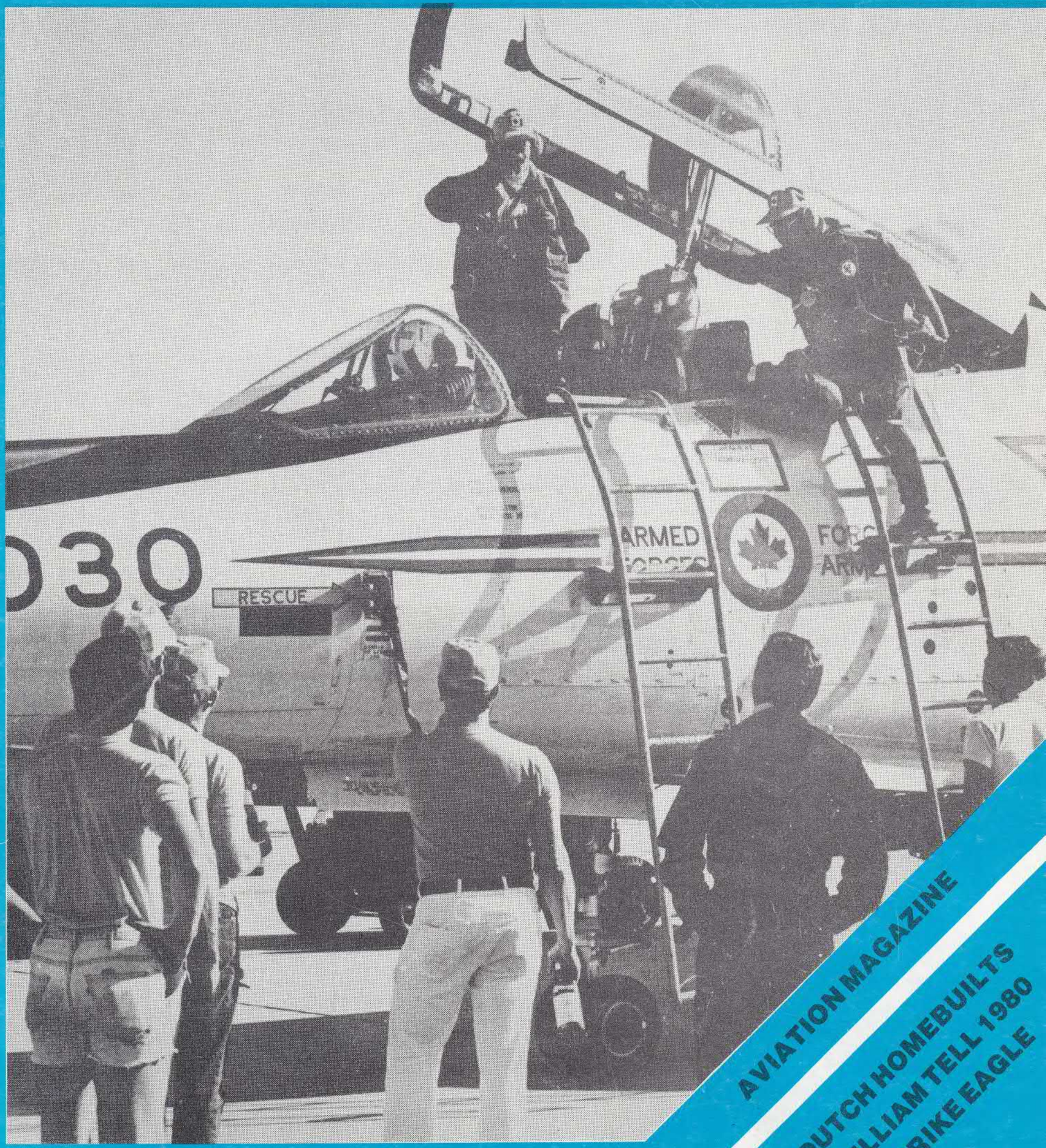
NOVEMBER 1980

FLASH

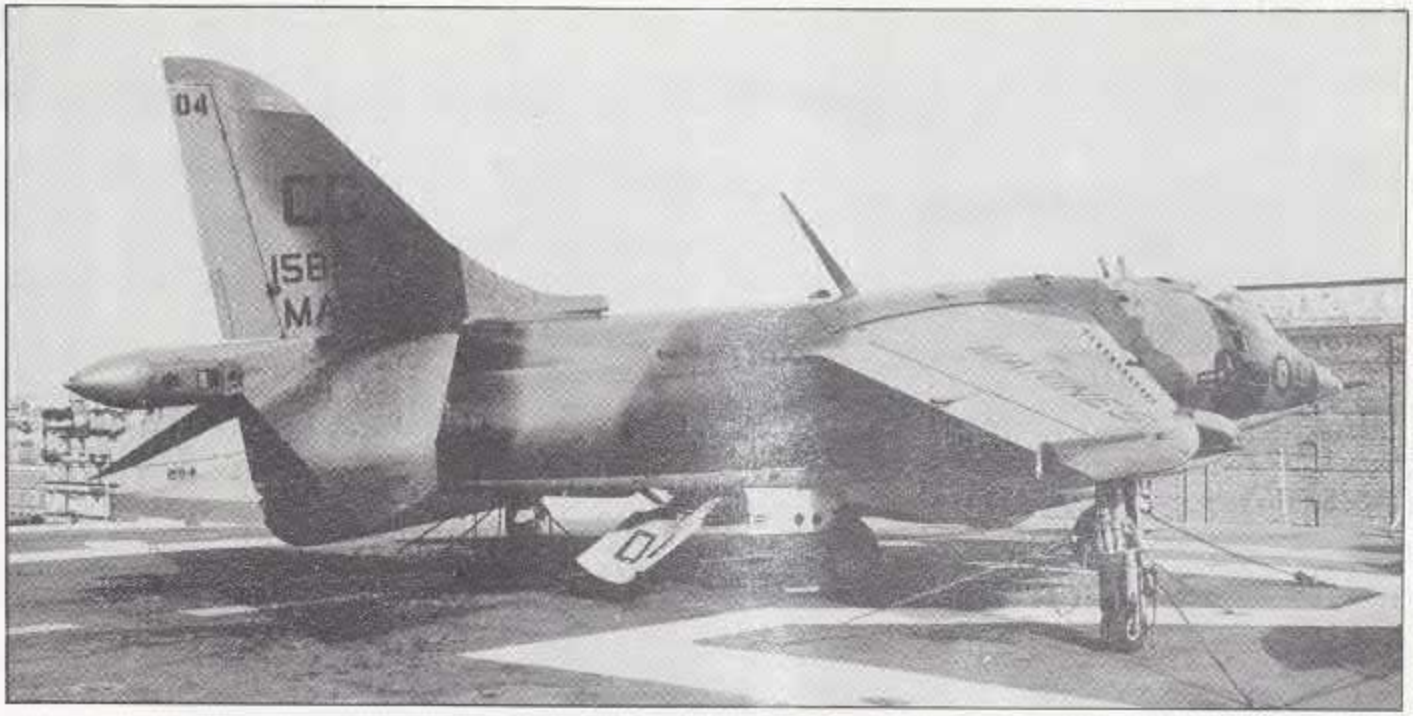


AVIATION MAGAZINE

DUTCH HOMEBUILTS

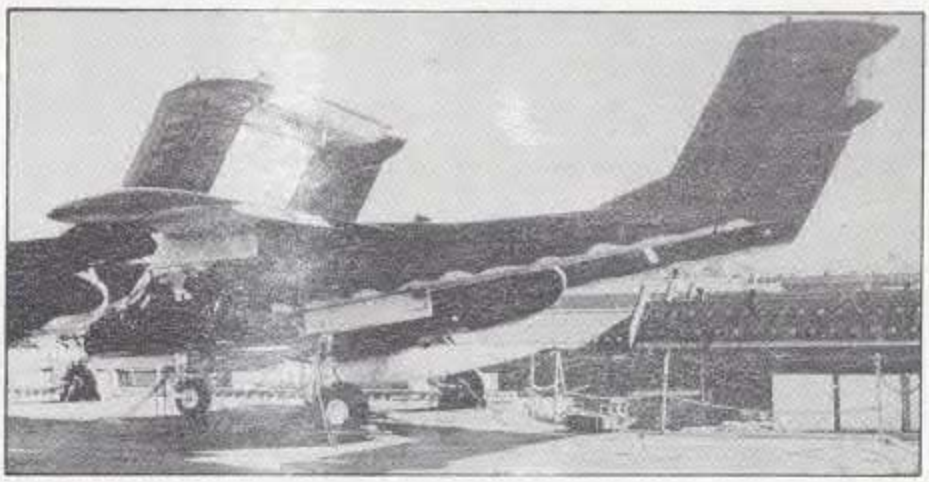
WILLIAM TELL 1980

STRIKE EAGLE



USS Iwo Jima visited Liverpool harbour

(LIVERPOOL, U.K.). Two weeks after being expected in Portsmouth, USS Iwo Jima docked in Liverpool on 18 October, USS Iwo Jima had participated in NATO naval exercise Teamwork 80 (see FLASH 121 p.12). The ship had provided air transport and air cover for the assault forces invading a Norwegian fjord. On its European cruise, USS Iwo Jima also carried V/STOL aircraft, being 4 OV-10A Bronocs of VMO-1 and 6 AV-8A Harriers of VMA-231. During the cruise the Broncos acted as Forward Airborne Controllers to direct the AV-8As to their targets.



Illustrated are AV-8A 158969/ CG-04, OV-10A 156440 ER03 & CH-53D 157173/CJ24 Barry Bailey-Hickman

COVER PHOTO : *Upon return at Tyndall AFB, Capt. Chuck Fast, celebrated his 'kill' with a glass of champagne. The back-drop of this happy event is the William Tell competition.* *(Arnold Booy)*

FLASH

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EDITORIAL

Does Europe need (an) ACMA?

Before going any further, I had better explain the acronymese I've just flung at you. ACMA is what the USAF, and specifically MAC (Military Airlift Command) and AFSC (Air Force Systems Command), now call the C-XX project for a new conventional cargo aircraft, to enter service during the late 1990s. The interesting thing about the new designation lies in the second letter. For ACMA stands for Advanced Civil-Military Aircraft. Briefly speaking, ACMA will be an aircraft suitable for both military and civilian use, which is fuel-efficient and produces little noise, and can carry at least 54,600 kg (120,000 lbs) payload (including bukly items) over 6,300 km (3500 NM) and further (1). By comparison, the Lockheed C-5A can carry about 100,000 kg (221,000 lbs) over 6,000 km (3,250 NM), or 51,000 kg (112,600 lbs) over 10,500 km (5,670 NM), and the Lockheed C-141B 40,500 kg (89,000 lbs) over 5,150 km (2,780 NM). These figures are approximate and without in-flight refuelling. The big difference between ACMA and the C-141B and C-5A, apart from fuel or noise considerations, is that the two existing types aren't commercially viable propositions, even though they were designed to meet civil (FAA) certifications standards as well as the military requirements that caused them to be (1). In other words, while the FAA would allow them to fly as civil freighters, no commercial cargo operator would touch them with a ten metre container loader.

The question posed in the title of this editorial, is really two questions, Firstly, does Europe need ACMA? There will be few air arms in Europe who will be able to pay for an advanced technology cargo aircraft in size somewhere between the stretched Starlifter and the Galaxy, but those that might (like the Royal Air Force, the Armée del'Air , or the Luftwaffe) have, at present, only very limited long-distance commitments. In fact, the Luftwaffe might be said to have none at all. This situation may have changed drastically by 1999, a likely service introduction date of the ACMA, but no sensible prediction can be made here. However, the prospects for ACMA on the European civilian market are considerably rosier. Specialized cargo operators, such as Aeromaritime, Cargolux and Heavylift Cargo Airlines (formerly TAC Heavylift), as well as those general airlines which have an extensive commitment to the air cargo business, such as Martinair, Air France, UTA and Lufthansa, are likely customers. But will they go for ACMA or another US (or European) design? ACMA will have to compete with other designs, but with the potentially powerful backing of the US government, and a large production run for the USAF and US and Asian civilian customers, and the application of advanced technology, and many other factors arising from its joint civil/military character weighing in, ACMA should stand a good chance. Its strongest rival might turn out to be the airship, which, if revitalized by Redcoat Cargo Airlines, will be viewed with apprehension by whoever is going to build the ACMA, and many traditional airframe manufacturers besides.

