INPUT

ANNIVERSARY ISSUE

10

EGATS

INPUT

the magazine of the
EUROCONTROL GUILD of AIR TRAFFIC SERVICES

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PRESIDENT'S MESSAGE

J. Gordts

Looking back on these first ten years with the Eurocontrol Guild of Air Traffic Services and having discarded all nostalgic thoughts about the longgone joys and miseries which traditionally seem to accompany the initial phases of all human enterprises, I remain attracted to one particular aspect which makes EGATS unique - its truly international character.

EGATS has since the very beginning identified itself as an International Association: it was founded in the Netherlands but has branches in 3 different European states. It consists of members of various European nationalities and last but not least, it includes military and civil ATC staff amongst its members.

This international aspect was not always advantageous: in the early days we found ourselves in a "stateless" condition, in order to make our own household rules we had to borrow here and there from those whom we thought to be leading examples of well established organizations. Our entry into the professional ATC scene provoked a series of arguments which made us appear to be competitors rather than colleagues.

It is therefore a rewarding feeling to realize that those days are over and that within our own organization "Eurocontrol" as well as in the international environment we are now considered and valued for what we truly are: an international air traffic services association.

This international spirit is manifestly present in our daily activities. We have been able to establish world-wide contacts in all branches of aviation, we count many friends amongst national and international ATC organizations and our own members and board officials are continuously striving to improve this condition. In our own professional way we now have at last the assurance that we take part in the slow but sure process of building a new Europe.
The hardship and discouragements to be encountered on the way should not constitute an obstacle to our determination to succeed.

I use this opportunity to thank sincerely all those who by means of physical and moral support or merely by means of their membership have contributed to this first decade of EGATS ■

J.A.H. Gordts
President

Dr. Ing. H. Frhr. von Villiez

MANY HAPPY RETURNS

EGATS celebrates its tenth anniversary which equates directly for 10 years successful management of a professional organization within our Eurocontrol community. It means at the same time numerous activities and valuable contributions within the range of our operational obligations as well as at international level and eventually also in the social field.

Your Guild and in particular the many officials who have spent much of their time in board activities, have every reason to look back with pride and satisfaction. Many remarkable events come to mind, the most important of which is doubtlessly the recognition of EGATS as member of IFATCA, the International Federation of Air Traffic Controller Associations.

I remember with pleasure the great success in the two major "Controller-Pilot Forums" in the past, encouraging events to face confidently this year's undertaking on November 25th, 1982 when air traffic control and fuel economy will be the central theme. I do not only wish you an equally successful forum, but I confirm herewith the maximum possible support for the organization of it from the management of the centre.

Every community is predominantly dependent upon the participating human beings, their intentions and determination. Active participation requires devotion to the community and its obligations and it is for this that I present my anniversary greetings in the first place to all members of the Board of EGATS. Knowing that EGATS' fate is closely linked to the future of our Centre, I conclude in saying wholeheartedly:

"Many happy returns!"■

Dr. Ing. H. Frhr. von Villiez

Director Maastricht UAC

INSTITUTE OF AIR NAVIGATION SERVICES LUXEMBOURG

Adrian Enright

Since its establishment, one of the chief concerns of Eurocontrol has been the training of the air traffic controllers whose efficiency is basic to the Organization's purpose.
A specialised working group was set up to determine common educational and training requirements. Although most ICAO Member States have their own controller training schools Eurocontrol saw the need to standardise this training of controllers and also to convert a number of controllers to the automated air traffic control systems which were being developed. Thus, the Permanent Commission of Eurocontrol decided on the 7th December 1967 to set up the Institute of Air Navigation Services in Luxembourg.
Building of the Institute commenced in September 1968. The ceremony of the laying of the Foundation Stone was on 3rd April 1969 and the first group of students (Ab-Initio 1) arrived on 5th January 1970.

Situated in some ten acres of land, made available by the Government of the Grand Duchy of Luxembourg, on the Kirchberg Plateau the two storey building has an overall floor space of 3,400 sq.m.
The classrooms are pleasantly light and spacious and a large conference room which can seat 200 persons is equipped for film projection. Interpreter booths at the back of the conference room make it an ideal location for symposia, seminars and other scientific and technical meetings.
The Institute's principle activities lie in the provision of "ab-initio" (basic) training for air traffic controllers and the advanced training and specialisation of air traffic services personnel, in particular air traffic controllers, operations experts, engineers, technicians and programmers.

Three training departments were established in response to the need for specific training concepts geared to the requirements of three categories of air traffic services personnel. viz.
Department L1 - Air Traffic Control
Department L2 - Programmation
Department L3 - Engineering

A fourth department (Administration) deals with financial and personnel administration for the staff of approximately sixty. A language laboratory enables students to improve their English and aviation phraseology.

The first few years of the Institute's existence saw a steady growth in the number of students and in the variety of courses being offered. The spectrum of training techniques extends from the more traditional methods of classroom instruction combined with the relatively simple simulators used in Aerodrome and Approach Control training to more sophisticated methods utilizing digital computers capable of simulating the radar displays used in any air traffic control system which have particular value when providing specialist training for a customer. Training for Precision Approach Radar is conducted on a digital simulator developed "in-house" by Institute programmers and engineers.

The Institute has kept pace with the demands of the Member States and other aviation administrations from all over the world and has developed comprehensive training courses suitable for all those involved in air traffic services today.

Management Studies and Instructional Techniques cater for all those involved in the supervision and training of air traffic controllers. For middle and senior managers in all branches of aviation the Institute organises International Seminars on subjects that are of concern to the aeronautical profession.

The expansion of automation in today's modern air traffic control systems has created a series of courses designed to cover all aspects of automation from automatic data processing for ATC to functional analysis and statistical studies including programmer training. Courses are also available for ATC engineers on such subjects as display techniques, processing of radar signals etc.

By the end of 1981 more than 8.000 students from 65 administrations had attended courses at the Institue. For the future, a programme of re-equipment to provide a new radar simulator is well under way. Construction has already started on the extension to the main building which is required to house the new equipment. Target date for full operational training is 1st January 1986.

The Eurocontrol Institute, in the fore-front of air traffic For experienced operational controllers there are courses in advanced developments in aviation and refresher training. control training, will continue to provide the expertise and experience to today's and tomorrow's air traffic controllers.

Classroom at the Institute of Air Navigation Services in Luxembourg

N.V. Philips' Gloeilampenfabrieken

PHILIPS

It is a regrettable fact that two quite different functions are carried out under the name of Eurocontrol.

Most aircraft operators, certainly in business aviation, will first and foremost think of the international tax gathering function which is an important factor in the steeply rising cost of aviation.

Unfortunately, the operational activity as carried out at Maastricht U.A.C. attracts much less attention.

It is nevertheless, a most interesting development because air traffic control is traditionally a national responsibility.
In Western Europe, however, most states are small, terr-torially speaking, in relation to the aviation route pattern and most upper airspace flights are of necessity international ones.
The existence of Eurocontrol as an international ATC operation supports our view that, in Europe and possibly elsewhere, the optimum system boundaries for aviation activities do not necessarily coïncide with state borders.

For business aviation there is an additional factor.
Most airway patterns favour the capital-to-capital route patterns of the airlines and the resulting "traffic windows" which are established for passing responsibility from one nation's ATC unit to another will be placed where such route patterns cross the national boundaries.

Business aircraft most frequent-ly do not operate from capital to capital but from and to those airports that are most con-veniently located for the particular business trip.

Their route distance tends to be penalised when they have to pass through a limited number of "windows" which are not in their direct line of flight.

International agencies such as Eurocontrol offer the potential of overcoming this problem and therefore we watch its development with great interest.

Fortunately, many controllers will give us all possible help regardless of what system they operate in and we thank all of them for their cooperation.

Special recognition, however, must be given on this occasion to the celebrating members of EGATS, our friendly voices from Maastricht.

N.V. PHILIPS' GLOEILAMPENFABRIEKEN,
AVIATION DEPARTMENT,

J. Velenturf
Vice-chairman-International
Business Aviation Association
(Europe)
Manager-Philips' Aviation Dept.

"I HAD A DREAM"

by eurospero

Who said that? Was it Maurice Schuman, Martin Luther King, Abba, you or I?
Right each time! All have said it some time or other. But for those who chose the Eurocontrol road to European life, where the runways (if we had any) would be paved with gold, the dream has faded.

We dreamed of an expanding International Organization with several ATC Centres in Western Europe, with personnel enjoying a career that could have enabled them to progress from operational to planning or managerial functions, for which they could have been motivated and rewarded. Unfortunately, the tide of European enthusiasm has gone out and Nationalism is returning. A new Eurocontrol Convention awaits full ratification, converting the only example of a truly multinational civil and military ATC organization, to a function of service provider, deprived of executive power.

Gone in addition to the dreams, will be the spin-off benefits enjoyed by the first generation of Eurocontrollers. The camaraderie and pioneering spirit we shared, when charged with new and challenging tasks and the satisfaction derived from achievement. The international repertoire of jokes and anecdotes, told whilst "winding down" at the post-duty mortem in a local bar. This was not such stuff as dreams are made on - they were reality to be remembered, except by cynics.

