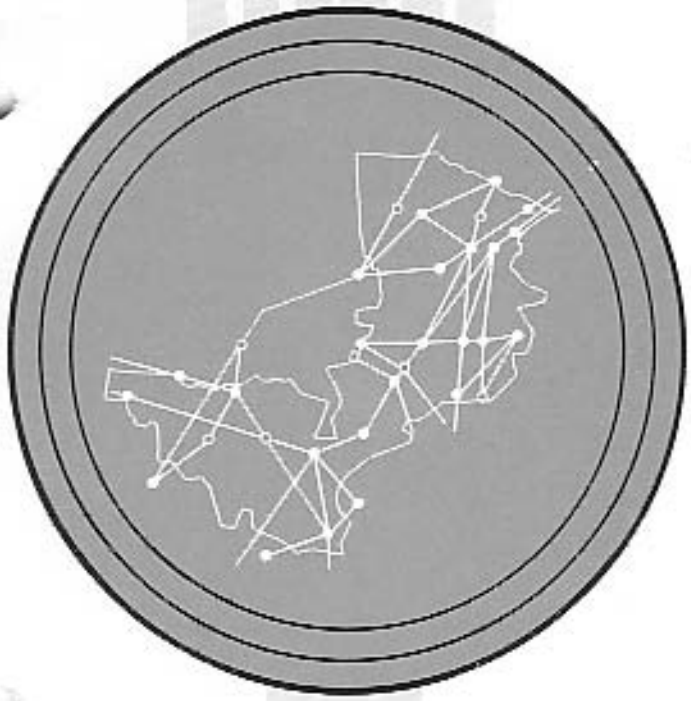

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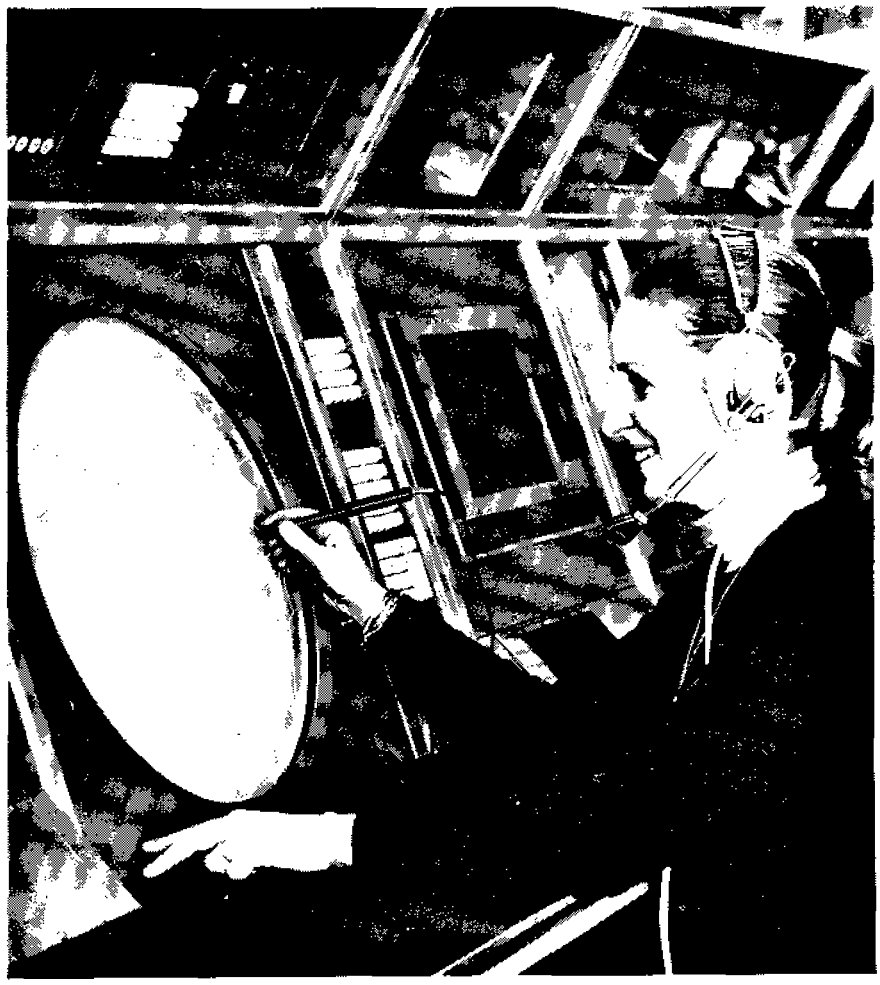

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Output

Safety or Self-Preservation?

As one senior pilot put it, an airmiss is a midair collision that did not quite happen. After investigation of an incident, steps may be taken to bring about improvements in safety standards, but generally the emphasis is placed on apportioning the blame. It is a sad fact that the majority of occurrences go unreported for fear of disciplinary action and will therefore happen again. Furthermore, unless details of an incident have been exposed by the press, the findings of investigations are often not circulated amongst the aviation community. By covering up the facts and discouraging aircrew and controllers from reporting incidents lest they should incur retribution, many organisations are responsible for causing the repetition of dangerous situations.

Ideally, there should be a free flow of information between airline operators, aircrew, ATC and civil aviation authorities about such matters as aircraft defects, possible sources of human error, and airmisses or other occurrences. At present this exists to only a limited extent, leaving much to be desired. An uninhibited international approach is needed, which might be arranged through ICAO, IFALPA, IFATCA, and aircraft manufacturers, and would certainly enhance aviation safety. It is not likely to happen whilst so many administrations are more intent on making people pay for their mistakes rather than learn from them!

There are airlines which encourage voluntary incident reporting from their employees, even on an anonymous basis, to help make improvements. Against this, there is the case of the British Airways captain who informed his company of a dangerous error he had made. He intended that this would act as a warning to others. In the words of "Flight", he was rewarded for his honesty by not being discouraged from resigning.

More than a year ago, a system of ATC Mandatory Occurrence Reporting was introduced in the U.K., actively supported by the British Guild. Despite assurances that no disciplinary action would be taken as a result, participating controllers have discovered themselves to be threatened with just that. If the spirit of such schemes is not respected, they are doomed to failure. The problem is not British, but worldwide.

It is time for the greater part of aviation management, in whatever field, to adopt entirely new attitudes. The bureaucratic mind which can see no further than the rules it has devised to protect itself and punish "lesser" mortals must learn to use initiative, understanding and even basic common sense. It must accept constructive criticism. For example, there are in existence ATC administrations where procedures are devised by men who have either become remote from the realities of the operations room, or, even worse, have never even had any practical controlling experience. And they can sometimes be wrong! Yet the controller who is unfortunate enough to have an incident when applying poor procedures must suffer the consequences; if he uses his initiative but does not stick rigidly to the regulations, he may also be called to task. At the same time, his career prospects could be jeopardised if he points out the deficiencies to his superiors.

When a Lufthansa Boeing 747 crashed in Nairobi, it was discovered that the accident had been caused by a technical fault inherent to the aircraft. Not only had other airlines experienced similar technical problems, but they had already carried out the necessary modifications on their own fleet. The defect had not been notified to other B747 operators, including Lufthansa.

Controllers thoughts cannot help but turn to Zagreb. The accident investigation revealed many contributory factors. Dozens of controllers reading the report must have been chilled by the realisation that they, too, had encountered at least some of the aspects which led to the tragedy.

Very early in the days of MADAP, Maastricht controllers abandoned the use of height layer settings on their screens because aircraft climbing into their airspace, whether correllated or not, could not be seen. Other units must have experienced the potential dangers, but for some reason these were apparently not realised in Jugoslavia.

And in spite of the salutory warning of Tenerife, pilots continue to misread or misinterpret perhaps ambiguous clearances from controllers who should also have learned, creating unsafe situations. How many of these cases are reported for the benefit of all concerned?

For fear of reprisals, very few.

M. Lewis

Intercom

Letters to the editor.

Dear Sir,

I appreciate that the editor does not accept responsibility for personal opinions expressed in INPUT, but I must challenge the statement made in INPUT Summer '77 page 16 regarding the Balkan Tu-134 "no auto-pilot, every course correction was felt like a 90° turn".

I think it very unlikely that this aircraft was in fact operated without auto-pilot. Under normal conditions the Tu-134 is a very smooth aircraft – possibly the crew were simulating a summer Saturday morning through the Brussels Olno Sector!

For the record, Balkan operate six Tu-134 and six Tu-134A aircraft, each fitted with a BSU-3P auto flight control and landing system, including an AP-6EM-3P autopilot, for automatic (or semi-automatic) approaches down to 60m. (200ft) This was demonstrated to me at Heathrow on LZ-TUF several years ago and it is an excellent system.

If I am not mistaken the "two squadrons of double-deckers" at Sofia airport are An-2R aircraft operated by the agricultural spraying company Texim!

Yours faithfully,

Bob Ruffle.

Sir,

I can't get rid of the unpleasant feeling that the Executive Board members, Nominated Officials or Committee Members – whatever is applicable – once having been established, start all kind of activities without any further communication, or coordination amongst the Guild members.

I am specially concerned about the activities of the Operations Committee and about requests made to the Management, in the name of the Guild (hence of all members), which might affect all of us although they result exclusively from the ideas of a very small minority – if not from individuals.
May I therefore emphasize that it cannot be the task of the Executive Board, nominated officials or Committee Members to just represent the members in all kinds of affairs.
It is indispensable to base these activities on requests from the members and to pass on proposals to management only when they result from well coordinated negotiations among Guild members.

Unsigned.

(If the anonymous author of this letter would care to reveal his identity to at least the editor, the Chairman of the Operations Committee is prepared to make a full reply. Meanwhile, perhaps the gentleman should familiarise himself with the minutes of the General Meetings held during the last year, and the actions voted for by those Members who made the effort to attend. MJL)

Turn left at reception . . .