What Europe does need, is its own 'ACMA'. There is no doubt in my mind, at least, that, should Europe wish to retain an independent aircraft design and manufacturing capability, i.e. avoid becoming the USA's or Japan's subcontractor, an advanced civil/military aircraft, suited to European needs, will not only be a desirable project, but a necessary one. Whether this will be in the form of an adapted Airbus A.300 or A.310, or BAe 146, or a brand-new design, is a matter for further discussion, although it would seem that more benefits would accrue from a brand-new design, which would, of course, also cost more. From the point of view of Europe in 1980, some European operators might want ACMA, but European aviation as a whole needs an 'AMCA' of its own design and manufacture. Jacob Struben

References:
(1) L.W.Noggle, C.E.Jobe, 'Joint Civil/Military Transport Studies - An Overview'. SAE Paper 801059, presented October 1980, Amsterdam, Holland.

MILITARY AVIATION NEWS

Future Canadian CF-18 Hornet bases

(OTTAWA, CANADA). The first CF-18 Hornet is expected to be delivered in October 1982. The amount of aircraft to be delivered, has not yet been determined as this depends on the U.S. paying a share of the Research & Development levy on each CF-18. This is likely to occur and the Canadian Armed Forces will then receive 137 aircraft. If the full R&D levy will be imposed, which has support in some factions of the US congress, only 129 aircraft can be purchased for the $ 2,2 billion earmarked by the Canadian government for the New Fighter Aircraft project.

The batch of 137 aircraft will include 113 single seaters and 24 two-seaters. By April 1983, seven CF-18 Hornets will have been delivered and production will continue at two aircraft per month till September 1988. Initially CF-18 operations will take place at CFB Cold Lake at the Operational Training Squadron to turn out fighter pilots ready to perform the diverse roles of the CF-18.

By mid 1984, the first of eight squadrons will be operational on the CF-18, and a new squadron will be formed every six months. First, the Voodoos will be replaced, as technical problems have been arising with increasing frequency to the point where operation of this aircraft beyond 1984 is problematical.

Secondly the CF-104 Starfighter will be replaced, as peacetime attrition through accidental losses reduced the numbers on hand, so that Canada's commitment in Central Europe could not be met beyond the mid 1980s.

The last CF-18s will replace the CF-5s of which some will remain in service as advanced fighter trainers.

All operational squadrons will consist of 12 aircraft and 18 pilots, and be located at Main Operating Bases (MOBs) at CFB Cold Lake, CFB Bagotsville and CFB Baden Söllingen. There will also be some Hornets at Deployed Operating Bases (DOBs) at locations still to be determined.

Hectic summer for YAH-64A flight test program

(PALOMAR AIRPORT, CALIFORNIA, USA). Recently YAH-64A prototype AVO04 reached a speed of nearly 206 knots (381,5 kms/h). This new top speed was achieved as one of the final data points in the aerodynamical flight envelope expansion programme. Chief test pilot Jack Ludwig flew the flight programme out of Hughes Helicopter Flight Center at Palomar Airport. Other flight envelope expansions included manoeuvres of more than 3G and 8 knots to 164 knots. AVO04 had been installed with the new low-mounted automatic stabilator. According to Jack Ludwig, the new tail rotor makes it possible to fly the AH-64 at 45 knots in straight-line sideways flight, at right angles to the front-rear axis.

Following the flight envelope expansion programme, AVO04 fired several Hellfire missiles and 30mm Chain Gun ammunition, to investigate if there would be any problems with structural loads of debris from rockets and missiles impinging on the stabilator.

YAH-64A prototype AVO03 was also modified with the low-mounted stabilator and the larger tail rotor, and carried out a flying quality survey.

YAH-64A prototype AVO05 gathered data under all types of conditions during the initial phase of a propulsion and power system survey.

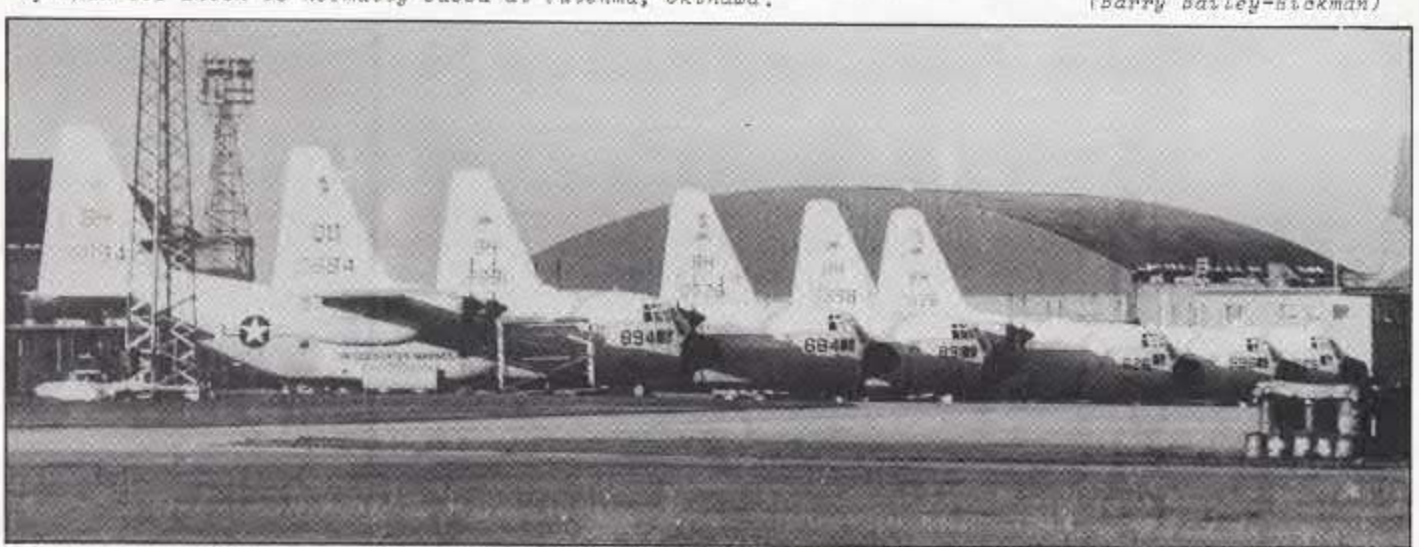
YAH-64A prototype AVO02 completed Armament and Fire Control Survey (AFSC) Phase 2, and on 8 August the helicopter was the last of the six YAH-64As to be modified with the final low-mounted automatic stabilator and larger tail rotor.

YAH-64A prototype AVO06 started with Armament and Fire Control Survey Phase 3, and was joined by AVO02 in August upon completion of its modification. As in AFCS Phase 2 it included firing of Chain Gun ammunition and Hellfire missiles in all flight regios. All night operations required the use of the Pilot's Night Vision System.

By spring of next year, Hughes will deliver the YAH-64s to the Army for extensive simulated combat testing in the field. The 56-month Advanced Attack Helicopter Development contract is scheduled to end in August 1981.

Next month a decision is expected by the Army and Department of Defence on the production of the AH-64A. U.S.Army requirements presently call for 536 helicopters with delivery to commence in December 1982.

Six U.S.Marine Corps KC-130F Hercules lined-up at RAF Lyneham on 25 September. The Hercules provided air-to-air refuelling for USMC Phantoms, Intruders and Prowlers returning from a deployment at Orland Norway, to Lajes, Azores. Amongst the KC-130Fs of VMGR-252 (coded BH) is a rare one, being 160684/QD of VMGR-152 which is normally based at Futenma, Okinawa. *(Barry Bailey-Hickman)*



Flying over top of two F-5E Tigers is this Swiss Flugwaffe Alouette III seen at Dubendorf in August this year. With the enormous sphere, Alouette III V-245 monitored the Tigers while taxying down Duben dorf's runway.

Klu to order 24 F-16s

(DEN HAAG, HOLLAND). The Dutch 1981 budget, which hasn't been approved yet by Parliament, includes DFL.10 million in preliminary funding for an order for twenty-four F-16s. No decision has yet been made on who the F-16s will be bought from, Fokker at Schiphol or General Dynamics at Forth Worth, Texas. Total Klu requirements for F-16s stands at 111, thirty of which are for projected attrition of the Klu's first batch of 102 Fokker-built F-16A/Bs, and 81 to replace the remains of 75 NF-5As and 30 NF-5Bs. The Dutch government would like Fokker to build the follow-on F-16s for the Klu after the current batch (which includes the Norwegian order) is completed in 1984.
However, if all 111 follow-on F-16s are bought from GD, the programme could cost DFL.400 million less. The Dutch decision to go it alone with a follow-on order is a result of Belgian, Danish and Norwegian reluctance to place follow-on orders jointly with Holland, thus enabling the European production agreement to continue. This does have the advantage for the Klu that they can place their orders in smaller batches, enabling them to spread the costs over a number of years and switch to another aircraft type (e.g. a Eurofighter) before all 111 F-16s are ordered.

RAF Chivenor resumes training facility status

(CHIVENOR, U.K.) On 1 August, six Hawk T.1s (XX219, XX246, XX247, XX256, XX282 & XX288) arrived at RAF Chivenor. The arrival of the aircraft of No.63 sqn, re-activated this RAF station in Devon, which had been a pilot training facility since World War II, until it was de-activated in 1974, when the Hunters of No.229 Operational Conversion Unit left RAF Chivenor for RAF Brawdy.
A great drain of operational RAF pilots to commercial airline companies and the expected need for more qualified pilots for the formation of a new Lightning squadron, and the forth-coming entry into service of Tornado, forced the RAF to expand its training facilities.
Located on the west coast of Wales, RAF Brawdy often suffers bad weather conditions preventing many training sorties to be flown. To meet the demand for extensive flight training, the RAF decided to split up the Tactical Weapons Unit
Anticipating the arrival of the Hawk, TWU was split up in 1TWU remaining at Brawdy, and 2TWU which was formed at RAF Lossiemouth with a detachment of Hunters. Meanwhile the runway and facilities at RAF Chivenor were upgraded, to prepare for the arrival of 2TWU with Hawk T.1s in August.

FROM A FACILE PEN.....

TTTE AT COTTESMORE
The Tri-national Tornado Training Establishment received another four Tornadoes during September, bringing the total number to 6. Early September Luftwaffe Tornado 43-04 & 43-05 arrived from Manching, while 43-06 arrived at Cottesmore in late September. A new RAF Tornado to arrive was ZA324.
By January TTTE is to be operational and will start the first training courses.

U.S.MARINES CORPS DEPLOYMENTS
The annual deployments of U.S.Marines aircraft to Europe, this year included 10 F 4J Phantoms 10 A-6E Intruders and 4 EA-6 Prowlers. All aircraft deployed to Ørland, Norway and partici - pated in a series of naval exercises, including Teamwork 80.
Returning to the U.S., the aircraft flew from Ørland to Lajes, Azores, and were refuelled in-flight by KC-130F/R Hercules. For two days six KC-130F/Rs operated out of Lyneham, U.K. and five more out of St.Mawgan, U.K. from 24 till 26 September.

AUSTRIA TESTS F-16
A detachment of the Army Aviation Force made several test flights on an F-16B at Forth Worth, U.S.A. The Austrian air force has a requirement for 24 fighter aircraft. The F-16 is a candidate in two versions: the standard F.100 engined version and the new J79X engined version. Only other candidate is the Mirage 50, although it is expected that the Northrop F-5G will also enter the competition. The Austrian Minister of Finance has announced the order will not be placed prior to 1982.

NATO AWACS CREW TRAINING
At Tinker AFB, U.S.A. training has started of the first NATO operational crews to man the E-3A Sentry. The duration of the training course vary from 3 upto 55 weeks, depending on the student's function. Only a small part of the future AWACS operation crews will be trained in the U.S. The training will move to Geilenkirchen, Germany as soon as possible. Klu pilots will convert to 4-engined jet operations on RAF Nimrods.

The 2TWU will be formed by No.63 squadron and 234 squadron. By September the first pilot training course started, lasting four months. Early next year, with the arrival of No.234 sqn, some 50 aircraft will operate from RAF Chivenor in three overlapping courses.

