



# INPUT



EGATS QUARTERLY

SUMMER '79

# Input

Egats Quarterly Magazine

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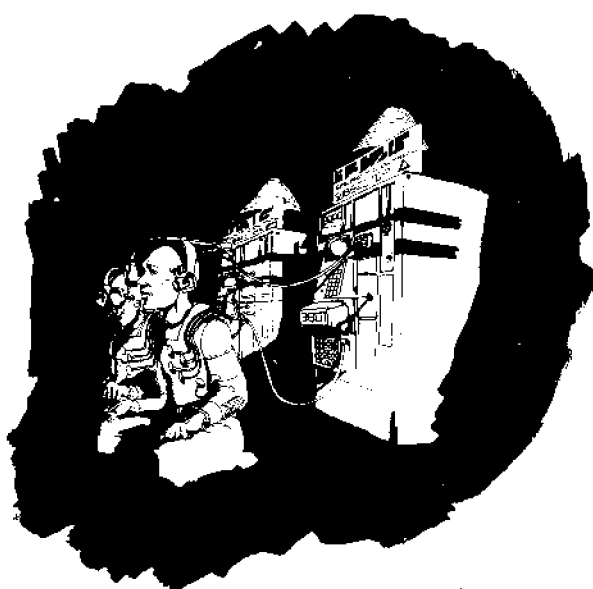
## Output

First an apology for the late appearance of this edition. This was brought about by lack of time on the part of the editor and compounded by the fact that, when the editorial digit was finally extracted, the printers went on holiday.

There is no shortage of staff in the operations division at Maastricht we are reliably informed. The withdrawal of five flow control specialists, three systems specialists and four resignations from the ops. room staff has obviously been compensated for by the recruitment of one new radar controller. Try explaining the fact that we are over-staffed to someone trying to get one day off for some urgent reason. Has it never occurred to management that it takes two to three years to train a radar controller from scratch, that it is not possible to open a new tin as the situation demands? In any air traffic control system the controllers are the front men without whom the system cannot operate, therefore it is surely better to have too many controllers than too few.

I. Guild

Since this was written five trainees have been recruited. They may be checked out by 1982 if past experience is anything to go by.



## Intercom

### Letters to the Editor

Dear Sir,

One of the conditions of appointment to Eurocontrol is that a servant (a Eurocontrol designation, not mine!) must have a security clearance certificate issued in his name by the national authorities of the country of which he is a national. Earlier attempts to discover precisely what this security clearance clears me for have led to nought and reference to my Eurocontrol „bible“ brings me no nearer to satisfying my curiosity. That this document is important to somebody has been clearly indicated by my own experiences. When first presented with a security clearance for completion back in the Zaventem days I found that I was not in possession of all the facts required by the form. Having filled in what I could the form was duly handed in for onward delivery to Headquarters. Shortly afterwards I was summoned to Headquarters in connection with the blank spaces that had remained on the form. Once there I was informed that I would not be allowed to leave if I did not proffer all the information required by the security clearance form. Having no desire to patronise the deep dark dungeons of 72 Rue de la Loi, I had no alternative but to complete the form with lies. The results were obviously satisfactory as I was allowed to sleep in my own bed (!) that night. Others have lied quite blatantly on these forms without repercussion.

Five years later, here at the UAC, I was threatened with loss of my job if I failed to submit my wife's details for the security clearance form. My partiality to money assured the appropriate powers of my co-operation. But I still never learned what I was cleared for! Having been obliged (stronger words come to mind!) to give my wife's details, is she now as „cleared“ as I am? Will she still be considered a security risk should I ever attempt to bring her into the UAC grounds (you better believe it!). Will knowing about such classified data as airways still rate me as a security hazard should I ever be unfortunate enough to be detained by a certain Member State's security organisation? C'mon, somebody tell me.

Paul J. Hooper.

Dear Mr. Guild,

In the Spring edition of Input (page 24) you reprinted a letter to me from Mr. Ben McLeod of Pan American World Airways with a comment which was way off beam. Mr. McLeod was replying to a letter of mine explaining that there would not be any increase on 1 April this year in the CAA's own charges for navigation services in respect of the Shanwick Oceanic Control Area or at nine airports in the UK where CAA/NATS provide such services. My letter and Mr. McLeod's reply had no relevance to the Eurocontrol Route Charges System. Unless you were unaware that charges under the ERCS did go up on 1 April, it is difficult to understand how you could comment as you did. It may have given you a warm feeling but it has not gone unnoticed!

Yours sincerely  
P.A. Robinson  
C.A.A. Commercial Manager

I apologize to Mr. Robinson for the misunderstanding. I was under the impression that, in the interest of efficiency, the member states – and others – had delegated the collection of all en-route charges to Eurocontrol.

Dear Sir,

It has been suggested to me, and quite justifiably so I think, that the cost of subscribing to „Interavia Air Letter“ (£ 980, –) for certain individuals and for the gents restroom, is just a little excessive.

The suggestion stimulated discussion amongst one or two total aviation people who concluded that a subscription to „Flight International“ would, at approximately £ 100, – per annum, provide far better value for money and the equivalent in news value. If the emphasis is on aviation news then a concurrent subscription to „Aviation Week & Space Technology“ would have the world scene pretty well covered. If the worry is that such magazines would rapidly perform the familiar disappearing trick, I am sure they too could be firmly attached to a suitable folder.

But gentlemen please note, there are a few of us frequenting the restroom who have more than a passing interest in aviation news. Unfortunately, by the time the Air Letter reaches us minions the news items have become history, so how about speeding up the circulation process fellas?

PJH.

## The International Labour Organisation

After many years lobbying by various controller organizations the ILO (International Labour Organisation) convened a meeting of „experts“ at its Geneva Headquarters from May 8 to 16, 1979.

At the opening session officers were elected, the Chairman from amongst the government experts and the Vice-Chairman from those of the employees. Because these officers must remain impartial and cannot therefore be so vociferous about subject matter as others it was a pleasant surprise to see that Mr. P.V. Dawson, Director of Employee Relations, from Canada was elected as Chairman. In my opinion this helped the employees in the days that followed as Mr. Dawson was arguably the most perceptive and incisive of the 15 government experts, this in addition to being scrupulously fair. The employees case was helped further by the fact that IFATCA Regional Councillors were spotted amongst the government ranks as was the U.K. Guilds' Director at IFATCA '78 and '79 who was acting as Technical Advisor to the British Government's expert.

The calibre and qualifications of some government experts were, to say the least, suspect! „No names, no pack drill“, but when you consider that one worthy was a transport administrator who appeared to know nothing about A.T.C., another could not distinguish between the terms „gross“ and „nett“ and had to be quickly put right by his advisor, whilst a third wanted to answer the employees right to strike with the employers right to „lock-out“. Can you see how this would expedite traffic.

The sessions were, of necessity, punctuated with frequent breaks to allow the translators to recover – they were further bogged-down by several people saying the same thing over and over again. In consequence, by the middle of day three we were already one day behind schedule.

I had to return before the end of the meeting due to the fact that Eurocontrol, although having granted two days special leave (for a nine day meeting!) could not allow time off due to staff shortage! It was therefore necessary to resort to swapping to get five days at Geneva. Incidentally it must be noted that Eurocontrol was told not to attend by the member states – so, even though the Director General was invited by the I.L.O. no management representative attended!!

The draft conclusions which will eventually be put forward as recommendations to the I.L.O. Member States were broadly as follows:

1) INDUSTRIAL RELATIONS. Controllers must have the right to join organisations of their choice, unhindered by anti-union activity. Also to indulge in collective bargaining and negotiations to obtain satisfactory conditions of work.

2) **SOCIAL AND LABOUR ASPECTS OF A.T.C. SYSTEMS.** As these two subjects are closely linked the results of studies into them should be freely circulated between member states.

3) **EQUIPMENT.** Abundant and adequate A.T.C. equipment should be provided commensurate with operational requirements. Controllers should be consulted in the early stages of design of new premises and equipment.

4) **CIVIL OR MILITARY?** Civil systems and staff should be used in preference to military ones for the control of G.A.T.

5) **DUTY PERIODS.** Hours of work, shift length, rest periods, the number of days worked continually, etc. must be such as to ensure that the controller is not unduly fatigued or overstressed. Duty rosters should be determined in consultation with the staff.

6) **MEDICAL EFFECTS.** The World Health Organisation should, in conjunction with the I.L.O., institute research into the problems of stress in A.T.C.

7) **RENUMERATION.** This should be linked to pilot salaries as is already the case in New Zealand and Venezuela.

8) **RETIREMENT AND PENSION.** Retirement should be at an earlier age than for workers in other employment, this should not however lead to a smaller pension.

9) **MEDICALS.** A system of regular medicals and follow up examinations must be instituted in the interests of safety and in order to enable timely detection of a deterioration of a controllers health and in order to prevent further deterioration. Adequate rest, recreation, welfare and sanitary facilities should be available at all units — rest rooms should be separate from recreational facilities.