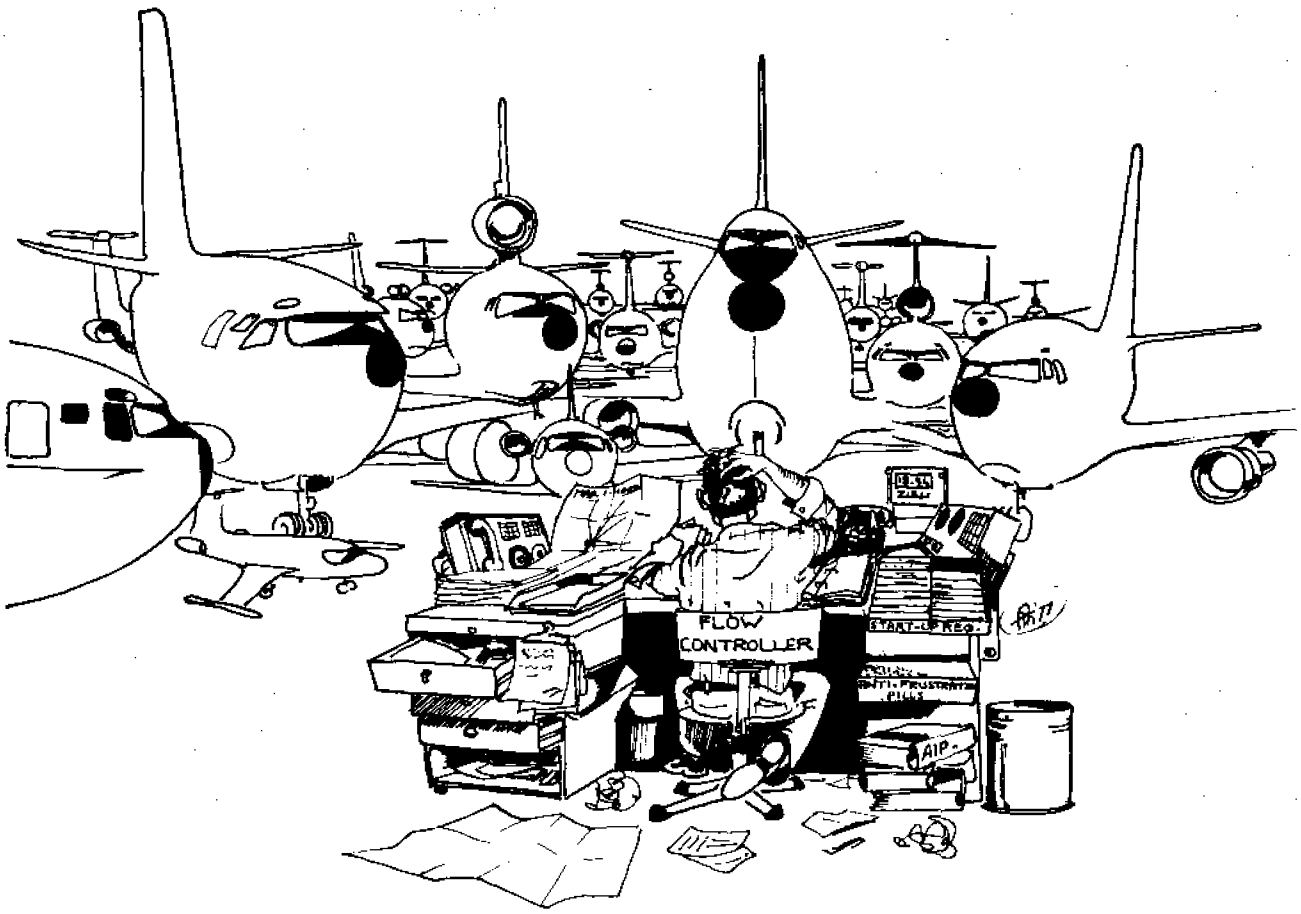
Fog can create havoc for air traffic and problems for controllers. One day, not long ago, Brussels National was below the landing minima, and five or six aircraft were holding in the Maastricht area awaiting some improvement. Details had been passed to Brussels ACC, but the fog did not lift. The aircraft eventually diverted, but someone forgot to advise Brussels about one flight. A little while later, the phone rang on the East Radar position.
EBBR: What has happened to OOSLA?
OEA: Weren't you told? He's already on the ground at Cologne.
EBBR: Can you give me a position?

Flow control - Air traffic's burden

For the airline pilot and passenger it can mean a frustrating delay. To airline companies it signifies loss of profits, problems of aircraft utilisation and ruined schedules. The controller may see it in several different ways, depending on where he works. No matter what the vantage point, Flow Control is, to say the least, unpopular. It is arguably the only outwardly noticeable aspect of ATC, because its effects are always negative for the traveller. Full transit lounges and grounded aircraft are all that the outside world sees. Just as there is a general lack of understanding about the profession of air traffic control, few seem to realise why flow control has become a necessity in certain regions, or its serious implications for the continued expeditious movement of traffic. If it continues, the widespread ignorance of the requirements of controllers, the neglect of his facilities by some governments, and the inability of nations (and, indeed, airlines) to cooperate with each other will ensure not only that flow control remains with us, but that it will be increased in the future.
There is a saying that a chain is only as strong as its weakest link, which is particularly applicable to the overall European ATC system. Although there are some high capacity area control centres, such as Maastricht and Karlsruhe, which are capable of handling large numbers of aircraft using highly sophisticated radar and computers, there are other countries where, because the equipment is totally inadequate, only procedural separation can be applied.
Quite simply, there are now more aircraft wishing to fly through certain areas than the relevant ATC system can safely handle. It has become essential to restrict the rate at which flights can be accepted from adjacent units. The repercussions can spread out to centres far removed from those originating the restrictions.
Flow control for Spain has been in force for a long time now, and it can only end when the controllers there are given and trained on new, greatly improved equipment. Much of the traffic effected has to pass through the Maastricht Area before entering French airspace. France Control must ensure that flights converging from several directions on the few entry points into Spain can be separated procedurally before handover – too many aircraft would inevitably result in a backlog of traffic which would have to hold or divert. Thus, France must specify a limited acceptance rate to her adjacent units. Maastricht is left with the unenviable task of regulating all the holiday flights from Amsterdam, Cologne, Düsseldorf, Hannover, Bremen, Hamburg and much of Scandanavia.
Like it or not, flow control has become a complex business for Maastricht staff. When the restrictions for Spain were increased a year or so ago, the job became too difficult to handle on a sector basis. This led to the establishment of a special "cell" position, to which a controller must be permanently assigned for most of the operational day. For each Maastricht team this has meant one extra position to man, resulting in a reduction of leave possibilities, more work for assistants and a smaller training capacity. For several reasons, there are few who enjoy working as flow controller anyway.
To begin with, no controller wants to delay aircraft, and because it goes against the grain, there is a tendancy to blame others. There have been occasions when pilots have complained on the frequency about the fact that they have had to wait a long time to take off. They have been told that the wait was due to "Maastricht restrictions". For our colleagues in adjacent units to put the finger on us is somewhat unfair, and basically incorrect, but their attitude is understandable: nobody wants to be accused of causing delays when it is not their fault. At the same time, it would seem that a lot of aircrew are unaware of the situation in Spain, and strangely enough, most of the complaints are from Spanish companies.
Every morning, Maastricht receives a telex from France specifying rates of acceptance. These vary, depending on routings and destinations through or within the Spanish area. The flow controller can be confronted with fourteen or more different lists to sort out. Basically, he must allocate slot times, i.e. when an aircraft calls for a clearance, he must refer to the appropriate list and specify

time limits between which the aircraft may pass certain navaids. On some routes, he is allowed only one aircraft per hour, on others perhaps two per twenty minutes. The slot times are for the entry points to northern France, but he must sometimes calculate for beacons in Norway or Denmark, taking into account the wind and differences in aircraft performance. It takes only one aircraft to run three minutes too late for the flow controller to have to recalculate all his times for others on the same list.
Problems over finding new slots have been compounded by a certain amount of "cheating" by some airlines and pilots. Wherever possible, the flow controller will re-route flights to minimise their delay. However, he is bound by the "flow orientation" rules (published by notam, but also sometimes overlooked by operators). However, it has been discovered that sometimes as many as four flightplans have been filed for the same flight, using registration and different callsigns, to the same destination but via alternative routings. Clearances have been requested for four apparently different aircraft, and slots allocated to each. This has enabled the pilot to pick the most convenient time, and later cancel the unwanted flightplans.
Such a procedure could be considered a great display of imagination. Certainly it is fine for the pilot who gets what he wants. In the meantime, other genuine flights will have been unnecessarily delayed and several slots wasted. It takes only a few such bogus flightplans to make a mockery of the flow controller's work and to create pointless inconvenience for other flights, perhaps even from the same company.

There are other ways in which traffic can be penalised, though through no fault of Maastricht. Suppose, as has happened, that one or two company flight operations sections request clearance for a whole batch of departures first thing in the morning. The flow controller gives each flight the earliest time possible. The clearances are accepted, but some of the aircraft would have to leave too far ahead of their planned departure time. Having caused other aircraft to be given later slots, the premature clearances are cancelled, normally too late to re-allocate them to anyone else. Wasting slots in this way can cause extra futile delays for the whole day on some busy routes.
Alternative attempts to beat the system have been: filing for a destination not subject to restriction, then "diverting" when airborne; trying to find a non-standard routings overlooked by the flow-orientation notam, e.g., via the ocean or the wrong way down a unidirectional airway; and by quite simply not complying with the time restrictions. Yet the offenders are to a great extent working against themselves and against the controllers who will do their utmost to expedite the traffic, bearing in mind that safety is their first consideration.
In spite of and because of all his efforts, the flow controller remains unloved by anyone. There can be days when he has recalculated all his slots three or four times, and has just modified the last clearance when over the teleprinter arrives a completely new set of restrictions. He is often seen to be in heated discussion on the telephone. He is shouted at by the planning and radar controllers. Letters of complaint about him are received from airlines.

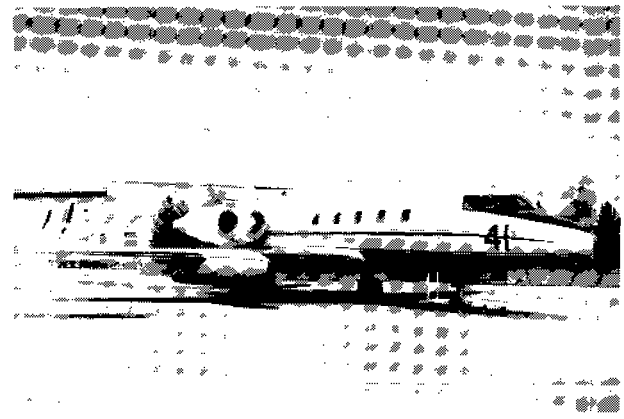


Radar controllers are confronted with angry aircrew because of him. He sits alone, performing a thankless duty. And it is likely that more and more of his kind will be seen in Europe in years to come.
The amount of general air traffic flying is continuously increasing. There is a desperate need for modernisation of many ATC facilities, and the continued development of others before they, too, can no longer cope without imposing restrictions. The ATC profession must receive much better recognition, and be given a much higher priority in many lands.
It is not only equipment deficiencies that will cause flow control to expand. The airways network is already congested, and contains several busy "junctions". Without some form of regulation, these points will become saturated.
On some days, most of the North Atlantic tracks can originate from just one UIR. There is the requirement to increase from domestic separation to oceanic separation on a limited number of routes, so there must be flow restrictions for all transatlantic traffic.
There are many questions that can be asked:
– Why do some companies operating regularly to Spain still believe that Maastricht is generating delays?
– Why are passengers unaware that they are being delayed for their own safety?
– Why do some pilots still request short cuts that will place them outside of their slot times?
– Why is it that five different companies want to fly at the same time from the same airport to the same destination and at the same level with only a few passengers on board each aircraft?
– Why, instead of complaining about controllers, aren't more companies pressurising their national administrations to supply better equipment?
– Why isn't there better international cooperation and more being done to rationalise the airways structure?
– Why don't airlines work together on planning schedules?
You may have further questions to ask. You may disagree entirely with the sentiments in this article. If you have a point of view to express, let's hear it. Your opportunity will be on October 20th 1977 at the EGATS Pilot-Controller Forum, on the subject of "Flow Control in European ATC". See you there!

MJL

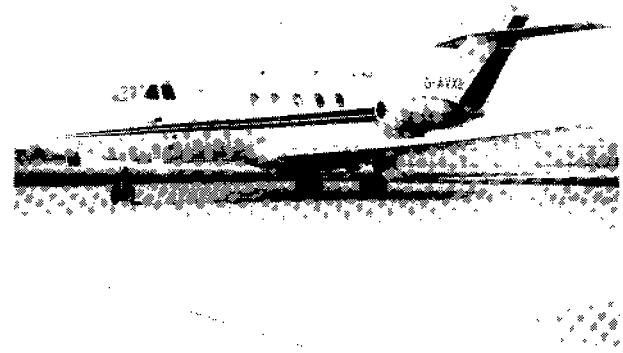
Say again your type

No matter how much information is published in the aviation press, it seems that the great majority of our Ops. staff is still unfamiliar with the performance characteristics of the business jets that our center handles daily. In addition, their ability to recognise and identify a specific type is severely limited. Despite the common belief that all biz-jets look alike, close examination will prove to the contrary, although I must concede that most models do have in common rear fuselage mounted engines. As we look at each aircraft in turn it will be seen that although two types may be similar in appearance, here the similarity ends. Each has been designed to perform to particular specifications, the manufacturers vying to corner a defined sector of the market.
So let's go back to 1957 when it all began.