Luftwaffe tested low-level flying in Canada

(CFB GOOSE BAY, CANADA). A detachment of six Luftwaffe F-4F Phantoms of JABOG-36 operated from CFB Goose Bay, flying missions over the unpopulated areas in north-east Canada. Just inland from the Atlantic Ocean, CFB Goose Bay is situated in the Canadian province of Labrador. The eastern part of Labrador is an ideal place for tactical low-level flying training.
On 22 July, the six F-4F Phantoms arrived, supported by two UH-1Ds of LTG-61. On 24 July, the Luftwaffe detachment was officially welcomed by Canadian Minister of Defence Mr.Lamontagne. The ceremony was attented at by the Royal Air Force, which has had a detachment at Goose Bay with Vulcans since 1967, the USAF which has a small detachment in support of strategic airlift operations, and the Canadian Forces who operate the Medville air defence radar system.
The UH-1Ds stayed for 2½ weeks, flying missions for the Germans to explore the area, while the detachment of JABOG-36 returned to Hopsten, Germany by the end of September.
The Luftwaffe has great problems in flying low-level training sorties in Germany itself. Densely populated areas make it impossible for fighter pilots to train properly. The Luftwaffe has issued many restrictions in order to have the pilots avoid built-up areas. The many restrictions created a situation which a Luftwaffe spokesman described as 'Die Slalom Kurs die Bundesrepublic Deutschland heisst' (the slalom course named Federal Republic of Germany). Despite all these efforts of the Luftwaffe, there are still many complaints about jet aircraft noise. The problem will only grow when the Tornado enters service. With this aircraft the crews will have to practise operating the aircraft's terrain following radar.
Therefore the Luftwaffe looked for a training facility abroad and found one in Labrador, Canada. The Canadian government agreed in principal to the Luftwaffe using CFB Goose Bay and surroundings for such purposes, but local authorities have opposed the idea. A final decision is not expected until early next year. □

BELOW: Ex-Klu F-104G D-8115 just prior take off from Leeuwarden on delivery to the Turkish air force on 25 August. The next batch of 13 F-104s will be delivered from Leeuwarden late November/ early December, completing the delivery of 25 Starfighters to Turkey. (R.Breur)
BOTTOM : Part of Coronet Eagle was F-15B EG77-158 Coronet Eagle was a deployment of 18 F-15 Eagles of 33TFW to Bremgarten, W.Germany from 2 October till 5 November. Note: this F-15 Eagle was until recently operated by 32TFS/Soesterberg. (G.Lang)

Modified F-15 Eagle to demo

(ST.LOUIS. MISSOURI, USA). New innovations in digital electronics applied to airborne radar avionics led McDonnell-Douglas to decide to launch the Advanced Fighter Capability Demonstrator (AFCD). In this company-sponsored programme, the original second prototype F-15B Eagle 10291 was modified with an improved APG-63 radar. On 8 July, the aircraft made its first flight from St.Louis. McDonnell-Douglas has set out to prove what they claimed ever since the type's first flight, i.e. that the Eagle has excellent air-to-ground capabilities.

Strike Eagle included the latest technology for all-weather operations

Because the programme is a private venture by McDonnell-Douglas and Hughes, the test programme involving F-15B 10291 'Strike Eagle', is presently being conducted out of St.Louis. McDonnell-Douglas' home base. By the end of the year, both companies hope to have completed some additional radar modifications to provide the necessary bandwith of the radar system. The aircraft will then be able to demonstrate the use of Synthetic Aperture Radar (SAR) in the interdiction role, which requires penetration of hostile territory possibly at night or in bad weather. Next year the companies hope to be able to evaluate the AFCD's system accuracy and utility under conditions simulated for SAR weapon delivery.

The use of the F-15 Eagle in the air-to-ground role is a much discussed matter. Originally the aircraft was required as an air-to-air combat aircraft, as a reaction to the now famous Domodadovo air show near Moscow in July 1967, where the Russians displayed 12 new aircraft types. When specifying its requirements in September 1968, the USAF wanted a fighter with a high wing load, dogfighting capabilities, and beyond visual range radar.

McDonnell-Douglas got the contract to develop and produce such an aircraft and soon faced the problem of how to combine a high wing load factor and dogfighting capability, which according to aerodynamical rules, are incompatible.
A high wing load (weight of the aircraft/area of lifting surfaces) is only possible with large wings, when the additional wing lift can compensate for the additional weight of external weaponry. Large wings, however, increase drag and reduce speed, which is essential for dogfighting capabilities. McDonnell-Douglas solved this problem by installing two powerful Pratt & Whitney F.100 engines, compensating the drag by thrust while maintaining the large wing surfaces.
The F-15 Eagle, therefore, never became a true combat manoeuvring fighter but its 'lack' of manoeuvrability was well compensated by the aircraft's radar capability of acquiring targets beyond visual range.
The final design of the F-15 proved to have air-to-ground capabilities as well. The USAF has always ignored this ability, and uses the F-15 Eagle for air-to-air missions only. Although they claimed not to have spent 'a pound for air-togroundd', the present Hughes APG-63 radar in the aircraft includes three modes for air-to-ground. McDonnell-Douglas has always emphasized the capabilities of the F-15 Eagle as an air-to-ground fighter and has always promoted the aircraft as a multi-role fighter.

SAR device gives photographic-quality display to detect tactical targets

To suit action to their word McDonnell-Douglas modified F-15B 10291 as an air-to-ground fighter, for the battefield interdiction role to be precise. In a time of great innovations in airborne radar systems, Hughes joined the project which gave them an excellent opportunity to get

nstrate air-to-ground capabilities

real airborne experience with the APG-63 Syntehtic Aperture Radar (SAR). The SAR system includes high-speed, low-power, circuits which are integrated on a large scale, and form the heart of a computer for structured and repetitive radar signal processing. Based on the Doppler effect of frequency-shift, the SAR uses much smaller beamwidth than normal radar devices, resulting in high resolution (60ft resolution at 65 kms). When the radar echoes have been processed by the high-speed computer, a very accurate map can be displayed. The computer presents the radar map in plan view as if seen from directly overhead.

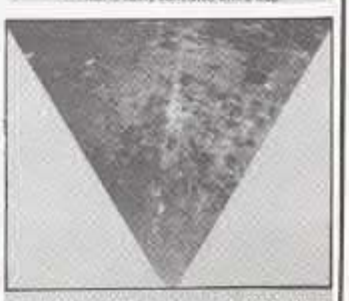
SAR gives the Strike Eagle the ability to 'see' small ground targets at night and in all-weather conditions up to a range of 58 kms. To operate the SAR system, the rear seat of the F-15B has been completely reworked to provide an 'office' for the Radar Operator, who can handle both the SAR and a PAVE TACK laser designator. The aircraft can carry 24,000 lb of ordnance plus three 30mm gun pods, whereas a normal Eagle can carry 16,000 lb. When on display at Farnborough 80 in September the Strike Eagle was equipped with 22 Mk.82 bombs, 4 AIM-9L Sidewinders and two Fast Packs.

Strike Eagle maintains air-to-air capabilities but adds all-weather capabilities

The Strike Eagle is an answer to the long standing wish by the USAF to have an all-weather ground attack fighter for the European theatre. The USAF is presently in the process of specifying the requirement for such an aircraft, the Enhanced Tactical Fighter (ETF). McDonnell-Douglas, however, moved away from the USAF requirement, and developped its own philosophy by keeping the full air-to-air capability of the F-15 Eagle. As Mr.Braun, general manager of the F-15 programme said: "When you move to an area of conflict, it is uncertain what mission have to be carried out - beyond visual range air-to-air, close-in air-to-air, interdiction or close air support. Strike Eagle is able to perform all these missions". JvT□

SAR imagery presents a plan view of distant terrain...

...that is easily correlated with a map



Visual and optical images can be obscured and distorted

Conventional 'real beam' radar imagery has poor resolution

alpha jet

Alpha Jet USA tour

(OBERPFAFFENHOFEN, W.GERMANY). Yet another European aircraft has heeded the call "Go West, young man!" On 29 August Dornier-built Alpha Jet F-ZVLB/A58 started out on a voyage to the United States. After a long flight from Istres, where the aircraft had been painted in a smart white/yellow/blue demonstration colour scheme, via Prestwick, Keflavik, Sondrestrom (Greenland), Goose Bay, Quebec City, and New York, the aircraft commenced a 4-week tour of US military bases, accompanied by 30 sales and maintenance people from Dornier and Dassault-Bréguet, and a large Lockheed-California contingent aboard a Mystère 20 and a Tristar. The Alpha Jet, which is a candidate for the VTXTS and NGT (see below), was demonstrated to political and Defense Dept. leaders at Andrews AFB, to USNavy officials and pilots at Pensacola, Meridian, Corpus Christi, Kingsville and Beeville NAS, and to the USAF at Randolph AFB. The three manufacturers involved reported that all and sundry were enthusiastic about the Alpha Jet, which, if selected by the US Navy, will be modified and produced under licence by Lockheed-California. The aircraft returned to Oberpfaffenhofen on 2 October, to be converted to Luftwaffe standard and painted as 40-58. JJSO

PHOTOS: Alpha Jet F-ZVLB/A58 at Oberpfaffenhofen on 2 October with demo pilots from Dornier (front) and Dassault-Breguet (rear) (top p.8), and in the air (p.8). Impressions of VTXTS and NGT versions (top and middle p.9). The demo aircraft landing after another stage of its US tour. (bottom p.9)

VTXTS: THE PROGRAMME

What is of most interest to us is the VTX part of the programme. Specifically, the USNavy is asking for a jet (or turbofan) powered aircraft with a tandem cockpit, which is capable of carrier operations and (easily recoverable) spins. It should be able to fly at least M=0.8 at 30.000 ft. in sustained straight and level Sometimes written as VTXTS, sometimes as VTX-TS, and sometimes as VTX/TS, the acronym stands for something like Heavier-than-air (V), Trainer aircraft (T), Experimental (X) and Training System (TS). VTXTS is not just a requirement for an aircraft, it is a requirement for a comprehensive undergraduate pilot training machine, including simulators, 'academics' (i.e. textbooks and suchlike), a training management system, and support equipment.
flight. It should have a state of the art escape system, and fuel consumption will be an important factor in the selection of the production aircraft. The VTX will replace two current types, the Rockwell T-2C Buckeye and the McDonnell-Douglas TA-4J Skyhawk. Student pilots will progress from the Beech T-34C Mentor and to combat types (such as the Grumman F-14A Tomcat and the McDonnell-Douglas F/A-18A Hornet).

NGT: THE OTHER PROGRAMME

New Generation Trainer (NGT) is the USAF's requirement for a replacement of its basic trainer, the Cessna T-37B Tweety Bird.
The USAF and USNavy are under some pressure to buy the same type for their respective trainer replacement programs (NGT and VTXTS). The problem is that the USNavy needs an advanced jet trainer, but the USAF a basic jet trainer.
The two services have been discussing the problem and have come up with the following solution: the NGT and VTXTS will be seperate types, but the USAF will consider the VTXTS type when the Northrop T-38 Talon is due for replacement in the 1990s, so that the USAF order will presumably be placed in time for the VTXTS production-line to continue unabated, even after all USNavy aircraft have been delivered.
Another suggestion is included in the 1981 Defense Authorization Bill, recently passed by Congress, which provides that the USAF must include the T-34C, still in production for the US Navy and export customers, in its NGT evaluation. The problem here is that the USAF wants a jet aircraft, or at least one with jet-like handling characteristics, like Vought's proposed model 538, based on the German RFB Fantrainer.

Air defence fighter jockies split the apple

William Tell Air Defence Competition, from 29 September to 18 October

Photos by Arnold Booy

(TYNDALL AFB, FLORIDA, U.S.A.). A symbol of marksmanship was the shot of the legendary Swiss archer William Tell, when splitting an apple from atop his son's head, which was his punishment for refusing to pay tribute to a 15th century tyrant. Marksmanship is also essential for air defence, as in air defence there's no place for 'second best'. In an environment that closely matched the real thing U.S. and Canadian fighter interceptor teams met at Tyndall AFB, Florida, USA.

Biennially U.S. and Canadian air defence teams compete for 'top gun' honours

The place is Tyndall AFB, the mission area - the Gulf of Mexico, the 50 aircraft - F-101 Voodoos, F-4 Phantoms and F-106 Delta Darts, the participants - fighter interceptor teams, the weapons - Falcon, Sparrow and Sidewinder missiles and Genie rockets, the targets - Firebees, Puck'ems and B-52s, the mission - to fly against 'hostile intruders'. The whole scenario is called 'William Tell'.

