and safe-life constructions. First flight of the prototype has been scheduled for late 1982/early 1983.



SAAB-FAIRCHILD Commuter Airliner



SAAB reveals details on Commuter Airliner

Not only the aircraft on display are interesting to be mentioned in the report on ILA'80. Inside the halls certain models were shown revealing company's intentions for the near future. The most remarkable model displayed at Hannover was SAAB's

At ILA'80, Dornier displayed the first versions of the company's recently launched commuter programme. Displayed to the public were the prototypes of the DO.128-2 (D-IDWM), DO.128-6 (D-IBUF) and the TNT-version (D-IPNT).



Four new versions of Dornier's DO-28

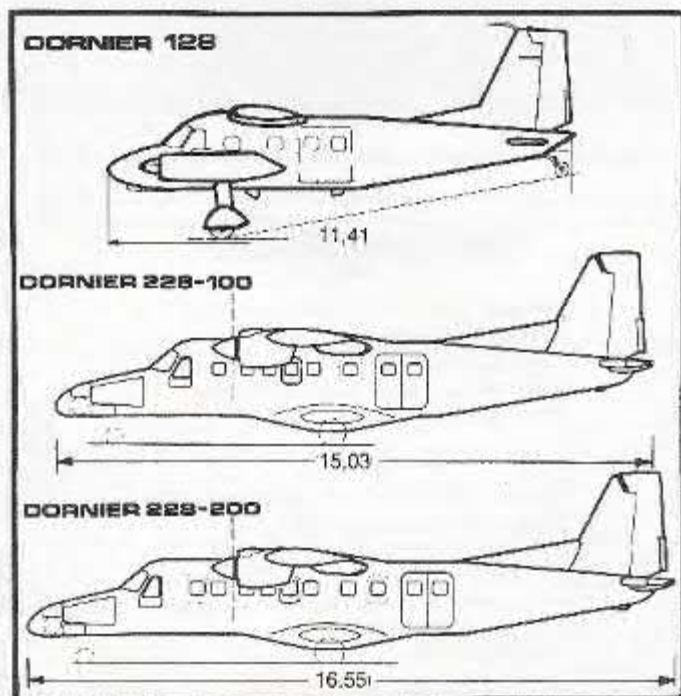
Dornier's future commuter family is built-up around the well-known DO.28D-2 Sky Servant, with new versions for 10, 15 & 19 passengers. Since cockpit lay-out and basic designs are the same for all versions, a commuter company operating these aircraft will be able to adjust its passenger capacity fast and efficient to the passenger demand.

Backbone of Dornier's Utility Comuter Range are two new versions of the DO-28D for 10 passengers. DO.128-2 will replace the DO-28D on the production-line and will be provided with two Lycoming 540A1E engines to compensate increased take off and landing weights. DO.128-6 will be a Turboprop engine version of which the prototype made its public debut at Hannover. Due to their rugged and deliberately simple design, both versions can be used for a multitude of missions.

Larger versions in Dornier's Utility Comuter Range are the DO.228-100 and DO.228-200 for resp. 15 and 19 passengers. Although the fuselage sections of both versions are largely identical to the DO.28, considerable changes have been introduced. Essential is the introduction of the TNT (New Technology Wing) which is expected to give an enormous improvement in performance and economy especially for commuter aircraft. Installation of this new design aerodynamical wing has some consequences on the design of the DO.228-100 & -200. The two engines have been attached to the wing and a retractable gear will be attached to the centre fuselage.

Both DO.228-100 and -200 prototypes are scheduled to be present at Paris air show next year.

The largest descendant in the new Dornier family is the Light Transport Aircraft (LTA). It has not yet been decided whether this version will be launched as Dornier intends to co-operate with another company in this project to develop a 30-seat commuter aircraft. Decisions will depend on the success of the DO.128/228 but also on the use of the TNT wing. Including the LTA, Dornier expects to sell 400 aircraft, mainly in Europe and development countries. In the latter Dornier has already built itself a good reputation with the DO.28.



Three models of the Eurofighter to meet resp. French requirement ATC.89, German requirement TKF.90 and British requirement AS1.403.