Controllers, being only familiar with a real-time working environment, are often intolerant of those who can indulge in day dreams whilst pushing their work into a pending tray But

controllers too are dreamers. A phenomenon of the old analogue radars was the hypnotic effect of the rotating trace. Thankfully, gone are the days when controllers could occasionally be seen to nod sleepily before their screens, in low traffic periods.

For many, however, promotion is the forgotten dream. In a shrinking organization, vacancies at higher levels are few and the ambitious can only await the dead mens' shoes.

But away with black thoughts! Our environment of time and space can conjure up exciting dreams of exotic places to which our aircraft are destined. What romance. Air France to Paris, Austrian Airlines to Vienna, Varig to Rio or a hi-jack to hell or who knows where..... Who can have failed to feel that thrill of great uncertainty (or was it panic?) when, five thousand miles from home, with only a standby ticket, you arrive at the airline check-in desk, only to hear the spine-chilling word "overbooked".

But think positive! Let us indulge in more creative dreams! Existing today at the Maastricht Eurocontrol Centre, is an ATC system of advanced design and efficiency which is capable of further development and extension to many users. Let us then dream of the day when a political will to implement a new wave of European thinking and activity might emerge. Let us dream of a new era of controllers, pilots, planners and management working together in an environment of mutual trust and respect, each for the other. After all, it costs nothing to dream.
The dream holiday becomes a nightmare, but not one to be compared with that bad dream prevalent among ATC types - the collision.

Reducing airmiss statistics suggest a reduction of risk, but it is an operational hazard with which the controller has to live.
With such responsibility, no wonder his subconscious mind records so often the day-to-day details. In the nighttime clean routine of the brain stores, garbled details of events past are output in dreams and become again apparent reality, to disturb the deserved sleep of our midsummer night dreamer■

KLM

Royal Dutch Airlines

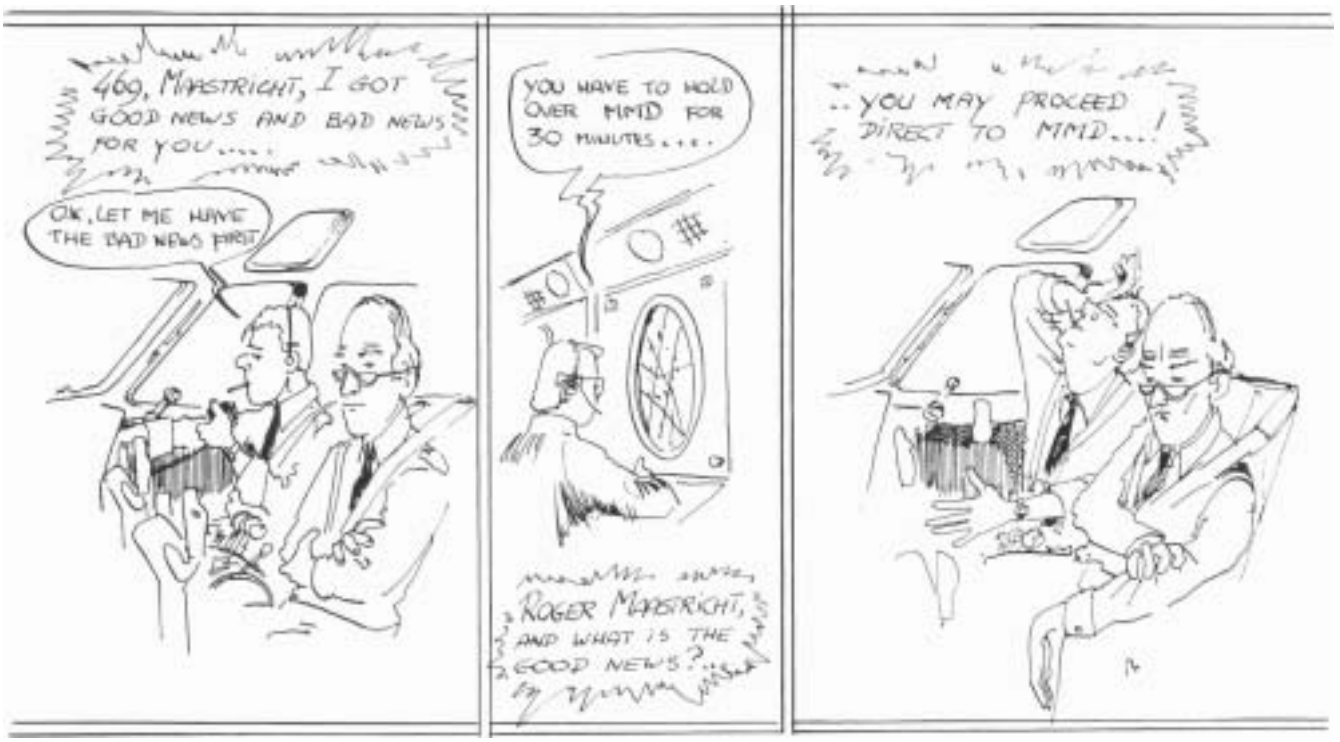
I would like to congratulate the Eurocontrol Guild of Air Traffic Services at Maastricht on its tenth anniversary.
The world of civil aviation within a world of communication.
It is our mutual profession to realise direct communication between millions of people all over the globe. In order to achieve that communication in a fast and reliable way, a skilful guidance of the many thousands of aircraft which populate the airspace daily, is essential.

Air Traffic Controllers effect the communication with and the guidance of all those aircraft, even during the busiest peak hours. Quite an achievement for which we, at KLM, have great respect.

Cooperation between our pilots and your traffic control officers is usually excellent and executed in the best of spirits. It is of essential importance to civil aviation. If that cooperation does not function optimally it has direct consequences on flight operations and punctuality, with dissatisfied customers as a result. Customers who travel or ship cargo by air form the basis of our mutual existence.

To you who guide and supervise our aircraft daily with great effort and expertise, I wish youlots of success for the coming years in a branch of industry which has become so essential to millions of consumers -- passengers and shippers -- in the communication between people.

Captain L. van Rijswijk
Head Flight Operations Div.
KLM Royal Dutch Airlines



SHORT-CUT SHORTCOMINGS

Stewart Ralston

As controllers we have in recent years been made considerably more aware of the desire from airlines for the most direct route available and of course the most economic flight level at which to fly.

At Eurocontrol Maastricht I think pilots who frequently fly in the airspace over which we exercise our executive function would agree that the service offered in this respect is of a very high standard considering the many additional factors existing.

The importance of fuel saving routings can be best illustrated if I quote from a paper by Capt. Grieve of Britannia Airways Ltd.* in which he states that at 1980 prices a saving of "5 miles or ½% saving of fuel amounts to £ 230,000" in operating costs taken over a year, and again that the fitting of Omega to their fleet provided a "minimum saving of 36 seconds per hour" amounting to a saving of £ 460,000" for this leading U.K. Independent Airline.

*ATC and The Economic Airline by Capt. B.S. Grieve, Deputy Chief Pilot, Britannia Airways Ltd.

A very simple example of the kind of contribution controllers make to this saving is the two minute short-cut in flight time we offer to almost all aircrafts flying from Michelsdorf on UA9 through Warburg which we almost invariably can route via Hamburg. The use of the word "almost" twice in the previous sentence is of prime importance because it leads me to the main point of this article

Over the years it has happened quite often that a captain flying that route who has received the short-cut on the previous occasions presumes that he has it again without being told so and sets off confidently towards Hamburg VOR thereby compriming safety and substantially decreasing the controllers life expectancy, because of opposite traffic on UG5.

A controllers duty is to conduct a safe and efficient flow of air traffic through his sectors. The emphasis is, and must remain, on "safe". And yet everytime we provide additional service by clearing an aircraft on a direct route outside airways or to a level already occupied by another aircraft, even when under the radar control provided by our superb equipment at Maastricht, we compromise to a certain degree the concept of total safety.

I think it is safe to say that as long as aircraft fly on airways at flight levels separated either vertically of longitudinally by ten minutes, and farther monitored by radar that the incidence of air miss would be reduced to zero. However, because of the density of traffic flying over Europe the application of this level of safety would be grotesquely inefficient, so we

operate a kind of "trade-off" system. For example any airliner flying off-airways, whatever the circumstances, has a slightly increase of chance of being confronted by military traffic in close proximity, or again a controller may accept two aircarft at the same level flying under radar or parallel headings five miles apart.
However suppose the autopilot fails, will the pilot and/or the controller realise in time to redeem a potentially dangerous situation? To overcome the chance of this happening should the controller work with eight miles instead of the minimum five? Or ten? Or fifteen?

According to Capt. Grieve's paper, achieving the Optimum Cruising Height has "the greatest single effect on fuel economy on jet transport aircraft". Perhaps the best illustration of Maastricht's contribution in this area is the acceptance, begun a few months ago, of internal flights in Northern Germany at their planned optimum level instead of a level restricted to 24.000 ft or below, as had been the case for years previously. This improvement drew a very quick response from Lufthansa in the form of a letter of thanks which circulated in the Ops. Room recently. One can safely presume that the saving for Lufthansa is substantial and welcome.
However, little comment has been made about the literally overnight increase in percentage traffic operating in a sector which could already "buzz a bit".
Certain national railway companies in similar circumstances would undoubtedly have been confronted with related "productivity bonus" claims.