William Tell 80 was the 14th meeting of air defence teams at Tyndall AFB, the home of the Air Defence Weapons Center (ADWC) and is the heart of the U.S. air defence system as the center provides crew training for the F-106, evaluation programmes on tactics, aircraft modifications, and range facilities for air-to-air live firing over the Gulf of Mexico. The range is located about 100 kms out of Tyndall AFB and consists of a tri-dimensional area of 200 kms by 280 kms by 50,000 ft. Part of this range is the Air Combat Manoeuvring Instrument (ACMI) range. Five unmanned tracking stations mark this range in a 48 kms diameter circle. The stations monitor the aircraft in the ACMI range and provide

dynamic flight data to a master station with continuous updates every one tenth of a second. With the flight data, including facts as air speed, altitude and G forces, a complete mission profile can be analyzed. At Tyndall AFB, the flight data is converted into a suitable form for presentation

so the judges can determine the scoring for the ACMI flights and the aircrews can watch their mission during debriefing sessions. The ACMI flights were Profile III missions and were flown by F-4 Phantoms and F-106 Delta Darts only, as these aircraft are capable of carrying an ACMI pod. The F-101 Voodoo flew a different kind of mission in Profile III.

William Tell 80 also included live firing missions in Profiles I & II. Targets for these live firing missions were subsonic BQM-34A Firebees, supersonic BQM-34F Firebees, and PQM-102 Delta Daggers (or Puck'em). Remoted controlled from ground stations these drones were flown to simulate 'hostile intruders'. This was done at various altitudes, different speeds, and in special profiles using a variety of radar confusing techniques.

The participation of penetrating B-52G bombers, introduced a true human element on the 'hostile intruder' side. Not with live firing of course, but with recording equipment on board, the fighters participating in William Tell had to defend a given area for a period of time against the bombers which simulated low-level bombing penetrations into the target area. The B-52s participated for the first time in the William Tell meet and provided realistic targets as far as electronic countermeasures were concerned.

One ugly duckling amongst WT80's participants was 347th TFW 'Mudbeaters'

As per tradition, William Tell teams were divided in groups, one per aircraft type. Since Air Defence Tactical Air Command (ADTAC) operates three different types, the categories and participants were as follows:

CATEGORY I: F-101 VOODOO
- Canadian Force Air Defence Group composite team
- 107th Fighter Interceptor Group New York ANG
- 147th Fighter Interceptor Group Texas ANG

CATEGORY II: F-4 PHANTOM
- 347th Tactical Fighter Wing TAC
- 119th Fighter Interceptor Group N.Dakota ANG
- 191th Fighter Interceptor Group Michigan ANG

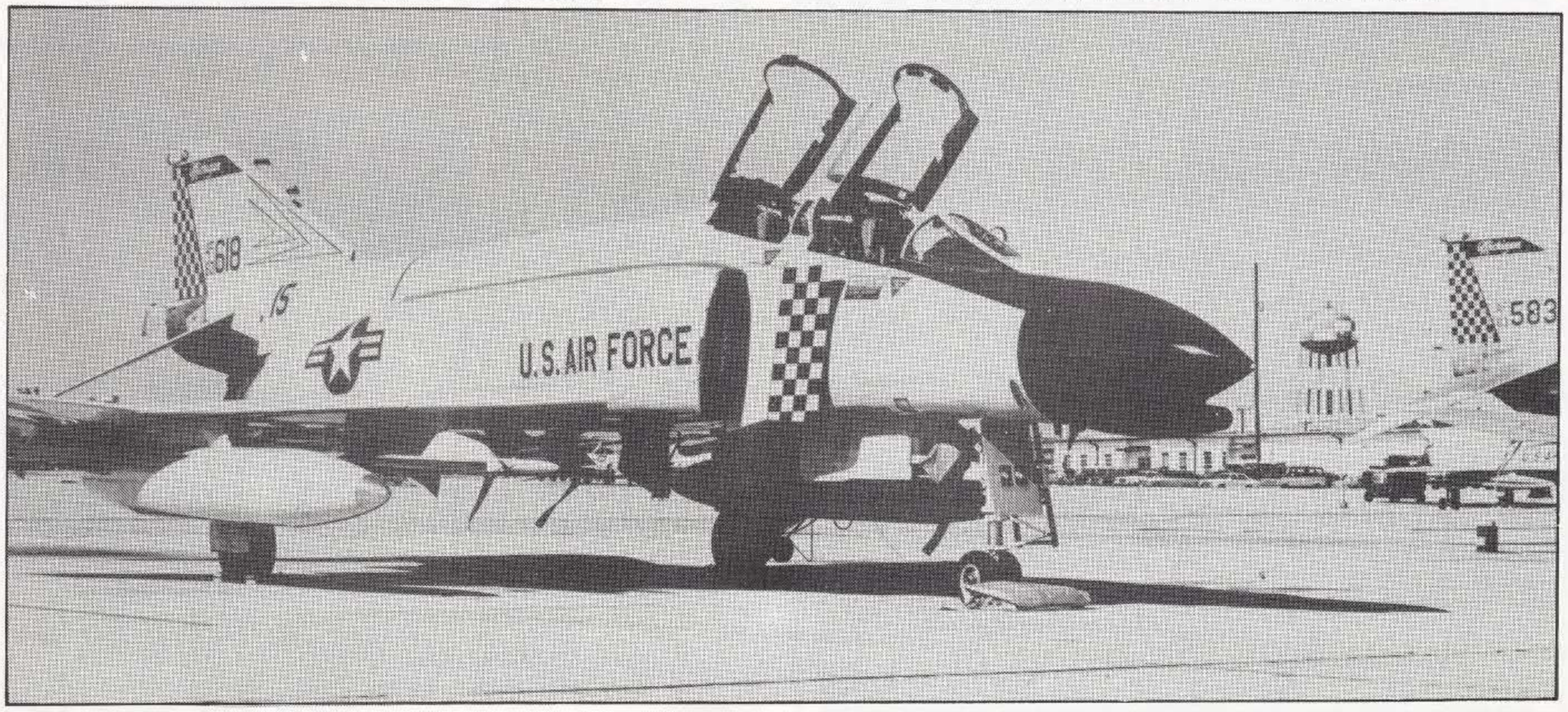
CATEGORY III: F-106 DELTA DART
- 5th Fighter Interceptor Squadron TAC
- 49th Fighter Interceptor Squadron TAC
- 102nd Fighter Interceptor Wing Massachussets ANG
- 144th Fighter Interceptor Wing California ANG

A note from Mudbeater's Man of Dirt

"Beardless, Beardless, Say my Intentions"

Remarkable participants were the F-4E Phantoms of 347th TFW from Moody AFB. As an element of TAC, the wing has a primary air-to-ground mission and only as a secondary role air-to-air. Amongst the participants of WT80 this led to a great deal of cynical remaarksaddressed to the 'Muddy Mudbeaters'. On the other hand the Mudbeaters themselves did not make bones about their origine. In one of the daily news sheet issued at Tyndall AFB, the Muddy Mudbeaters tried to introduce the use of air-to-ground tactics to eliminate SAC B-52 intruders. Here is their tactic: "According to Sam S. Sam (ADTAC spy. no class) the Muddy Mudbeaters will use laser guided bombs for all aspect shots and Maverick air-to-ground missiles for front and stern shots. Weapons selection was made on the assumption that the BUFF will be bigger than the F-106 or even the F-15 Ego jet and that it will be uglier than the F-101.
Early detection and target contrast are key elements of the tactics. Seismographs located on the beach will feed pulsed laser data to onboard PAVE SPIKE system computer, which will automatically compute a long range standoff LGB attack against the BUFF. As a backup the TV Maverick will be used to scan the reflection of light from the beach. When total eclipse of the sun is observed, lock-on will be accomplished for the long range Maverick intercept. The last ditch go for broke plan will be to lase the BUFF's cockpit thus causing the coffee to boil which will severly burn the crew. The incapacitated crew will crash during the reading of the Coffee Burn Checklist. A KILL IS A KILL".

F-4C Phatnom 63-618 of the Michigan ANG (Six Pack) scored the first William Tell 1980 kill.



WILLIAM TELL 1980 MISSION PROFILES

During the William Tell meet, the team flew four different kinds of profiles. In a given number of sorties the teams had to accomplish a certain score, with a maximum of 10,000 per profile.

PROFILE I (front fly-up)
Each interceptor is committed individually to a front fly-up attack against a supersonic target at high altitude.

PROPILE II (F-4 and F-106 - two-ship attack)
Interceptors will be committed in pairs against a PQM-102 drone at medium altitude. One interceptor will fire a radar missile on the front while the other will position for a stern shot with a heat seaking missile.

PROFILE II (F-101 - low)
Interceptor will be committed individually on a towed target at low altitude and will fire a heat seeking missile.

PROFILE III (F-4 and F-106 - cold ID shoot)
Aircrews will be committed in pairs on a cutoff attack against an unidentified target. The target will be an F-101, F-106 or F-4 with a colored panel displayed in the rear canopy. Interceptors must identify the aircraft and color before receiving clearance to fire.
Scores for simulated infrared missile shots from each aircraft will be recorded by the air combat manoeuvring instrument range equipment.

PROFILE III (F-101 - ID shoot)
The F-101 is not equipped to fly on the ACMI. Consequently, it will fly the profile against a drone and will live-fire infrared missiles.

PROFILE IV (electronic countermeasures, ECM)
Each team will be given a liability period during which they will defend an area against penetrating B-52 bombers. Simulated weapons launches will be scored by assessment of recording equipment on board each fighter.

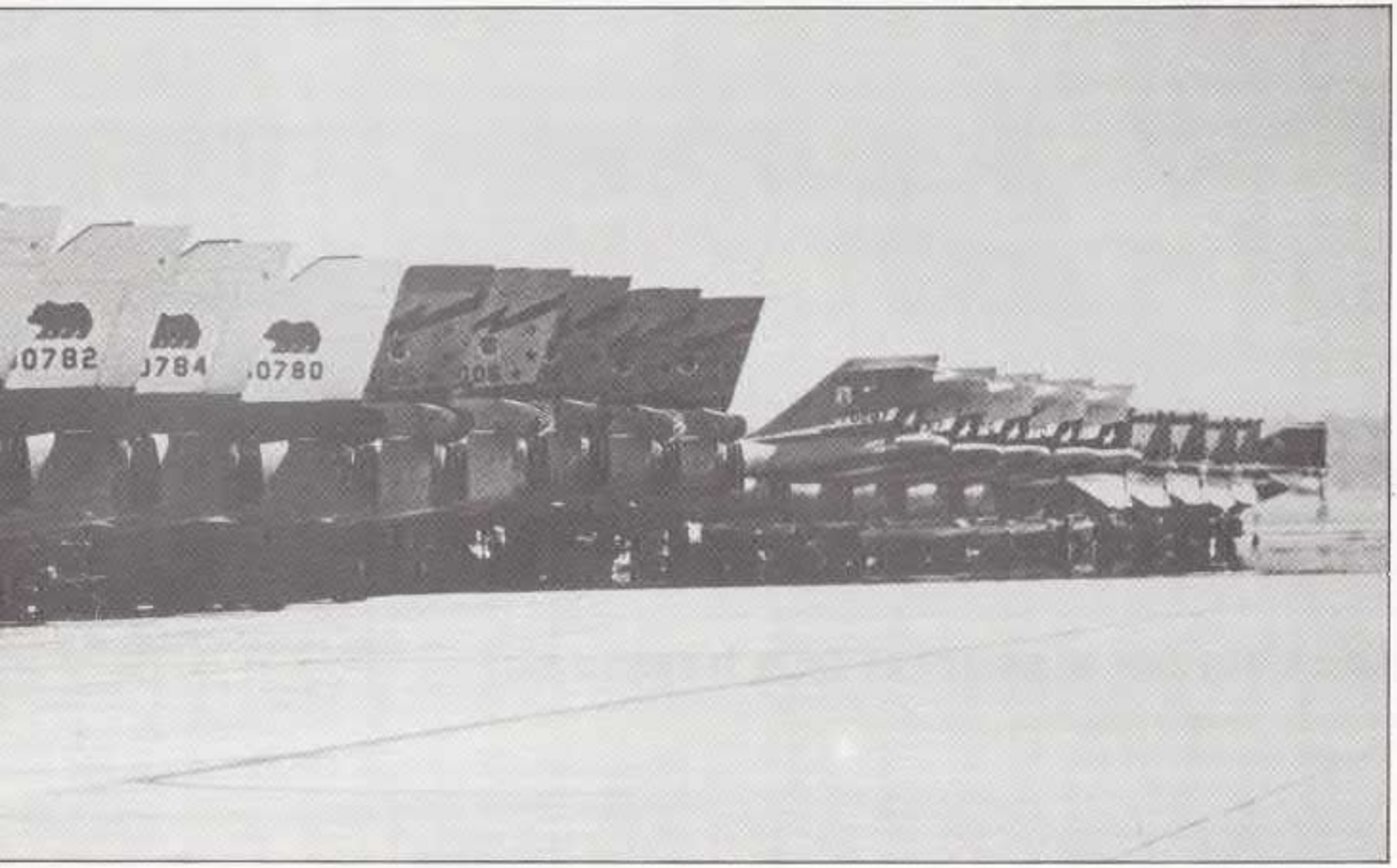
True fighter jockies spirit with deadly seriousness in the air and abundant liveliness on the ground

This humorous approach of the traditional rivalry between air-to-ground and air-to-air crews is representative for the spirit of William Tell meet. Each team tries to reach the perfect score of 40,000 points achieved by flying four different types of intercepts (profiles). Throughout William Tell, tactics were refined and weapons use was improved so that all air defence units could better perform their assigned mission and subsequently increase their score.