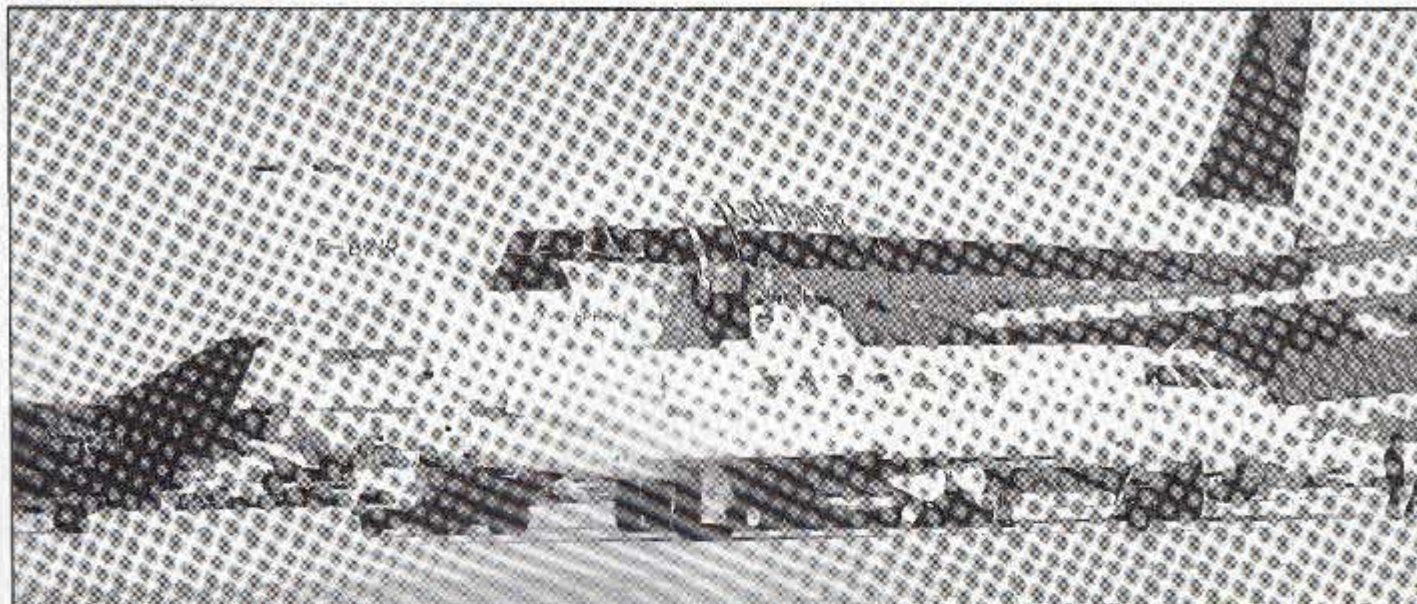
Industry agrees on European Combat Aircraft

Just prior to ILA'80, three major European aircraft manufacturers agreed to join in the European Combat Aircraft (ECA) programme. Months of negotiations between Dassault, MBB, and British Aerospace were concluded and might be the basis for Europe's biggest challenge of all times whereas aviation is concerned.

At Hannover, all three companies announced their co-operation in the new programme and both MBB and Dassault displayed models of their designs.

MBB's TKF90 (Taktisches Kampf Flugzeug) appears to have been fixed and an 1:1 scale mock-up was part of the company's exhibition. Part of Dassault's exhibition were two mock-up models of the ECA. One being a derivative of the Mirage 2000 provided with canards. The other design being a true scientific fighter. Not displayed was the British design, although photo's were released from their model.

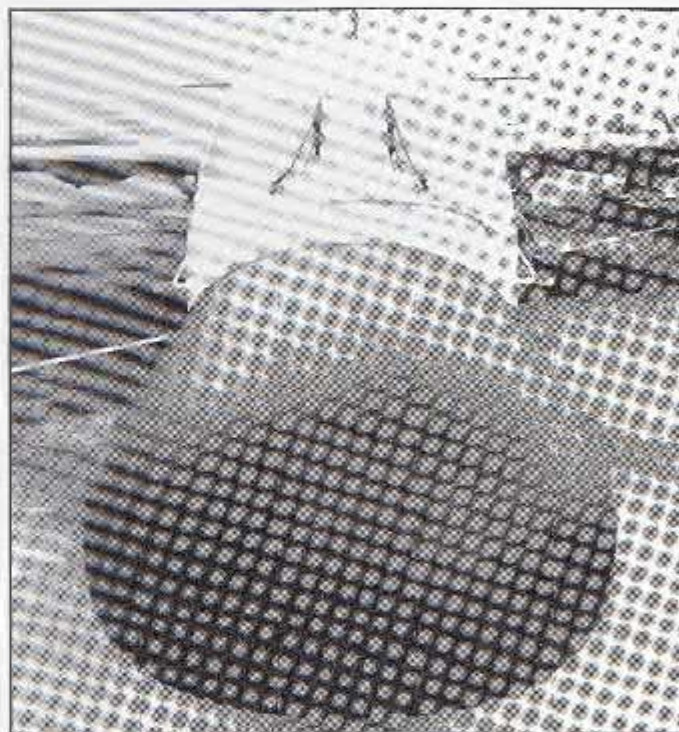
This agreement made by the European aircraft industry, forces the governments of these three countries to continue negotiations and settle one final requirement for a European Combat Aircraft. Both the RAF and Armee de l'Air are looking for a replacement of their Jaguars which calls for a ground support aircraft. The Luftwaffe, however, seeks replacement for their F-4F Phantom in the air defence rôle. Subsequently all models are designed to meet both requirements. Highly manoeuvrable with canards, voluminous fuselage to install various avionics and large wings to guarantee a high weapon load. No doubt small modifications can turn the designs either into an air defence fighter with air-to-ground capacities or a ground support fighter with air superiority capacities.



ABOVE: Daseault Falcon 50 F-RINR arriving at Hannover on April 25th, establishing a distance record in straight line between Teterboro, U.S. and Hannover, Germany. The distance of 3882 n.mis. was covered in 5 hrs 21 min. BELOW: A remarkable shot of IAT's Sea Scan, a derivative of the Westwind 1154.