A Jetstar 2 at this year's Salon, Le Bourget

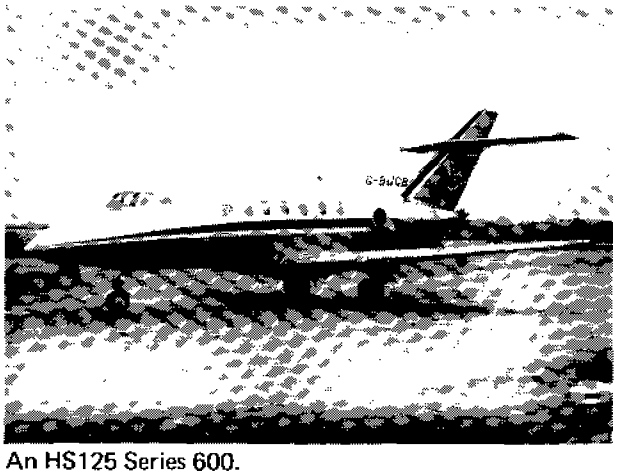
LOCKHEED L1329 JETSTAR/JETSTAR 2.
Despite design work on the Sabreliner starting earlier than on the Jetstar, it was the latter aircraft which became the world's first purpose built business jet to fly when it took to the air on September 4, 1957 powered by two Bristol-Siddeley Orpheus engines. One of the two prototypes was later re-engined with four Pratt & Whitney JT12 turbojets, this subsequently becoming the standard configuration on production models. In this form the Jetstar, with a crew of two, will transport 10 passengers almost 2000nm at 440 knots, or more, at 37,000 feet. Rate of climb at sea level is 5200 fpm.
In 1959 the Jetstar was matched against the McDonnell 220 in a U.S.A.F. competition for a fast executive transport. The Jetstar was selected and entered U.S.A.F. service as the C140.
In the summer of 1973 Lockheed announced a new version of the Jetstar to be designated Jetstar 2 and powered by four AiResearch TFE731 turbofan engines. The first aircraft flew in March 1976, but it should be noted that AiResearch's own Jetstar had flown with the 731s installed almost two years earlier. Passenger accommodation of the new model remained unchanged but range was increased to around 2700nm.



An HS125 Series 3.

HAWKER SIDDELEY HS125 SERIES 1/2/3/400/600/700.
The HS125, or DH125 as it was then, was announced on April 6, 1961 and made its' first flight on August 13 the following year.
The Series 1, 2, 3 and 400 had the same overall dimensions

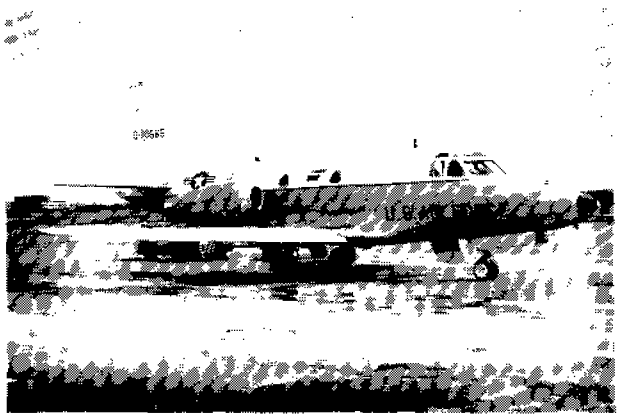
although the gross weight gradually rose, from the prototype's 8618kg, to 10,569kg. Each could carry 10 passengers up to 1500nm at around 420kts. The exception amongst the early models is the Series 2 which was tailored to meet an R.A.F. requirement for a navigation trainer. This model was designated Dominie T.1.
With the Series 600 came an increase in fuselage length allowing accommodation for up to 14 passengers. In addition, the forward fuselage was re-shaped and the flight deck layout up-dated. Up to and including this model the powerplant had been the Rolls-Royce Viper turbojet. However, with the dramatic increase in oil prices in 1974, it was decided that the thirsty turbojet should be replaced by a fan engine. As with the Jetstar the AiResearch TFE731 was selected to power the new Series 700 and the first flight, in the form of a converted Series 600, was made on June 28, 1976. Although 600s can be retrofitted to bring them up to 700 standards, the production 700 embodies a number of refinements in addition to the change of powerplant. Range is now increased to 2330nm, pushing 436kts at 27,000 feet or 403kts at 41,000 feet.



An HS125 Series 600.

ROCKWELL SABRELINER/SABRE 40, 40A, 45, 60, 65, 75, 75A.

Another of the early biz-jets, the North American Aviation Sabreliner, first flew on September 16, 1958 powered by two General Electric J85 turbojet engines. The aircraft was designed to meet a U.S.A.F. requirement for a combat readiness trainer and utility aircraft and in January 1959 the first order for T39As was placed, but with the more powerful Pratt & Whitney J60s. Subsequent military versions of the Sabreliner/Sabre have been the T39B and D for the U.S.A.F. and the CT39E and G for the U.S. Navy. On September 22, 1967 North American Aviation merged with the Rockwell-Standard Corporation to form the North American Rockwell Corporation, becoming the Rockwell International Corporation on February 16, 1973. Following the merger N.A.R. found itself with two competing biz-jet production lines on its' hands – the Jet Commander and the Sabreliner. Jet Commander development and production rights were acquired by Israel Aircraft Industries while N.A.R. concentrated on improving the sales prospects of the Sabreliner – now known as the Sabre. As the relevant details are likely to confuse both you and myself suffice it to say that the Sabre was developed into a family of biz-jets with the following designations: Sabre 40, 40A, 45, 60, 65, 75, 75A. Three of these models, namely the 45, 65 and 75A, are fan powered

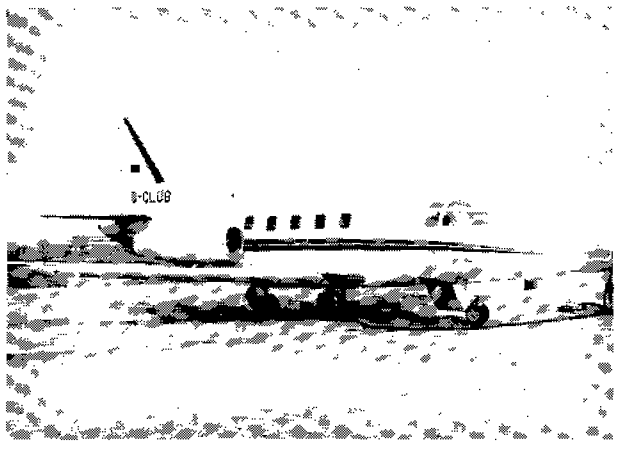


A Sabreliner T39A.

variants, the first two with AiResearch TFE731s and the 75A with General Electric CF700s.
The 75A has a maximum cruising speed of Mach 0,80 and an economical cruising speed of 0,74. With four passengers and maximum fuel it will cover 1712nm. Max. rate of climb is 4500fpm.
Production of all Sabreliner/Sabre variants passed the 500 mark earlier this year.

AÉROSPATIALE SN601 CORVETTE.

One biz-jet which has not met with the degree of success that many of its contemporaries enjoy, is the SN601 Corvette. It is not for me to say why this aircraft failed, but one could surmise that possibly the Corvette attempted to break into a market, which had already been more than adequately covered by successful, well established designs. Harsh as it may seem to use the word "failed", it does appear to be the most appropriate word when one considers that firm sales of the Corvette have amounted to something like four!
The prototype SN600 Corvette flew for the first time on July 16, 1970 powered by two Pratt & Whitney Canada JT15D turbofan engines. The aircraft recorded more than 270 flying hours before being lost in an accident on March 23, 1971. This was the one and only SN600, all subsequent production aircraft being designated SN601, a fact which I.C.A.O. has been a little slow to realise as they still insist on designating the aircraft S600!
The first production aircraft flew on December 20, 1971 with a stretched fuselage and modified JT15Ds.



A Sabre 75A.

The SN602, a projected version with Larzac engines, appears to have come to nothing. Since its introduction into service a number of Corvettes have operated extensively on third-level scheduled services, the aircraft being configured for up to 14 passengers. With twelve passengers the Corvette will cover 840nm at an economical cruise speed of 306kts at 39,000 feet. By reducing the payload and fitting tip-tanks the range can be increased to 1380nm. Maximum cruise speed is 410kts, service ceiling 41,000 feet and maximum rate of climb at sea level – a modest 2700fpm.
Space being at a premium it would be impossible to cover all the biz-jets this time, therefore I shall continue the descriptions in the following issue.
Hopefully, by that time further details of the Lear Jet 55 & 56 will have been released for inclusion.

Paul J. Hooper.

All photos – Paul J. Hooper.

Operations chief retires

Mr. Denis Watkins, Head of Maastricht UAC Operations Division since the Centre began, officially retired at the end of July after a distinguished career devoted to air traffic safety. Sadly, poor health has prematurely deprived Maastricht of a pioneer of Madap and other modern ATC systems, and ops division of a popular, well-respected boss. To many, Mr. Watkins has been mentor, counsellor, protagonist and friend. Controllers from the ab-initio 1 course, for example, will never forget his efforts on their behalf. Because this farewell gatherings had to be held during the peak summer leave period, there are a lot of people who were unfortunately unable to say "au revoir" to Mr. Watkins as they would have wished. They will be pleased to know that he did not leave without gifts, including an engraved silver tray to which everyone at Maastricht contributed, and from the Guild, a champagne bucket (suitably filled) presented by the President with the following words:
"On behalf of the members of the Guild, I would like to say thank you for everything you have done for us, and especially for keeping your door open when we had problems to unload.
I think we'll miss those Friday afternoon pre-weekend walkrounds, just to see that Madap was still working and to have a final look to see if we were OK.
To you, Mr. and Mrs. Watkins, have a long and happy retirement in Wales. Please accept this gift as a token of our appreciation."
The gift bears the inscription:
Denis W. Watkins
Presented on the occasion of your retirement in recognition of your outstanding contribution to the Air Traffic Control Service.
E.G.A.T.S. – July 1977

Characteristically, Mr. Watkins was shortly to send the following letter:

My Dear Roger,
I feel that – despite my inadequate speech the other night – I must put pen to paper and – through you – send my very special thanks to all members of the Guild for their kind thoughts, their great effort in being present at my farewell party, and their extraordinary generosity in giving me such a magnificent retirement present.
I assure you all that I shall cherish it to the end of my days, and each time I use it, I shall be reminded of my colleagues at Maastricht.
After a complete "life" in ATC, I can truthfully say that my greatest and most fruitful experience was the time spent with you all at Maastricht – it is something I can never forget – the spirit of enthusiasm, good will, and the wish always to "press on" and give the finest possible service – this is what makes good ATC – and – (despite small difficulties at present) – I am sure the wonderful spirit will rise again, and you will continue to lead the world.
I shall retain contact by means of the U.K. Guild, and will keep you advised of my address in England.
In the meantime, my wife joins me in repeating our sincere thanks for everything and wish the greatest possible success to EGATS – and I know that – from U.K. experience – this takes a few years before you become an established part of the Organisation.
All fondest wishes to you all,

Denis Watkins.

We are sure that everyone will join INPUT in once again wishing Mr. and Mrs. Watkins many happy, healthy and peaceful years to come.

Russian military aviation 1977

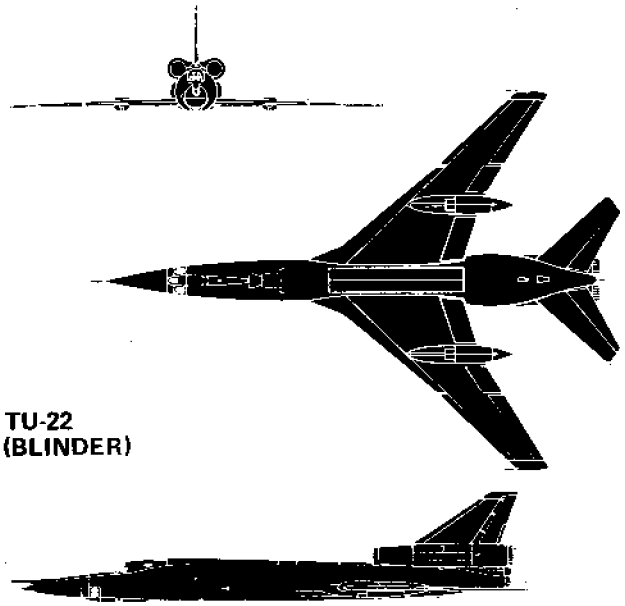
The beginning of the New Year saw the Soviet air forces equipped with a large number of offensively orientated aircraft which are now not only traditionally quantatively greater but also qualitatively superior to those in the air forces of the West.