The eagerness to win is very apparant during William Tell, as, apart from the main competition, several other competitions were organized, including a song contest. Even the arrival time of the teams at Tyndall was a competition. The teams had been asked to set a time to arrive over the Tyndall control tower. The first team to arrive on 26th September were the 347th TFW 'Mudbeaters' which set an impressive arrival time with less than one second difference from their planned arrival time, which was not bettered during subsequent arrivals. A more impressive feat, though, was the arrival of 144FIW from Fresno, California, logging 4.3 hours flying time, including an inflight refuelling, and arriving only 4 seconds early.

According to the daily news sheet, the teams had various reasons to come to Tyndall AFB, and to participate in Willy Tell 1980:

NY's First (107FIG)	'To visit their grandmothers'
Richochet Rumbles (49FIS)	'Puck'em is gonna die'
Texas Teasers (147FIG)	'To defend their victory of WT78'
Mudbeaters (347TFW)	'To prove terms as Fox 1 and Fox 2 are as familiar as Mk.82, GBU-10, LGB and 'pickle'
Happy Hooligans (119FIG)	'To win their third WT and their first in the F-4'



Six Pack (191FIG) 'To educate old ADCOM heads, not too familiar with the F-4, about Double Ugly'

While the pilots and maintenance crews form the most visible players of the William Tell, the ground controllers also form an important link in today's modern air defence operations. Competing in their own radar 'Scope competition' the ground controllers got information on air activities, gathered by ground radar stations, over a wide area A Back-Up Interceptor Control (BUIC) computer correlated the information and the ground controllers manipulated the computer to enable them to locate targets and direct their fighters to the intercept. BUIC also directly fed information to the F-106 and F-101 interceptors. F-4 interceptors were guided by manual control.

Six Pack scored first William Tell 80 kill

The Six Pack considered their F-4 aircraft to be a kind aircraft, as its smoke trail can be seen from many miles away, so that it gives the 'enemy' a sporting chance. But sometimes the F-4 carries REAL missiles which negated that sporting chance somewhat. As was proven when Six Pack scored the first WT80 kill. Captain Roy Keyt and Captain Terry Andersson, flying aircraft 63-618, c/s JL15, destroyed a BQM-34F Firebee with an AIM-9E Sparrow missile, during a Profile I scramble.

In the morning of 6 October, one of the team's F-4 Phantoms failed to properly check out on the hot preflight, when Capt.Keyt and Capt.Andersson were called in to replace the broken bird. Three shots had been fired before the shot that hit its target. Capt.Keyt: "When the missile left the rail it went straight for the drone. The contrails were converging and I said to Terrythat it looked .like it was going to hit it". A real hit it was indeed as the missile went straight through the heart of the drone, causing it to break into three pieces. The chute came out but there was nothing attached to it, so there was not much left for the drone to 'bite the dust'. JvT□

"the lone star Texan"

'Turn left, traffic on your 12 o'clock' . A 678th Air Defense Group Controller directed. 'Watch out for the boundary on your right'.'Two strangers dead ahead'. The stubborn pilot continued to spin around in circles. 'That's it ! ' shouted the frustrated controller. 'You are going, NOW ! '. 'No Way', the pilot retorted, 'I have plenty of gas and 30 minu - tes playtime'. The weapons controller jumped out of her seat and reached for the door, 'Find your way out of the parking lot, cowboy'she snapped.

WILLIAM TELL 1980 RESULTS

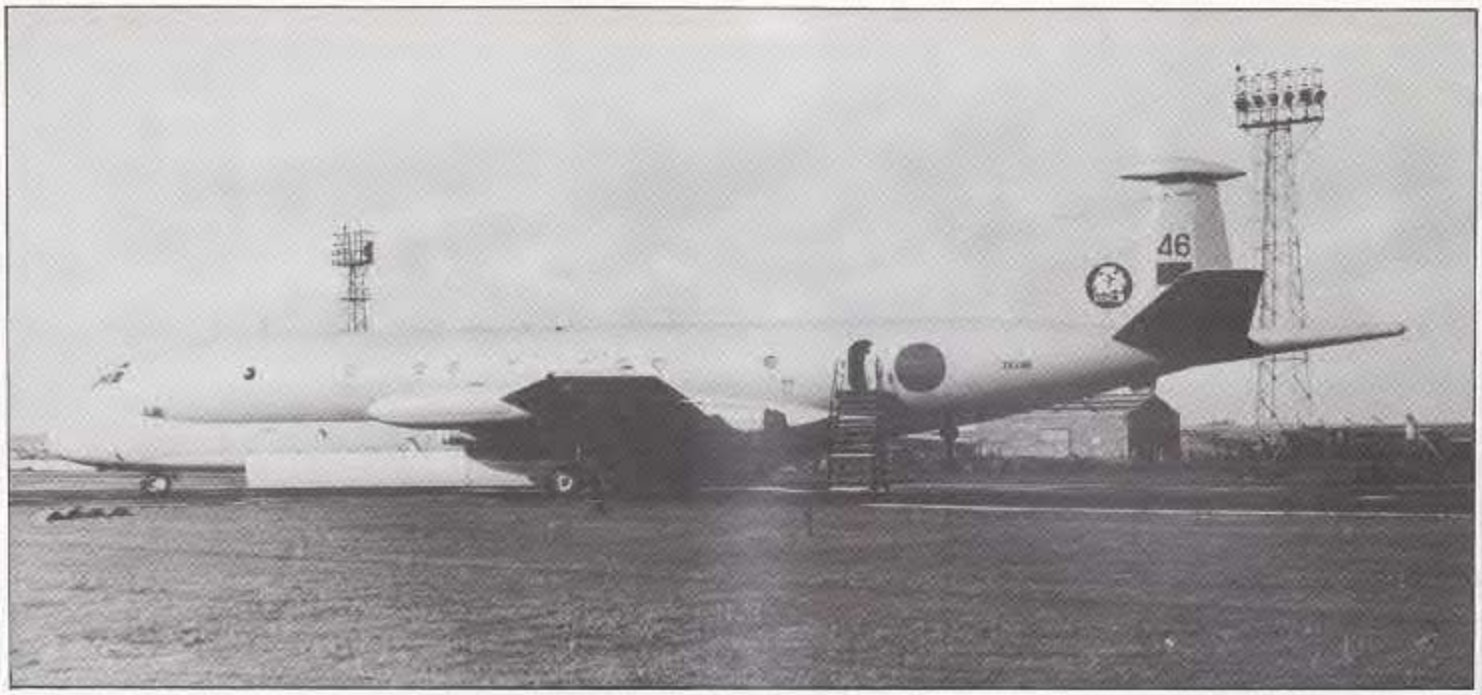
FIGHTER INTERCEPTOR TEAM AWARD (Winning team)
- 144th Fighter Interceptor Wing/California ANG

CATEGORY AWARDS (Winning teams of the F-101, F-4 and F-106 categories)
- 144th Fighter Interceptor Wing (F-106)
- 347th Tactical Fighter Wing (F-4)
- 147th Fighter Interceptor Group (F-101)

TOP GUN AWARD (Best individual pilot or crew)
- 147th Fighter Interceptor Group/Texas ANG

TOP SCOPE AWARD (Best weapons controller)
- 26th Air Division (controllers of 144FIW)

BOMBER AWARD (Best B-52 bomber crew)
- 379BMW from Wurthsmith AFB



Looking for a snorkel in a haystack

Fincastle Throphy competition 1980

A report by Barry Bailey-Hickman

(St.MAWGAN, CORNWALL, U.K.). A Royal Air Force Coastal Command Air Gunner named Sgt.Nairn Fincastle Aird Whyte, was killed in action in 1943. In his memory, his parents presented the Fincastle Trophy in 1960, to be competed for by anti-submarine crews of the RAF, RAAF, CAF and RNZAF.
Since 1961 the four competitors flew over their home waters annually, and sent the results of their sorties to an adjudicating committee in London for the selection of the winner. During this period the throphywas won only once each by Britain and New Zealand, twice by Canada and the remaining five years by Australia.
In 1970 the competition was expanded to examine a wider range of Anti-Submarine Warfare (ASW) skills, including localising and attacking a submerged submarine. The RAF were winners of the trophy that year. The competition in its present form was first held in 1971 and all competitors meet at a common venue.

Mission was to locate submarine HMS Ocelot

This year British, Australian, Canadian and New Zealand patrol crews gathered at RAF St.Mawgan from which they flew the sorties in support of Fincastle Trophy 1980. Each crew flew one day and one night sortie, of four and two hours respectively. During the day sortie, crews had to detect, localise and attack an evading submarine, which had been briefed to present limited detection opportunities to the various aircraft sensors. During the night sortie, crews were to detect, carry out a radar homing and to make a simulated attack against a snorkelling submarine. The portion of the submarine showing above water is approximately two feet long by four feet high, and under normal conditions is considered a very small target. This year severe weather conditions took its toll. Sorties were flown in gale conditions, with waves over twenty feet high, making life for both the hunter and the hunted very uncomfortable - as a result a number of sorties failed to locate HMS Ocelot, the submarine. The tactic employed by the submarine to evade hunters while snorkelling (resting just below sea level with a portion above water while charging batteries, etc.) was to ensure that the snorkel was in a trough between waves and matched the speed of the submarine with that of the swell. In this way the snorkel was effectively hidden on each side by high waves; to detect its presence the hunting aircraft would have to be directly overhead.

The competition search area was approximately 250 kms off Lands End in the Atlantic Ocean, and the actual area in which HMS Ocelot was to be found was about 3,600 square miles - a large area in which to locate a relatively small craft.

Operation method was to make radar contact with HMS Ocelot

The competition was judged on a basis of points scored for various elements of the search, with penalties for over-running allotted time, and extra points for a visual sighting and a good photograph. Very simple, the aircraft entered the search area and called 'on task'. When radar contact was established or other sensor indicated that the submarine had been found, a run - in to the target was made and sonar buoys dropped. If circumstances permitted an attack was made by dropping an Anti-Submarine Target Indicator (ASTI) which is a small explosive charge. If the detonation was heard by the submarine, a smoke float (smoke flare) was released so that the aircraft could see that it had infact made a 'kill'.

Each aircraft carried two observers drawn from the other nationalities competing, to ensure fair play. Although the types of competing aircraft ranged from the aging piston engined CP107 Argus to the jet engined Nimrod MR.1, there were no provisions for a handicapping system to take into account speed or equipment. Each air arm competed on equal terms, even though differences in speed and sensor must have existed.