The 1:1 scale mock-up of MBB looked impressive of size but likely this indicates ECA is another very expensive fighter programme. In this respect, the official opening speech of German's Minister of Defence Dr. Apel addressed a serious warning to the aircraft companies involved:

'From 1970 till 1979 the defence costs increased by 90%, while the defence budgets increased only 3% annually. From this point of view the increasing costs in the Tornado programme worries me. Re-calculation in May 1970 showed a price of DM.28 mln. per Tornado system, by now this has increased up to DM.67 mln. Hence, we will face an enormous explosion in our defence costs and the consequences for financing these costs are immense. This development cannot continue and must be stopped. If we want to maintain and improve our defence system, we are forced to do so. Also a Minister of Defence cannot pay at all prices and the industry shall have to put more efforts in controlling the increasing costs. Early April the Ministry of Defence received the tri-national industrial study for ECA including a budget of DM.10 mld. for research & development. Although these costs are to be divided over three governments, I can say quite frankly that according to present calculations of the defence budget we cannot afford it'. Minister of Defence Dr. Apel ended his opening speech announcing that the three governments are discussing the ECA requirements and in 12 - 18 months a decision can be expected. □



FLASHBACK-ISSUES

Available, though some in very small amounts, are the following FLASH back-issues:

- 1977: April, May, June, July/August, September, October, November, December.
- 1978: January, March, September, October, November.
- 1979: February, July/August, September, October, November, December.
- 1980: January, March, April

Price per issue DFL.2,50

WANTED

Many photos have been taken when I demonstrated during air displays in Dutch F-104 Starfighters D-8062 (1977), D-8091 (1978) or D-8331 (1979). Who can send me copies of these photos for my collection. Write to: Hans van de Werf, Meerhoek 623, 5403 AC Uden, Holland.

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OLD TIME RALLY AT ILA80, HANNOVER

Not only the latest aircraft designs were present at ILA'80, as the Bundesverband der Deutschen Luft- und Raumfahrt Industrie (BDLI), in co-operation with the Deutscher Bank and the Roter Baron Fliegerclub, organised an 'old-time' rally to Hannover.

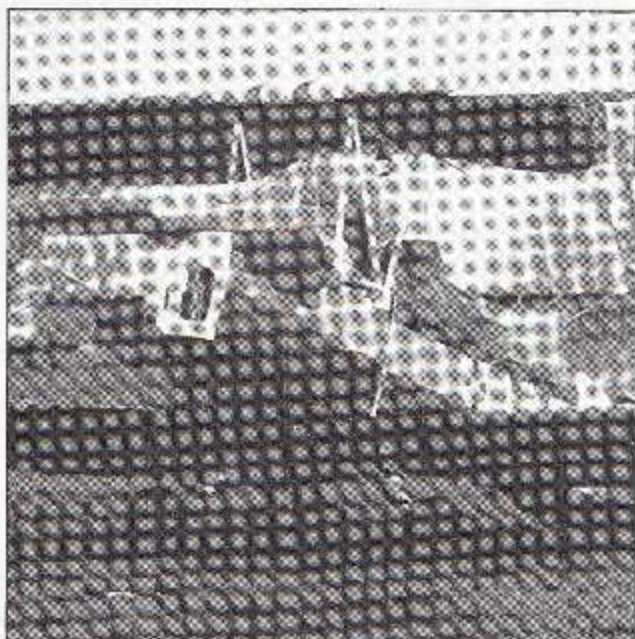
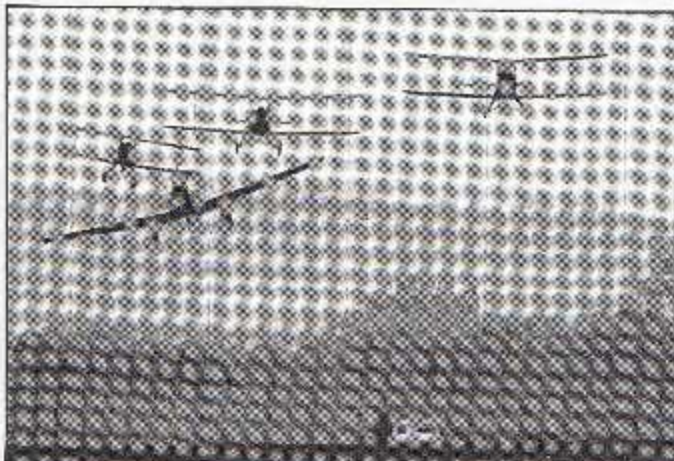
Many old timers lack proper radio equipment and to spare the air traffic controllers at Hannover headaches, the oldies were requested to gather at a nearby airstrip Hildesheim.

On Saturday April 26th, the aircraft started arriving at Hildesheim and participated in a small display here in the afternoon. Following the air display all old-timers were airborne to practise formation flying in preparation for the trip to Hannover the next day.

Unfortunately almost half the announced aircraft could not show up due to aviation's biggest enemy: bad weather. Bad equipment to fly with low visibility, makes it very dangerous for these oldies. Not even to old-timers but also to extremely well-equipped aircraft at the Tornado, which are claimed to be all-weather fighters. Participants from Southern Germany, Belgium and France hadn't risk getting lost in the mountains in Southern Germany, and subsequently only 20 old-timers were present. The oldest participant was Tiger Moth D-EPYS built in 1935, and amply passing the minimum age of 35 necessary to be classified as an 'old-timer'.