10) **EQUIPMENT SAFETY.** This must be further investigated vis à vis the safety, health and welfare of controllers.

11) **LEGAL LIABILITY.** A non-penalizing system of incident reporting must be introduced to help prevent repetition of incidents. Controllers must have legal representation made available whenever they are involved in legal liability matters.

12) **TRAINING.** The existing guidelines for training should be revised. It is desirable that all controllers have at least basic flying training. Retraining should be available in order to keep abreast of new techniques and equipment and also to enable controllers to be rehabilitated into another job if forced to leave A.T.C. This is already done in Canada.

13) **MANPOWER AND CAREER PLANNING.** This is vital to the safety and efficiency of all A.T.C. systems.

The above aims are laudable but we are all aware that getting member states to agree to them is another matter. To date the I.L.O. has had some one thousand cases to investigate where its member states have failed to abide by resolutions which they have already agreed to.

## Air Anglia introduces its first F.28-4000

AIR Anglia on May 21 became the proud owner of a new F.28-4000, the airline's first, although it has been operating two leased F.28s for several months. The new aircraft will be used on routes between Aberdeen and Amsterdam, Paris, Bergen and Stavanger; and between Edinburgh and Amsterdam or Paris. It will replace the F.28-1000 which has been leased from Dutch manufacturer Fokker-VFW since August.

Air Anglia will operate the new aircraft as a one-class 85-seater. It will be joined by a second example in August, but Air Anglia's other leased aircraft, an F.28-4000, will probably be retained for a while after this. The leased aircraft may eventually be replaced by the purchase of a third example, probably for Leeds-Amsterdam and Leeds-Paris.

The airline made the move from turboprops to the Spey-powered F.28 principally because of F.27's long sector times on the above routes. Aberdeen-Amsterdam for example, is nearly two hours by F.27, while the F.28 takes just an hour and a quarter. The airline however has no plans to replace its 44-seat F.27s on domestic routes because it feels that journey time and seat-capacity are adequate. Air Anglia's new F.28 is the first to receive British certification. The changes necessary to meet Civil Aviation Authority (CAA) requirements have been fairly minor and include duplication of the high-speed warning system. The CAA has found the F.28-4000's natural stall characteristics sufficiently good that no stick-shaker or pusher is needed. The airline has also specified Category 2 minima (decision height 100ft, horizontal visibility 1,300ft), which should be granted in mid-August.

Total cost of Air Anglia's two F.28s including spares is about £12 million, but Fokker-VFW is quick to point out that nearly half the aircraft is of British manufacture. Air Anglia plans an annual utilisation of about 2,500hr for each of its two aircraft, but this may eventually reach 3,000hr.

Flight

## ECC 1979, Prestwick, Scotland

Sunday, May 20th, at 13.30 hrs five cars left Maastricht UAC en route to Europoort to catch the 18.00 hrs ferry to Hull in England on their way to the ECC 79 football tournament. The tournament, generally known as the Prestwick tournament was held in a small coastal town on the Scottish west coast, named Largs.

We arrived in Hull on Monday morning around noon and we were very happy to see our bus, which was going to take us to Scotland, waiting at the exit of the North Sea Ferries terminal. Via Barnard Castle, a pretty little town where we had lunch we went to the north and via well-known places like Gretna Green, and Carlisle we proceeded to our destination. Our trip took us through one of the most beautiful parts of northern England and Scotland. Bare hills and wooded mountains relieved each other and wherever you looked you saw the famous Scottish Highland cattle and the sheep which produce the wool to make the Scottish kilts. Most areas are scarcely populated and the houses make one think of the French Dordogne and Auvergne areas, roughly built, but usually at the most beautiful spots. Most farmhouses and „heather meadows“ are surrounded by stone walls, most of which have been there for centuries, which offers protection to the cattle during the autumn storms. This part of the country is really the place for a quiet holiday if you do not wish too many people. During the whole trip ample use was made of our Scottish guide Bob, who, understandably, considering the beauty of all there was to see in his country, was very eager to explain everything we saw. It was around 20.30 before we arrived at the Timaru Hotel in Largs where we were going to stay. The hotel offered us everything we wished and that was probably the reason for our final position in the tournament. Drinks, good food and late opening hours of the bar.



Instructor J. Minoli (left) of the N.L.S. presenting training suits to H. van Hoogdalem and J. van Eck.

Tuesday, 22nd, we started in the tournament with a match against our great host, Prestwick, a match which was lost by us with 2 - 0. (Politeness?) The second match that day was against Rovaniemi, Finland, and we scored a draw, 0 - 0, post and cross-bar prevented us scoring real goals. We were getting a little optimistic and it was then that we had to play Vienna, a team we beat last year. Obviously they were out for revenge and they beat us, 4 - 1. That was all for Tuesday and we went back to the hotel to prepare for the usual ECC-party. We went to bed very late. Wednesday morning our opponent, Stavanger presented itself on the pitch just as tired as we did, but we managed to beat them, 3 - 0. Our next opponent, Geneva was too fit for us after the walk-overs they had. They had not played that day so they beat us, 3 - 1. Schiphol was our next opponent. Just before half-time Maastricht, for once took the lead. This fact, after a very tiring day asked for a celebration. Immediately one of our fantastic supporters rushed to the centre-spot to put down a crate of beer. Together with the referee and the Schiphol team this crate was treated in the appropriate manner after which we continued. The final result was a 2 - 0 victory. That night we went

to the Springfield Hotel where we met many other team-members and several beers. Thursday morning, the final day of the tournament we played against Stockholm. We won the match with 3-2, but it was in this match that the most peculiar goal was scored by our opponent which caused one of our teammates to comment on Jos's in total great performance: „Hey, Jos, do you know that you had bounced already twice before that ball reached and passed you?". At 13.00 hrs, after a bagpipe show Prestwick and Padua played a (to the Scottish), nervewracking final. After the normal and extra time a draw was reached, 2-2. Penalties decide and Prestwick won.

That night we had a real party at our hotel in which the landlord and his wife and staff joined us. It was three o'clock when we went to bed after a great night and a great tournament. Friday morning 08.00 hrs waved off by the hotel staff we returned to Hull, which we reached just in time at 17.15, only 45 minutes before sailing time. We arrived in Europort on time and thus a marvellous week had come to an end. Now all those who were there in Prestwick are looking forward to Zagreb for ECC 80. The Zagreb tournament will most likely take place in the last week of August.

All we can say at this moment on behalf of all those who were there is: „Thanks, Prestwick and Largs for the great time we had in Scotland and we hope to see you next year in Zagreb". (And beat you there).

End result of E.C.C. '79

1. Prestwick
2. Padua
3. London
4. Amsterdam

We wish to thank the N.L.S. for their support.

## DABS/ADSEL — A Plain Man's Guide

DABS, Discrete Address Beacon System, and ADSEL, Address Selective SSR, are SSR developments being pursued in the United States and the United Kingdom respectively. The two systems, while not identical, are compatible in that the signals exchanged between the ground station (interrogator) and the aircraft (transponder) are of the same format in each system. Equally important is the fact that both systems are compatible with current SSR systems, this being necessary to permit an

evolutionary introduction of the ADSEL transponders and to allow ADSEL and SSR ground stations to operate simultaneously. In a mixed environment, an aircraft having only an SSR transponder will reply normally to both SSR and ADSEL interrogations, whilst an aircraft equipped with an ADSEL transponder will reply with SSR data to an SSR interrogation and with an ADSEL message to an ADSEL interrogation (see Fig. 1).

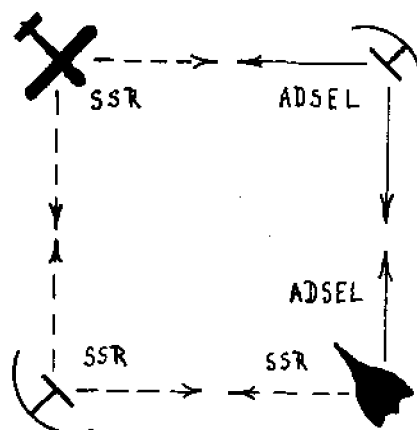


Fig. 1

### PHASE MONOPULSE AZIMUTH DETECTION

Azimuth detection using a phase monopulse function is not only more accurate than the method described above, but also has the additional advantage that it requires only a single transponder reply. The left and right halves of the antenna are electrically independent. If an aircraft is precisely on the axis of the main beam (on boresight) at the instant that it is interrogated, then the distance from the aircraft to each half of the antenna will be identical, anywhere else in the beam the distances will differ. This difference will result in a phase difference between the signals received at each half antenna. From the phase difference an angle left or right of boresight can be calculated and this, when added to the boresight angle, provides a very accurate azimuth, (see Fig. 4). As can be seen this technique is not necessarily linked to ADSEL and may be used in conjunction with a normal SSR station.