The Air Forces of the USSR protect the world's largest state, which stretches some 7,000 miles east-to-west and 3,000 miles north-to-south. The organizational structure of the Soviet forces is unlike anything to be found in the West and the Soviet equivalent of the United States Air Force (the only other of the world's air arms comparable in size) comprises the Air Forces of the USSR, or Voenno-vozdushniye Sily (V-VS), Naval Air Force, or Aviatsiya Voenno-morskovo Flota (AV-MF), the manned interceptor element of the Anti-aircraft Defence of the Honeland, or Protivo-vozdushnaya Oborona (Strany) (P-VO), which is a separate command of the Armed Forces of the USSR, and the Strategic Rocket Forces, or Raketny Voiska Strategicheskovo Naznacheniya (RVSN), which is also a separate command. First line combat aircraft strength of the V-VS and the P-VO Strany is something in

the order of 11,000 warplanes. That of the AV-MF about 800 aircraft.

V-VS main components are the Frontal Aviation, or Frontovaya Aviatsiya (FA), the Long-range Aviation, or Aviatsiya Dal'nevo Deistviya (ADD), the Transport Aviation, or Voenno-transportnaya Aviatsiya (V-TA) and the AV-MF.

Principal Military Districts are Moscow, Leningrad, Baltic, Kiev, Volga, Trans-Caucasion, North Caucasion, Carpathian, Ural, Odessa, Byelo-Russia, Central Asia, Turkistan, Trans-Baikal, Siberian and Far East. Forces Groups



TU-22 (BLINDER)

comprise the Northern Group of Forces with H.Q. at Legnica, Poland, the Southern Group of Forces with H.Q. at Tokol, Hungary, the Central Group of Forces with H.Q. at Milovice, Czechoslovakia and the Group of Soviet Forces in Germany with H.Q. at Wünsdorf in the D.D.R. Additionally, there are a number of Frontier Troop Districts.

The FA has received the highest priority in the re-equipment programme. At the end of 1976 the FA had about 25% more tactical strike fighters than the United States Air Force and the United States Marine Corps together. Total first line aircraft amount to a little more than 5,000 with some 3,000 others utilised primarily in training roles. These are deployed within the various Military Districts according to their importance and with the Forces Groups based in Czechoslovakia, Poland, Hungary and the D.D.R. In the latter alone about 800 aircraft are based. FA elements are attached to 12 Military Districts.
FA units comprise three squadrons (eskadrilii) each with 12-16 aircraft per regiment (polki). About 1,300 variable-geometry MiG-23S and MiG-27 aircraft are in service with the larger number deployed with the Forces Groups in satellite countries and the three westernmost Military Districts of European Russia. The MiG-23S (Flogger-B) is operated in the air superiority and intercept roles. It is equipped with a twin-barrel 23 mm SSSh-23 cannon and a quartet of infrared and radar-homing AAMs. It has 90 cm Al radar. The MiG-27 (Flogger-D) is designed for the battlefield interdiction role operating from dispersed sites. Fixed armament is a six-barrel 23 mm rotary cannon. It has terrain avoidance radar and a laser designator.

ADD are estimated to have a requirement from approximately 300 bombers of the Tupolev (Backfire) type. It is powered by two military versions of the NK-144 engine with 44,000 lbs. s.t. with reheat. Its capability compares with, and in some aspects exceeds, that of the Rockwell B-1.

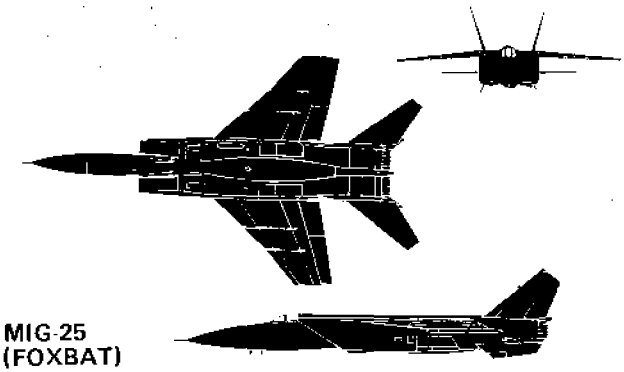
Including a small number of Tu-22U (Blinder-D) proficiency trainers, the Tu-22 (Blinder-B) amounts to some 33 aircraft. These are employed in the medium-range bomber role in hi-lo-hi mission profile with a tactical radius of 1,370 miles. The long-range heavy interceptor version of the Tu-22 has now virtually replaced the earlier Tu-28P (Fiddler) and operated to patrol the sections of the periphery of the Soviet Union unprotected by SAM installations. The former Tu-28P in this role possessed a clean endurance of 3.5 hours. Probably less than 100 Tu-16 (Badger) medium bombers remain in first line ADD service. Types retired from the ADD are frequently transferred to OV-MF units and re-worked for Naval requirements.

Strategic reconnaissance is also the responsibility of the ADD. Types operated include the Tu-20 (Bear-D and Bear-F), An-12 (Cub-C), An-24 and a handful of old Il-14s.

Each ADD squadron consists of 10 aircraft with three squadrons per regiment. Training aircraft and flight refuelling tanker elements are attached to each regiment.

Logistic support is provided by the V-TA. Less emphasis is placed on the strategic military transport than in the United States Air Force. Presumably because the entire Aeroflot (Soviet Airlines) fleet is at its disposal should the need arise. A considerable amount of military - civil operations are conducted on a general basis and Aeroflot operate many flights for the Group of Soviet Forces in Germany, especially during the regular troop rotations.

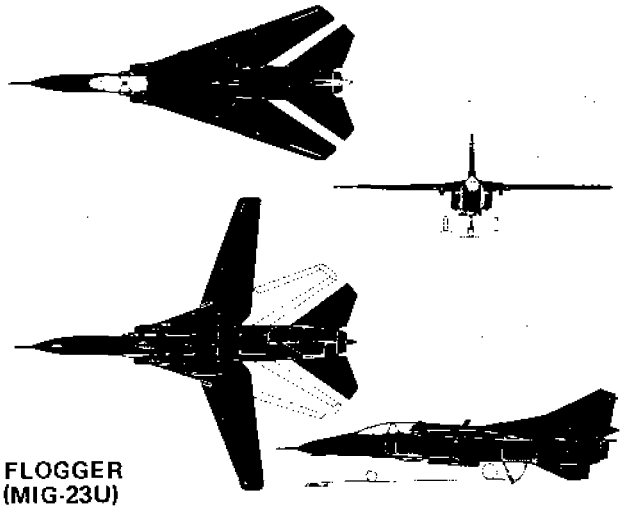
The V-TA operate about 40 An-22 and some 30 Il-76 strategic transports in military colours. The latter being fitted with rearward firing cannon mounted at the base of the fin, similar to military An-12s. About 800 An-12 tactical transports are in first line service. Primary role of the V-TA is support of the airborne forces which include seven 7,000-man airborne divisions, of which



MIG-25
(FOXBAT)

more than half, together with their support elements, can be lifted simultaneously over short or medium ranges. Other equipment includes An-26, An-24, Il-14, An-2 and even some Li-2s (Russian -C47 Dakota). Plus Mi-6 and Mi-8T helicopters.

The manned interceptor force of the PVO Strany is the Istrebitel 'naya Aviatsilya P-VO Strany, or IAP-VO Strany. The IAP-VO Strany is responsible for the air defence of the main centres of Industry and population, military and naval installations, ports and peripheral defence, mounting continuous air patrols over areas not screened by SAM missiles.
About 40% of its strategic defence fighter compoment is comprised of the older Su-11 (Fishpot-C) and Yak-28P (Firebar) aircraft. Low altitude intercept capability has been improved considerably with the introduction of the Su-15VD (Flagon-E). This version possesses good intercept capabilities at high, medium and low levels and is more powerful than earlier versions, which still remain in first line service. Armament standardises on the 23 mm GSh-23 twin-barrel cannon coupled with infrared and/or radar-homing AAMs. Phased into service with the Su-15VD was the MiG-25 (Foxbat-A) Mach 3 interceptor. Peripheral patrols are mounted in co-ordination with the ADD-operated Tu-22 interceptors.



FLOGGER
(MIG-23U)

First line aircraft are supported by large numbers of MiG-21 (several variants), MiG-17F etc. Proficiency training is conducted on two-seat versions of the MiG-25 and MiG-21, the Su-7U (Moujik) and even a few MiG-15UTIs, which like the Lockheed T-33, appear to go on forever.

About 12 Tu-126 (Moss) AWACS (Airborne Warning and Control System) aircraft are operated, providing limited airborne controlled intercept capability. This type is also frequently employed by the AV-MF for shadowing N.A.T.O. Naval exercises.

Most significant types to join the AV-MF ranks recently are the Tupolev (Backfire-B) and the so-called Yak-36 (Forger-A). Some 30 or so Tupolev (Backfire-B) entered service in the maritime reconnaissance role. AV-MF bases for this type currently being located on the Kola Peninsula and at Anadyr on the Bering Sea. Recent flights by the (Backfire) over United States Installations in the Azores were conducted from bases near Murmansk. The so-called Yak-36 (Forger-A) and two-seat trainer version (Forger-B) were revealed with the appearance of the carrier Kie. Development of this type can be expected in the not too distant future. Since 1963 the AV-MF have been engaged on shadowing the U.S. Fleets and N.A.T.O. Naval exercises, employing a variety of aircraft. Tu-20 (Bear-C, Bear-D, Bear-E, Bear-F) variants are used. The Tu-20 (Bear-E) equipped with three pairs of camera ports in the weapons bay with a seventh located to the rear of the starboard side. Tu-20 (Bear-D) can also be operated in an anti-shipping missile control role. Bases at Conakry, Guinee and Havana, Cuba are utilized for Tu-20 operations.

About 300 Tu-16s are in AV-MF service. The Tu-16 (Badger-C, Badger-D, Badger-E, Badger-G) are operated in the maritime reconnaissance role, Tu-16 (Badger-F) in the ELINT role and missile armed Tu-16 (Badger-B, Badger-C, Badger-G) in the anti-shipping role.

Myasishchev M-4 (Bison-B and Bison-C) is also employed in the maritime reconnaissance role, as is the Il-38 (May), including ELINT tasks. About 50 Tu-22 (Blinder-C) back up earlier, but still operated, Il-28T and Yak-28 (Brewer) types. The Be-12 (Mail) amphibian is standard equipment in the medium-range ASW reconnaissance role.

One squadron in each Tu-16 and M-4 long-range maritime surveillance regiment serves in the flight refuelling tanker role.

Shore based Ka-25s (Hormone) or Mi-4s (Hound) are employed by the AV-MF for short range ASW tasks. The Ka-25 is now generally deployed on Soviet anti-submarine cruisers and missile carriers.

Total number of aircraft on the AV-MF inven-

tory is generally estimated at around 1,200.

V-VS flying training is undertaken by various organisations. DOSAAF (Volunteer Society for Co-operation with the Army, Air Force and Navy) para-military schools provide primary and basic instruction prior to induction by the services. An all-jet training syllabus is employed by the V-VS, with basic instruction on the L-29 Delfin or L-39 Albatross with advanced conversion on the MiG-15UTI. Advanced flying schools are operated by all the services with type conversion conducted on the various two-seat versions of operational aircraft, such as the MiG-21U, MiG-21US, MiG-21UM, MiG-23U, Su-7U, Su-11 Uand Yak-28U. Specialist flying schools undertake combat training.