**Roter Baron Fliegerclub invited
old-timers for ILA'80**



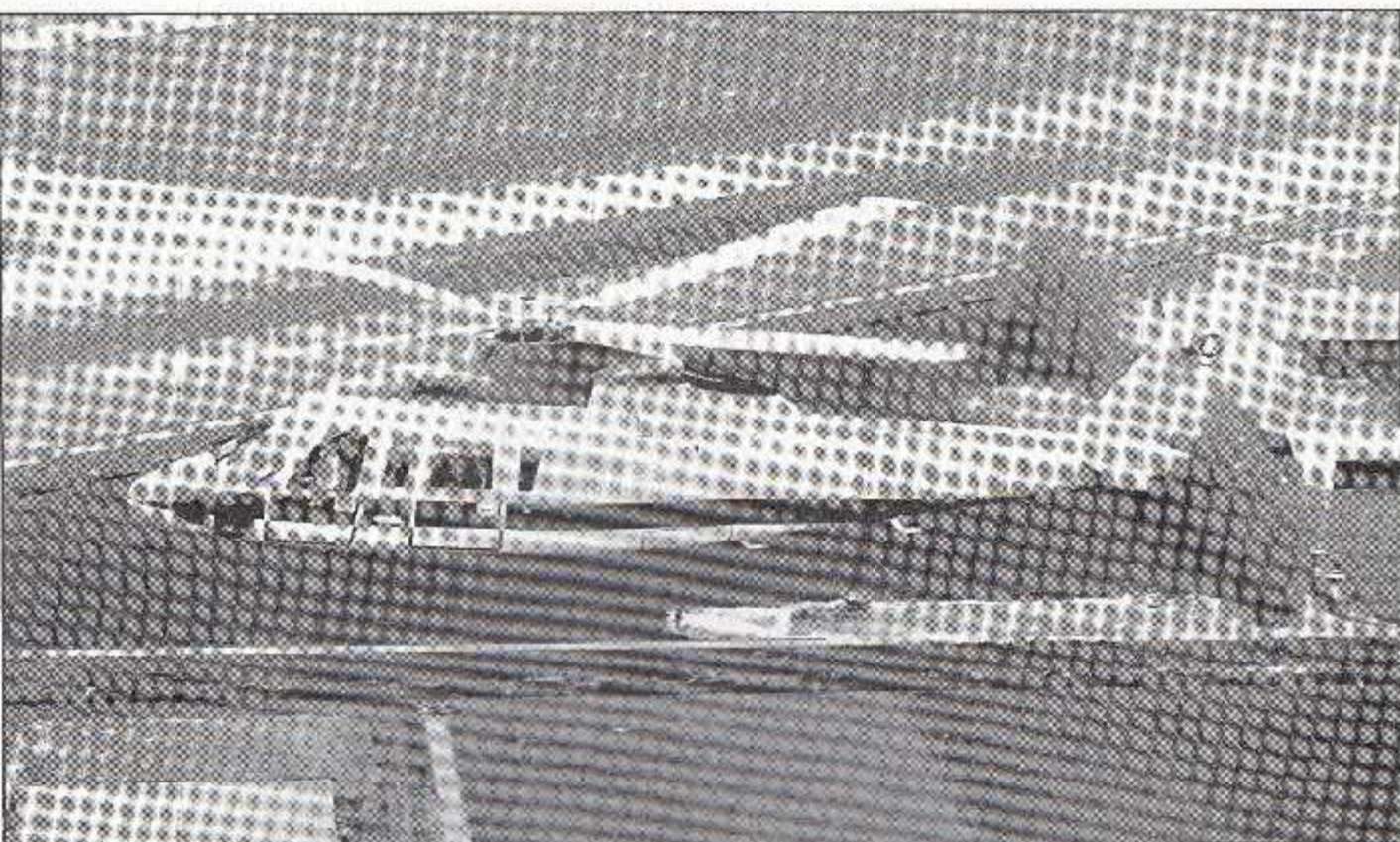


PHOTO: KLM Helicopters

NEW SPIRIT FOR KLM HELIKOPTERS

Sikorsky S.76 delivered to KLM

Late April, KLM Helicopters received the first of two Sikorsky S.76 Spirits on order to replace the Sikorsky S.58T (see FLASH Nr.114 p.22). This Spirit, PH-NZM) was accepted by two pilots at Long Island, N.Y., prior being seafreighted to Amsterdam. Both helicopters have been leased from Island Helicopters with a claim for a possible sale. By operating these two machines, KLM Helicopters has adopted its fleet for requirements of its most important clients: off-shore service.

range up to 500 mls. and a high cruise speed which allows many long-range missions on one day. Calculations of all potential helicopters for KLM's off-shore operations resulted in the diagram elsewhere on this page. Clearly the S.76 beat all competitors in the range/payload ratio.

Not only the technical characteristics were of importance in the final selection but also the cost effectiveness for air mission. Again the S.76 was the winner as Sikorsky could incorporate much of the company's knowledge in its new design. Traditionally helicopters are designed for military requirements and later adapted for civil use. Relying on the prognoses for a growing demand for helicopters in the near future, Sikorsky chose for a different approach and designed the S.76 specially for civil operations. This required a different set-up in many aspects but showing its results in e.g. cost-effectiveness.