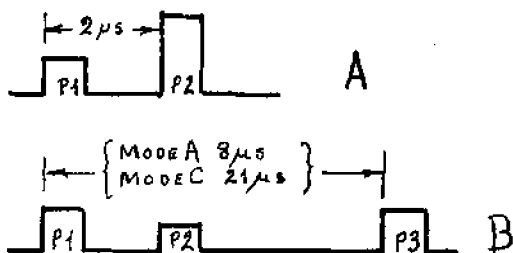
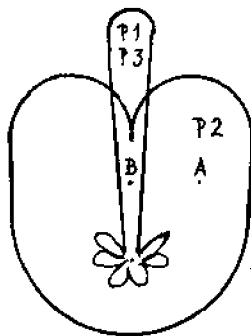


Fig. 2

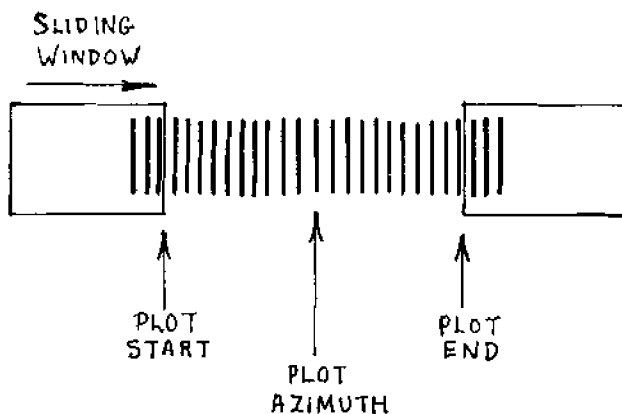


Fig. 3

### CURRENT SSR SYSTEMS.

The signal transmitted from an SSR interrogator consists of three pulses referred to as P1, P2 and P3. The elapsed time between P1 and P3 determines the reply mode of the transponder (mode A, B or C). P2 is used for side-lobe suppression. P1 and P3 are emitted in the main beam, P2 is emitted in the form of a cardioid with the null in line with the main beam. Outside the main beam, P2 will have a greater amplitude than P1 and this will be detected by the transponder which will ignore further signals for about thirty-five micro-seconds. Within the main beam, P2 will be smaller than P1 and the transponder will reply in the appropriate mode. (see Fig. 2). During the time that the main beam sweeps across an aircraft between twenty and forty replies will be received from its transponder. Two of these replies will be used to extract the mode A and mode C codes and all of them are used for the determination of the aircraft's azimuth. Using a sliding window technique, the beginning and end of each series of replies (plot) is determined; the azimuth of the plot is then taken as the mid-angle between the start and the end (see Fig. 3).

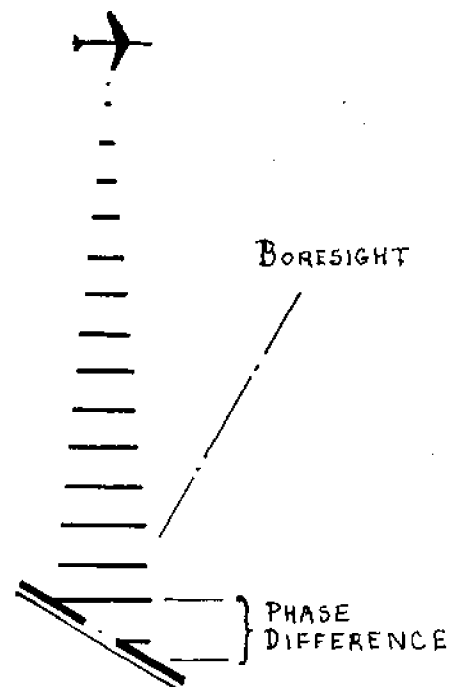


Fig. 4



## DISCRETE ADDRESSING.

Before communicating with someone it is necessary to be aware of their presence and of their name or address. This data is acquired by ADSEL by means of an SSR/ADSEL ALLCALL signal. Because the monopulse technique described above requires only one or two replies in order to determine position the interrogation rate can be very low, consequently SSR/ADSEL ALLCALL interrogations are emitted at a frequency of about 50 interrogations per second which means that each aircraft will be interrogated about 4 times as the main beam sweeps across it as opposed to about 35 times in current systems. The SSR/ADSEL ALLCALL pulse train is shown at Figure 5. It consists of the normal P1, P2 and P3 pulses described above and, in addition, 1.5 micro-seconds after P3, a P4 pulse. SSR transponders will react to P1, P2 and P3, and will reply in the appropriate mode (A or C). ADSEL transponders will detect the P4 pulse and will reply with an ADSEL message containing, amongst other items, their ADSEL address. The ADSEL messages use 24 bits for the address which provides for over 16 million discrete addresses. Once it has been acquired by the system the transponder is instructed not to reply to further SSR/ADSEL ALLCALL signals. The ADSEL system now initiates a radar track for the new aircraft so that it can trigger an individually addressed interrogation the next time the aircraft is in the main beam, adjust the power output in accordance with the range of the aircraft, and time the interrogation to avoid overlapping of returning pulse trains from different aircraft.

The discrete interrogation pulse train is shown at Fig. 5. It consists of a P1 pulse, a P2 pulse transmitted within the main beam and of a greater amplitude than P1, and is then followed by the message itself which contains the address of the aircraft

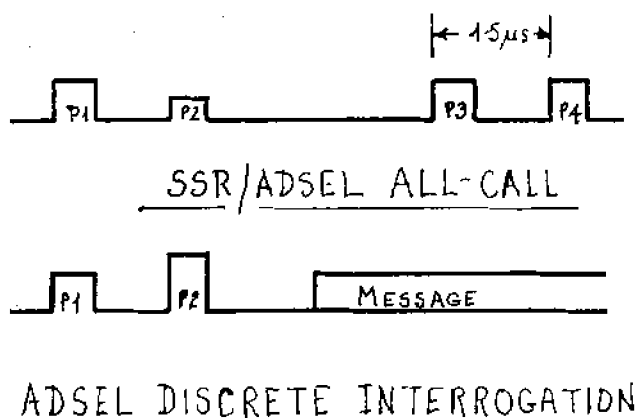


FIG. 5.

being interrogated. The presence of the high amplitude P2 pulse will cause SSR transponders to be temporarily suppressed (as when triggered by a side-lobe) ADSEL transponders will continue to decode the message but, of course, will only reply if they find their own address.

Occasionally it will be necessary to make a roll-call of all ADSEL equipped aircraft, this is done by emitting a series of ADSEL ALLCALL interrogations having the form of a discrete interrogation but containing an address in which all the bits are set to 1. ADSEL transponders will reply as they do to the SSR/ADSEL ALLCALL interrogation described above.

## THE DATA LINK.

ADSEL interrogation messages consist of 56 or 112 bits transmitted at a data rate of 4 megabits/second using a technique known as Differential Phase Shift Keying (DPSK) i.e. no phase shift represents 0; phase shift represents 1. At this high rate a complete 112 bit message can be transmitted during the suppression period of SSR transponders (about 35 micro seconds). If required, a string of up to 16 messages of 112 bits can be transmitted to an ADSEL transponder and be acknowledged by a single reply.

ADSEL reply messages also consist of 56 or 112 bits but these are transmitted at a data rate of 1 megabit/second and use a technique known as pulse position modulation, i.e. each bit is represented by a pulse which may appear in one of two positions depending on its value, 1 or 0.

The type of information which may be exchanged on the data link is still under discussion. The basic reply from the aircraft will include its ADSEL address, the Mode A code and the flight level as encoded for Mode C transmission. Interrogations will repeat the Mode C flight level received from the aircraft so that the pilot can check the transmitted level against the cockpit display. Other potential uses are:

- transmission of aircraft parameters, roll angle, rate of turn, rate of climb/descent, etc. to assist tracking and conflict detection programs.
- CAS, BCAS, ATARS data. These are collision or conflict avoidance systems basically designed for providing separation between uncontrolled aircraft or between uncontrolled and controlled aircraft. In the United States there is a great deal of pressure on the FAA to implement one or other of these systems due to the large general aviation population and this pressure was, of course, intensified as a result of the San Diego collision. Current opinion seems to be that such systems are not necessary in Europe.
- automatic spacing and metering commands from the ground.
- automatic clearance delivery.
- transmission of actual met. by aircraft, notably

wind and temperature to assist flight plan processing and trajectory prediction.

- exchange of company messages.
- automatic transmission of terminal area information.