The submarine which acted as target throughout the trophy was S17 HMS Ocelot, a diesel powered craft, of the Oberon class. It is important to note that the submarine is diesel powered rather than nuclear, as detection techniques for the two types differ. A diesel submarine can shut down completely when at a standstill under water and hence become completely silent. A nuclear powered craft on the other hand must keep a cooling pump running continually to ensure that its reactor does not overheat. The noise from the pump must obviously be a disadvantage when being tracled by sonar. Unofficially this is one of the reasons why new-built submarines are still diesel-powered. This matter remained unofficial after relaying the question to the commander of No.120 sqn at St.Mawgan on the ocassion of the Fincastle Meet.

The aircraft competing this year were:
Royal Air Force
Nimrod MR.1 XV246 of No.120sqn from RAF Kinloss
Canadian Armed Forces
CP107 Argus 10736 of 404/405/407 Sqdns from CFB Greenwood
Royal Australian Air Force
P-3B Orion A9-297 & A9-299 of No.11 sqn from Edinburgh
Royal New Zealand Air Force
P-3B Orion NZ4201 of No.5sqn from Whenuapai

It is thought that in 1981 the competition will be held at Whenuapai, Aukland in New Zealand -- very appropriate since No.5Sqn RNZAF with their P-3B Orion NZ4201 carried off the 1980 trophy. □

PAGE 14: British participant Nimrod Mr.1 XV246
TOP: Australian participant P-3B Orion A9-299
MIDDLE: New Zeland participant P-3B Orion NZ4201
BOTTOM: Canadian participant CP107 Argus 10736

VP INTERNATIONAL

To coincide with the 1980 Fincastle Trophy Competition, a meeting of an organisation named VP Internation-l was planned to take place, also at St.Mawgan.
Membership of the 'club' is restricted to aircrew with over 2,000 hours maritime flying.
Participation was expected from Great Britain, United States, Canada, Holland, Norway, France and Germany but because of fuel restrictions, not all were able to attend.
Most interesting participants were the Canadians who arrived in their brand new CP140 Aurora . The first visit of the type to Europe. Next year of course the CP140 will be used for the Fincastle meet, and heralds the beginning of the end for the venerable Argus, who knows, the Argus competing in Fincastle could have been the last of this type to have visited Europe.

AIRLINE NEWS

Martinair flies 27,00 Hadjis from Indonesia

(SCHIPHOL, HOLLAND) Martinair used three of its four aircraft DC-10-30CF fleet to fly 27,000 Indonesian Moslem pilgrims to Jeddah in Saudi Arabia during late September and early October. One aircraft operated from Medan (on the island of Sumatra) and two from Surabaya on the more densely populated island of Java, under subcontract to Garuda. Starting on 15 September the three aircraft flew a total of 72 round trips in 25 days. Carrying 375 passengers, the aircraft flew via Dubai (for refuelling), and empty back to Indonesia non-stop, each aircraft making slightly less than one 18,000 km trip every 24 hours. Only one of the 72 flights was delayed for a short time, due to an hydraulic problem, and all pilgrims arrived at Jeddah on time to participate in the yearly Holy Week ceremonies in and around Mecca. Martinair officials were understandably pleased with this succesful completion of the Hadj flights Phase One.

The three aircraft returned to Schiphol on 14 October, and Martinair's 164-strong contingent at Jeddah, Madan and Surabaya was able to take a 12 day break before starting Phase Two, the exact reverse of Phase One. One of the DC-10s spent most of the 12 day break in the Middle East, flying under contract to Air India between Kuwait and India, in order to cope with refugees from the Iraqi-Irani war. While three-quarters of Martinair's DC-10 fleet is committed to the Hadj flights, Martinair are reportedly using Korean Airlines Boeing 707Fs for their scheduled cargo flights to and from Hong Kong, normally flown by DC-10s.

PanAm to introduce Tristar 500 on Rome route

(NEW YORK, USA). After deciding that the New York-Rome route may yet become profitable, PanAm has included it in its winter schedule after all, and will introduce the TriStar 500 on the route. PanAm TriStars are becoming an increasingly common sight in Europe, while the Boeing 707s are gradually disappearing.

Swissair's DC-9-81 HB-INC is the first example of the version to enter service, and flies between Zurich and Heathrow, where this photo was taken. (Frank Struben)

SABENA Metroliner OO-JPK prior leaving Eindhoven for the last time on 31 October.

Last SABENA flight from Eindhoven

(EINDHOVEN, HOLLAND). A low pass over the small civilian terminal at Klu air base Eindhoven, and SABENA flight 976 headed south to Brussels for the last time. Twenty-five years after the Belgian national airline became the first scheduled carrier to operate to and from Eindhoven, the route became terminally unprofitable, because of the opening of the final stretch of an excellent road connection between the two cities. The route had been operated by SABENA since 19 April 1955, when the first Sikorsky S.55 landed at a purpose built 'heliport'. Later on, the Sikorsky S.58 was introduced, but after ten years, helicopter flights were stopped. The route shifted to the nearby military air base, and at various times it was flown by BIAS Fokker F.27s, Publi-Air Islanders, a Publi-Air Twin Otter, incidentally by a Publi-Air Queen Air and a Cessna 401, and finally, since April 1976, by European Air Transport Fairchild Swearingen Metroliners, all under contract with SABENA and mostly in SABENA colours. It was Metroliner OO-JPK, flown by EAT captains Bert Zegels and Serge de Vos, carrying a single French passenger, which took off from Eindhoven's Runway 08 for the last time in the cold hazy afternoon of 31 October.

Swiss anti-noise tax

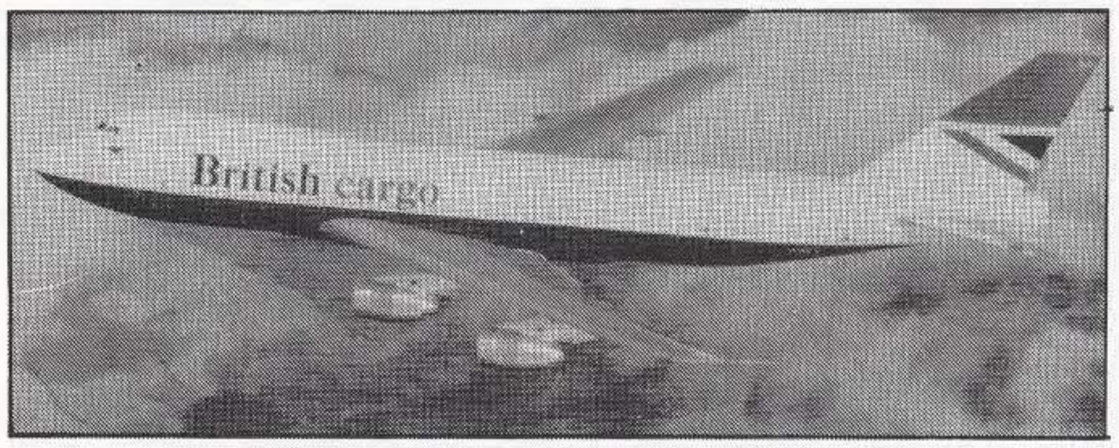
(GENEVA, SWITZERLAND) From 1 November 1980, Zürich Kloten and Geneva Cointrin Airports will provide a financial incentive to airlines to speed up (or initiate) their aircraft replacement programs. This will be in the form of an additional landing fee, the size of which depends on the amount of noise the type of aircraft normally makes. The more common airliner types have been divided in five categories, the noisiest being the older DC-8-20s and -40s whose operators pay SFr.300 per landing, while Sfr.100 is payable for Super Caravelles, DC-9-20/30-40s, 737s and 747s. Airbus A.300s, DC-10s and Tristars are exempt. The receipts, estimated to be SFr.3.3 million a year, will be used to finance other efforts in aircraft noise reduction.
In itself the Geneva and Zürich experiment won't do much to speed up the replacement of the older airliners. However, should more European airports introduce such measures, then the financial penalty of continuing to operate aircraft which ought to be replaced, if only because of noise considerations, will become high enough to nullify the financial advantages of operating old aircraft over buying new ones earlier.

AIRLINE ACCIDENTS

PAN AM (NATIONAL AIRLINES) DC-10-30 N83NA aborted take-off from Heathrow on 16 September when the tower told the crew that smoke was coming from the right main landing gear. The tyres had burst, causing damage to the right landing gear, wing, flap, engine and tailplane. The aircraft came to a halt 500 ft. short of the end of the runway, and all 217 passengers and 17 crew were evacuated within a minute of escape chute deployment. During evacuation, three people were injured, none seriously.

The SAUDIA TriStar which burnt out at Riyadh Airport on 19 August, killing all 301 people on board, did not catch fire due to a camping stove gas leak, as originally reported. The fire is now believed to have started in an underfloor hold in the rear of the aircraft, but what the cause was is still not known. Saudia, meanwhile, has stated that the captain had contributed to the accident becoming a disaster by clearing the runway after landing, and then leaving the engines running, causing the cabin to remain pressurized so that the doors couldn't be opened. According to an eye-witness report, the aircraft did stop on the runway and the engines were shut down (No,2 engine, the centre engine, had been shut down before landing, because the fire had melted its controls). The tower then told the captain to clear the runway to allow other aircraft to use it, The captain complied, starting up Nos.1 and 3 engines, backtracking and clearing the runway. After that no more was heard from the crew, who, it is speculated, had by then been overcome by smoke, although the engines were shut down again a few minutes after the aircraft cleared the runway. Saudia and the Saudi authorities are being reticent on a number of facts which should be known to them, possibly so as not to compromise the accident investigation.

TOP: British Airways Cargo's latest (oversized) baby: Boeing 747-236F (SCD) G-KILO in flight. BOTTOM: G-KILO shows of its big mouth on the ramp of Boeing's Everett facility before delivery . G-KILO was delivered to Heathrow on 1 October, and entered service on the New York (John F.Kennedy) route on 16 October. On 21 October the aircraft started out on its first round-the-world service, routing Heathrow-Heathrow via Dubai, Hong Kong, Tokyo and Anchorage. (both : British Airways)



NLM-Cityhopper F.28-4000 PH-CHI seen at Heathrow recently. NLM's parent company KLM is among the eighteen airlines which are using the BAA over landing,handling and take-off fees. (Frank Struben)

What price quieter aircraft?

(LONDON, ENGLAND) The question of how much airlines should pay for newly built. quieter aircraft is one which will determine how quickly airlines will replace their older noisier equipment. In particular the role of government is an unsettled issue. The British and US treasury departments, who in the past have effectively subsidized foreign airlines in their equipment programs, and hence in their operations and fare levels, are now discussing ways of reducing what they see as expenditure which they can't really afford in these times of economic recession. This may lead to the end of cheap credit, for which the governments up to now have supplied guarantees. A recent example of such cheap credit is the 8% interest loan of $,77.2 million from the US ExIm Bank, plus $.36.6 million from other banks arranged via the ExIm Bank, to BCAL to buy four DC-10s, which was announced last June.

Credit that cheap is unlikely to be offered by private banks, so airlines would have to pay more for their new aircraft. This increase in cost will either lead to higher fares, an extremely unpopular move at a time when fares are being slashed everywhere in an effect to fill existing aircraft, or to a decrease in the number or rate of new aircraft bought.

An alternative way of either speeding up replacement programs, or, should credit become more expensive, to maintain the programs at their planned size and timing, was proposed by the president of Pratt and Whitney Aircraft Group, Mr.Robert Carlson, at an aerospace conference in London at the end of August. He suggested that US airlines, at least, would benefit from US tax changes which would make it cheaper to buy, and more profitable to sell second-hand aircraft. If buyers where allowed to write of a value decrease in line with the true value of the aircraft at the moment of purchase, and sellers weren't taxed on inflation-caused capital gains on the aircraft, more money would remain available with all airlines to buy new quieter aircraft.

New USA-UK routes approved by CAA

(LONDON, UK). The Civil Aviation Authority (CAA) has approved seven new transatlantic services by British airlines:

- British Airways may start Heathrow-Pittsburgh,PA services on 1 April 1981. This decision is bound to raise criticism, as foreign airlines are still required to use Gatwick for any new London services. However, possibly to placate some of these

critics, British Airways moved 36 weekly flights to Gatwick. These were the remaining Heathrow-Spain services, and will be followed by the Heathrow-Portugal services next spring. British Airways is now the largest Gatwick user.