The company has a rich history whereas helicopters are concerned. Subsequently it was able to include the latest technologies in the S.76 design. It used many innovations, as a new tail rotor system eliminating lubrication of bearings, a revolutionary aerodynamical shape including a retractable gear. Combination of the new rotor system and two engines provide the S.76 with a high cruise speed and good flying characteristics.

In co-operation with Aeronautics, KLM developed a flight director system which will be installed in both helicopters. With the standard stabilization systems this reduces the operational limits and the S.76 will be able to operate under nearly all kind of conditions.

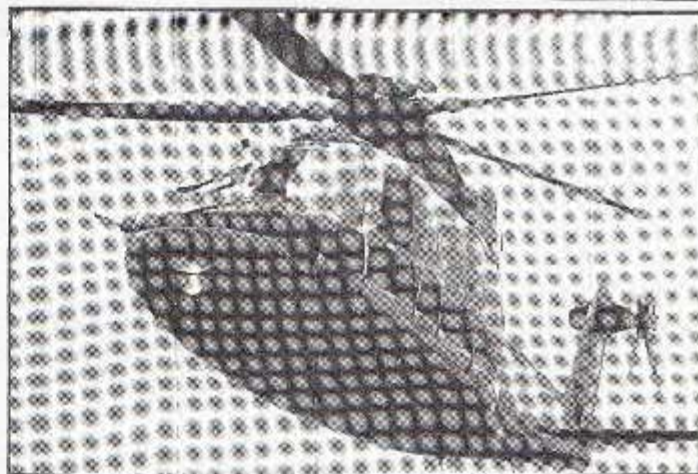
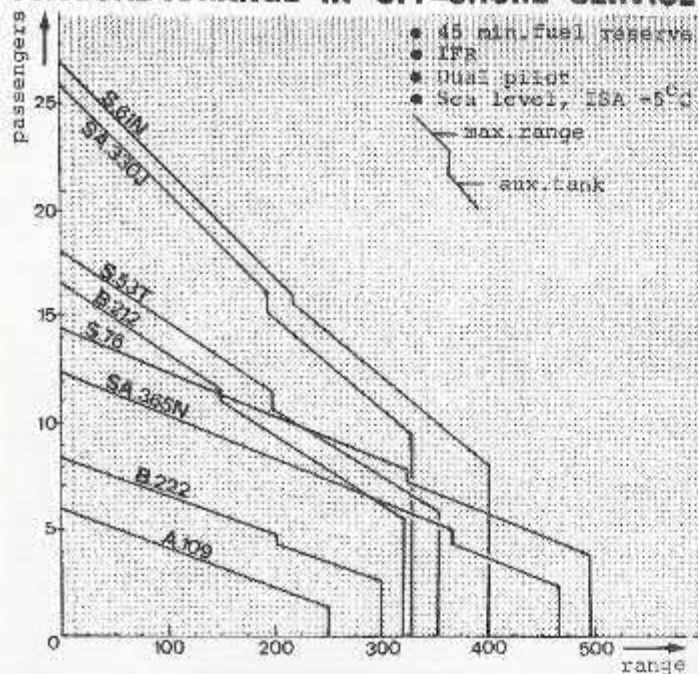
Sikorsky met the requirements of the civil operators very well with the S.76 design, as can be concluded from the sales record of 74 customers and 350 ordered machines. Totally Sikorsky expects to sale 1,600 S.76 Spirits. □

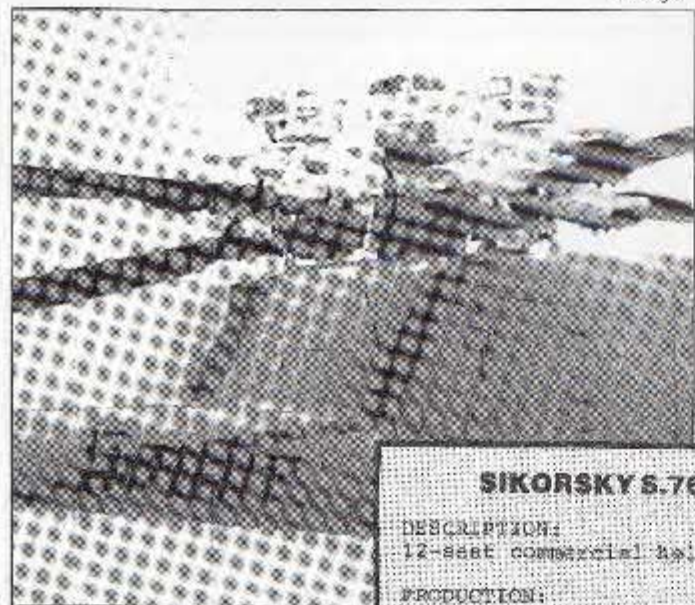
Range—payload ratio important factor in selection of S.76

In the commercial concept of the company, the Sikorsky S.58T was no longer applicable anymore and evaluation started for a successor. The new helicopter had to be suitable for off-shore operations. These operations required a number of specific characteristics incl. Instrument Flying Rules (IFR) equipment, two engines, a good range payload ratio and a high cruise-speed. Evaluating the Bell 222, Puma SA.330, SA.365 Dauphin and Agusta A.109, the final choice fell on the Sikorsky S.76 Spirit. In the special requirements, the S.76 showed off much better than its competitors.