#### WHAT ARE THE ADVANTAGES OF DABS/ADSEL?

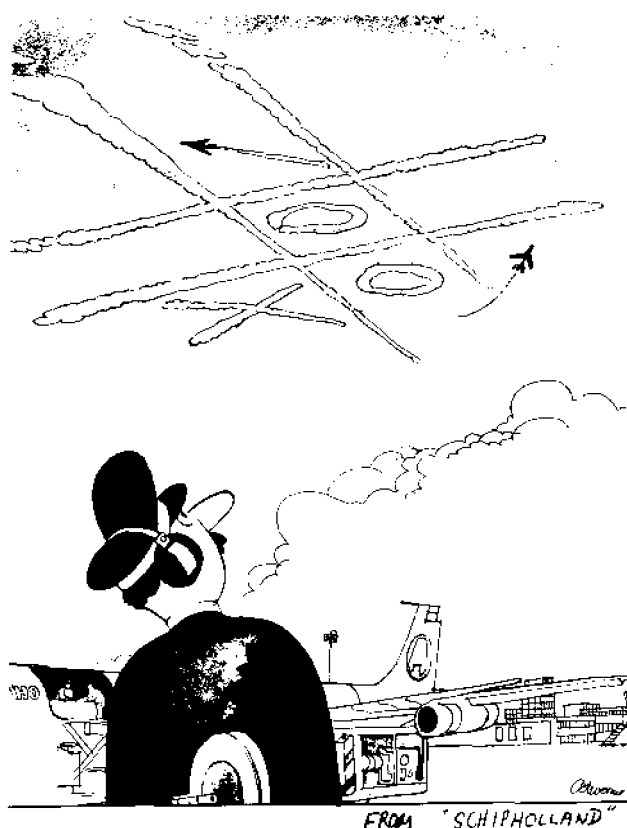
Ignoring the advantages which derive from the data link, the use of which is still under discussion, the immediate advantages will be:

- unambiguous identification via the ADSEL address;
- better positional information in azimuth and better azimuth resolution (reduced garbling for aircraft not equipped with ADSEL);
- complete elimination of garbling for ADSEL-equipped aircraft;
- a cleaner SSR environment due to the lower interrogation rates.

#### WHEN WILL DABS/ADSEL BECOME OPERATIONAL?

Both DABS and ADSEL are undergoing evaluation in high density traffic environments. In the United States a production specification and the formal decision to implement DABS are expected for 1980 with implementation starting in 1984. In the United Kingdom although testing appears to be going well there seems to be, at least for the moment, no firm implementation schedule.

B. Martin



## IFALPA to Boycott Two-Man-Cockpit Aircraft

Member associations of the International Federation of Air Line Pilots' Assn. have voted to boycott all two-man-cockpit versions of future aircraft, including the Airbus Industrie A310 wide-body transport, the Fokker Super F-28 and the Boeing 767. In its annual meeting in Amsterdam during March, IFALPA delegates from 66 member associations representing 54,000 airline pilots voted in favor of retaining a three-man-crew cockpit configuration of current flight and navigation instrumentation. The association agreed to make known its stand against the two-man cockpit configuration both aircraft manufacturers and individual airlines now buying new aircraft.

"We will not accept any version that will be flown by two men", an IFALPA official said. He said most new aircraft would have optional two- or three-man cockpit configurations, and that the association was opposed to the two-man option, even if proposed for use by a domestic airline.

The group also denounced recent attacks on aircraft by ground-launched missiles in Rhodesia, and named Zambia as being responsible for harboring the perpetrators of the attacks on two Air Rhodesia aircraft in recent months.

The group agreed to consider several steps to thwart such attacks, including a boycott of Zambia by airline pilots. Members said the first step will be to warn the Zambian government of the potential boycott. A continuation of the attacks on aircraft would be met by a boycott of Zambia and refusal to fly over the country.

The group also approved:

- Resolution to lobby to increase the number of member states that ratified the Bonn summit agreement against air piracy endorsed last summer by the major economic nations, including Japan, the U.S., West Germany and Great Britain.
- Plans to encourage international and local air associations and organizations to improve security at airports. Security requested would extend to examination of both the inside and outside of every aircraft before departure, including charter flights.
- Ban on all nonessential automobiles and vehicles from access to runways.
- Resolution opposing the use of VFR and IFR in the same airspace at an airport. The resolution extended to the use of VFR in any "high performance" aircraft.

ASWT

## The Phantom Flyer

It was in December 1969 on a cold winter's morning with the temperature at about 7 degrees below.

I was on duty in the Airport Havendienst office with very little to do as there wasn't much flying. I happened to look in the direction of hangar no. 3 when all of a sudden one of Aero Limburg's Cessna 150s (PH-ALF) literally flew out of the hangar at a height of ten feet and climbing slowly. On reaching a height of about 15 feet the aircraft descended and proceeded to perform a touch and go on intersection no. 4. It continued with a series of touch and goes still flying quite well but in the direction of the drainage lake, which at that time was nearly full to a depth of 2 meters. I was still in a state of utter amazement to think that some fool had attempted, and succeeded, a take off from the platform. I was just about to contact the tower when the crash alarm sounded. As duty fire chief I instinctively made a dash for the rescue vehicle. My no. 2 was already aboard so no time was wasted. Within seconds we were on our way to what looked like a very bad crash. As we approached the scene we deduced that the aircraft had turned over in mid air and had nose dived into the middle of the lake; only the tail and part of the rear fuselage remained above the water. On arrival I immediately dived in, regretting it the instant I hit the water. It felt like coming out of a sauna and into a deep freeze, but at the time my prime concern was for the pilot and possible passenger.

Being a drainage lake, which not only served the airport but also the motel, one can imagine that the water was more than a little dirty. I therefore had to feel my way to the cockpit, the door of which opened without difficulty. By this time I had to come up for air, attempting to avoid various unsavoury articles of waste in the process. On my second dive I was able to feel my way into the cockpit but to my distress all I could find was a briefcase which I later discovered contained the ship's papers. Once again I had to quickly come up for air. Surfacing, I looked towards the bank (why, were you overdrawn? Ed.) where by this time a number of people and vehicles had gathered. I called to the nearest person I could see and told him that I couldn't find the crew. He replied that it didn't surprise him as he was the pilot. Confused, I waded towards the bank amidst those articles of waste floating about in gay array, eventually reaching the so called pilot. Cold and, of course, wet through, I asked him with as much calmness as I could muster, just how the hell he managed to get out of the submerged aircraft without getting wet. He explained that he wasn't in the aircraft in the first place and that he had just arrived himself. Not feeling in a very humorous mood I asked him to clarify himself. He continued that he was about to go flying and, with it being so cold, had decided that prior to starting the engine he

would turn the propeller by hand in order to lubricate the engine. On the second turn of the prop the engine fired and started whereupon he took immediate avoiding action by diving to one side. The aircraft whizzed past him and became airborne. By the time he had completed his tale I was in a complete state of shock.

This story can be verified by quite a number of people as being authentic and has since gone down in the annals of aviation history as the Phantom Flyer of Maastricht Airport. The name of the pilot must, of course, remain anonymous.

Toby Jennings,  
Airport Fire Chief.

## Common Market to Get Aircraft Proposal

Brussels — Member nations will be presented this year with proposals from the European Economic Community Commission for a \$2-billion Common Market sponsored short- to medium-haul aircraft project that would be part of the Airbus Industrie family of aircraft planned for the 1980s.

An official of the commission said last week that \$2 billion would be necessary if the member nations were to launch development of two types of aircraft — in 100-130-seat and 150-180-seat configurations — resembling the Airbus Industrie Joint European Transport JET 1 and JET 2 aircraft programs. The project would complement the A310 aircraft under development by Airbus Industrie.

The commission has sent a potential plan of community financing to the Council of Ministers. Among the financing possibilities is a recently created Common Market fund of \$500 million a year that could be applied to the project.

The commission document also noted that the current international economic climate further enhances the possibility of a community supported project. The Common Market structure offers the aircraft project a common research base, financing, and standardized airworthiness and flight standards, and could provide export credits for worldwide marketing of the two aircraft.

While the proposals list two aircraft, a final decision by the community governments could limit the project to one, depending on the requirements of the market and the competition in the short- to medium-haul aircraft field.

## Scimitar plans to enter passenger market

Scimitar Airlines, a frequent visitor to Beek, has acquired its first aircraft. A second aircraft will be acquired before the end of the year. Scimitar has already won an exemption from the September 30 shut-off date for importation of non-noise-certificated aircraft into the UK.

The aircraft are Boeing 707-320Cs. The first is an ex-Pan American aircraft. Its flying hours are in excess of 40,000 but its cycles are comparatively low (less than 15,000) and this makes it an attractive buy for Scimitar, which has paid in excess of \$5 million for it.

The UK Civil Aviation Authority has granted Scimitar three cargo charter licences: a Class 6A general five-year licence, a Class 6D to the UAE and another to Nigeria. Also granted are Class 5A and 5B licences for substitute flights for UK and foreign operators respectively. Scimitar will start as a cargo carrier, but aims at becoming an air carrier operating in all areas of air transport (hence the acquisition of convertible 320Cs) and hopes to graduate „as soon as is commercially and economically sensible“ to wide-bodied aircraft, as it has told the CAA.