Of more interest is the question whether or not total safety is again compromised slightly by the suddenly increased density of sector traffic.
Coming to optimum descent profile, this is an area where bureaucratic negotiation seems to have a greater influence than economic considerations. To take an example, it has been the case for years that inbounds to Amsterdam should be at FL260 level 15N.M. before RKN according to the Letter of Agreement. This restriction is required by the Amsterdam negotiations on the basis of, I believe, a further height restriction later on which the aircraft would not be able to meet if it was any higher at RKN.
And yet the reality is that controller to controller coordinationwith our colleagues in Amsterdam means that the vast majority of inbounds are accepted descending to FL260, under which terms I have observed that most aircraft cross RKN + FL300 descending.
Again quoting Capt. Grieve writing on the normal inbound restriction to Luton to be at 12.000ft. by Detling : "This clearance is 18 N.M. or 6.000 ft below the optimum profile and when the effect is multiplied up by the number of approaches made by us into Luton, the cost over a year is £ 82.290 of extra fuel burnt".

So we save a lot of airlines a lot of fuel by "bending" (or breaking) the Letter of Agreement with Amsterdam.
Suppose there occurs an airmiss 10 miles West of RKN at FL280 with a descending inbound and any other a/c, perhaps military crossing. The Amsterdam controller might reasonably defend himself by saying according to Letter of Agreement the aircraft

should have been at FL260, 15N.M. The Maastricht controller could reasonably say that he very specifically stated "descending to FL260" in co-ordination. I don't wish to argue which is the correct defence, only point out that whilst we contribute to the fuel saving economies of the users of Amsterdam Schiphol in this case, we do so with at least the risk of a nasty black mark on our career prospects.

It may seem from the above that I am advocating a"return to airways" combined with ultra-conservative control methods. Not so! On the contrary I am, together with most of my colleagues at Maastricht, committed to maximising the economic use of our airspace, but I would be a lot happier if I didn't feel that sometimes I am "sticking my neck out" for little gratitude or understanding from some companies■

FINNAIR

FINNAIR aircraft operate regularly in the Maastricht UAC airspace.

We have for many years suggested that there should be at least for the upper airspace a supra-national air traffic control system covering the whole of Europe a so called Flow Control system.

So far this has been accomplished only in a limited way. The Maastricht UAC is a brilliantly and effectively working section of Eurocontrol. We sincerely hope that similar control centres would be established in other parts of Europe.

We wish to extend our best greetings and thanks to the Maastricht UAC controllers for the excellent control service in the last ten years and do hope that the good cooperation between Maastricht UAC and Finnair pilots will continue in the future.

Sincerely,

Tero Mustakallio
Vice President Flight Operations

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 322D AIRLIFT DIVISION (MAC)
APO NEW YORK 09012

.....We fully support the objectives of EGATS and wish you success for the pilot/controller forum.

Sincerely

JOHN F. HILGENBERG, Colonel, USAF
Deputy Commander for Operations

AN OPEN LETTER TO COMPANY PILOTS

Ph. Domogala

Certainly you are all aware that of the operating costs of your aircraft,60% comprises fuel. At $60 per minute for a B747, the difference between a profitable flight and long term financial disaster.

The immediate solution proposed by your management is the purchase of those natty little on-board computers. These computers will tell you much, but they cannot advise you of the parameters which can render all computation useless:
- the density of traffic
- the flow control and en-route level restrictions
- the activation of military zones
- the efficiency of air traffic control

The only way to overcome such difficulties is by an open dialogue between those in the air and those on terra firma. In the last twenty years the responsibility for a flight has gradually been slipping from your hands and, understandably, you do not like this.
I do not know if these trends are reversible, but what you could do to help stifle them is to figuratively step-down and collaborate with those underneath you. And do this before Mode "S" arrives, which device will definitely reduce us all to System Operators.

You could also go to your management and convince them that Atc are not a bunch of bothering people and that to introduce them into your cockpit is not to introduce a contagious disease.

You could stress that visits to ATC facilities should be part of normal airline crew training.

If the result is a saving of fuel which helps to keep your company in profitability we will be quite happy. We appreciate a request for an intelligent direct route, but "Our computers tell us...." does not impress us.

Put the human factor back into the system before it's too late ■

PAST, PRESENT AND FUTURE

SOME REMINISCENCES, OBSERVATIONS AND PROGNOSTICATIONS

by

D. W. Watkins

It gave me great pleasure to be asked to contribute an article for this special edition of your magazine which is devoted to the tenth anniversary of THE EUROCONTROL GUILD OF AIR TRAFFIC SERVICES

As it is now some 40 years since I became a Controller, I have seen ATC grow from its first few faltering steps, to the all embracing and very professional organisation which exists today.

You may think that I have been tempted to compile a "History of ATC". You would probably be correct by so thinking, but that must wait for another day, and I will content myself by remembering the most important details of my early days in ATC, recalling the main points of my participation in the early days of Eurocontrol, and end with some thoughts of what may - or could - happen in the future.

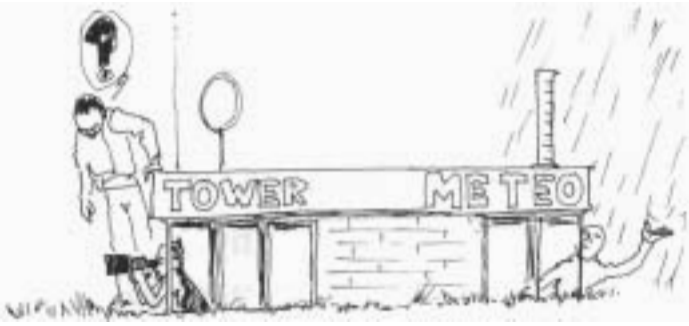
The early years 1939 - 1946

My introduction to - and first memories of ATC; go back to the military environment of World War 2, when, after passing a tough selection board, I was one of the many airmen selected to join Flying Control, (as ATS was then known in the Royal Air Force). Officer status was granted only when the course of training was completed satisfactorily, and looking back it is amazing to recall that the main subjects taught were almost the same as those taught today, i.e. Air Navigation, Meteorology, Communications Theory and Operating Procedures, (radar was not then invented) Radio and Light Beacons, Airfield lighting systems, and airfield circuit procedures. The pass mark in all subjects was 70 %, and we were not given a second chance if we failed !

The need for some type of organisation to control the arrivals and departures from airfields, many of whose circuits interlocked, became apparent in the early days of the War, as safety was difficult to achieve using only a "Duty Pilot" armed with a red and green Aldis Lamp, a Verey Pistol, and red and green cartridges, sitting at the end of the runway in a small caravan. So the Military

Flying Control service was born, and the training was intended to produce - in the most generous terms - the equivalent of today's Tower Controller.

The caravans were retained at the end of the runway, manned by a Sergeant Runway Controller, but the Flying Control Officer was situated in a new building known as a Control Tower. I have no idea how the word "Tower" was im-



spired, because the building was a square, two floored brick edifice with small windows rarely giving a view of the approaches to the runway. The tower also generally housed the Meteorological Office, and the Station Signals Officer, who was responsible for all communications equipment. In the early stages such equipment consisted of telephones and a teleprinter, and two high frequency radio transmitter/receivers one for wireless telegraphy and one for radio telephony. Certain more important Towers also had a R/T direction finding station housed in a small cabin close to the airfield and more or less in line with the main runway. The operator in the cabin with his equipment was connected to the tower by telephone, as also was the runway controller with these simple aids, and in such splendid isolation, the Controller was little more than a collector and distributor of information most of which was of little value to him in performing his duties as a Controller.

It was in such an environment that I was initiated into ATC, and as you may well imagine I was not unduly impressed - especially as my first posting was to an airfield used by fighter aircraft , with pilots who cared little being controlled in any way, and who had no means of communication with the Tower.

Many of you will smile at the thought of trying to perform or worthwhile job in such circumstances, especially those of you who joined an already highly developed service such as MINFAP/MADAP as your introduction to A.T.C. But in those early days we did give a service as we settled down to use our own ingenuity with the tools available. For instance, there still exists the International "Q" code, which we used with the W/T direction finder to carry out the QGH procedure. This enabled many aircraft to break cloud overhead an airfield with a cloud base of 4/500 ft, and to land safely by a low visual circuit. In bad weather it was not unusual for a Controller to carry out 10 or 15 QGH approaches in one shift. This was a good example of the service which pilots required, and most of the aircraft concerned were multi-engined, so gradually word was passed around and confidence in the new service grew.

As this confidence grew, so did the facilities available to the Controller begin to improve. You will be amused at the thought of an airfield searchlight, but at night time with a low layer cloud over the airfield, the Controller would point the illuminated searchlight straight up through the clouds to help the pilots to identify his airfield. This became a simple but effective beacon which could be seen for many miles when flying above cloud.