The range/payload ratio was probably the most important reason to take the S.76. Oil-exploration in the North Sea so far, has been as close to the shore as possible due to low oil-transportation costs. Lately new oil-rigs have been situated all over the North Sea. Delivery of supplies & employees to these oil-rigs require an helicopter with a

PAYLOAD vs RANGE IN OFF-SHORE SERVICE



KLM HELIKOPTERS
**SIKORSKY S.76 SPECIFICATIONS****DESCRIPTION:**

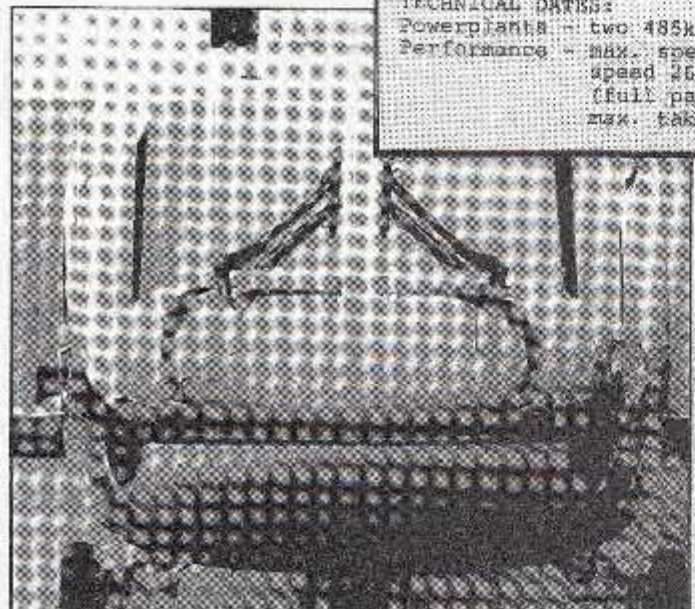
12-seat commercial helicopter (plus crew of two)

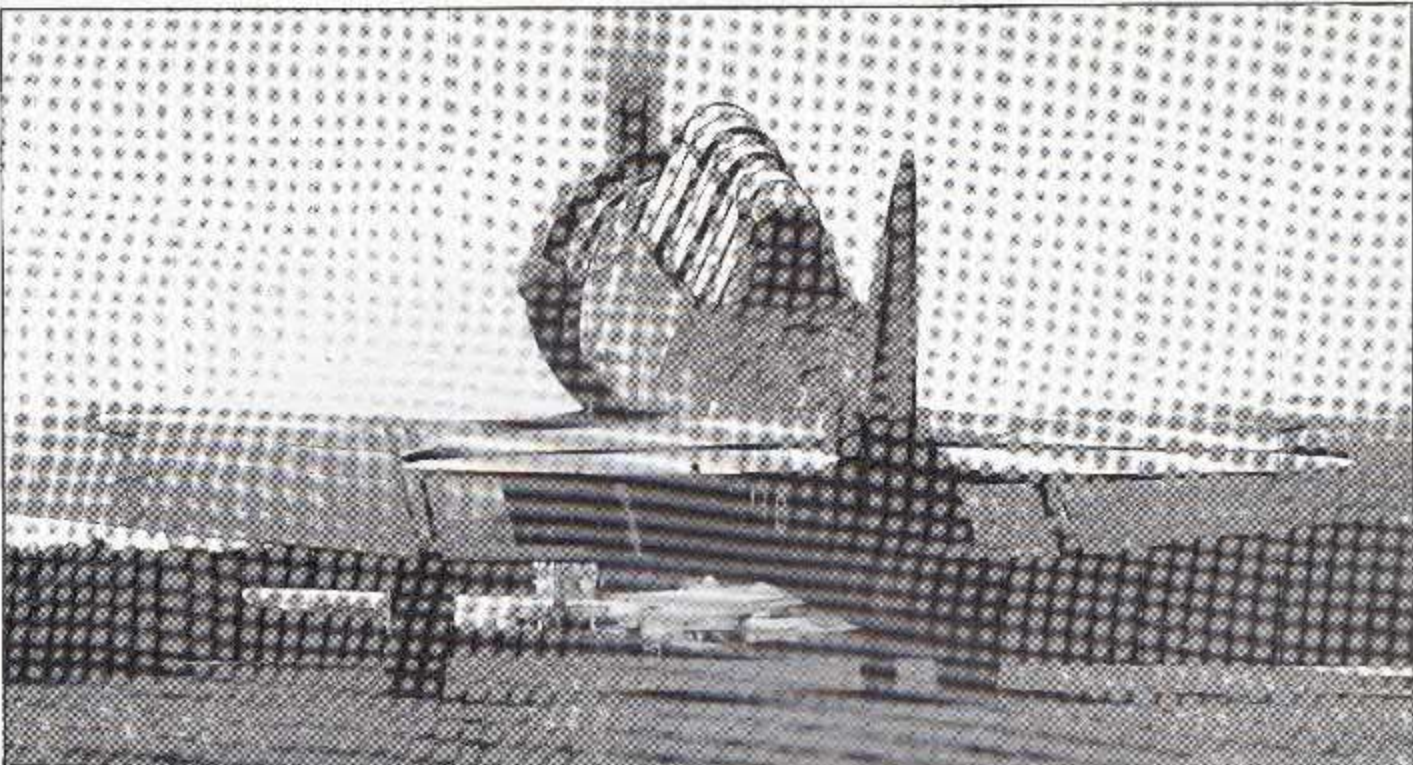
PRODUCTION:

First flight on 13 March 1977. Four prototypes built. First delivery in 1979. Production rate of 8 per month.