Scimitar has budgeted a modest utilisation of 3,000 hr for each aircraft in the first year rising only to 3,300 hr in the second. Assuming a revenue rate of £1,500/hr, the first aircraft should earn £4.5 million. Scimitar's management team has strong personal connections with chief executive Guy Guinane, formerly managing director of B.CAL and deputy managing director of Cunard Eagle. In his 37 years in aviation, Guinane has 17 years' experience as a pilot and 25 years at board-level management.

There are two deputy chief executives. The technical director is John Sawyer, formerly in engineering management in Nigeria Airways and before that with B.CAL, Caledonian, Eagle and BEA. He is an expert in the introduction and maintenance of 320Cs and has worked closely with Guinane since 1966. The commercial director is Tony Coates, chairman and owner of Viking Air Freight. The flight operations director is Dick Holmes, who has worked with Guinane in Caledonian, Eagle and Dragon Airways since 1954 in both management and flying roles. He came to Scimitar from Iran Air. Tom Beauchamp is chief economist. He is a cost accountant who progressed swiftly through Caledonian and B.CAL, to become general economics manager for B.CAL before leaving with Guinane. It is against this background that Scimitar has been successful in obtaining financial backing. The authorised capital is £1 million and it is understood

that the issued capital will exceed £450,000, with over £600,000 provided for the first aircraft, which was acquired under hire-purchase.

The future policy of Scimitar is clear – „no eggs in one basket“ says Guinane. He told the CAA in public that Scimitar would have to go wide-bodied within two years. When pressed about passenger operations Guinane will only say: „My instructions are to go pax when it is profitable to do so with reliable revenue. It could be 1979, although whether we will use our 320s or acquire 737s will depend solely on the long-term prospects for profits“.

Asked about the wide-bodied type he favoured, Guinane responds: „There are only three types with transoceanic range. We will choose the type most economic for our planned operations at the time“. With regard to longer-term objectives and whether scheduled services are part of Scimitar's thoughts, Guinane says: „We intend to operate in any area which we believe will be profitable. If at the time scheds are still in profitable existence we will operate scheds. We regard our air transport as a business. Nothing less. Nothing more“.

From Flight International

## Controllers at Beek demand a new tower

The Dutch Guild demands that a solution be quickly found for the problems which have arisen at Beek because the control tower there is no longer satisfactory.

Because of increased traffic, wide-bodied aircraft are frequently parked in front of the low tower thus obstructing the controllers' view of the apron and the manoeuvring area. Additionally the tower is so badly insulated against noise that it is very difficult to understand the frequency whenever a parked aircraft has its engines running. The Dutch Guild demands the immediate building of a new tower. The Ministry recognizes the problem and states that preparations for the building of a new tower were made some years ago. The problem is the fact that the site for the new tower lies within the boundaries of Ulestraten and it has so far proved impossible to obtain building permission from the council there. In order to improve the short-term situation steps will be taken to spread the traffic load in order to prevent traffic peaks although this will lead to delays and inconvenience for the airport users. As we closed for press it was learned that the green light was given for the construction of the new tower.



## Report Director and Committee „A“

The EGATS delegation to the Annual Conference in Brussels this year consisted of Tom van Hal as director, Ted Mc.Clusky, Jan van Eck and Philippe Domogala as deputy directors and Boris Smeeth, Patrice Behier and Adrian Enright as delegates. Observer on his own behalf was Roger Bartlett who put EGATS on top of the table again by acting as Vice-Chairman committee „A“.

In the case of Boris, officially assigned to the job by our last AGM, it is a real shame that it was impossible for Boris to get days off or to swap in order to be able to attend this important Conference, due to a lack of personnel, whereas in other, less important to the profession, occasions staff can more easily be replaced by personnel from the „belle-etage“; a real shame if you have to explain to other Member Associations at the Conference that this is the only reason why the President of our organisation is unable to attend!!!

Now to the input of EGATS to this Conference: For Committee „A“, EGATS, through Ted Mc.Clusky, produced WP's in regard to the position of the Executive Secretary (Indemnity), dispute between Member Associations, suggestions to Standing Committee III (Finance) on a new method of finance and the acquisition of a permanent HQ for the Federation, and to Standing Committee VI (Constitution and Administrative Policy) papers on a regional development.

For Committee „B“ Jan van Eck produced a very comprehensive paper on Blocking of R/T frequencies and R/T failure Procedures.

Brian Martin, very able, compiled three WP's from last years Conference on Outbound/Inbound Flow Control to one series of Recommendations under the heading: Total Traffic Management.

And last but not least, 5 WP's!! were produced by Adrian Enright, discussing in depth: Determination of what link, if any, exist between the training schools and operational units.

Examination and validation procedures.

Study of automation-controller training.

Study of ICAO Training Manual, training of Air Traffic Controllers.

Standing Committee V (Recruitment and Training of Air Traffic Controllers) work programme 1979/80.

An enormous pile of work put in this years Conference, through which EGATS is recognised by the other Member Associations within the Federation, underlining the old saying: „A prophet is never recognised within his own Agency“.

Tom van Hal

Committee „A“ this year had to cope with a very heavy Agenda and in order to be able to finish the work within the time available, a sub-committee was formed to work on all subjects related to the Constitution. For EGATS Ted Mc.Cluskey was participating in this sub-committee.

An idea which worked out very well and thus enabled the meeting to get through all the Agenda Items, although one day was in session from 9 am until 9 pm! Who was talking about fun trips on the members expenses?

The most important item for EGATS was again Member Associations problems where the closed meeting (directors and deputy-directors only) decided upon the following motion:

That

The IFATCA Executive Board use the influence at its disposal to determine the intentions of the authorities as to the future of the operation of this facility; and in the event that the appropriate authorities decide to cease the operation of the Maastricht UAC, that the Executive Board exert all possible influence to ensure that the future employment in air traffic services of IFATCA members affected be secured.

Netherlands, Austria, Luxemburg and East Africa abstained, Belgium voted against, a vote which was withdrawn later as it did not reflect the Guilds opinion but the personal opinion of the delegate and verbal apologies from Executive Board members of the Belgian Guild were received.

This was the first time that the future of EGATS has been discussed in such depth and that our case was on the floor for such a long time and I trust that we have met the mandate given to us by the last AGM.

Another matter, discussed but not finalised, is the Constitution. This seems to be an extremely difficult subject as it took EGATS three years to get theirs finalised.

It was really odd to experience how common the financial problems of the Federation are to ours, IFATCA cannot operate to the fullest extend due to the fact that Member Associations are unable to pay their full fees or do not pay at all, refusing to increase fees for various reasons.

The only way to make *any* organisation operational to the fullest extend is to provide it with the necessary financial means!!

During the Conference two new Vice-Presidents were elected:

Vice-President Admin: Pat O'Doherty Ireland

Vice-President Technical: Daniel Oudin France

Since Ted was tied up in the above mentioned sub-committee my first time in Committee „A“ I was most of the time alone since Boris was unable to attend so I really hope that our management next year recognises the importance of this Conference by allowing the EGATS more days off on order to be able to cope with the workload.

The Conference is apparently important enough to send officials on mission-order and to offer an aperitive before one of the lunches.

T. van Hal

## Report Com. B

The Conference took place in the Sheraton hotel and was well organised by the Belgium Guild.

The Board of Com. B consisted of: W. Pye - UK (chairman), J. Kaan - Neth. (vice-chairman) and T. Cauty - Canada (secretary).

EGATS delegation: J.A. van Eck (dep.dir.) and P. Behier (del.)

Topics of the meetings:

A) Callsign confusion:

a main problem, that created confusion and air misses in some countries. After long discussion about trials and new ideas we accepted the following recommendation:

B.2. It is recommended that controllers should, in any event, instruct aircraft to use alternative callsigns in any situation in which continued use of flight-number-type callsigns could cause confusion in R/T communications.

B) Automation- Total traffic management.

The recommendation made by EGATS (thank you B. Martin) were very much appreciated by all M.A.'s. ICAO stated that this recommendation contained all details necessary for the traffic management. As there was a misunderstanding between some MA's our W.P. had to be accepted as a late working paper and with the time available it might have been too much to accept this in total.

It was therefore referred back on the work program for 1980 to SC1 under the heading:

Automation- review, consolidation and coordination of outstanding tasks.

Our special attention in this will be „Conflict detection“.

C) Radio Communication failure and blocking of R/T frequencies:

This working paper was made by the EGATS and brought new ideas about the solution of the problem „no contact between pilot and controller“. Although thanks were expressed to the very good paper 50% of the MA's could not vote in favour of the recommendation, by which civil pilots would have to listen out on 121,5/243. It was therefore referred back to SC1 for further study.

In general we had a good conference with the assistance of more colleagues than before. This makes the work much easier. Thank you and hope to have even more colleagues next years.