- BCAL may start serving San Juan, PR as a stop to South American flights from Gatwick, on 1 April 1981.
- Laker Airways can start operating between Gatwick and Tampa, FL on 1 April 1981. As soon as the Department of Trade (DoT) ratifies the CAA decision Laker Airways can start on the Manchester-Los Angeles and Prestwick-Los Angeles routes, as well as Manchester-New York.
- BMA can start services between Birmingham and New York, via Belfast, on 1 April 1982. Up to twelve flights per week are allowed. BMA will use Boeing 707s on the route, at least until the FAA bans the type on 1 January 1985. This licence is not really new, as it involves the transfer of unused British Airways and BCAL licences to BMA.

These CAA decisions only have to be ratified by the DoT in order to take effect, since CAB (US Civil Aeroanutics Board) approval is implied by the Bermuda 2 bilateral agreement on air traffic between the two countires, Meanwhile, the CAB has recommended presidential approval of its decision to give TWA authority for non-stop flights between Gatwick and Pittsburgh, PA (compare this with British Airways' licence for Heathrow-Pittsburgh) and World Airways for non-stop services between Baltimore, MD and Gatwick. American Eagle has been designated back-up carrier. And a CAB judge has recommanded the CAB to designate Air Florida as the second US carrier on the Miami-London route, using Gatwick. PanAm (National Airlines) currently operates Miami-Heathrow, and Air Florida operated scheduled charter services between Miami and Gatwick during the summer.

FAA noise regulation in effect from 1985

(WASHINGTON DC, USA). The FAA will apply its domestic aircraft noise regulations, which will take effect on 1 January 1985, to all foreign airliners weighing more than 75,000 lbs take-off weight as well. The only aircraft which will be exempt, and then only till 1988, are twin-engined narrowbody jets, so that smaller local airfields in the USA will not lose essential airline traffic. Boeing 707s and non-reengined DC-8s will be banned under the 1985 regulation, whether they be US-registered of foreign.

BAA fees revolt

(LONDON, UK). Eighteen non-British airlines, under the nominal leadership of TWA, are suing the British Airports Authority (BAA), the government agency which operates Heathrow and a number of other major airports in Britain, over increases in landing, handling, and take-off fees. In the suit, to be heard before the High Court, the airlines allege that the BAA has illegally and excessively raised those fees which it charges at all its airports and demand that the excess fees be repaid. They claim that on average charges went up 35% on 1 April this year, making Heathrow the most expensive airport in the world to use. For example, they say, a Boeing 747 with a 65% to 70% load factor, landing and taking off during a peak period, and using prime parking space for one hour, is charged £.4100 at Heathrow, which compares with £.1833 at Frankfurt/Main, £.1625 at Paris (they don't specify whether this is Orly or Charles de Gaulle), and only £.666 at Madrid/Barajas. While the suit is before the court the airlines are diverting the excess fees into a trust fund where the money will remain untouched until the suit is settled. The outcome will have far-reaching effects on aviation in Britain and the authority of the British government over nationalized industries. On the one hand, if the airlines win, even in part, they will have undermined the currently existing right of the British government to force price policies on nationalized industries including the BAA, as happened on 1 April. On the other hand, if they lose and BAA fees remain at a high level relative to those at other European airports, intercontinental traffic might move to non-BAA airports, possibly Manchester, but more likely Amsterdam/Schiphol and Paris/Charles de Gaulle. This would be a grave loss of business for the BAA and the communities around the BAA airports, which wouldn't be compensated for by the resultant, probably modest, increase in passengers flying from the Continent to Britain.

- The eighteen airlines involved are: TWA, Air Canada, Air France, Air India, Air Mauritius, Alitalia, Austrian Airlines, BWIA, Flying Tiger Line, Gulf Air, Iberia, KLM, Lufthansa, SABENA, SAS, Saudia, Swissair and TMA. PanAm has filed a separate suit. British Airways sympathize, but can't participate, because it would involve suing their own owners. □

AIRLINE MARKET

AER LINGUS was reported by Aviation Ireland to have taken Boeing 737-281 EI-BEE in service after all. The aircraft, owned by Guinness Peat Aviation, was delivered to Dublin this summer after a lease to Bahamasair, but couldn't be converted to Aer Lingus standard because of a strike by maintenance personnel. The aircraft was stored at Dublin Airport until a decision was reportedly taken to take the aircraft into service in October to compensate for the unexpected departure of EI-BCR, also a 737-281, to Nigeria Airways, to replace the damaged 737-281 EI-BEF.

AIRBUS orders have seen an upsurge: Kuwait Airways ordered five A.310s on 24 September, and the aircraft are additional to the six ordered last June. Cruzeiro ordered one additional A.300B4-200, the airline0s fourth. And Egyptair ordered two more A.300B4-200s, making a total of five (plus three on lease), on 16 October.

AIR PORTUGAL is likely to order three L.1011-500s soon, now that the Portuguese government has provided financial support. The airline had been losing money and was unable to pay debts held over from its colonial operations.

AVIACO has sold DC-8-52 EC-ATP to the Spanish Air Force (Ejército del Aire -EdA), which have serialled the aircraft T.15-2. EdA already operates former Iberia DC-8-52 EC-BAV as T.15-1/401-01.

KLM's three latest Boeing 747-206Bs, two of which remain to be delivered, will keep US registration marks, as they are owned by a US leasing company. N1295E was delivered to Schiphol on 12 September, N1298E will arrive in December 1980, and N1301E (which will have a Side Cargo Door) in October 1981. PH-BUP, BUR and BUT had been reserved for the aircraft but will not now be taken up.

NOR-FLY A/S has bought a CV.580, LN-BWG, and sold a CV.440 to Gulf Air Transport, Louisiana, U.S.A.

SAS is offering two older 747-283Bs, five DC-9-21s and two DC-8-62s for sale. These aircraft are in part being replaced by newer aircraft. Together with other measures, this replacement program should help SAS, which lost £.10 million during the first half of Fiscal 1980, regain profitability.

TAA (TRANS AUSTRALIA AIRLINES) can go ahead with the purchase of four A.300B4-100s now that a dispute between TAA's owners (the Australian federal government) and the EEC over lamb sales has been resolved. The four aircraft will be delivered between June 1981 and June 1982.

WIRTSCHAFTSFLUG, a Frankfurt/Main based cargo operator, is expected to start flying with a German registered Hercules, most likely to be a new L.100-30, early next year.

PH-COR Landing gear: two wheelbarrow-wheels and one kid's scooter-wheel

In his youth, Cor Dijkman Dulkes used to make small model aircraft, and soon decided that he would love to build a real aircraft. Together with Wim Stargaard of the TH Delft (Delft polytechnic), Cor D-D designed a high-wing aircraft with a DAF 750cc , 31hp engine. He built the aircraft in two and a half years,after which he made some taxi tests and engine runs at a beach near IJmuiden. He was confident of his homebuilts' safety and decided that PH-COR I should have a test flight. For this first flight he chose Jac van Ham as pilot, who was instructed not to take PH-COR I any higher than one metre. On 13 September 1969 Jac van Ham took off from the beach: as handling appeared to be good the aircraft was grounded by the authorities as the homebuilt hadn't been certified.
When the authorities checked PH-COR Is' air - worthiness they concluded that they knew too little about the design and the materials used. As soon as Cor Dijkman Dulkes found out that the homebuilt wouldn't fly again, he started designing PH-COR II. Having learned a lesson, Cor D-D first decided to notify the RLD of his new design, which this time had two seats and a low wing. All measures and stress forces calculated by Cor D-D and Wim Stargaard were che - cked by the RLD. Once, during a meeting of Cor D-D with the authorities, he showed his results which the authorities compared with their own calculations. However, Cor D-D wasn't allowed to look at the authorities' results, although they had them on their side of the table. Still there was some co-operation and during 1976, PH-COR II took off at Lelystad for its first flight, pilotted by Jac van Ham. This time it is likely that the aircraft will receive a restricted C of A as soon as the authorities get around with it.

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NVAV

Dutch homebuilts in the blossom of youth

(NIEUWEGEIN,HOLLAND). Holland has always been the country without homebuilts. Now, more than thirty people are in various stages of building one . This number of people who are to fly their own built aircraft someday , has become possible thanks to the Nederlandse Vereniging van Amateur Vliegtuigbouwers (NVAV, Dutch Society of Amateur constructors). This organization has managed to improve the possibilities for homebuilders to a standard which is comparable to Belgium, France and the U.K. , the countries where you have to watch your step carefully, otherwise you might stumble over another of those spam cans at the airfield.

NVAV: go-between the RLD and the home builder

Due to reservations the RLD (the Dutch civil aviation authority) had always kept concerning homebuilts, only two aircraft ever reached the certification stage in the past 35 years. The reservations of the RLD have now largely been resolved thanks to the hard work of the NVAV and Cor Dijkman Dulkes. The NVAV is comparable to the well-known Popular Flying Association (PFA) in the U.K. , and was set up during 1971 to stimulate people interested in building their own aircraft. A co-ordinating organization like the NVAV appeared to be necessary in Holland as private homebuilt projects like Cor Dijkman Dulkes' PH-COR I were doomed to fail , because the RLD was not able to control these projects. The aims of the NVAV are to stimulate the designing, building, restoration and trials of aircraft, and the flying of these aircraft. By keeping tight relations with authorities , and foreign organizations having the same aims, the NVAV aims to improve the theoretical and practical knowledge of their members.Currently relations with the RLD are good, as can be concluded from the combined RLD/NVAV regulations, set up last year, for the "procedure to start building a proven design". The latter is the main cause for the upsurge of Dutch homebuilts, but what went on behind these regulating activities ?

Co-operation: only possible from both sides

If there is a single person who has made homebuilts possible in Holland, it must be Cor Dijkman Dulkes. Against all odds Cor D-D built PH-COR an aircraft that according to its constructor was able to take one up into the sky and back to the ground without any abnormal risks. However, the RLD didn't agree that the homebuilt was airworthy, as the RLD hadn't been given any idea of the materials and design principles used for the homebuilt.
Cor D-D then stated that if the RLD wanted to prevent clandestine homebuilts, the RLD should co-operate with and not ignore their constructors. With a possible PH-COR II in mind, Mr. Dijkman Dulkes devised the following form of co-operation the RLD would have control over the quality of workmanship and design, while the constructor could discuss problems with the RLD as and when they occured during the designing or building phases.
At that time the NVAV was set up and it was decided to use PH-COR II, and later also the autogyro of Carel Verlaan, as test case. The experiences with

PH-VER at the airfield appointed for test flights of Dutch homebuilts : Lelystad.

these two homebuilts led to the earlier mentioned proceduresto start building a proven design, which was established by the RLD and NVAV jointly. This procudeer transfers part of the responsibility of the RLD to the NVAV. The Technische Commissie (TC, or Technical Commission) of the latter is partly responsible for the accompaniment of a homebuilt whereas papers and construction is concerned.

Homebuilder: constructor to construct

When the RLD receives a request for permission to construct a homebuilt , they will in the first place try to discover whether the constructor is serious or not. Regularly there appear to be potential constructors whose only interest is the low cost they would have in acquiring an aircraft, by building one himself (or herself). According to Mr. Cees Gootjes of the RLD: "These people con - struct to fly, what we want are people who con- struct to construct". For the former category, quality , and thus safely , is likely to be of minor importance, as their only concern is to get that damned thing ready as soon as possible and get it into the air. After these goats have been seperated from the sheep, the potential construc- tor (sheep) will be referred to the NVAV, and at this point the RLD/NVAV procedure will be carried through.

Guan Tjoa was the first homebuilder to work ac- cording to this procedure. After he made his choise from among the ever growing list of excisting home- built designs, the Aerosport Scamp, he announced his choise to the co-ordinator of the NVAV. The co-ordinator decided what papers and/or documents were necessary for approval by the RLD. After Guan Tjoa collected these papers, they were forwarded to the RLD which made up its mind as to the design should be approvable when finished.

As the Scamp was considered to be a viable, poten- tially safe design, Guan Tjoa was referred to a member of the technical commision, who tested Guan Tjoa's manual skill, knowledge of the trade and the materials used in the trade. All conclusions and documents were again forwarded to the RLD, this time accompanied by a request for a BvI and BvL (certificate of registration and certificate of airworthiness).