TECHNICAL DATA:

Powerplants - two 485kw Allison 250 Turboprops
 Performance - max. speed 288km/h, max. cruise speed 268km/h, range 400 nls (full payload & 30 min. reserve), max. take off weight 9,700lbs.





Battle of Britain Flight, Super Cubs & Harvards commemorate Dutch Liberation Day

May 5th, was a national holiday in Holland to commemorate the liberation from German occupation 35 years ago. One of the many festivities organised on this day, were the food-droppings with Harvards and Super Cubs, simulating the droppings at the end of WWII. Also the Battle of Britain flight participated in the celebration of Dutch Liberation Day.

Invited by the Royal Air Force Association (RAFA) Amsterdam Branch, the RAF Memorial Flight with a Hurricane, Spitfire and Lancaster would attend various places in West Holland gracing the local Liberation Day festivities. All three aircraft are authentic and were used in great numbers by the RAF during WWII. Unfortunately the only flyable Lancaster could not participate as certain problems had occurred with the aircraft's propellers. Subsequently, the annual major overhaul had not yet been completed. As a replacement the Spitfire Mk.19 (PS853) & Hurricane Mk.2C (LF363) were accompanied by a Devon CC.2 (VP971) of the RAF. The trio came straight from RAF Coningsby, U.K. and made flight-passes over e.g. Den Haag, Rotterdam and at 12 o'clock precisely the formation arrived over Amsterdam where the official Liberation Day celebration took place. After the memorial flight the aircraft arrived at Schiphol Oost where they were put on display in front of the RAFA Amsterdam Branch club building.

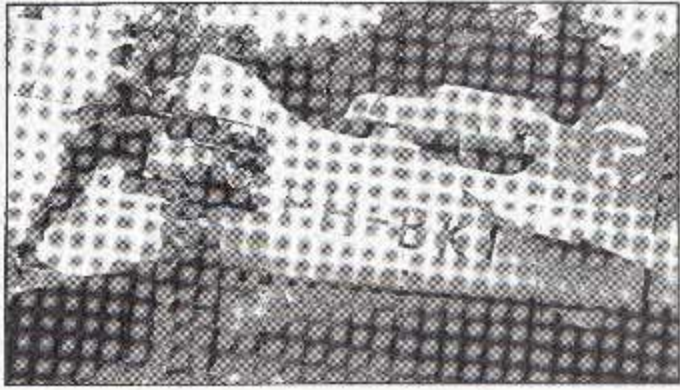
Divided in two groups, almost the entire aircraft fleet of Stichting Vliegspot Gilze Rijen also participated in the festivities on May 5th. Requests from many so-called 'Oranje Comité's' in various places, made a split-up inevitable. A formation of four Super Cubs (PH-GAR, PH-GAU, PH-GRC and PH-GAZ) flew to Leerdam. On a marked terrain 8 large bags full with rolls were dropped as well as copies of the original pamphlets of the first 'Liberation Issue' of the Vliegende Hollander. To drop these items the aircraft had to fly under the minimum altitude of 150 mtr and for this purpose special permission had been obtained from the RLD. The three Harvards of SV Gilze Rijen (PH-IIB, PH-KLU and PH-BKT) were loaded with 4 large bags with rolls, totalling 1,500 rolls to be airborne for dropping purposes. On the back-seat the passenger was wrapped up by 2 bags in front,

one aside and one on the legs. Additionally somewhere in the cramped space available, three parcels with the pamphlets had to be tucked away. During the dropping, the crew had to be careful to open only the back-part of the cockpit. In case both cockpits would be opened, the pamphlets would circulate inside the cockpit which could be dangerous as it could hinder the pilot's view.

The three Harvards flew the same route as the Battle of Britain formation but in the opposite direction. In the afternoon another memorial food-dropping flight was made. At noon the aircraft were also on display at Schiphol-Oost. Also the Dutch air force contributed in the display with an NF-5A (K-3048), and RF-104G (D-8127) and an F-16A (J-222). A large public on such a local event again proved the growing interest in aviation.

OPERATION MANNA	
March 1945	German occupies sabotage food-supplies. Negotiations are started with the Germans to allow food-droppings over West Holland.
Apr. 29, 1945	At 13.00 p.m. the first of 200 Lancasters is reported near Ede of Holland for dropping food parcels.
May 1, 1945	USAAF starts food-droppings with 490 B-17 Flying Fortress.
May 5, 1945	German capitulation.
May 8, 1945	Daily food-supplies can now be organised by road and Operation Manna ends.