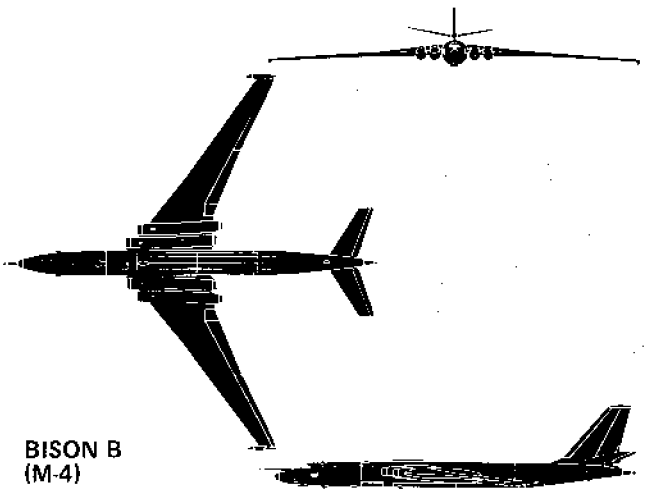
Entering service during 1976 was the Su-19 (Fencer-A). This longrange interdiction fighter is similar to a scaled-down General Dynamics F-111. With an offensive load comparable to current western aircraft the Su-19 is capable of attacking any N.A.T.O. airfield including those in the U.K. from D.D.R.-bases. The first regiment is based at Chernyakhovks (near Kaliningrad) in the Baltic Military District. A second Su-19 regiment is also being formed at this base. The Su-19 is likely to feature significantly in future FA inventory, replacing such current types as the Yak-28 (Brewer-A), Yak-28L Brewer-B), Yak 28I (Brewer-C) and Yak-28P (Firebar), and possibly the Tu-28P (Fiddler). The Su-17 (Fitter-C) variable-geometry fighter is slowly taking over from the established Su-7BMK (Fitter-A series) in the ground-attack role, offering an improved tactical radius with better weapons carrying and short-field characteristics. Su-7Bs are now operated only in second line areas. Substantial numbers of late series MiG-12s remain in service such as the MiG-21SMT (Fishbed-K), MiG-21MF (Fishbed-J.), MiG-21MA etc., with the earlier models serving with MiG-19 and MiG-17 variants in second line duties.

Helicopters form a major part of the FA forces and recent build-ups bring the total number to some 2,500 machines. About 180 of these are Mi-24 (Hind) twin-turbine powered gunship and assault transport helicopters based in the D.D.R. These serve to support the Mi-8T troop transport helicopters. Both types utilizing similar power plant, gearboxes, drive shafts and controls. The Mi-24 has a 12.7 mm machine gun in the nose with 250 to 350 rounds of ammunition for defence against infantry fire. Maximum speed is in the 140 to 160 mph range with stations for small bombs or anti-tank missles and must be considered a serious threat to western armoured units.

Reconnaissance at extreme high-altitudes is undertaken by the FA from its Northern Forces Group Aviation and from its Aviation of the Group of Soviet Forces in Germany bases. With short-endurance Mach 3 capability the MiG-25R (Foxbat-B) is employed on photo-reconnaissance and ECM duties from bases in Eastern Europe, from which it can overfly West European N.A.T.O. countries with impunity. No currently deployed N.A.T.O. SAM system or interceptor being capable of challenging it at its operational ceiling. The Yak-27R (Mangrove) has been withdrawn from service, as has the ECM Il-28s. A few ECM-28 (Brewer-E) remain in service and the MiG-23U (Flogger-C) is occasionally employed in this role. The D.D.R. based An-8 (Camp) aircraft have given way to older ECM equipped Il-14 twin-engined transports; currently engaged on missions along the border with the Federal German Republic.

FA Il-28s formerly based in the D.D.R. have been replaced by a small number of Tu-16 (Badger) but their exact role is not clear.

Training versions of most current types are operated for combat proficiency training.



BISON B (M-4)

The ADD had operated relatively obsolescent equipment in the strategic bombing sphere, relying on the M-4 (Bison-B and Bison-C), contemporary of the Boeing B-52, and Tu-20 (Bear-A, Bear-B, Bear-E) backed by missiles of the RVSN. 1976 saw some 80 Tupolev (Backfire-B) variable-geometry bombers entering the ADD ranks. Unrefuelled range - it has in-flight refuelling capability - is over 6,000 miles, high altitude cruise speed of Mach 2+ and low level supersonic flight profile. All-up-weight is approximately 272,000 lbs (123 tons).
The largest military flying school in the world is the Kachinskoya Vyshee Voennoye Aviatsionnoye Uchilischsche im A. F. Myasnikov near Volograd. There are Pilots' Higher Schools at Borisoglebsk, Barnaul, Stavropol. Other V-VS advanced flying training schools are located at Tambov, Orenburg, Balashov (near Saratov), Syzran, Chernigov, Kharkov and Yeisk (near Sea of Azov).

The expanding capability of Soviet air power

growth can only be viewed with alarm. The Soviet industry is now manufacturing 1,800 advanced combat aircraft annually - a rate that could re-equip the entire Royal Air Force with warplanes approximating in calibre to the future Panavia Tornado within five months - and production is concentrating on offensive tactical aircraft to virtual exclusion of defensive interceptors.
R.J.R.

(Reprinted from the 1977 edition of Aviation Year, a 120-page colour-illustrated hardback describing all the important aviation events of 1976, available for £ 4-50 + 50 p p&p from Ais Britain Sales, 9 Rook Close, Elm Park, Hornchurch, Essex RM 12 5QH, England, Silhouttes Courtesy German Air Force).

Money matters

As those of you who bothered to attend the Annual General Meeting and the Special General Meeting which followed it may be aware, it was decided that, with effect from January 1st 1978 the membership fees for the Guild were to be revised as follows:
Professional Members *f* 100 p.a.
Ordinary Members *f* 80 p.a.
The joining fee for either form of membership to be set at *f* 50.

The reasons for this change are as follows:
1) The present system, whereby different grades pay at different rates, has been found to be unwieldy and very difficult to administrate.
2) The fees had remained constant since the Guilds inception, and whilst this in itself is not a reason to change the fees, it must be remembered that inflation effects the Guild as well as its members.
3) As you are all no doubt aware the Guild is active in trying to maintain our existance after 1983. This is not a cheap business.

Whilst on the subject of money I would like to remind those of you who have STILL not paid the fees for 1977 that this money may be paid to me in cash or, better still, transferred to our account with the AMRO Bank in Beek. The account number is 46.86.12.254. If some of you do this I can maybe pay some of our bills!

Ian Guild
Treasurer

I beg your pardon

Rumour has it that a Belgian pilot flying to America via the U.K. was troubled by interference on the r/t in the vicinity of Lands End. His command of English was, perhaps, not quite as good as it might have been. Reporting the fault he said,
"Excuse me London, but you have a loud whistling coming from your behind."

Lippe rader, the story of a military ATC unit

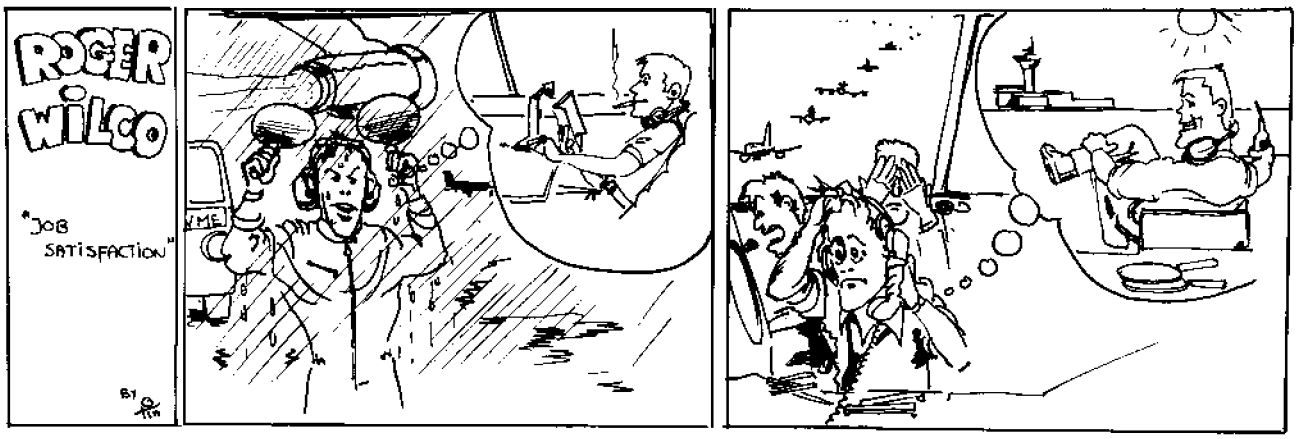
Foreword.

Following the destruction of the "Drittes Reich" the essential ATC services were taken over by the Allied Forces.
In 1946 the Royal Air Force established an 'Air Traffic Control Centre' in Bad Eilsen, near Bückeberg, for the provision of Air Traffic Control, Flight Information, Alerting, Aeronautical Information and Search & Rescue Services, plus the necessary Telecommunication Service within the 'British Zone'.
From 1953 onwards, the responsibility for ATC services was gradually tranferred from the Allied Forces to the newly created national authority, the "Bundesanstalt für Flugsichering" (BFS).
The RAF ATCC moved from Bad Eilsen to Hannover Airport in 1955, at which time control functions were handed over to the BFS Regional ATCC, also sited at Hannover Airport. However, responsibility for FIS, AIS, Alerting Services and SAR, as well as Telecommunications, including the maintainence and servicing of all technical equipment, was still kept by the RAF authorities.
A new era of post-war ATC history in Germany began in 1956 when, after the creation of the "Bundeswehr", it was planned to set up ATC units of the Luftwaffe besides the existing ATC services of the RAF and BFS.
First attempts were made in 1957/58 to build up a teleprinter network for GAF airfields, linked to the BFS and ICAO networks. These early efforts failed since there was as yet no automation in existance, and all connections for the transfer of messages had to be made manually.
In 1960, when new types of aircraft entered service with the Luftwaffe, this "hand delivery" of information became a serious problem. As a solution, Luftwaffe authorities ordered the installation of Teleprinter Centres for the northern and southern parts of the FRG, to be based at all times on the most modern technological developments.
Similar difficulties arose for the young military ATC service when the F-104 "Starfighter" came into service. The performance capabilities and the necessity for a growing number of training flights forced the "Inspekteur der Luftwaffe", General Kammhuber, to order that all flights with the F-104 had to be conducted under radar control.
This requirement gave rise to the so-called "ATC-Cells" concept. It was planned to install

ATC Cells in Air Defence radar stations, to assure navigational assistance for the F-104, as well as to provide them with separation from other aircraft.
In the establishment of an ATC Cell in the Radarsite Uedem, and the subsequent nomination of a "Provisional ATC Centre 3" at Goch in 1960, lie the origins of what was later to become "Flugsicherungssektor Nord".

From Cell to FSSN.