Gradually other aids became available, probably the first major improvement being the introduction of VHF/RT. Now the Controller could really begin to do a good job, at the same time being able to talk to the pilot and explain what was required to be done in the air. This circuit control with

large numbers of aircraft became much quicker and safer to operate.
As I mentioned earlier there were so many airfields, that the normal circuits partially overlapped. In such circumstances the two or three towers were connected by direct telephone, and coordination was made to allow arrivals and departures to be carried out more safely. In fact this was the start of Approach Control but we did not use that name. However, the use of the direct telephones, and the new ability to speak immediately to aircraft by VHF/RT, gave us a much wider ability to exercise safe control procedures which we usually worked out between ourselves. This was before the days of all embracing manuals of procedures for all circumstances, but we did produce a type of Letter of Agreement with our neighbouring airfields, so that at least all the Controllers know what they were supposed to do.

Very soon as direction finding facility was added to all airfields using VHF/RT, and two or three fairly adjacent airfields could carry out a VHF fixing service, by passing bearings to its neighbours; many ingenious plotting boards were made with local maps and pieces of string which could be pulled out to plot the bearing from all participating stations. Eventually this valuable service become nationally operated and many lost aircraft, usually low on fuel were "fixed" and given bearings to the nearest airfield for landing. The old QGH procedure became a ZZ procedure with aircraft using VHF/RT, as the direction finder was usually mounted in line with the main runway, and by the taking of frequent bearings a good Controller could perform the equivalent of a "PPT step down" procedure and have the aircraft break cloud with the runway straight ahead.

And so, little by little, things began to fall into place, procedures were written up nationally, but on a "Group" basis, and the Controller finally began to do a job which he felt was worthwhile, and to provide a service which came to be expected by pilots to help them when they were most in need of help. Therefore progress could be considered to have been made, and in the right direction.

Meanwhile, of course, scientific effort was being applied constantly to help aircraft navigators and pilots to navigate themselves more accurately. A multitude of MF radio beacons were placed throughout the country, many of them on airfields, and with the required radio facilities in the cockpit, a valuable fixing and homing service became available to aircraft, requiring no action on the part of the Controllers.

Eventually rumours became prevalent (although highly secret) of a new invention known as radar. We learned of new stations being built, particularly in the South East of England, with large aerial arrays looking out over the English Channel. These stations were supposed to be able to see aircraft approaching from the French, Belgian, and Dutch coastal areas, and actually report the number of aircraft involved and their heights !! All this information was telephoned to various Headquarters (particularly Fighter Command) where it was represented as moving target information on a very large plotting table. At that stage, of course, only very few people were given knowledge of the new system, and we working Controllers could not then appreciate how radar would revolutionize our task in the coming months.

But the first benefits of radar application were devoted to various aircraft systems - not to the Control service. The P.P.I. with rotating time-base was invented and proved to be the most versatile display unit ever used in an operational manner, actually in aircraft systems such as ASV (Air/Surface Vessel radar) for spotting shipping, submarine periscopes, etc;

H_2S used for direct downward scanning through cloud to show coast-lines, rivers, lakes, and built up areas such as large towns, and AI which was a slight variant (forward looking) used by night fighters to find targets after having been ground directed to the correct area of the air-space.

meanwhile the early warning radars on the south east coast of England were developed and Air Defence Control (as distinct from Air Traffic Control) was supplied with autonomous radar stations, with direct viewing P.P.1s, used by the Air Defence Controllers to direct fighter aircraft, by day and night, towards hostile targets, where the navigator completed the interception by using his A1 radar.

As all these developments proceeded, the Air Traffic Controllers continued to carry out his tasks without any great improvement in his "tools for the job". However, the developments first described themselves eased the Controllers' tasks, as positional information on aircraft became increasingly accurate, and additional lines of communication were provided to make use of this information.

About this time (1943) I was posted to a night-fighter station and it was here that I had my first real chance to experiment in the search for improved efficiency and safety.

The various improvements and inventions previously mentioned were of great value in the control of night-fighters (Mosquitos) when we established the required means of ground communication between the Air Defence Control Units and the Airfield Tower Control. This particular Tower was redesigned with an Approach Control receiving information from Air Defence which we plotted on a large scale map.

After their patrol duty our aircraft were returned to us at a pre-determined fixed point, and then transferred to our airfield VHF/RT fre-

quency for homing and landing. Large numbers of aircraft were involved and the new system did much to improve the safety and rate of landing, as aircraft were positioned (yes, even in those days) for a straight in approach.

After some 10 months of working with the night-fighters I was suddenly posted to a Radar Research Establishment where I arrived to find a multitude of projects in progress, but the one earmarked for my special attention was the ACR prototype. This had great potential, but was inadequate for handling more than one aircraft at a time. It was adapted from an ASV radar, the rotating dish aerial being mounted on a wooden structure some 4 feet high. The aerial was cabled back to a mobile vehicle which was actually a small control room with a six inch P.P.I. with range selection capability from 5 - 25 miles, and an aerial tilt joy-stick which could be employed to move the aerial in elevation to maintain contact during descent on the glide path which was, of course, controlled by the pilot. We generated our own power supply, and had a second vehicle for ground/ground and ground/air communications. So the Unit was completely self-contained and mobile, and I soon found it to be so reliable that the ground trials were completed in about two months. After some small modifications I took the Unit to 2nd Tactical Air Force in Germany, where I set up operations in Celle. After 3/4 months I moved to the Polish Air Force in Oldenburg, near Bremen. It was a great pleasure to have developed and put into operational use the first piece of radar equipment especially intended to assist Air Traffic Control.

This, for me, was the end of an era, as the war then ended and peace in Europe brought its own particular problems for ATC. I was determined to remain in the profession and was looking forward to the end of my Military Service, and the start of a new task in helping to develop civil ATC.

The Middle Years 1946 - 1963

After leaving the Royal Air Force in February 1946, I immediately applied to become a civil Air Traffic Control Officer.

As always, the wheels of officialdom turned slowly, but eventually I received instructions to report to Manchester (Ringway) Airport where I was to be trained and converted from military to civil Controller. On the day I reported my thoughts flashed back to my first day in a Control Tower in the R.A.F. To my horror I found Manchester to be very comparable. Aircraft were still being controlled by the use of the famous "Q" code using HF/WT, or by Aldis lamp. I almost packed my bags and went home again, but thinking about it very carefully I recalled that pre-war the few civil airliners were controlled by this means, and all that had happened of course, was that civil aviation had stood still for about seven years, and all development had been for purely military purposes. The only thing that had changed was the aircraft. Now we had a mixture of DC3's and C54's, with a few converted Halifax bombers and several twin engined AVRO Ansons and I could hardly believe my eyes to see BEA with a flect of JU 52S. The airfield had an MF Beacon and a flashing Light Beacon, and I remember thinking that the only thing missing was the searchlight mounted beside the Tower !! So nothing terribly exciting happened for two months which were spent learning local instructions. National legislation (such as it then was) and working for local control validation. Having achieved this first goal, I suddenly received a posting notice to London Airport (Heathrow), which allowed me to dwell with pleasurable anticipation on all the good things to come. In the long run they were a very long time coming!!

My arrival at London Airport was, to say the least, a strange experience. I reported to the Tower, which was the only permanent building on the site. It was on the North side of

the airport, beside the main London/ Bath Road, and it was brick built, three stories high with a balcony all round the central floor, which had a flat roof; on this roof was a very large greenhouse-type building - all glass with a 360 degree vision of the surrounding countryside. The airfield looked to be an enormous area of land, and resembled a large rubbish dump, builders yard and Motor Transport company all mixed up in an apparent state of utter confusion. There was mud and water everywhere, and here and there tents were created which housed the various contractors offices, and several airline companies. Everyone wore gum boots because of the water and mud, and there was no such luxury as a canteen. Fortunately there was a very old English Pub right behind the Tower, called the "Three Magpies". This rapidly became the meeting place for all the control staff, which greatly enriched the landlord, but kept us happy when off duty.
After a briefing on the overall position at the Airport, I learned that there was one runway just completed, with five more to come, in an undefined time scale. The aircraft movements were two per week; York aircraft of British South American Airways, which made the round trip to South America once weekly. As there were, by this time, about 30 controllers at L.A.P., you may imagine that we were not overworked, at least not on control duties. The greenhouse on the flat roof was local control, "London Tower", and below was the room with the balcony which became "London Approach".

Again much time was devoted to studying local procedures and getting to know the way round the acres of mud and water, where we eventually found signs of new works for underground tunnels. power stations, hangars for use by eventual customers, and sites for our transmitters and receivers for we were in the process of installing HF/RT and VHF/RT in the Tower, and the same, plus HF/WT in Approach Control.

New control desks were installed and eventually the whole place began to look suitable for the task it was to perform. The period of which I am now writing was around December 1946, and, about that time, engineers came to install an SCS51 on the main runway 28R. We had no idea what it was for, but after much enquiry we found it was an American Signals Corps Set (SCS) No. 51, and it was a landing aid, for aircraft suitably equipped, which gave both azimuth and glide path information. I was, of course, the forerunner of the I.L.S. system, and we understood that aircraft of American Companies which may eventually use the airport were intending to use this system. British Aircraft would use an improved S.B.A. system (Standard Beam Approach) which was also about to be installed. Word was then passed around that we were to have G.C.A., the system of American origin which came into operation towards the end of the war years. Then, in January 1947, I was informed that I had been selected as a member of the No.1 GCA crew for London Airport, and that I, together with three other Controllers and two Female A.T.S. (Assistants) were posted immediately to the RAF School of G.C.A. at Watton, for an eight week course of instruction. I detected progress at last and packed my bags again for the journey to Lincolushire. All this constant movement from one place to another, each of an entirely different nature, gave me great experience of learning and appreciating the very different needs for different circumstances, so I suppose that, although I began to feel like a nomad, it was all adding up to an increased ability to appraise new circumstances, and adapt means and methods as appropriate. This was to help me considerably in later years in furthering my career in ATC.