Harvard PH-BKT being loaded with rolls & pamphlets



DUTCH REGISTER APRIL 1980

Reg.	Type	C/n	Remarks
PH-AFD	2472 M.S.Rallye 150ST	2787	De Grootte Molen BV
PH-AFE	2878 M.S.Rallye 180TS	3239	Gooiland Aero Center
PH-AFI	2948 M.S.Rallye 110ST	3289	Gooiland Aero Center
PH-ARB	3001 Socata TB.10	55	Aviation Francaise BV
PH-BER	2992 Reims Cessna FRA.150M	0330	Air Service Holland BV
PH-BSX	2094 Cessna F.177KG	0095	Air Service Holland BV
PH-CBD	3002 Reims Cessna F.152	1791	Air Service Holland BV
PH-CBE	3014 Reims Cessna F.152	1795	Air Service Holland BV
PH-CBF	3015 Reims Cessna F.152	1799	Air Service Holland BV
PH-DKA	2524 Piper PA-18-135 Super Cub	18-3854	Luchtvaartbdf. De Kempen
PH-DKD	2872 Piper PA-18-135 Super Cub	18-3863	Luchtvaartbdf. De Kempen
PH-EIJ	2742 M.S.Rallye 150ST	3141	De Grootte Molen BV
PH-FCS	2999 Fokker F.27-600 Friendship	10178	Fokker BV
PH-FDM	2967 Fokker F.27-600 Friendship	10197	Fokker BV
PH-FTG	3011 Fokker F.27-200 Maritime	10585	Fokker BV
PH-JAL	2730 Cessna 404	404-0218	L.E.F. BV
PH-JTG	2754 M.S. MS.892E	13182	De Grootte Molen BV
PH-LWD	2195 Piper PA-18-150 Super Cub	18-3931	Armita Nederland BV
PH-MER	3016 Cessna U.206G	U206-03573	B.Taverne & Mastenbroek
PH-NKI	2405 Piper PA-18-150 Super Cub	18-7609116	Air Service Holland BV
PH-NZI	2495 Sikorsky S.61N	61762	Skylight BV
PH-NZM	3004 Sikorsky S.76A	760037	K.L.M. Helikopters BV
PH-NZN	3012 Sikorsky S.76A	76-0042	K.L.M. Helikopters BV
PH-OTK	3007 Reims Cessna F.172N	1963	K.L.M. Helikopters BV
PH-RNA	3008 M.S. Rallye 150ST	3101	Air Service Holland BV
PH-RNB	3009 M.S. Rallye 150ST	3176	Aviation Francaise BV
PH-RNC	3010 M.S. Rallye 150ST	3177	Aviation Francaise BV
PH-SBO	3005 Piper PA-28RT-201	28R-8018050	Aviation Francaise BV
PH-SRR	2731 Piper PA-38-112 Tomahawk	38-38A0339	BV Nationale Luchtvaart St.
PH-SRR	2731 Piper PA-38-112 Tomahawk	38-38A0339	St.Vliegmat. Rotterdam
PH-SRS	2776 Piper PA-38-112 Tomahawk	38-78A0651	J.Mastenbroek
PH-SRT	2777 Piper PA-38-112 Tomahawk	38-78A0655	St.Vliegmat. Rotterdam
PH-SKT	2777 Piper PA-38-112 Tomahawk	38-78A0655	J.Mastenbroek
PH-SVB	2990 Robin R.2112	189	J.Mastenbroek
PH-SVD	2991 Robin R.2112	190	J.Mastenbroek
PH-TBT	3000 Socata TB.9	56	Aviation Francaise BV
PH-TGW	2326 Reims Cessna F.172M	1294	Air Service Holland bv
PH-TVO	2470 Boeing B.737-266	21196	Transavia Holland bv
PH-TWB	1288 Reims Cessna F.172H	0376	J.Choogedam
PH-TWO	2012 Reims Cessna F.150L	0920	Air Service Holland BV
PH-URI	3006 Piper PA-31	31-8012029	Netherlands European A.S.
PH-VSL	2561 Reims Cessna F.172N	1610	St.Vliegmaterieel Hceven
PH-251	567 Rhönlerche II	226	Gelderse Zweefvliegclub
PH-258	574 Ka.8B	657	Gelderse Zweefvliegclub
PH-292	965 Ka.8B	8119	Kon.Ned.Ver.voor Luchtvaart
PH-308	972 Sagitta 013	006	P.J.Eijlander
PH-366	1187 Ka.6E	4068	Zweefvliegclub NO Polder
PH-432	1836 AS-K13	13284	Kon.Ned.Ver.v.Luchtvaart
PH-484	2145 Standard Libelle 201B	526	H.M.Reyers
PH-517	2285 Ka.8C	81003	Vliegc. Midden Zeeland
PH-592	2683 Astir CS Jeans	2051	L.A.Smit & J.P.M. de Baar
PH-679	3017 HL LS 3-17	3390	H.Deege & W.Kenna
PH-689	3012 Twin Astir	32311	Zweefvliegclub NO Polder
PH-691	3003 LS 3-a	3389	C.H.M. de Rooij e.a.
			(out)
			(out)
			to Eweefvliegc.Deelen
			to U.J.Beeke e.a.
			to Zweefvliegc.Deelen
			to Vliegclub Flevo
			to R.Sénéchal
			to F.Höller
			to de Baar & Jansen
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			(new)
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