In July 1960, Luftwaffe authorities ordered the selection of ATC personnel to set up a vanguard "Flugsicherungsbereichszentrale 3" (Regional ATCC 3). Their task was laid down as:
— Radar control and monitoring of F-104 aircraft operating from Nörvenich Airbase (at that time, the Luftwaffe training unit for F-104s),
— Radar control and monitoring of other military aircraft in so far as operational capacity was available.
With RAFG and 2ATAF representatives, it was arranged that one fighter control cabin was to be provided by CRC Uedem for the use of ATC personnel. This cabin was equipped with two radar consoles, technical installations for 1 (one) UHF frequency, and the necessary telephone lines. The personnel complement at that time: 6 controllers (2 with Terminal Control Licences and 4 GCA trainees).
In the absence of any relevent orders, the ATC Cell gave itself the name "Hollywood Radar". Until mid-1961, there were no major changes in the operation of Hollywoood Radar. Nevertheless, the complement of personnel expanded to 8 controllers, and a second UHF frequency was even allocated for their use! But in July of that year, the status of the ATC Cell as a vanguard was changed when the Military ACC Hannover was formed, and the Uedem personnel were placed under the command of this new unit. However, the task of the ATC Cell remained the same. The new orders stated, "The Military ACC Hannover is to take over and run the former RAF ATCC Hannover, its external D/F stations and the Search & Rescue Coordination Centre, and the radar control and monitoring of F-104 operations presently conducted by the Uedem ATC Cell (if necessary from Brockzetel Radarsite).
The implied possibility of working from Brockzetel, near Wittmund Airbase, became a reality for some of the Uedem personnel in August 1961. A new ATC Cell, callsign "Miami Radar", was established.
Apart from the navigational assistance for F-104 flights from "Waffenschule 10" within the northern part of the FRG, this ATC Cell was assigned another task, that of a "Recovery & Diversion Cell" for SOC Brockzetel.
In contrast to the work at Uedem, the cooperation between ATC and Air Defence personnel at Brockzetel turned out to be very difficult. Amongst other incidents, the officer commanding ATC personnel, Lt. Kolb, found himself temporarily arrested by four SOC/CRC officers shortly after he had guided an F-84 in emergency safely to its home base in Hopsten, using the guard frequency. Reason: orders only stated that the ATC Cell was allowed to assist F-104 aircraft, not F-84s!
But there were other difficulties as well which gave rise to great doubt as to the effectiveness of the Brockzetel ATC Cell. The range of the Brockzetel radar, a Marconi Type 80, gave only limited coverage for the assistance of F-104s operating from Nörvenich. And in 1961, Nörvenich was the only TACAN equipped station within the whole of the northern FRG.
In spite of these technical problems, 1961 saw the first steps towards better civil/military cooperation when civil controllers from Hannover ACC were posted to Uedem as coordinators.
In February 1962, the Brockzetel ATC Cell was finally withdrawn, and R/S Auenhausen (near Kassel) was chosen as the alternative location. Indeed, this new ATC Cell soon became operational, but only during the fortnightly 8-hour maintainance period of the Uedem radar. So "Fulda Radar" (provisional callsign of the Auenhausen Cell), was, in fact, more or less a backup for Uedem. The situation altered in 1964, when



orders were issued to divide the work half-daily between Uedem and Auenhausen.
It was in 1962 that first considerations were made with regards to the future of air traffic and ATC, especially that within the upper airspace. There was no doubt on the military side that the tremendous changes in civil and military aviation which could be forseen must result in an integrated civil/military ATC system. This perception was to lead to the creation of a military ACC for the upper airspace at Goch.
Pr.

EGATS Forum 1977

Flow control in European ATC

I HISTORY
The EGATS 1975 forum was a first attempt to establish a dialogue between controllers and pilots. There were faults:
– The audience was rather small
– There was no specific theme, hence the discussion covered too many topics
– Some partners were missing (controllers from other centres)
– The room facilities were inadequate.
EGATS therefore decided to make a new attempt bearing in mind previous shortcomings.
– There is a precise theme, bound to interest many because of its current significance
– Controllers from other centres will be invited
– A better room (more academic) will be provided
– It is expected that a larger audience will attend (through efficient advertising)

II PARTICIPANTS
These fall into three categories, controllers, pilots and others.
1) Controllers.
– Controllers from all adjacent units directly connected with Maastricht in flow control. Invitations will be sent via the national associations
– Maastricht Control Staff
– Military Controllers, MATRAC and BELGA
2) Pilots.
– All European Pilot Associations and IFALPA
– All main European National Airlines
– All main European Charter Companies
– IATA Representatives
– IACA Representatives
3) Others. To be invited as observers or consultants.
– Eurocontrol H.Q.
– Operations Division
– CORTA-French Flow Cell
– Luftraumnutzungszentrale-German Flow Cell
– ICAO European Office
– FAA European Office
(and eventually the Main Tour Operators)

These parties will be invited and requested to acknowledge before Oct. 1st.

III FORUM ORGANISATION
Panel.
The forum will be presided, guided and moderated by a panel consisting of 10 members.
The intention is to invite the following as panel members:
PILOTS
1) SPANTAX
2) SCANDINAVIAN PILOTS ASSOCIATION
3) COCKPIT VEREIN (GERMAN PILOTS ASSOC.)
4) V.N.V. (DUTCH PILOTS ASSOC.)
5) BALPA (BRITISH PILOTS ASSOC.)

CONTROLLERS
6) FRANCE CONTROL
7) DUSSELDORF ACC
8) RHEIN UAC
9) MAASTRICHT UAC
10) CHAIRMAN: MR. W. ENDLICH (MAASTRICHT OPS)

N.B. Except for the chairman, the participation of the panel members above is subject to their approval. A final list of panel members will be announced as soon as possible.

IV FORUM DEVELOPMENT
The forum session will be started by means of an introductory lecture. The flow control concept as well as recent practical developments will be illustrated by means of visual aids and verbal comment.
The sequence will be as follows:
1) What is Flow Control? (Origins, types, statistics)
2) Repercussions on ATC and operators. (Description of the existing F.C. organisations (if any) per state.
3) Practical example of flow control: A typical traffic sample (Summer '77) will be analysed in different steps.
This introduction is bound to trigger off several questions and answers and will enable further discussion. The final aim is to obtain suggestions from the floor in order to improve the overall flow control development in Europe.
An effort will be made to hear all parties.
The forum should not exceed 3 hours including breaks.

V TECHNICAL DATA
DATE. October 20th 1977
TIME SCHEDULE:
11.00 – Acceptance of guests at Centre gate
Briefing
Guided visit to Ops. room
13.00-14.30 – Buffet lunch for guests in Luftwaffe 'Casino"
14.30 – Continued briefing and guided visits for late guests (if necessary)
16.00-17.30 – Pre-forum meeting between Chairman and Panel members in Conference Room.
17.30-18.00 – Tea in canteen
19.00 – Forum Session in EUROMOTEL Conference Room.
ROOM & FACILITIES
The Forum room will be fitted with a voice amplification device and overhead projector. A blackboard will also be available.
The panel will be seated on a raised platform and the public will be in a semi circle round it.
The "Input" editor will make a report on the session.
Voice recordings will not be kept.

VI ORGANISATION
A Forum working-group has been set up as follows:

Messrs. Pauwels
De Bruijn
Smeeth
Pierrard
Prevôt
Van der Flier
Gordts

They will take care of all correspondence, documentation, preparation and liaison with local authorities. They will continue to meet regularly and work out all details of the project. They will, by means of posters or notices advise all members and eventually ask for their support and assistance.
Volunteers to transport the visitors to and from the airport or railway station and guides to accompany the guests will especially be needed.

J. Gordts

IFATCA action for EGATS

Telex

international federation of air traffic controllers associations

to the president of the permanent commission of eurocontrol

geneva 9 june 1977

dear sir

the eurocontrol guild of air traffic services has drawn the attention of the international federation of air traffic controllers associations on the present situation in the uac maastricht.

ifatca feels much concerned about all problems related to general conditions of work of air traffic control staff, which as you know have a direct effect on the output of the air traffic services, hence on the safety of international air navigation. the fact that serious doubts exist among the controllers of the uac maastricht regarding the livelihood of their occupation could have such adverse effect upon the qualitiy of the services.

ifatca hopes that the result of deliberations of the permanent commission will in no way affect the continued employement of the ats personnel.

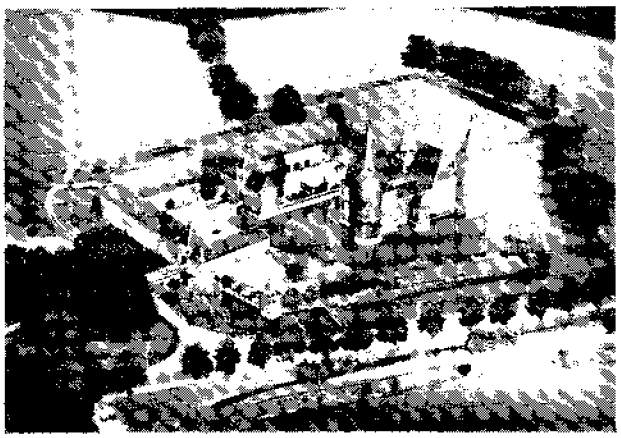
yours sincerely

jean daniel monin, president of ifatca

Nationalism and you

On August 17th, the following letter was received by a trainee controller who was originally recruited by Euro-

ANNUAL BUFFET DANCE



FRIDAY OCTOBER 21ST 1977

A reminder to make it a date/book your leave

PLACE: CASTLE HOENSBROEK

TIME: 20.00-± 02.00

MUSIC: „THE VALENCIAS"

Organisation by EGATS

1 – Ample car parking space
2 – Separate „quiet room" with cheese/wine + bar
3 – Raffle – Tombola

Tickets available on a team basis or from reception
price fl. 20,–

control for Karlsruhe. As a direct result of the renationalisation of the Karlsruhe UAC by the FRG, more than 70 trainees have been forced to decide whether
a. to abandon all hopes of becoming a controller, as they had wished, and to try to find another job within Eurocontrol,
b. to accept one of the few posts offered by the BFS (German Nationals only)
c. to continue their controller training, with little prospect of employment upon completion.
The revertion to nationalism by those who committed themselves to forming Eurocontrol is still causing grave concern for the future. If isolationism is to be their policy now, how many more Maastricht controllers can look forward to a similar letter, at eight days notice?

Re Application of Article 41 of the General Conditions of Employment in pursuance of the decision taken by the Permanent Commission at its 49th Session on 9 June 1977 following the establishment of a BFS ATC operations unit at Karlsruhe UAC.

Dear Mr. . . . . .

I regret to have to inform you that your name has been entered on the list of staff to be assigned to non-active status.

I should therefore be obliged if you would let me know, by 25 August 1977 at the latest, whether or not you wish to complete your controller training with the EUROCONTROL Agency under the terms of the decision of the Permanent Commission under reference.

In the event of your reply being in the negative, or in the absence of any reply on your part by the aforesaid date, you will be assigned to non-active status as soon as the administrative formalities have been concluded.

To enable me to regulate your administrative status, I would ask you to return to me without delay the two enclosed forms duly completed and signed.
Any details called for which are not yet available to you should be supplied as soon as possible.

Yours sincerely,
R. BULIN
Director General

FAA low-level wind shear alert system

Last year at New York an Eastern Airlines B727 crashed while on final approach during a thunderstorm. The cause of the crash was attributed to severe low level wind shear. The aircraft in fact hit the approach lights with fatal results for the passengers and crew. This was the latest in a number of accidents that have occurred in recent years, in almost every case when the airport was experiencing a thunderstorm and the surface winds were highly variable. These accidents might have been averted if the pilots had had a more thorough knowledge of wind conditions on

TO ALL GUILD MEMBERS

EGATS
EUROCONTROL GUILD OF AIR TRAFFIC SERVICES

SPECIAL GENERAL
MEETING – „CONSTITUTION"

26th October – Maastricht UAC

Follow-up meeting – 3rd November – Maastricht **UAC**

ANNUAL GENERAL MEETING

24th November – Maastricht **UAC**

Agendas to follow

EGATS is You.
Its policies are dependent on **Your voice.**
Your contribution is needed.

and around the airport during the final approach.
The FAA has now concluded that a system of anemometers located around an airport could alert the controller, and in turn the pilot, whenever a significant wind direction and speed difference is detected between a remote site and the centrefield wind read-out, and would present a simple and readily available solution to a large percentage of the horizontal wind shear problems.
Accordingly a "Low-Level Wind Shear Alert System" test program will be evaluated for a six month period from the time the equipment is installed and operating at seven major airports in the U.S., including JFK. Selection of the locations was based on traffic volume, location, frequency of thunderstorms, history of accidents and user requests.
The system detects the presence of a possibly hazardous low-level wind shear by having it's computer continuously compare the winds measured by anemometers around the periphery of an airport with the wind measured by the centrefield anemometer. When a pre-determined level of wind direction and speed difference is detected between the centrefield and any one anemometer, the wind information received from that remote site is forced onto a Control Tower display panel accompanied by an initial aural alarm. In addition to the current wind direction and speed indicators in the tower, which will remain unaltered, the system displays centrefield wind in digital form at all times, with loss of the latter indicating system failure.
When an alarm is received the tower controller will provide arriving and departing aircraft with an advisory which includes the centrefield wind plus the remote site location and wind information that is displayed.
Since the anemometer locations are not all associated with specific runways, description of the remote anemometers will be based on an eight-point compass system.
Example: "SB304, centrefield wind 270 at 10, south boundary wind 140 at 30".