Because of very bad weather the G.C.A. course dragged on for about three months, after which I and my colleagues returned to London Airport,

where we found many changes. New airlines had moved into their tented offices and a prefabricated arrivals and customs hall had been built. Many airlines we had never seen before such as Pam-American; T.W.A., Qantas, American Airlines, Alitalia, and airlines with strange sounding names from South America. The aircraft types were all old favourites DC3, DC4, a new French aircraft the Languedoc, and many British war conversions such as the Lancastrian and liberator, which latter aircraft operated as the British transatlantic aircraft for many months.

Aircraft movements began to step up week by week, and we were constantly making proposals to try and improve the air environment around London, which at that time was to say the best simple, to say the worst - crude. There were no airways of course at that time but we had a Control Zone with entry points marked by MF Beacons. The Beacons formed a roughly circular formation around London and Northolt Airports, and - as I remember - they were situated starting from the South and going anti-clockwise - Dunsfold, Craydon, Gravesend, Brookmans Park, Luton, and Woodley. Aircraft departing from London were routed to one of these Beacons at two or three thousand feet, and aircraft inbound to London were allocated levels, at the same Beacons above three thousand feet. The problems of departing aircraft wishing to climb in the FIR after crossing the exit beacon were numerous and difficult when viewed from the safety angle, and random scatter plus VFR climbs were the main safety factors, as the FIR Controllers operated a purely Advisory Service.

To serve as a holding and stacking point for landing aircraft, a four course MF radio range was installed at London, and aircraft were fed into the range holding pattern at 500 ft intervals. The average bad weather landing rate using the range procedure was one aircraft per 16 minutes.

The G.C.A. crew tried to improve this landing rate but few companies would allow their pilots to make use of G.C.A. in bad weather, so we went in for a long process of pilot initiation; Sabena and KLM even sent training aircraft to London to train in the GCA procedures. Gradually, again by word of mouth, confidence grew, and I well remember the first month when 200 GCA approaches were made. By this time we had five fully trained GCA crews and we were providing a 24 hour service.

By the end of 1948 (or thereabout - it is difficult to recall exact dates) I was moved to H.Q. as staff officer radar, as I had constantly been making suggestions for improvements to the system.

My first task was to implement a chain of GCA Units at the major UK airfields, and eventually seven Units were deployed. GCA was now well accepted by most airlines as a major Approach Aid.
The situation at, and immediately outside, the entry/exit beacons of the London Central Zone, however, was still very unsatisfactory. In cooperation with the Telecommunications Directorate and the Experimental Unit we managed to get hold of two ex-American war-time MEW (microwave Early Warning) 10 cm radars one of which we installed at London Airport, where it was tried out for a lengthy period of operational trials under my direction as an extension of the GCA search radar. By using this equipment we were able to identify aircraft at the exit beacons and give them a safe climb to cruising level. Similarly inbound aircraft were identified at about 100 miles range from London and given a radar controlled entry to the Control zone, with, whenever possible a direct hand-over to GCA. This was the first application of radar to en-route civil aircraft in the World, and, following the very successful trials, the service became operational in early 1950.

Meanwhile, work was proceeding on the Airways Plan for the U.K., and as radar had now proved its worth in the F.I.R. and Central Zone, I was moved into a reconstituted Airways Planning Section where I continued plans for the further application of radar to the general ATC task. The result was the setting up of the Epsom and Watford holding points (on range legs) with a G.C.A. feed to the runway either by the P.A.R. element of GCA, or by ILS monitored by P.A.R. You will recall that using the range let-down procedure, the average landing rate was one aircraft per 15 minutes. By the compulsory use of GCA direction in the landing pattern, I guanranteed a three minute landing rate. The airlines and airport management were very sceptical at such an increase in landing rate, but on the afternoon we introduced the new procedures - a Friday afternoon at 1600 hours - we landed 17 aircraft in 55 minutes, and only stopped then because there were no more arriving aircraft for some 30 minutes. There were many red faces amon the airport management staff, as the airport north apron was blocked by aircraft taxying in from all directions, and departing aircraft could not find a way out to the runways. Having completed this task I moved to the ATCC - which was then at Uxbridge - and later moved to the new Centre at London Airport. Here Airways Control became fully integrated with London Radar. I spent about 3½ years working as a Procedural and Radar Controller, always noticing the difficulties which beset the controllers, and making a note for future action to improve the situation. Towards the end of this period the old wartime MEW radar was replaced at London by a Marconi S 264 A. This was a big improvement, as rain clutter was no longer a worry. In order to increase radar cover particularly on Airway Amber 1 at Abbeville, we received permission to use a cabin in an Air Defence Radar Station on the South Coast of England, and after a while I went down to this station to see what was its maximum capability in assisting the sorting out of the heavy traffic on this main entry point from France to the U.K. Experiments carried out there with the Air Force also led to a first small joint operation, and in the fulness of time the J.A.T.C.R.U.'s were developed. After a further six months I was recalled to the Ministry H.Q., and back to the planning task. This time the task was to be the introduction of Automation into the U.K. ATC system, and its integration with Military A.T.C. which was viewed as having top priority. Plans were made for the introduction of Flight Plan Processing, to be followed by Radar Data Processing, and then the integration of the two forms of processing into one system.

On January 8th, 1960, there had been set up in Paris (Orly) a "Bureau d'études" to study various A.T.C. problems in Europe, including the probable introduction of automation. I immediately saw the possibilities of a far reaching task to be carried out in Europe, and I was impressed by the realistic interest which Governments were beginning to show in this truly international problems.

Although I was interested from the outset, my own Ministry had yet one more task for me to undertake.

In view of the work already completed towards the plan for automating Civil A.T.C., the government decided that as the Air Force had a similar need for Air Defence purposes, the two projects should be planned by an integrated staff of Scientific experts, Air Defence Experts and one ATC advisor. This a Group (called the Facilities Group) was set up at the Royal Radar Establishment, Malvern to carry out this task, and the time allowed for the project was to be 3 years. I was again promoted and joined the Group as the civil ATC advisor. I was also given a

firm promise that on completion of the task I would be allowed to re-apply to join Eurocontrol.

My 3 years at Malvern proved to be of tremendous value to me personally, as I was working with some of the most famous "Boffins" in the R.R.E. I learned much about basic computer technology and system design, and they learned much about ATC, so the time was a long period of learning and designing/planning on both sides. The task was completed in the time allowed and the usual large report was prepared. The system, in its outline, was also given in presentation and demonstration form to Eurocontrol. I was asked to stay on and join the implementation team, but I declined and reminded my superiors of their promise to me at the start of the project. I was therefore released to join Eurocontrol on January 14th, 1964; a day I shall always remember.

The Final Years: 1964 - 1977

I arrived at Eurocontrol H.Q. in Brussels on January 14th, 1964, at about 1600 hours. It was snowing heavily and was bitterly cold, but the welcome was warm, and I met numerous old friends that I had not seen for many years.

I was posted to Division 0.1 (the policy making Division) and started, once again, to find out what had already been accomplished, by whom, and with what objections. It was very essential to learn what had happened while I had spent my 3 years working at RRE Malvern, completing the plan for Linesman/Mediator.

I found that the Bureau d'Etudes, which had been my original source of interest when it was established in January 1960, had been taken over by, or integrated with, the Eurocontrol Association on April 1st, 1961, and was provisionally installed at Orly. I remember thinking that April 1st was maybe an unlucky day to set up such an Association ! The Experimental Centre had been established on October 1st, 1962, and the Convention, giving birth to the Eurocontrol Agency, as we know it today, had been signed on March 1st, 1963. It was also interesting to read Directive No. 1 of the Commission which related to the drawing up of Bilateral Agreements "with a view to providing Air Traffic Services in Europe in airspace entrusted to the Agency by Member States of the Agency"

My enquiries showed that at that date Eurocontrol was controlling nothing, but was "planning for the future", so it appeared that Member States were not exactly rushing to pass over their problems to Eurocontrol, although Decision No, 2 of the Commission, signed on October 7th, 1963, had determined the airspace within which Eurocontrol would eventually provide service. I remember thinking therefore, that my arrival in Brussels on January 14th, 1964 was probably fairly good timing on my part, having missed the preliminaries, but arriving in time for the action !

Very shortly after my arrival, I was delighted to hear, on February 28th, 1964, that a decision had been taken to set up a Eurocontrol UAC in the Netherlands. (I was not to know, at that date, of my eventualinvolvementin the project).

Meanwhile, I was very busy in Division 0.1 joining numerous working parties and writing many papers, and wondering when we would control something in real earnest, if that was to be the objective.

As I was so busy pen-pushing one important item escaped my attention for quite a long time after it took place; but after some months, I learned that on March 3rd, 1964, Eurcontrol had taken over the responsibility of running the Brussels UAC. I have wondered many time since then whether it had been purposely kept quiet or whether we were proud of our first task in the Control business !!