PH-MUG: a gnat the NVAV can't catch

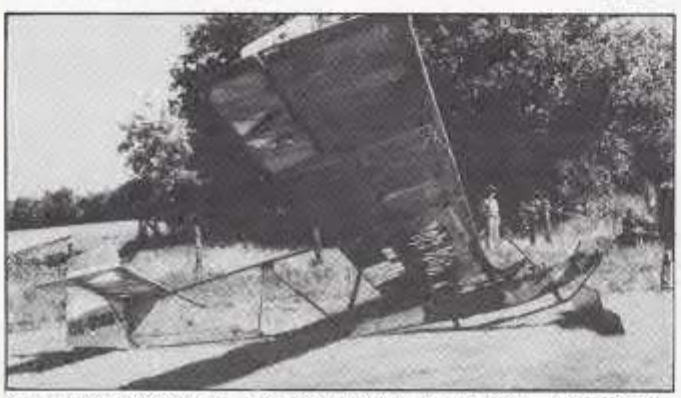
While researching this article, we came across a little known autogyro; PH-MUG or, literally translated, PH-gnat. The photo below was taken at Moordrecht in June 1978, and the builder,Mr. P.H. Hofman, recently stated that the "gnat"is still alive. Mr. Hofman, who is not affiliated to the NVAV, designed the autogyro himself . Some design elements are based on the known autogyro principles. Hofman's first request for a C of A expired after two years, but the build- der stated that in due time, a second request will follow. Apart from the "gnat", the photo also shows the advanced workshop at Moordrecht. Incidentally, the workshop is seperated from the "factory airfield" by a ditch. The autogyro has to be placed on a platform which can be moved along a railtrack, crossing the ditch , to arrive at the take-off area. Speaking a- bout 007...

Next step was a meeting between the constructor a member of the T.C. and the RLD, which was held in January this year. At this meeting the go-ahead was given to build this biplane with open cockpit, T-Tail and tricycle gear, the Aerosport Scamp. The rest of the document stage was completed , and while Mr. Tjoa waited for the kit to arrive he set up his workshop. Recently, the Scamp did arrive at Hoofddorp, and construction started . In principle the T.C. member will accompany this phase and at the same time make interim checks. Technical problems which need solving during construction will be discussed with the T.C.member and the RLD .

HOMEBUILTS: WHAT IS IN IT?

The efforts put in a homebuilt will be paid back mainly by the idea of flying an aircraft you built with your hands. But what do you really have to pay for this hobby ? Out of the many designs , available, like racers, tourers and aerobatic planes, the cheapest one is the simplest one. For a solid and safe single seat aircraft, like the popular Volksplane, initial costs will be around Dfl 7,000 (£ 1,400) if a converted car engine,like the equally popular Volkswagen, is used.Any other design is likely to cost more, certainly when a real aircraft engine is used.
You need space, like a garage, and tools. The former has to be kept at the same temperature and humidity otherwise the materials or glue could be affected. The tools have to be of good quality. It is best to exchange the really expensive tools with other constructors. The NVAV has monthly meetings for just such purposes as well as for exchanging information and experiences. Time is an important factor too. Considering that the average homebuilders needs five years to complete his creation in the spare time he has available on average. However the total time involved depends completely on the design, speed of constructing and available spare time. As with most hobbies connected with aviation, the married person has to watch out, or he will end the project alone. The potential homebuilder must have preseverance but he is not alone anymore, the NVAV is standing behind him while other constructors are with him.

Hans Beerens, co-ordinator of the technical commission, said that this year has seen an upsurge in people interested in homebuilding in Holland. He expects that the applications to build aircraft will drop to a steady flow while more and more projects will reach the flying stage. At the NVAV show next year, Hans Beerens hopes to see a Dutch Quicky, Volksplane and CVA-2P in the air. This show, which is held annualy, will take place at Lelystad on 28,29,30 and 30 May 1981. During these days there will be lots of firsts for the NVAV : the first ten years of excistance the first home - builts constructed through the new procedure , while their first hangar, which will be built for and by them, should also be ready. It is busy, or buzzy, at last in Holland, thanks to the enormous efforts of the NVAV. CvdH □



Schulungsgleiter SG.38 still carrying Austrian registration is being rebuilt

HOMEBUILTS CURRENTLY PLANNED

NVAV Nr.	Type	Constructor	CAT.
05	Dijkhaster CWH	C.Dijkman-Dulkes	(1)
06	Air Tummy Two	Charles Verlaan	-
10	EVANS Volksplane VP1	Frans Goossens	(0)
25	Aerosport Scamp	Gwan Tjoa	(0)
26	Quicky	Jean Reumers	(0)
27	Evans Volksplane VP1	Ton v.d. Kooy	(0)
28	American Eaglet	Jan Cortenraad	(0)
29	VO-3 De Reiger	H.van Ommeren cs	(0)
30	Sport de L'air Henry Mignet HM-290/3/A	Günter Niemand & Dick Siebelink	(0)
31	Weedhopper	Jan Struik	(0)
32	Mitchell Wing B-10	Rien Braspenning	(0)
33	Jodel D-119	H.van Milligen	(2)
34	Pottier P80S	Wil Post	(0)
35	Sorrel Guppy SNS 2	Wolanda Verlaan	(0)
36	CVA-2P	Charles Verlaan	(3)
37	Pottier P80S	Marius de Bruin	(4)
38	Schülungsgleiter SG38	L.van Liempt cs	(R)
	Windwagon	Jos Theuns	(N)
	Don Quixote J-1B	H.v.d. Bult	(N)
	Pottier P80S	Herman Santema	(N)
	Pottier P80S	Louis Sommen	(N)
	Pottier P180	Piet Boers	(N)
	Rand Robinson KR-2	Henk de Heer	(N)
	Rand Robinson KR-2	Stef Feld	(N)
	Bensen B-8M	Gerrit te Pas	(N)
	BU 181 Bestmann	Wim Daams cs	(R)
	Aeronca 7AC Chapion	Dick Funcke	(R)
	Bleriot XI	Henk van Hoorn	(P)
	Fokker DR-1	Jaap Mesdag cs	(P)
	Quicky II	S.Schulbergen (?)	(N)

(0) = currently being built
(1) = R-Bvl requested by builder
(2) = no official approvement yet to actually start building.
(3) = mention has been made to the RLD
(4) = as with (2),not building.
(N) = new aircraft
(P) = replica
(R) = restoration/rebuilt

Three projects, which don't appear on the list, have been cancelled, a Zenair Zenith CH-200 was cancelled as the builder decided he was a bit too old and that the time he would need to finish it was too long. Therefore he decided to spend his money to flying itself. A Vari-Eze project was changed to a Quicky II project, which is a self designed two seat version of the Qiucky I. The GE-2C Skymaster was too expensive as some materials were not available in Europe, thus Mr. Verlaan decided to design a gyrocopter himself.
Mr. Verlaan's earlier project, PH-VER NVAVnr. 6 concluded its test phase prematurely early this year, as this autogyro was only few hours from certification. The autogyro ran into engine troubles and its constructor decided to stop the project and start building a two seater With the latter two seater Mr. Verlaan will be able to teach other people to fly autogyros.

Volksplane PH-GOO seen in an advanced stage

DUTCH REGISTER SEPTEMBER 1980

PH-CAA: one of the few American-built Dutch Cessna

PH-ECO will be used for air pollution control

Reg.		Type	C/n	Remarks	
PH-AFJ	3077	Socata TB.9	139	Aviation Francaise BV	dd 2-10 Rotterdam (new)
PH-ARK	1580	Fuji FA-200-160	FA200-174	William Cars	to C.R. van Leeuwen
PH-BKT	1860	Noorduyn AT 16 Harvard II	14A-1020	J.A.H.M. Thuring e.a.	to Mw. H. Toren
PH-CAA	3072	Cessna 172N	17273039	Campbell Air Sales Holland v.o.f.	ex N1949F dd 10/8 (new)
PH-CAG	3053	Socata TB.9	131	Aviation Francaise BV	to M.G. Grensemann
PH-CET	1957	Reims Cessna F.150L	0823	Air Service Holland BV	to G-HFCI (out)
PH-DPA	2631	Reims Cessna F.172N	1622	DAPA to Air Service Holland BV	to G-JFWI (out)
PH-EAS	3074	Piper PA-28-181	28-8090214	Netherlands European AS BV	ex N8142H,OO-HLN (new)
PH-ECO	3062	Piper PA-31-350	31-8052174	Netherlands European AS BV	to Geosens BV
PH-FTR	3076	Fokker F.27-600	10450	Fokker BV	ex TU-VAJ, TU-TIA (new)
PH-ILG	3069	Beech 200C Super KingAir	BL 13	Philips' Gloeilampenfabrieken NV	dd 29-9-80 (new)
PH-ILH	3061	Beech 200 Super King Asr	BB 737	Philips' Gloeilampenfabrieken NV	dd 29-9-80 (new)
PH-INH	1273	W.J. Heutink Muller	58	Jodel DR-100	cancelled (out)
PH-KLB	2953	Piper PA-18-135	18-3857	Air Advertising Holland BV	to G-LION 29-9-80 (out)
PH-MAI	1142	Piper PA-18-150	18-6591	Martinair Vestiging Vlv Lelystad	cancellec,stored (out)
PH-MAT	1525	Fokker F.28-1000	11008	Martinair Holland NV	to VH-FKF 1-10-80 (out)
PH-MIC	2101	Piper PA-23-250	27-7405239	BV Recreatiecentrum Zwartven	TO H.A. Kapteijns
PH-PGP	2920	Pitts S-2A	2186	A.C. Bakker	ti Welimex Nederland BV
PH-SDA	3075	Piper PA-28RT-201	28R-8018101	Netherlands European AS BV	ex N8251B dd 9/9 (new)
PH-SDN	2276	Piper PA-28R-200	28R-7535192	Grootland Holding to N.E.A.S.BV	cancelled (out)
PH-SVE	3055	Robin DR 400/120	1499	J. Nastenbroek	to St.Vlmat Rotterdam.
PH-SYD	3071	Piper PA-28RT-201	28R-8018094	Netherlands EuropeanAS BV	ex N8264S dd 27/8 (new)
PH-TMG	3070	Piper PA-38-112	38-80A0079	Netherlands European AS BV	ex OO-HKD dd 27/8 (new)
PH-WLH	2713	Reims Cessna F.172M	1443	A.C. Bakker	to Welimex Nederland BV
PH-ZBV	3066	Fokker F.28-3000	11153	Fokker BV	to Philippine Gvt (out)
PH-ZBW	3067	Fokker F.28-4000	11157	Fokker BV	to PK-GKC (out)
PH-ZUS	2933	Rockwell 700	70019	H.A. Kapteijns BV	to BV RecreatieZwartven
PH-262	578	Ka 6 CR	661	Zweefvliegclub Texel	to R.E. Beekamn ea
PH-335	992	Ka 6 CR	6335	A.J.H. Karsmakers	to J.H.M.van Arendsberg
PH-514	2255	Pilatus B4-Pol1	178	Zweefvliegclub Texel	to P.Zielman/B.Kelholt.
PH-685	2973	LS3-17	3387	BV Handels en Adviesburo UBO	to Venlose Zweefvlieqc.
PH-694	3073	PIK-20-E	20288	Zeeland Soaring BV	(new)

PH-ILG is the thirteenth cargo Beech 200 produced

Seen at Rotterdam airshow lately,was this Arrow IV.

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Other titles obtainable:

BRITISH CIVIL AIRCRAFT REGISTER DFL.21,75
Gipsy Moth G-AAAA was the first British civil aircraft to enter the second permanent register in July 1928. Some 150 pages furtheron Piper Chieftain 350 G-BXFP is the last aircraft to have been included in this reference, containing 22,000 entries.

U.S. MILITARY AIRCRAFT DESIGNATIONS & SERIALS DFL.22,50
All serial-numbers of aircraft serving with the U.S.Army, Air Force, Navy, Marine Corps and Coast Guard since 1909, have been indexed according to type designation.

DUTCH PUBLICATIONS

NED. KONINKLIJKE LUCHTMACHT

DFL.69,50

A survey of all aircraft types presently serving with the Dutch Air Force, counting 160 pages and illustrated with 130 photos (incl. 10 colour). Additionally the author adds a brief history on the Klu, and pilots' reports on a Dissimilar Air Combat Manoeuvring Training and a trip to a Dutch gunnery range.

VLIEGEND VOOR DE VREDE

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A Dutch publication containing over 400 photograps of aircraft of the United States Air Force in Europe. Additionally explained (in Dutch) are the organisation of the USAFE today, as well as the phenonema 'agressors' and 'deployments'.