J.C.

Lodge or Egats? Statutes or Constitution?

Ever since the foundation of the Guild in the early Maastricht years, there have been problems about the Constitution, or Statutes as they were formerly called.
In 1972, it was thought that we had finally formulated good Statutes, meant as basic rules to ensure that the Guild was run properly. At that time, we obtained legal recognition in the Netherlands by means of a Royal Approval. However, IFATCA did not accept the way in which we were organised and rejected our application for membership. Therefore, a Constitution was laid down in line with the IFATCA recommendations, and so EGATS was founded. But the Maastricht Lodge still existed, although no longer as an active body.
Subsequently, in 1976, the Dutch Law changed; a Royal Approval was not needed any more, but the legal status had to be obtained via a notaries (solicitor's) office by the laying down and signing of a deed. Together with this, the requirements for a Constitution changed slightly.

The present EGATS Constitution was checked by a notary who could not agree with many points because of their non-compliance with the Dutch legal requirements. Therefore, a change is again necessary. The question has also been raised, what is supposed to happen to the so called "Lodge"? It has to be dissolved!
Consequently, two courses of action are needed and planned now:
1. Change of the EGATS Constitution (to comply with the legal requirements in the Netherlands)
2. Dissolution of the Maastricht Lodge
To reduce the number of Special Meetings necessary in this respect, the following is suggested:
A. To change the Lodge Statutes so that, (i) the name will be changed to EGATS and, (ii), that the old Statutes will be replaced by the EGATS Constitution.
B. To change the present EGATS Constitution in such a way that adherence to the Dutch legal requirements is reached without going outside the IFATCA recommendations.
To facilitate all the necessary changes, a combined Lodge/EGATS Extraordinary/Special meeting has been called for October 26th. Provided that, at this meeting, the proposed changes, which do not in fact change the basic concepts of the Constitution, are accepted, the normal Annual General Meeting, under the new EGATS Constitution, will be held on November 24th.

The internal regulations as they exist presently, combined with the Lodge Statutes, will be revised as well, and will be updated to become EGATS Bye-Laws. For simplicity, this will also be included in the October Extraordinary/Special Meeting.
So, we hope to be ready in October, and we believe that thereafter we will have a Constitution that suits all bodies and parties concerned.
Seeing you, hopefully, in October at the meeting,

For The Constitutional Committee,
C.F. van der Flier

Tids & Tourniquets

A few weeks ago, just before a night duty, the editor thrust his hand into the INPUT locker and it bit him – or something like that. One unkind soul suggested that he should have opened the door rather than stuff his hand through the letter-box. Someone else suspected sabotage by person or persons unknown who did not appreciate some of the humour in the magazine. Whatever the cause, the result was a badly cut finger, which left the editor dripping blood all over the locker room floor.
Worrying that the cleaners might be annoyed by the stains, which could have resulted in controllers being required to walk round in polythene bags, the editor rushed off to find something to plug the hole in the offending digit.
It was only then he discovered that there is no first aid kit in the locker room, operations room, canteen or anywhere else accessible in the main building outside of office hours. Not one bandage or pair of tweezers to be seen. The nearest help turned out to be in the guardroom. It was therefore unavoidable that, for 48 hours, evidence of the mishap lay in a trail down the stairs, through the foyer and across the car park to the main gate.
Due thanks must be given to the very helpful guard who

bandaged the wound right up to the elbow, giving the editor a good excuse for not making any keyboard inputs that night.
Nevertheless, the question must be asked, why is there no emergency repair kit available in the ops room for minor injuries, bearing in mind that there are sharp edges on some of the machinary plus a hardcore element of accident prone staff? There have, of course, been first aid courses arranged within the house. Could the answer be that there was the proverbial enthusiastic response from the ops room? (i.e., nobody turned up). Does the attitude exist that, since noone is officially qualified to use first aid equipment, there is no point in supplying it? Or is this, like so many other things, regulated by budgetary restrictions?
Imagine the scene. Before elastoplasts can be distributed, controllers must be checked out in their skills, using what is available at present . . . . . .

It was a normal working day in Maastricht UAC. In their workshop, two members of the maintainance division were tearing their hair out. They had just replaced the glass partition in the canteen corridor, but their labours had gone unnoticed by one bleary-eyed ATS assistant. He had walked straight through what he remembered as a gap between the wall and the door. With a resounding crash, the partition had gone and the gap had reappeared. For the maintainance men it was going to be a long hard day filling in new requisition forms.

In the corridors, several people were busy drafting office notices instructing staff how to use doors and forbidding the use of certain short-cuts. Morning shift personnel who had risked a cup of coffee from the machine were anxiously queuing for the only toilet not cordened off by the cleaners.

But for Roger Wilco, today was to be a little out of the ordinary. After only $6\frac{1}{2}$ years training, he was ready for his first checkout as first aid assistant to the Balcony Planning Controller. He entered the ops room to find it as peaceful as ever, and Roger was comforted by the howl of the airconditioning extractors, the chattering of teleprinters, the squeaking of unoiled chair castors and the pleasant clatter of stripholders being thrown into empty bins. The tranquility was only occasionally disturbed by a couple of controllers who still mistrusted the new-fangled invention called "telephone" and who preferred to shout to France Control direct. When Mr Tcheckov from the training section arrived, Roger was prepared.
Mr Tcheckov: "Alright, Roger, nothing to worry about, just carry on as usual. Was there anything special in the briefing today?"
Roger: "Not much. Staff are reminded to avoid hitting their heads on the protruding fire extinguishers – it could make them u/s. Anyone who does is only entitled to 80% of an aspirin. We've been advised to check before stubbing out cigarettes. Some of the ashtrays are missing from the consuls, which can lead to singed trousers, holes in tights and scorched knees – one of the hazards of smoking. Repairs can take up to four weeks and there are no spares."

As Roger seemed fully aware of the latest amendments, the pair settled back to await the first casualty. It was not long before a piercing scream attracted their attention. Miss Dongling had trapped her thumb between two full stripholder bins whilst trying to gently strangle a colleague. Roger grabbed his handbag and rushed to the rescue.

Mr T.: "That was well handled, Roger. Two stripholders as a splint, bound up with a teleprinter roll. Standard no-first-aid-box procedure. But why did you use blue instead of the red emergency colour?"

Roger: "Well, she's going on leave at the weekend – hitching home to England. I thought it might help."
Just then, there was a dull thud. A small group was gathering at the end of the planning suite. The supervisor had fainted. Actually, it was the flow controller's fault; because of a misunderstanding, an adjacent unit had asked the supervisor to make more than one decision per hour. Roger sent everyone back to their seats, left the supervisor on the floor, made a few phone calls and returned to his chair on the balcony.

Mr T.: "What were you doing? Why didn't you pick him up?"
Roger: "Well, as he's not responding to any calls, I treated him as a communications failiure. I've cleared other traffic away from him, warned other units, and I can't change his level, can I? I was using my initiative to suit the situation."
Mr T.: "But why didn't you give him the kiss of life?"
Roger: "Would YOU?"
Tcheckov cast another glance towards the prostrate figure, turned white and hurriedly looked away again. "I think you did all you could under the circumstances, Roger."
It was another twenty minutes, local and GMT, before Moorish Television returned from his vigil of staring out of the restroom window. He was complaining of deafness in his left ear. Roger took him to the BPC screen, turned the brightness up to full, examined the defective appendage and removed three minilite rubber earpieces from the orifice. "I will ask to work here if I can get promotion," growled Television, and rushed off to scrounge a coffee ticket from someone.
Mr T.: "I'm sorry, Roger, but I'm going to have to stop this now."
Roger: "Did I do something wrong?"
Mr T.: "No."
Roger: "Not enough traffic?"
Mr T.: "No, not that."
Roger: "Well what, then?"
Mr T.: "I'm going sick."

The IFATCA conference! How often?

This letter to all members of the Guild is written at the suggestion of the Board since next year IFATCA will have to decide on a policy of having either Annual or Bi-ennial Conferences. Obviously the delegates at the Conference could vote for one or the other with apparently no interest from the Members except that we would pay less expenses if we sent a delegation every second year rather than every year. So the membership has an interest in this problem and should be consulted. Personally I approve the status quo but then you might say so would anyone who attends the Conference while the others back home pay the bill.

Nevertheless my opinion is shared by those Members who have participated at their own expense, and some more than once, so there is more to the problem than expenses for delegates.
IFATCA has the avowed aim of recruiting all air traffic controllers, civil or military, wherever they may be in the World in the interests always of improving firstly safety. With fifty MAs it has come along a very great distance since the first Conference in Amsterdam in 1961. But it is still less than half as big as IFALPA and not nearly one third as big as ICAO so there are many recruits still to be found and many do not know of our existence. It was only when the Conference went to Canada that South Africa and the USA (unfortunately no longer a Member) joined the Federation possibly in the belief that as we moved out of Europe there was a place for them in IFATCA. In Melbourne we saw for the first time observers from Japan, India, Indonesia, Fiji (now a Member), Malaysia, Nepal and several African countries. You only had to listen to the news on TV in that part of the World to see why. Europe is hardly mentioned and IFATCA only made the news because it happened to be there. Thus we have a definite need to go out to Africa, to Asia to South and Central America to make ourselves known and to encourage the work of the few Associations there. Let us suppose that a decision had been taken in Australia to have bi-ennial Conferences. We would have been in Lyon in 1976, Nicosia 1978, Copenhagen 1980, Belgium 1982. Our first possibility of going outside Europe to show the flag would already have been 1984 and it would be the turn of the Century before we had been far enough afield to be known everywhere.

But what about present MAs. Year after year we hear of membership difficulties. These are much better discussed when the delegates can ask on the spot for facts and fill in the holes which brief summaries in the Circulars must leave. Delegates can judge just how and how much their support is needed or whether they need to give any support at all. But if support is needed even a short delay can be fatal and a two year delay might be impossible to catch up. Of course more and more work would be thrown on to the shoulders of an already overworked Executive Board and that would be bound to produce the effect of people refusing a further term of office thereby losing continuity at the very time when negotiation might require it. By throwing this extra responsibility on to the Board, many Constitutional changes might be required to permit them to carry out their work properly and the control of the Federation would almost certainly pass out of the hands of the Directors and thus further from the individual Members. We have been very fortunate in the Federation that elections have almost always thrown up the right man at the right time. We do not know if that will always be the case so control by the Directors is essential. Even taking today's Board, with 2 Swiss, 2 British, 1 Canadian, 1 Icelander we have a four MA group. Suppose that four MAs were against the stream and being human, Board members always took the part of their home Association first, the policy of the Federation could be completely against the wishes of the majority and let us suppose that even one Member of the Board acted contrary to the Federation's wishes, he could be elected for one term, refuse to stand for reelection and never be answerable to the Members. These are technical difficulties which would have to be faced.
But let us look at the work of the Federation which no-one can deny is for the benefit of controllers. It must be admitted that a number of MAs make no input to the work of the Federation except at Conferences. Their contribution would be halved. But often these MAs need to put in input at Conferences so that the Standing Committees can keep the world wide balance necessary in policy. Often this lack of input outside of Conferences is not their fault since their home countries have difficulties in other spheres than ATC, eg post, bank regulations, language difficulties which can be overcome at Conference but not in correspondence. Standing Committees can produce a vast amount of work but it serves no purpose until it has been adopted by Conference. Yet working papers tend to start appearing at the last minute before Conferences. Such would still be the tendency, human nature being what it is, between deadlines and so the work of Standing Committee's would remain in two years what it now is in one. Again half the effort, or policy must be taken on by the Board in all spheres. With a Board of the present size this would be impossible and an enlarged Board would also have to meet more often. This means more expense for the Federation. At present we may justify having only one non-European Board Member by the excuse of expense but could we really enlarge the Board with Europeans now in the minority and expect to continue with the expense excuse? Rather than enlarge the Board we might give more power to the Council but, as all Regions are represented, expenses for travel would be bound to increase. And it should be remembered that Councillors today are chosen having certain qualities required for the job. Other duties require other qualities. A good Vice President need not necessarily be a good President, so would we have to double Regional representation?