J.A. van Eck

## Report Committee „C“

This year, Committee C, professional matters, had to deal with two important items: The Convention of the profession of Air Traffic Controller and the attitude to take in case of industrial action by adjacent centers.

Further, medical studies, especially on ocular diseases, were given as information.

A report on training was given by Adrian Enright (Instilux).

A study of legal problems and incident investigation etc. was developed as well but it will need more international study before something concrete will come up in this field.

### Profession of Air Traffic Controller

The following recommendations were agreed upon:

- The maximum amount of working hours per week should not exceed 32.

- Maximum shift length should not exceed 7,5 hours.

- A break of at least 30 min. shall be given 2 hours work (less for radar contr.).

- Minimum leave per year should be 30 working days (6 weeks) plus public holidays.

- Renumeration of Air Traffic Controllers should be relative to senior Captain of international airlines.

- Air Traffic Controllers should leave the actual control work at the age of 50.

- The right to retire after 20 years of active control duties.

- The employer should pay a loss of license insurance.

- Air Traffic Controllers should be entitled to at least one fam. flight per year.

- Air Traffic Controllers should participate in refresher courses every year.

These recommendations will become IFATCA Policy next year and will be distributed widely to Press, Aviation world and national administrations.

### Action adjacent Centers

IFATCA Policy on the matter now reads:

— Member Associations will not clear aircraft into airspace or area's where it is known that a substitute air traffic control service is being operated by unqualified personnel.

The EGATS delegation assigned on Committee „C“: Ph. Domogala Dep. Dir., E. Enright Delegate. For the purpose of helping in the work of this committee Ph. Domogala was assigned Vice-Chairman for one and a half day.

Ph. Domogala

## The air safety challenge

Cleared for takeoff - cleared to land. Two short and simple phrases which in fact trigger off the two most complicated and, as statistics have shown, most dangerous phases of even the shortest flight. Only three years after Orville Wright's first successful flight this fact was recognized by Mr. Alexander Graham Bell who in 1906 said: „There are two critical points in every aerial flight - its beginning and its end“.

Looking at flying in general we must say that it is by far the safest way of transport possible. In 1976 229 million passengers were safely transported by U.S. based operators. Only four fatal crashes were recorded which caused US casualties. For the statistician among our readers this is 0.0000196 %. Takeoff or approach. Two phases. However, one, approach and landing is much more critical than the other. Mr. Webster B. Todd Jr., chairman of the National Transportation Safety Board explains it as follows: „When on the approach, you're descending, your speed is low and this is where mistakes and malfunctions bite you faster. You simply don't have the same tolerances as when flying at 25.000 ft.“ Statistically seen, approach and landing incidents form 60% of all fatalities since 1959. If the accidents during takeoff are included this figure goes up to 85%. What is causing these accidents? What is being done to prevent them?

To start off with the second point one may say: „Everything“. Every airline pilot receives thorough training before being allowed to take even the oldest aircraft with a cargo of sweets into the air, let alone when this cargo consists of fare-paying passengers. After receiving his ticket the airline pilot is confronted with half-yearly medical checks and proficiency-checks. The latter being carried out during

actual operational flights and simulator flights. Nowadays most airlines, have highly sophisticated flight simulators of those aircraft they fly at their disposal. These flight simulators are boxy contraptions on spiderlike legs which from the inside look like the flight deck of an aircraft. By means of TV screens and computers a real flight and problems no pilot ever hopes to come across can be presented and solved. Another thing which causes aircraft accident statistics to go down is the fact that most major systems are duplicated at least. To give an example, a Boeing 747 has four independent hydraulic systems. Returning to the question of: „What causes the accidents“, we see that the investigation committees normally establish only a „probable cause“ as most accidents generally are chain reactions whereby any link in the chain of aviation, pilots, weather, ATC-personnel, airport facilities, navigation aids, and last but not least the aircraft itself, may cause a disaster. Mostly the investigation committees point to several factors but most often to pilots and weather. Here's what that sounds like in a NTSB accident report „..... the probable cause of the accident was the pilot's failure to execute a missed approach when he lost sight of the runway environment in heavy rain“.

How can weather, human behaviour and aircraft performance „play“ together to create a scene of disaster on an international airport where operations continue as usual, while on the horizon Cb's are beginning to set the „décor“ for the disaster to come?

This is what happened.

June 24, 1975. Runway in use at KJFK is RWY 22L. Six miles on final FT 161 is getting ready for landing. Flaps down, wheels down. Approach speed - 152 kts. „FT 161 is cleared to land“. Scarcely one minute after receiving this clearance and passing through a rain shower the aircraft is perilously low and swung to and fro by turbulence and clawed at by winds approaching hurricane force. A pilot on the ground later stated: „They were fighting for control like a cat on a hot tin roof“. After landing safely but exhausted the captain advised the tower and demanded a change of runway for following aircraft. „But Sir, the wind on the runway is only 15 knots“ was the answer. The FT-captain answered that he couldn't care less what the wind indicated at the tower was. He had just passed through a wind shear which had almost crashed his aircraft and he suggested changing the runway to the northwest. There was no reply from the tower. Meanwhile EA 902 was in trouble, encountering a severe wind shear on the approach to runway 22 L. At a mere 60 ft the crew manages to level off the aircraft. Eight seconds later EA 902 abandons KJFK to go and safely land at Newark. After this event two more flights land at KJFK after encountering this wind shear but no report is made. Next was EA 66, a Boeing 727. Anticipating adverse weather the crew decides to keep an extra safety margin on the speed. EA 66 entered the rain shower and at 500 ft the crew turned their windshield wipers to high speed.

Commander: Stay on the gauges, as the approach is continued. I have the approach lights. Stay on the gauges... runway in sight.

First Off.: I got it.

Commander: Got it?? Takeoff thrust!!!

Maximum power was shouted for. It was the last phrase that was recorded by the cockpit voice recorder of Flight EA 66, on that 24 June 1975. One hundred and thirteen people were killed when the Boeing 727 hit the ground short of RWY 22L.

Here we have seen in a very superficial way what may cause a disaster. From this resulted an extensive investigation which included a computer programme which in conjunction with a B 727 flight simulator enables experienced pilots to fly a simulated approach under conditions which caused Flight EA 66 to crash. The instructions to the pilots:

„Land if possible, make a missed approach if necessary, don't crash". Of 54 approaches, only five were successful.

After the crash Eastern Airlines initiated a thorough investigation into the characteristics of wind shears. For this purpose Dr. T. Theodore Fujita, professor of meteorology at the University of Chicago carefully studied 3,000 bits of meteorological data. He finally came to the conclusion, that he had identified a new, rare fast moving thunderstorm, which, from its shape on weather service radar, he called a „spearhead". Because of their severity Dr. Fujita prefers to call them downbursts instead of down-drafts. The mass of air that hit EA 66 came down at a speed of 1300 ft per minute. „The rain showers beneath these storms may look innocent enough", he said, „but I guarantee you that the winds are formidable. Something must be done".

Since the early 1960's the IFALPA had urged the FAA to investigate windshear. In 1958 Northwest Orient Airlines began to develop a method of forecasting shear related to certain weather fronts. By 1962 they had succeeded. Northwest's method is now one of the FAA's major weapons. In 1973 shear was proved beyond doubt after the crash of a wide body aircraft with computers to record essential aircraft performance data which for the first time documented an actual shear Final action. The start of a four-year, multi-million-dollar programme, only came after the crash of EA 66. Jerome Lederer, winner of the Wright Brothers Memorial Trophy, and president emeritus of the Flight Safety Foundation calls this another example of „tombstone safety".

What role do visibility and visual reference points play in flight safety? According to experienced pilots it is no problem keeping an aircraft lined up with the runway during the approach. But the ground is coming nearer every second and to maintain a proper descent angle continuous reference must be made to the flight director as well as other instruments. In other words: the problem during the approach is in vertical guidance. This was also the conclusion to which six retired airline captains came who, following a request from Richard P. Skully (the director of FAA Flight Standards Service), in-

terviewed nearly 1,000 pilots over a period of a few months. The ILS is, of course, a great help, but at some time during the approach the autopilot has to be disengaged and the pilot has to go „visual".

This transition period from instruments to outside visual references can last at least five or six seconds. The NTSB has recommended, and similar recommendations have been made by IFALPA, that a pilot shall not descend below a predetermined „Decision Height" unless he sees the runway. Now what happens if you don't see the runway at the point where you disengage your autopilot? Retired capt. Robert N. Buck (TWA) says this about it.