Meanwhile I was very busy working in, and producing papers for, the SSR working group, and I was eventually charged with producing a paper detailing the guide lines for an automated Air Traffic control Centre.

It is of no interest to you to go into great detail of my early days with the Agency, but I will continue to story with my move into Division 0.3. This Division was charged with designing the operational system and preparing for operation a fully automated UAC at Maastricht.
The first task of the Division (which was just completed as I joined them) was to produce an outline description of the System we intended to develop, in the form of an Operational Concept. This was to be distributed to European Industry, but first it was circulated internally for comment. There was much comment, and the document was then re-written in its finite form, and distributed to all interested industrial organisations in Europe.

The document created great interest and many meetings were held with various major industrial organisations, discussing and/or explaining our requirements. The purpose of this document, of course, was to give them time to consider our ideas prior to eventual tender action for a system later to be written up in much greater detail.
Meanwhile I visited the USA to see how they were progressing with their automation plans. As usual they were very frank and we recorded all their warnings of the things not to do, as they had tried them and failed. They were not only endeavouring to automate the ATC Centres, but also their tower and approach controls - a really tremendous task. In addition they were forced to automate an existing complete national system; we were starting with nothing, and were able to plan for full automation of the system, in fact a system based on automated processes, which left us largely unfettered at regards the needs of existing systems.

On returning to Brussels we sat down to discuss, argue, suggest, and eventually to write up the "MADAP Plan", which was intended as a main document for Tender purposes.

There was now a wonderful sense of anticipation among all the Operations and Engineering Staff who were to produce the plan for MADAP. Enthusiasm produced new thoughts and the level of this enthusiasm never lessened. Tenders were called for and eventually to consortium selected to build the system was chosen, the contract being awarded on December 19th, 1968. The UAC building, of course, was already going ahead, the foundation stone having been placed in position on October 4th, 1966.

There now followed a period of intense activity concerned with programme definition (which took nine months work for 30 people - a mixture of Eurocontrol Staff and others from the Consortium) - and the resultant document ran to 800 foolscap pages - truly a monumental task.

Meanwhile the System Design Group was in almost constant session, and then the Console Design Group was formed, of which I was made Chairman. Its task was two-fold - first to design all the required consoles from a minimum number of modules, and secondly to prescribe the layout of the Operations Room.

In order to prepare for the great day when the Brussels UAC would move to Maastricht, I had already been put in charge of the UAC, and I remember arranging to meet the Controllers at the Airport, to hear their many complaints and to try and get to know them. Perhaps because I was a stranger to them, about 85 % of the total staff turned up at the Meeting. The normal Belgian hospitality was well to the fore, and much talking was intersporsed with much beer drinking ! I think we went forward together from that night, and met all our difficulties with a smile and a firm intention to solve them. Incidentally, if my memory is correct, this meeting lasted for approximately 4 hours.

Very many people were of the opinion - at that time, - that controller acceptance of an automated system would be a major difficulty, as it had been in the USA. I did not share this opinion, because I was aware that the whole system had been built around the needs of the Controllers. happily due in no small measure to the total dedication of the Training Section, we had no difficulty. Even the older controllers, who, it was said, would be difficult to convert, were, by their loyalty, perseverance, and enthusiasm, some of the quickest to accept the great assistance which automation could give to them.

As we progressed towards our objective, the Director was appointed, and the four Maastricht Divisions were set up and staffing commenced. My Operations Division began to work towards the ultimate objective, and then a cruel blow of fate befell me personally. I suppose the constant pressure of work to meet schedules, and the almost daily journeys to Maastricht extracted their toll, and I suffered a severe heart attack. Once again the overwhelming loyality of the Staff expressed itself in so many ways, and I recovered sufficiently to be back at work (mornings only) after about three months, gradually increasing the number of hours worked per day.

There is really no need to recall the events from then onwards. Briefly, we went forward, all Staff and Management, determined on complete success, and that success should be reached on the target date. The world was amazed that we did it, but always we were quietly confident, and we put MINFAP into operational service on February 28th, 1972.

The following years saw MINFAP itself develop while MADAP was being quiety implemented and tested such as no system has - I am certain - been previously tested. We therefore went confidently step by step, and - again exactly on target - we brought MADAP (Brussels Sectors) into operational service on October 1st, 1973.

And so, I, personally, had achieved my ambition to help build an ATC system worthy of the Controllers whose daily task is one of difficult decisions, complete concentration, and devotion to duty; something which could never have been remotely dreamed of in those early days which I described in the first paragraphs of this article.

There followed in orderly fashion the introduction of the Hannover Sectors, and the German Air Force Sector, all these things proving to the world that the enthusiasm of all grades and all professions - Controllers, Systems Division Staff, Engineers, Administration, and top level management can overcome all difficulties if the objective is a true and sincere one, and that in such cases these results can be obtained in spite of changing governments, political indecision, and the need to keep within the confines of a strictly controlled budget. One cannot help reflecting that if such cooperation and loyalty could be applied to many other aspects of life in Europe, the dreams of people like Mr. Schuman would have progressed more quickly and more equitably over the last few decades.

This part of the story of my recollections must now end, but once more on what was, for me, a sad note. By July 1977, my health had weakened considerably, and I was forced to retire on medical grounds. The skill and devotion of another fine body of men and women - the heart surgeons - gave me new life and repaired the ravages of my previous heart attack, hence my ability to write this somewhat lengthy but still incomplete series of recollections over some 40 years. I hope they are of interest to the younger members of the ATC profession who missed those years of "once upon a time", but let me assure you that they are not Fairy Stories, but really happened in the days before computers, and electronic displays or even before radar was invented.

What does the Future Offer ?

It has been said that:

"Young men have visions
Old men have dreams"

If this be true, and I am inclined to believe that it is, it should really be the younger members of our profession who are having the visions. But that would admit that my visionary days are finished and that therefore I am left only with my dreams. But remember that those dreams were also - to me - once visions of a magical future, which to a very great extent have been realised. So I think I may - with a modicum of trepidation - gaze into the crystal ball and imagine what the next two decades may have in store for Air Traffic Control.
In the technological field there need be no barriers to the development of a perfect system, of that I am sure. The only things which will prevent such a perfect development will be the everlasting failure of governments, individual politicians, and high-ranking civil servants to agree first of all on the type of development, and secondly on how much can be afforded to pay for it.

As one looks around the world at the vast sums of money being spent on weapons of destruction, such as rockets, bombs, warships, fighter and bomber aircraft, one could ask what would happen if all Governments would contribute one tenth of one percent of their Defence Budgets to a Civil Aviation Development Budget, for world wide application. This need only be a "once and for all" contribution, and would produce an enormous sum of money.

After all, the modern aircraft is without doubt the most widely used method of international travel, so all nations and all people would benefit from the development.

Any system would need to include both ground and air components.
The heavy old problem of flow control could be solved overnight, but at a great price.

If such a development could be applied, in the first instance to Europe and parts of the near East, the result would be dramatic.
Air Time Tables must be stored regionally in rapid access stores.
All airfields despatching traffic to the Upper Airspace must be connected by computer link to their controlling ATCC. The ATCCs must have the most modern processing and storage equipment and they in turn must be directly interfaced with the computer complex at the UACs.
The process of conflict prediction by flight plan processing would commence as an aircraft taxied out for take-off, when the flight-plan would become live.
At the time of take-off, ATD would be inserted at the airfield and the detection search through the first two UACs along the route would be carried out. When airborne the data link from air to ground would constantly update the flight's progress by reference to the aircraft's own navigational system. All this would be highly accurate, and would be based on flight-plan only !

In Europe 3 or 4 monitor Centres, probably twice the size of the present Maastricht UAC would watch progress by special Flight Plan Conflict Displays. Conflicts would be automatically transmitted to the Radar Data Processing Systems, and the Controllers, at the next two UACs along the route of flight. The UACs radar conflict detection system would look at the problem from its own lower separation standards, and would assume Tactical Control only when required.
This would be the perfect Planning and Executive Control System, one system only for the whole of Europe.

Impossible you say !! Never admit to impossibility. Another twenty en-route radars, transmission of information by special ATC satellites, rapid digital air/ground links, operating in both directions, more Eurocontrol operations UACs from Maastricht through Europe to the Near-East, and the job would be entirely feasible.

All that is missing is the aforementioned will of the governments, politicians, and high-grade civil servants to agree - the technology is available, the controllers are, or could be made, available; the world is waiting for a bold declaration of intent to build a safe and expeditious system at great expense, but with great benefits to all.

Such a system must be operated supra-nationally, and Eurocontrol already has the mechanism and the expertise to take on such a task. Surely it is a vision worth praying for, and paying for.

Let us work towards this through the European Parliament, but not in its present form. What we need - in fact what we must have - in all Parliaments are men and women of expertise, who will not be side tracked by those senior civil servants in all National Administrations who are intent in looking after their own personal positions and interests and those of their colleagues, rather than taking the much broader view of how they can contribute by applying their expertise to the problems of a European integrated Air Traffic System which operates from the airfield runway to the highest Flight Level in the UACs. Then we may make the progress we all wish to see in the future, with a fully automated, fully integrated system on the ground and in the air, bringing safe and expeditious movement of air traffic for the benefit and prosperity of all.