So are we going to save money on the Conference itself? The MAs will certainly save in paying expenses, that is to say those who are not subsidised by their Governments or otherwise. The Federation would save 5000 S.Frs every two years if we disregard losses on Conferences which have not happened since 1974. This saving, it will be proposed, will help towards a permanent secretariat. The budget shows the Secretariat as costing already 32000 S.Frs so we are not going to build an office overnight. Annual Conference in the Budget is shown as 16000 S.Frs but we should not be misled by that sum as it includes the expenses of the deficit guarantee, which is not paid when there is no loss, plus the expenses of Committee Chairmen and Secretaries as well as Standing Committee Chairmen. If there were no Conference there would nevertheless have to be a meeting of SC Chairmen with the Board, so we could only add the saving of the Committee Chairman and Secretary. But SC Chairmen now travel to Conferences at their Association's expense as part of the delegation: the Federation would now have to pay their travelling expenses.
Finally, what of the Host Associations? They would now have to give guarantees six years in advance. It is already difficult to gain a promise of Government support three years in advance without going to six. Admittedly, there would be more time to come up with a contingency plan if an Association had to pull out of hosting the Conference. But lets put it another way. We have so far never lacked offers to host the Conference. We have had 16 already (two in France) and there are five or six offers in the pipeline (Belgium for a second time as well as the UK and Ireland) but we should not forget that at previous dates there were offers from the Channel Is., Hungary, Rhodesia among others which were not accepted when a vote had to be taken. So Member Associations want the Conference since often it is a means of strengthening their

own Association. If we go to a two yearly system, even with the present Membership, only the youngest members could see all the MAs having held the Conference before they die and they'd have to live to be over 90. So much for using the Conference to strengthen the local Association!
Last but not least, as those who have attended the Conference will testify, the biggest loss would be personal contacts whether on the professional level or just merely meeting friends from all over the World. Delegations change a little each year, and would change much more every two years so again continuity is lost. About ten per cent of our Members have already attended Conferences in our brief history. Noone was deceived. Copenhagen next year should give a chance for even more participation, as will Belgium in 1979. Those who go to these Conferences will, I am sure, agree with what I have written but our decision must be clear before Copenhagen. So give the Board direct guidance on how we must vote. Let EGATS policy be for continuation of the present system.

E. McCluskey I.L.O.

Emergency - what happens now?

The second of a series of cockpit emergency procedures as specified in the relevent aircraft operations manual.

DC 10
Rapid Decompression
A rapid decompression may be caused by a structural failure or by a pressurization failure.
If the cabin altitude is increasing rapidly:
— Cabin Outflow Valve ..... CHECK CLOSED
If Cabin Outflow Valve is Closed
The pressurization source is inoperative or aircraft has a large leak:
— Verify pneumatic and airconditioning systems operating normally.
If unable to control rising cabin altitude:
— Call ..... DECOMPRESSION
If Cabin Outflow Valve is Open
— Standby CABIN ALT RATE Selector PULL/ROTATE DOWN
If cabin outflow valve does not respond:
— CAB PRESS AUTO/MAN Selector MANUAL
— CAB ALT Control Wheel .....ROTATE DOWN
If unable to control rising cabin altitude:
— Call ..... DECOMPRESSION
Emergency Descent
As the rapid decompression could be due to structural failure or pressurization failure, the captain must evaluate the situation considering structural damage.
Abrupt control inputs, the use of speed brakes or excessive speed increases should not be made until he has evaluated the situation and is satisfied that the aircraft is structurally sound. Known failures affecting structural intergrity and/or presence of turbulence may dictate other profiles and manoeuvres.
— Flight Engineer Calls "DECOMPRESSION"
If aircraft altitude is above 14000 ft:
— Captain Commands ....." EMERGENCY DESCENT

Captain
— Oxygen Mask ON/100%
— Cockpit Speaker ..... ON/VOL UP
— Autopilot ..... OFF or CWS
— Autothrottle ..... OFF
— Evaluate situation
— Throttle ..... CLOSED
— Speed Brakes ..... FULL
— Aircraft Attitude ..... 10^0 NOSE DOWN
— Speed Schedule ..... 82 - 85 M 320 - 350 kt
— Level off at 14000 ft or higher if required by terrain.

First Officer
— Oxygen Mask ON/100%
— Cockpit Speaker ..... ON/VOL UP
— Transponder Code 7700
— ATC ..... INFORM
— Min. Safe Altitude ..... ADVISE
— Seat Belt Switch ..... ON
— No Smoke Switch ..... ON

Flight Engineer
— Oxygen Mask ON/100%
— Passenger Oxygen Mask Switch ..... EJECT
— Cabin Altitude Warning Horn ..... PRESS
At 2000 ft above desired altitude: smoothly reduce rate of descent, use speed brakes as necessary for transition to level flight. Desired altitude is 14000 ft unless prohibited by terrain. When in level flight at desired altitude; asses situation and take appropriate action.

Doing the rounds

The following incident occured at a well-known international airport. To avoid embarresment, fictitious callsigns are used.
A trainee controller working the ground movement frequency, was alarmed to see a Caravelle HPACC overshooting its runway turnoff. The trainee wanted the aircraft to turn around and leave the runway at the correct point. In his excitement he became confused, and the instructions came,
"HCC, make a 360 in your present position"
Of course, he meant "a 180", but the aircraft continued its line regardless.
"HCC, make a 360 in your present position!"
Still the aircraft did not respond.
"HCC, make a 360 turn NOW."

Just then, the telephone rang. The Voice at the other end was that of the light aircraft platform manager:
"I don't know what's going on up there, but there's a police Cessna, HPTCC going round and round in circles down here!"

New flight data system for Germany

Sperry Univac Defense Systems has been selected to provide a Central Automatic Flight Plan and Strip Printing System (ZKSD) for the Federal Republic of Germany.
The system will be used by the Bundesanstalt für Flugsicherung (BFS) to support air traffic control operations within the airspace of West Germany.
Flight strips will be issued periodically for each flight in progress as aircraft reach certain predefined checkpoints. Information for each flight is received from pre-stored flightplans and updated with current information. The flight strips are routed to the air traffic controller for use as a planning aid and a backup in the event of a radar failure.
The Flight Strip Generation system will use a SPERRY UNIVAC multiprocessor, the ARTS Computer, with a set of peripheral equipment including magnetic tape units, disks, high-speed printer and terminals.
The system will interface with MANNESMAN light strip printer and the AEG Telefunken communications system.
A software data management system is being developed using the ARTS executive as a baseline. A SPERRY UNIVAC 1100 system will provide program generation support.
The ZKSD System will be installed at the Frankfurt area control centre. The system will correlate all flight plan information for aircraft entering German controlled airspace. Correlated flight plan information will be printed at controller positions within the area control centres.
The system is scheduled for delivery in early 1978.
(Courtesy of Sperry Univac)

Kastrup ATC training facilities enhanced

A contract worth £ 139,000 to extend the capability of the ATC training simulator at Kastrup Airport, Denmark has recently been completed by the Ferranti Digital Systems Division.
The work involved increasing the number of simulator displays from 4 to 6 and adding a further two aircraft control positions to bring the system total to 7. In addition certain enhancements were incorporated in the software for the simulator's FM1600B computer enabling the total number of aircraft capable of being portrayed to be incre increased to 42.

The extension program includes a modification providing a graphical presentation in the bottom right hand corner of the blip driver's electronic data display. The picture he sees relates specifically to the aircraft he is handling and shows its relationship to the nearest navigational facility. He can now reply more precisely to questions regarding his position. The relevant feature in each case being the navigational facility closest to the aircraft being worked.
This is the first time in a Ferranti ATC stimulator that the function of the display has been extended to include graphics, and it is believed to be the first time that this particular feature has been introduced anywhere.
The air traffic control simulator was installed at Kastrup Airport by Ferranti in 1972.
The digital ATC training simulators are designed by Ferranti so that they can subsequently be easily adapted to provide new operational training facilities as a user organisation's requirements change.

Internal affairs

Courses and Refresher Training
The IFACTA viewpoint;
"As a means of maintaining a worldwide air traffic control service of the highest standards, controllers should participate in a refresher course (training and simulation designed to ensure a maintainance of knowledge and abilities with respect to all standards, procedures, equipment and techniques currently in use) every year while actively engaged in control duties.
As well as programmed refresher courses, adequate courses of instruction should be provided prior to the introduction into the ATC system of new or modified equipment and changes to standards or procedures which may require additional skills or changes in operating techniques.
Fam. Flights. Licenced and trainee controllers should participate in familiarisation flights each year.
Supervisory and Management Courses: Controllers who are charged with responsibility for indoctrination or on-the-job training of ATS personnel, should be provided with adequate courses of instruction in order to discharge these additional responsibilities.
Prior to appointment to a supervisory or management position, controllers should be provided with suitable supervisory and management courses which meet the requirements of the new position.
Career development courses should be provided on a programmed basis to prepare controllers for non-operational air traffic control management positions.
Controllers should also be provided the oppor-

tunity to take courses which will prepare them for employment on other duties in the government service and, if requested by controllers, for employment outside the government service".
In the last months several members have asked the Executive Board to approach management in order to clarify the situation regarding the allocation of personnel for courses, Brétigny simulations and other external missions.
The Board, like yourselves, agree that the present situation is not as it should be and have asked management to change the procedure.
We are sure the allocation of personnel is made fairly but feel that -

1) all courses etc. should be publicised beforehand
2) when selection has been made, the list of names of those participating should be published for **all** to see
3) where possible the younger controllers and senior ATS should be considered for management/refresher courses
4) all controllers who participate in on-the-job training should attend an instructors course.

For information: a full list of courses given by INSTILUX is available from the Guild EB.

Eurocontrol guild of air traffic services

Executive Board Nominations
Due to the resignation of Mr. J van Eyck from the E.B. as from the November General Meeting, candidates names are required for election to the E.B.. The election will be held at the Annual General Meeting, 24th November 1977.

Executive Board Election
Candidates name . . . . . Guild No . . . . . .
Proposed by . . . . . Guild No . . . . . .

Please return to Internal Secretary, A, van Ommen, before Oct 20th

The 1978 IFATCA Conference
Names are required for those wishing to participate in the 1978 Copenhagen Conference as part of the official Guild delegation. From the names received, the E.B. will appoint the Director, Deputy Director and Delegates. Those wishing to participate on an Observer basis and not as part of the official party are also requested to give their names.

IFATCA 1978
Candidates Name. . . . . Guild No . . . . . .
Proposed by . . . . . Guild No . . . . . .
Observer/Official + + delete as necessary

ROGER WILCO "SPACE AGE"