„Having confidence in your autopilot's performance you know that at the 100-foot Decision Height your aircraft is lined up properly. You don't see your aiming point but you do a second or so later. The worst that can happen is a hard landing". This „ballistic" flying may, however, last four or five seconds. If a runway is not equipped with an ILS the FAA's Flight Standards Service requires the following: The pilot must see the „approach threshold" of that runway, or approach lights BY OTHER MARKINGS IDENTIFIABLE WITH THE APPROACH END OF THAT RUNWAY. The part of the preceding phrase which is in capital letters has given rise to discussions. Even among FAA's Flight Standards „rule-makers". Why? It is ambiguous to the extreme. Anything could possibly be established in a pilot's mind as being identifiable with the end of the runway. From a hotel sign to the fact that farmer Smith's laundry is outside because it is Monday. Through the rules hadn't yet been changed the FAA has begun to define a radio fix as the point where the pilot should be seeing the required visual references. On the question as to whether pilots often violate the set minimums, and in poor visibility conditions descend below the minimums, NTSB Chairman answered: „We can't tell you how many times they make it, but we can tell once or twice when they didn't". The reason for these violations mainly lies in the pilot's wish to land and deliver his passengers and thus avoiding costly and time consuming diversions. In low visibility conditions yet another danger pops up – the visual illusion. Approaching a runway through cloud patches a captain looked up when his First Officer called „Approach Lights". Later the captain recalled that his impression was that they were unbelievably high. However, this pilot resisted the temptation to go by the eyeball method and stuck to his instruments. He landed safely. Or as Capt. Frank Ormonroyd, flight technical manager of British Airways puts it: „There is a lesson here" and speaking for everybody, he says: „The lower we go on instruments, the safer we get". When at the Decision Height the pilot sees some of the approach lights and decides to go in for landing and he lands the decision was right. When he crashes he was obviously wrong. Dr. Calvert, who retired in 1965 from the Royal Aircraft Establishment after a distinguished career studying low visibility landings, says the following: „Even in good visibility visual guidance in the vertical plane is poor until the pilot's eyes are about 100



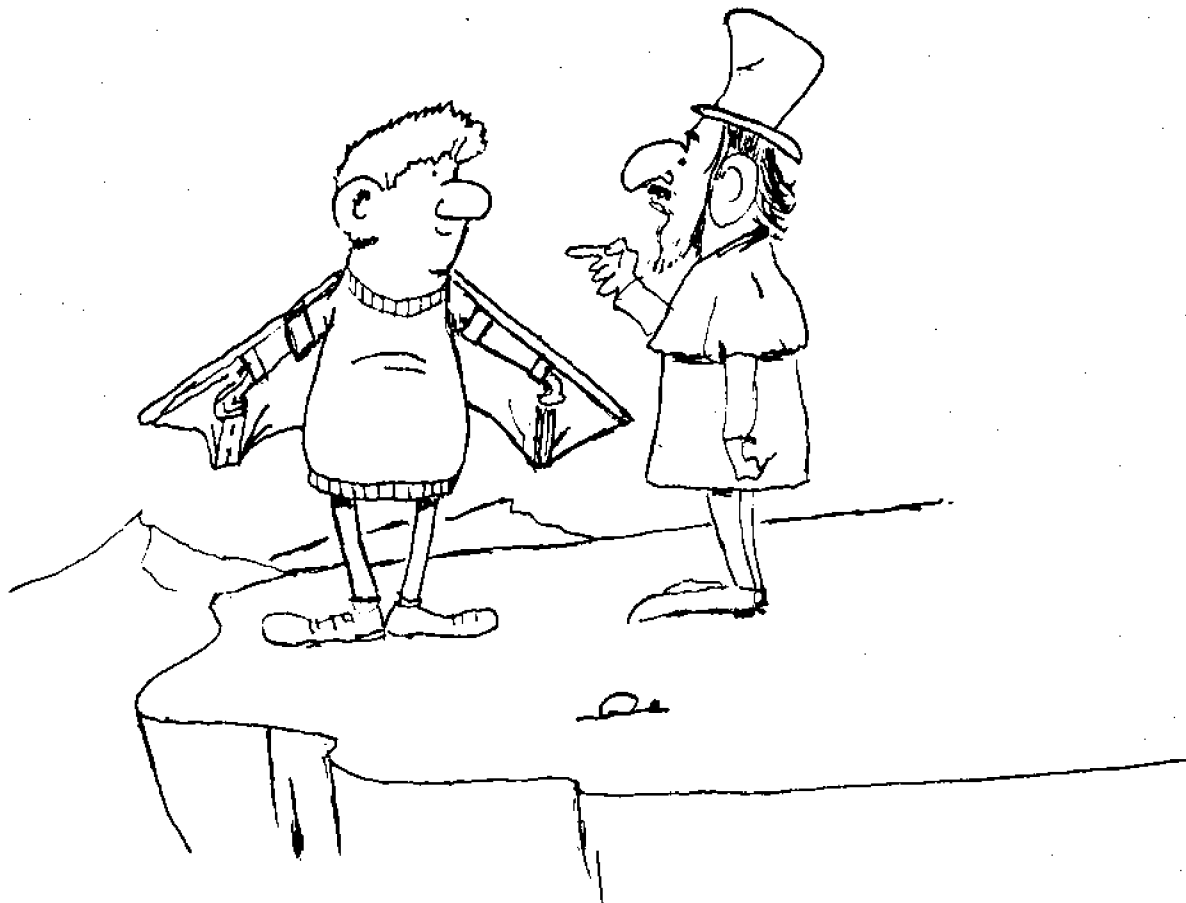
feet above the ground". Dr. Calvert developed, with his colleagues a clear-day guidance aid. By means of light beams, produced at the touch down point of the runway by lights placed on both sides of this runway, the pilot sees red and white lights. The saying goes, that when you see Red over White you're right (on the approach path). When you see Red over Red you're dead, (below the approach path). The low visibility „ice-berg" is a rare berg indeed in the ocean of landings and pilots are doing a great job in steering over it. How can they do a better job in future? At present HUD's (Head Up Displays) are being carefully tested. The HUD projects crucial flight path information on a glass in front of the pilot's eyes showing him what to do to stay on the approach path. This way we, of course, are inevitably moving towards total automation of landings. In 1976 BEA autolanded their jetliners at Heathrow in visibilities of as little as 100 metres. We

may even go to the point where, as Thomas G. Foxworth PAN AM veteran pilot and aeronautical engineer, puts it. „We put the pilots behind glass on the flight deck and supply the steward with an axe and instructions to break the glass in case of an emergency".

So next time you're flying, don't be surprised to hear this:

„Good morning ladies and gentlemen, this is your synthetic captain speaking. We will shortly takeoff in this completely computerized aircraft. There are no human pilots, but don't be afraid, nothing can go wrong, tick, can go wrong, tick, can go wrong".

F.J. le Noble, with thanks to the National Geographic Society which allowed „Input" to quote and rephrase their article, which was published in August 1977, and was written by Michael E. Long.



Don't stay up too long... I want to get to the patent office before lunch.

## Merry Christmas

Doesn't time fly?

Fed up with sleighs and robins on your Christmas cards?

Do you remember the good old days of 1977 when this original cartoon appeared?

Are you interested in a personalised Christmas card?

EGATS can help you!!!



We are considering publishing this cartoon as a Christmas card (Yes, I know it's still officially summer). If you are interested, contact the editor or leave a note in the Input locker letting us know how many you would like to order.

In addition you may like to dream up a caption or verse for inclusion in the card (It doesn't even have to be printable, so long as it's funny). For this a small prize is being offered, the nature of which I am not allowed to disclose at the present time, it will not however be a sightseeing flight around Limburg in the editorial executive jet.

## DC-10, the passengers, and the professionals

The day before DC-10s were allowed to land again at American airports, Sir Freddie Laker asked the editor of *Flight* to write a DC-10 safety message for passengers. This is how it went:

„The world fleet of 274 McDonnell Douglas DC-10s is now certificated as safe by all the Government airworthiness authorities, including that of the manufacturing country, the United States.

„What happened? Why was the DC-10 grounded? What has been done to make sure that the Chicago accident, caused by an engine separating on take-off, can never happen again?

„Passengers want simple, non-technical and straight answers to these questions. They have heard scary stories about cracks, broken bolts, missing bolts, and more cracks. Media comments have ranged from 'the DC-10 should never have been grounded' to 'McDonnell Douglas builds planes that crash in order to increase their profits.

„The *Flight* world airline safety index – which covers all types of public-transport flying, scheduled and charter, passenger and all-cargo operations – is now down to two fatal crashes per one million departures. In other words, only two in a million flights come to grief, including those in which only one occupant may be killed.

„The world DC-10 fleet has made nearly two million departures, of which only four have ended in fatalities (two of those killing a total of three passengers). The DC-10 record is thus two fatal crashes per million departures, or par for the course.

„For some years now airline flying has been less of a risk than most forms of transport, and much safer than some – including, depending on how you interpret the statistics, travel in the family car.

„Yet the questions persist: What happened at Chicago? Why was the DC-10 grounded? What has been done to prevent a recurrence?

„Everybody is now certain, although nobody can officially say so for legal-liability reasons, that the primary cause of the accident was a crack in the structure caused by a maintenance procedure peculiar to two US airlines.