This is not a dream or a vision but a real feasibility within the next decade.

The tools and technology are available. Let us put them to use before another opportunity flashes by to rest for ever in someone's "Pending" tray■

NLM, (Nederlandse Luchtvaart maatschappij)

OUR FRIENDLY DOMESTIC EUROPEEN

It is very likely that few of our overseas readers have ever heard of NLM, yet this airline is perhaps the most efficient "international domestic" airline in Europe. Their network includes not only the traditional internal feeders services in the Netherlands, but also an extensive international network linking Amsterdam, Rotterdam , Maastricht and Eindhoven to major European cities.

NLM is a daughter company of the Dutch airline KLM and as such maintains the responsibility of the "feeder" network between Amsterdam/Schiphol and Enschede, Groningen, Eindhoven and Maastricht.

They commenced operations on the 29th August 1966 with two leased Fokker F27 "Friendships" serving only internal routes, the intention being to open up Schiphol airport to the Dutch travelling public living

THE HOPPERLINES

outside the complex of Amsterdam, the Hague and Rotterdam. Domestic passenger traffic has now stabilised at around 90.000 per year.

The international network was conceived with the business-man in mind, aiming to fly him out to business in the morning and back on the same day, providing a punctual and reliable link between regions of industrial acitivity.

The first international route was commenced in 1974 from Eindhoven to Hamburg, later the London route was added and now in 1982 NLM serves 13 European destinations from six Dutch cities.

The NLM fleet comprises 8 F27 Frienships of which 3 are the MK500 "wide body" interior version, and 4 F28 Fellowships for purely inter-national routes.

With an eye to establishing their own identity, especially in foreign countries, NLM introduced in 1976 the name "Cityhopper".

Today the NLM fleet flies nearly half a million passengers per year. Their aircraft are also available for ad hoc charter. Recently they commenced in collaboration with a group of travel agencies and tourist organizations in promoting special tourist trips to destinations served by their international network.

Whilst people of the Netherlands and regular users of the airline are no doubt aware of the quality and efficiency of NLM, we hope that this necessarily brief account will project that awareness farther afield■

Amsterdam/Antwerp **35 minutes,** Amsterdam/Basel **100 minutes,** Amsterdam/Belfast **90 minutes,** Amsterdam/Birmingham **65 minutes,** Amsterdam/Bremen **60 minutes,** Amsterdam/Brussels **45 minutes,** Amsterdam/Dusseldorf **40 minutes** (F28), **50 minutes** (F27), Amsterdam/Eindhoven **30 minutes,** Amsterdam/Enschede **35 minutes,** Amsterdam/Enschede/Groningen **70 minutes,** Amsterdam/Groningen **35 minutes,** Amsterdam/Guernsey **80 minutes,** Amsterdam/Jersey **80 minutes,** Amsterdam/Eindhoven/Maastricht **60 minutes,** Amsterdam/Maastricht **60 minutes,** Amsterdam/Rotterdam **20 minutes,** Amsterdam/Stuttgart **70 minutes** (F28), **100 minutes** (F27), Eindhoven/Hamburg **75 minutes,** Eindhoven/London (Gatwick) **75 minutes,** Eindhoven/London (Heathrow) **75 minutes,** Eindhoven/Paris **55 minutes,** Maastricht/London (Gatwick) **115 minutes,** Rotterdam/Hamburg **110 minutes,** Rotterdam/London (Heathrow) **55 minutes,** Rotterdam/Paris **60 minutes** (direct), **95 minutes** (via Eindhoven)

For reservations call Amsterdam 43 42 42, or your travel agent.

SINGAPORE AIRLINES LIMITED

EGATS
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DFO 2

12 August 1982

Dear Sir,

Thank you for your invitation to contribute to the special issue of your magazine to mark the 10th Anniversary of the foundation of EGATS.

We have no articles to contribute for this issue but would like you to know that as a regular operator through Europe and having experienced the Air Traffic Control services that Maastricht provide, we are extremely pleased with the high standard of Air Traffic Control that we experience in Maastricht and throughout Europe. All our crews are appreciative of the high degree of professionalism that EGATS controllers show.

We congratulate you on your Anniversary and are confident that you will continue to maintain the high standards we have come to expect from you.

Yours faithfully,

Captain M de Vaz
Director of Flt Operations

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ATC AND THE INDEPENDENT PILOT

Roy L. H. Mc. Dougall

Operations Director
Britannia Airways Ltd.

The independent pilot knows, through painful experiences, that companies who do not benefit from state aid must make a profit to both survive and expand. Profit can only be derived from giving the customer the service he demands.

Attempts in the past to regulate the needs of the customer have invariably failed. If the customer wishes to concentrate his vacations to coincide with the school holidays or to travel mainly at the week-ends, this is what he wants and this is what we must provide if we are to make a profit.

The sphere of operations for most pilots is by its very nature - international. Within Europe, one flies over and to many countries with differing political and economic situations which sometimes erupt into industrial action. This significantly disrupts air transportation. Unless safety is compromised, we in the airlines have a duty, both to the passengers and the transport business as a whole, to deliver our passengers as close to the published schedules as it is possible to achieve. Our efforts to deliver our passengers are not always fully appreciated and understood by ATC. However, let me assure you that our response to industrial action is in the best interests of all of us engaged in air transportation which, of course, includes ATC.
Here are some examples.

During the period of Spanish industrial action, the handling rate of traffic within Spain was considerably reduced. In order to maximise the number of passengers that could get to and from the Balearic Islands, it was obvious that other traffic, handled by Barcelona centre, would have to be withdrawn from the system. Consequently, Dan Air and ourselves, representing approximately 70% of all the Spanish traffic from the U.K., elected to road transfer all our passengers from the Costa Brava (Reus-Barcelona-Gerona) through to Perpignan in France. This meant a considerable amount of unplanned coach travel for the passengers and it did, of course, shorten their holidays. However, this procedure did enable the majority of the passengers to travel and return at least on the day originally planned although some hours late.

The same principle was applied when the U.K. took industrial action. There exists within the U.K. both military and municipal (non state) radar and ATC systems which are in daily use. There is also a low level cross-channel system which falls outside the national air traffic system. By utilising these non-state facilities more air space was made available for the Jumbo aircraft that would otherwise still be queuing on the ground.

When France, which is the hub of all ATC systems within Europe, suffers technical failures or reduces the flow as a result of industrial action, then the airlines have no option but to accept the very considerable mileage increase and fly to the Mediterranean via routings over the Bay of Biscay or to enter the Mediterranean via the more overland eastern routes.

It must be appreciated that those companies both within the U.K. and Europe who are exclusively engaged in the package tour industry are the most affected by industrial action. We all have an obligation, unlike the schedule carriers, to deal with the passengers, many of whom have booked months in advance, when they arrive at the airports. Those going outbound have paid for a number of specified days holiday and of course, those in the resort areas continue to occupy rooms for which they cannot be charged, either way the tour operator and airline have to pick up the cheque.

AIR SPACE USAGE

Air space within Europe is FINITE. It is divided between air space required for military purposes and air space required for the passage of aircraft . To use the recognised airways over-flying charges are levied. All air space, therefore, has a price and it is our view that the military should be asked to pay for the air space they require. When this air space is not in use, it should be immediately released to the civil authorities and of course payment will cease. It is our view that if this rule was introduced, a considerable amount of air space would be released to the civil users sooner, which would, of course, increase the flow of air traffic. There is nothing like the tinkle of a cash register to speed up the process of handing over unwanted airspace.

DEREGULATION - EVOLUTION NOT REVOLUTION

There has been much talk lately of deregulation and that air travel, over there, is much cheaper than in Europe. Not true - the air content of a package holiday represents excellent value for money. Our view on this subject is best explained from a paper presented to the EEC commission by our Chairman and Chief Executive, still an active pilot, when President of ACE. I quote:-

MEETING WITH EEC COMMISSION - BRUSSELS - 10TH OCTOBER, 1979

"Firstly, the document which is under discussion, namely 'Contribution of the European Communities to the Development of Air Transport Services' - /COM(79) 311 Final/ - says some very sensible things about what is wrong with air transportation and, we agree, there is a great deal wrong. Furthermore, it makes some

observations and suggestions about what could be done to improve the situation. Nevertheless, in reading the document, which is essentially about deregulation, most of us here today are somewhat concerned about the effects that it will have - but why should we be? We are all doing, currently, exactly what the document asks us to achieve and what the public require in Europe and that is to provide cheap air transportation and nobody is providing that at cheaper rates than the Independent Airlines.

Secondly, the costs of production of those represented here today - the Independent Airlines - are the lowest in Europe. So why should we be concerned about competition? Let me say right away that we are not concerned about fair competition at all, but we have seen many examples in the past of unfair competition from the large state-sponsored or subsidised airlines with whom we have to compete.