„The DC-10 engine is attached to the wing by a pylon; if the engine is offered up correctly, the damage that caused the Chicago accident cannot occur. The incorrect maintenance method has been prohibited.

„So why the grounding? With hindsight, it was probably an over-reaction by the US Federal Aviation Administration, in an American legal-damages environment which has often seemed to put blame

before safety. And grounding, especially by a parent airworthiness authority, is legally more difficult to reverse than to apply.

„What has been done to prevent a recurrence? Not only has the irregular maintenance procedure been banned but, in addition, the most stringent new inspection procedures have been introduced. These include electronic testing of the pylon.

„Meanwhile the airworthiness authorities, manufacturers and airlines have got together in a joint review – applicable to all aircraft – of fail-safe design, structural testing, inspectability, and maintenance reporting systems. All this will ensure that air transport remains the most regulated – and self-regulated – safety-conscious industry in the world today without exception.”

The safety professionals know that air-safety goes beyond reassuring words. They have done all that is humanly possible to ensure that an accident will never happen again. They will now be attending to the full message of the DC-10 accident.

Whatever the findings and recommendations of the US National Transportation Safety Board's accident report, Chicago's longer-term lessons are already emerging.

Stall-warning systems should be duplicated. Training should allow a pilot to trade climb for speed after engine-failure, given obstacle-freedom. Control surfaces should be mechanically or hydraulically incapable of locking asymmetric. Accidental damage should be regarded as a routine "failure mode". Fullscale fatigue-tests, as well as static-strength tests, are essential. A single-point structural attachment should fail safe.

As the Lusaka and Chicago accidents have shown, analysis alone does not produce fail-safe structures.

„No single cause of any kind should result in a catastrophic structural accident.” J.M.R.

'Flight'

## Nutrition: „A New Foreign Language“

Myth: If I exercise, I can eat all of anything I want.  
 Myth: A big juicy steak will provide all of my nutritional needs.

Truth: Along with a well planned regular exercise program, a well planned balanced diet is an essential part of a successful "total" fitness program. Being in the Fitness business brings to light the main point of excitement is the fact that so many people have become Health Conscious, and have taken up regular exercise programs. That is why I want to talk about something a little different concerning your health program. I want to discuss nutrition.

People are basically bored with health care talk. After all, we have been hearing it all of our lives.

Myth: Eat everything on your plate, there are children starving in India.

Myth: Eat all of your food and you will receive a reward (chocolate cake with ice cream).

Truth: The eating habits we set as young people will be the habits we are happy with or struggle against all of our lives.

The basic concepts of nutrition that we all learned in the third grade, causes most of us to feel that we have a well balanced diet from which we receive almost all of our daily nutritional needs.

If, in fact, our knowledge of nutrition is so good, and it has been part of our daily lives since we were children, why is it projected by the year 2000 all of us will be DIABETICS? Why have all forms of death and disease decreased since the 1920's except man-made diseases (Diabetes, Heart Disease, Cancer,...) and these diseases which were almost non-existent 50 years ago, have today become the number ONE and number TWO killers in America, Cancer and Heart Disease.

Here is a short list of a few of the reasons that America, who used to be one of the healthiest nations in the world, is now one of the world's sickest nations:

1. Devitalized convenience foods (quick tacos, fast burgers, etc.)
2. Highly refined foods (white bread, sugar)
3. Excess sugar (which is added to almost all pre-processed foods, make a list of foods you eat regularly, how many are processed and how many are not processed... Do I have your attention now?)
4. Excessive animal fats and proteins (beef is a red meat which the amino acids in the human body cannot easily assimilate into usable food — this causes saturated fats to adhere to the wall of the heart and arteries causing blockages — sound serious?)

5. Consumption of tea, coffee, and chocolate
6. Polluted air and water
7. Alcohol
8. Hydrogenated oils and other saturated fats
9. Chemicals and preservatives
10. Smoking
11. Inadequate Exercise — Exercise burns calories, causes perspiration which helps rid the body of toxins. Without regular exercise, the toxins remain in the body, again heart problems, cancer and kidney disorders appear.
12. STRESS—Especially for Air Traffic Controllers—ulcers, hypertension (high blood pressure)
13. Lack of Sunshine

Man made diseases have become the number One killers in America. It seems a little redundant, but we can cure small pox, polio, we can land an airplane in zero visibility, and we have also created such killers as... cancer, diabetes, arteriosclerosis, Kidney disease, arthritis, and hypertension.

This story seems incomplete because I am not going to tell you the answers to your personal health needs. I do know that everyone requires a regular exercise program. I also can tell you that a good nutritional program will complete your health program. What I can't tell you is where YOU stand concerning your basic health needs.

Go see your doctor and ask for a complete nutritional analysis, blood analysis and even a hair analysis. These tests are expensive, but not nearly as expensive as a long hospital stay or a funeral.

Myth: I use saccharin instead of sugar, I am healthier.

Truth: Americans are consuming 126 pounds of sugar plus 5 pounds of chemical food additives and 3 pounds of food dyes per year per person.

Air traffic controllers are under enough stress and strain on their bodies already.

Let's try not to increase the problem, but reduce it so you can enjoy those years when you're through fighting those „Crowded Skies“.

Kyle Turner, Director  
 Fitness Center of Grand Prairie

From „Crowded Skies“

## The Hoop's Column

Whether you are aware of it or not Beek Airport does produce occasional movements of great interest to us aviation enthusiasts/photographers, but I'm sure that if we turned the clock back nearly twenty years the movements of those days, although less regular in appearance, would have seen us happily expending numerous rolls of Pan F. Without boring you with lists of aircraft registrations I should like to scan through some of the more noteworthy aircraft types to have visited Beek back in the early sixties. Let's return to the summer of 1960 and see what was operating the seasonal inclusive tours from the airport.

British operator Falcon Airways was serving Italy from Beek during the 1960 summer season with their fleet of three Handley Page Hermes'. As an example, G-ALDC arrived from Gatwick at 2318 on July 29 and departed for Treviso 24 minutes later. The aircraft arrived back at 0543 and departed for Gatwick after a 45 minute turn-round. 'DC was written off in a landing accident at Southend later that year, resulting in the cessation of Falcon's Hermes operations. The company itself fared little better being placed in the hands of the Receiver in January 1962 after barely three years in existence.

That summer saw another British company, Orion Airways, operating a weekly charter to Barcelona with Vickers Vikings. Once again the service originated and terminated at Gatwick. Unfortunately this company was even closer to its' final decline and eventually went the way of so many British independent airlines when it ceased operations on November 7, 1960, following just over three years of activity. Falcon and Orion were the only regular operators during the 1960 vacation season. Sifting through the rest of the year's movements I see that Prince Bernhard's Friendship, PH-PBF, made a number of calls at Beek during July. That month also saw the visit of a U.S. Military C47, 49338, captained by a gentleman named Presley, plus a one off flight to Nice operated by a Falcon Hermes with the company's Managing Director, Marian Kozubski, in command.

On August 5 Martinair DC3, PH-MAB, departed for Son San Juan in Spain returning a couple of weeks later. A similar trip was flown in September by the same aircraft. 1960 was obviously a very bad year for the British operators. On September 27 Viking G-AJCE of Continental Air Transport arrived from Manchester and departed for Southend within the hour. One week later this aircraft operated the company's final service, a charter from Malta to Birmingham.

On 10 October, and on the 19th Friendship PH-FAU visited, from and to Eindhoven, eight days prior to its' delivery to THY. The 20th and 21st produced KLM Convair 340s PH-CGB and PH-CGH respectively, both operating domestic sectors.

Up until the end of the year the only other commer-

cial types to visit with any degree of regularity were British United DC3s, G-AMSV, G-AMPZ and G-AMRA operating a cargo service Düsseldorf - Beek - Gatwick. The latter aircraft has in fact visited Beek in recent times in the guise of Eastern Airways. Throughout the year Sabena had operated their S58 service linking Maastricht Heliport with Brussels, Liège and Cologne.

It might interest you to know that the Aero Limburg fleet on 1960 consisted of a couple of Austers, a Tiger Moth, a Piper Cub and a Cessna 172, PH-LAC, still current with the present day fleet.

Well that's about all I can dig out of 1960's movements without resorting to monotonous listing. Perhaps next time round we can take a look back at 1961 and see how once again the holiday flights were dominated by the British independents. Coming a little more up to date I thought perhaps you might be interested to see the 1978 traffic figures for Beek.

	Revenue Traffic	Non revenue Traffic	Totals
Aircraft movements:	11,270	29,154	40,424
Number of passengers:	93,252	7,146	100,398
Mail:	5,129 kgs.	2,021 kgs.	7,150 kgs.
Cargo:	13,608,022 kgs.	-	13,608,022 kgs.
Total gasoline:	313,963 liters		
Total Jet A1:	5,978,835 liters		
Total oil:	2,514 liters		

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