Much has been said today about innovation and also that the Commission expects innovation from the Independent Airlines. One example of innovation was the whole-plane charter market on the North Atlantic, where finally the Independent Airlines, engaged in whole-plane charters, were able to secure a great deal of business in the cheap travel end of the market - the leisure end - which grew very rapidly and certainly more rapidly than that of the essentially business travel of the scheduled carriers. The scheduled carriers then decided that they had to get into our market, and as a result all fare levels on the North Atlantic came down considerable. It is no exaggeration to say that it was the innovators - the Independent whole-plane charterers - who secured a very considerable decrease in the level of air fares in that area and, hence, benefitted the travelling public on the same lines that this document here today would like to see. But where are these innovators today? They have all but vanished from the North Atlantic. Having carved out a very successful business for ourselves, the reaction and retaliatory measures carried out by the scheduled carriers resulted in unfair, subsidised seat rates to an extent which even takes them below the whole-plane charter market. That is what we regard as unfair competition and unfair retaliatory action and it is an example of what we all fear if deregulation occurs in an uncontrolled manner within Europe.

What I have had to say so far should not appear in any way to be an unwelcoming message towards deregulation. However, our first consideration must be to protect the investments which we have made. We have all carved out, in very difficult circumstances, a small niche for ourselves in the European air transport scene and we are providing the cheapest air transport within Europe, mainly associated with inclusive tour operations.

Any business which is going to expand and provide the innovation and the new services which you are looking for in this document, must have a base from which to expand. That base may be of two types:
1. a large financial
or
2. a variable business

All of us here, without exception are in the second category. We need the business which we

have developed in order to move further and we need to protect the profitability of those businesses. It is essential, therefore, that in deregulating the Commission understands two points:

1. that as deregulation occurs, in a gradual sense, they are sure of the impact of that deregulation;

or

2. The Commission has to correct any failure to achieve the results which it intended"■

NOTE - Britannia operated two 707/320's on the North Atlantic on whole-plane charter for two years.

For your information, Britannia commenced operations in 1962 with three constellations. Today, (1982) we operate 34 737's completing between 70 - 90 rotations per day. A rotation provides seating capacity for 260 passengers.

Now for the brains among you (ha! ha!)

A PUZZLE FROM :

Hidden in the letters below are 15 aircraft manufacturers.
They are written in various directions, even backwards.

```
E G A T S F D C O N S O R T I U M U F O
A M D G K D E P E U T A T S H U K O I J
E Y M X W S H E T E U F A V J U K D A R
R P D Q S K B A L N P Q J B S K D Z X E
O O I N B O Q V M E O E R M E B N J J Z
S K A P E T E W J U L T F R O U E J N T
P Y Y I E G A C C X E T O N P T Q L W D
A G N D G R O V J H V J V J L E Z X L A
T G O U L T N O R T H R O P K M T Y J S
I X H A W K E R S I D D E L Y A I V Z S
A X N A C I R E M A H T R O N Y G C K A
L K E D F I V A M Q I L Y U S H I N H U
E V L I B M D Y Q Q W R X A O D Y S D L
G W W D S A L G U O D L E N N O D C M T
Y E B Q L O L J P A Z H J G R U M M A N
```

Prizes: 1. a signed photograph of Britt Ekland
2. an unsigned photograph of Britt Ekland's sister
3. a grubby drawing of Britt Ekland's parrot.

GOOD LUCK !

TALKING ABOUT ANNIVERSARIES

Philippe Domogala

What is this "new" friendly airline in America again? Pilgrim? But Pilgrim is certainly not new, since this year, like us, they celebrate an anniversary. Their 20th.

Pilgrim is known as the "Twin Otter" airline, for in 1965 they helped to specify the passenger version of this aircraft, and in 1966 they were the first airline in the world to introduce the type into service.

They started in 1962 with 5 seat aeroplanes. In the mid-sixties when the large U.S. regional carriers changed over to jet aircraft the then uneconomicalshort-haul routes were left to airlines such as Pilgrim, which soon filled the gap.

1962

In 1974 they had become one of only two U.S. commuter airlines operating an international network, serving Montreal from Hartford/Bradley.

Then in December 1980 Pilgrim put their first F27 into service and in 1981 introduced the New-York - Ottawa route.

Today Pilgrim have 5 twin Otters, one Beech 99 and 3 Fokker 27's. They fly nearly 200 scheduled flights daily, last year carried 200.000 passengers, and have a computerised reservations system. All this, with only 175 full-time and 25 part-time employees.

Well done Pilgrim and congratulations to you from us at EGATS■

1982

DAN-AIR SERVICES LTD.

Directors: F.E.F. NEWMAN, M.C. A.J. SNUDDEN F. HORRIDGE F.G. TAPLING
CAPT. A.H. LARKMAN B.V.S. WILLIAMS W. JONES

Gatwick Airport
Near Horley
Surrey RH6 0LY

Telephone: 01-668 4211

Telex 87247

IN REPLY PLEASE QUOTE

All correspondence to be addressed to the Company

Operations Base

INPUT Magazine
EGATS
Postbox 47
6190 AA Beek-LB
NETHERLANDS.

25th August 1982.

Dear Sir,

As an airspace user may I take the opportunity, through your Anniversary Issue, to extend to all concerned at Maastricht the grateful appreciation of one airline for the provision of a very efficient Air Traffic Control and also for your Air Traffic Service. No doubt the Controllers themselves are aware that this Service is valued by Dan-Air as may be judged by our pilots comments, and certainly our Fuel Control Manager's eyes light up whenever he enters your airspace (or it's our Logo-lighting perhaps.) One thing you won't be familiar with as much as Controllers in other Centres is the request "Can I go direct ?" - its nice not to have to ask !

To all Controllers and Staff at Maastricht, and in particular to our many friends there - thank you.

On behalf of Dan-Air,

Bob Willis

R.A.G.Willis
Operations Control Manager

P.S. Our Deputy Chief Pilot is insisting that I ensure you know he endorses my views !

REGISTERED OFFICE: 36/38 NEW BROAD STREET, LONDON EC2M INH
REGISTRATION No. 519947 ENGLAND DAS 7

HOOPER

When first approached with the idea of compiling an article about the airlines and aircraft types that had met their demise during MUAC's first ten years I readily agreed. This brief act of idiocy on my part clearly showed not the slightest appreciation of the complexity, nor indeed the enormity of this subject's potential.

Within minutes of my commencing research for the article the truth was convincingly brought home to me. My desk had aquired a mountain of books, magazines and record files before even a single fact had been extricated and set on paper. I clearly needed to employ some realistic thinking whilst practising the word "No"! for the next occasion such a request might arise.

Reality prevailed. I could either write a book on the subject or produce a simple chronological listing. Being a classic exponent of the art of laziness I opted for a compromise which would tend toward the latter.

Delving into the vast void that constitutes my apology of a brain I was able to recollect just one significant type that had ceased to grace the heavens during the ten year period - namely the Comet. Back in 1976 I was fortunate to have a fam. flight with Danair aboard one of their Comets. The chief pilot of the fleet was more than a little tickled by my request to "fly in a Comet before they finally disappear".
He assured me that Danair's latest aquisitions (the ex RAF Comet fleet with an average of only 11,000 hours on the airframes) would be flying until at least the mid eighties.
Sadly the last laugh was on him!
The aircraft's four Rolls-Royce Avon engines were notorious fuel guzzlers and ultimately drunk themselves out of viability and on to the scrap heap. Fortunately, for posterity's sake, a number of Comets have been spared the breaker's torch and are located at various points around the UK: Blackbushe, Wroughton, Lasham (PPO), and Duxford to name a few.

For reasons best known to those more aptly qualified than myself, British and German airlines seem over the years to have been more susceptible to negative fluctuations of the economic climate. This might in part be due to the more liberal policies adopted by aviation's mentors in these two countries who permit the existence of a more substantial degree of competition to the national airlines.

Note the use of the word degree, for the protectionist attitude still prevails, albeit to a lesser extent than in Italy or France for example.

By the end of our first year here at Maastricht a number of airlines had made the one way ascent to St. Peter's incandescent Amber airway, or to use my daughter's terminology of the moment - snuffed it! No longer would German company Calair's B720s wend their way across the Maastricht radar displays. Neither would the

DC8s and 9s of Atlantis (NO) or Air Commerz's (DZ) Viscounts (God's own airplane!) and B720s.

On February 29, 1972, just prior to our departing Brussels for the promised nirvana beyond the border, Southend based Channel Airways (CW) operated its' final service having placed the airline in the hands of the receiver just four weeks earlier.
Thus ended a run of twenty six years and Channel's diverse fleet of Viscounts, BAC 1-11s, Tridents and Comets passed on to other operators.

1973 saw the demise of two companies whose existence had been but brief. During 1971 German company Aviaction took delivery of three new F28s from Fokker, but on October 30, 1973 the airline was forced to cease operations.
All three aircrafts were returned to the manufacturer, at least two of them destined to spend a considerable time languishing at Schiphol in their colourful liveries.
During its period of operation Aviaction had also leased a Caravelle from Sterling.
Trans Caribbean's (TC) two DC8s had regularly traversed the Brussels/Maastricht air-space but following the takeover by American Airlines the aircraft were sold to Spantax on February 12, for which company they still ply the airways.
The year closed with the disappearance of Swiss company Phoenix (HP).
I'll wager you'd forgotten the name! Not surprising really as the airline's brief existence was hardly sufficient to carve a notable niche in the annals of aviation history.
The company's first aircraft was 1-11 HB-ITL which it received on April Fools' day 1971. This was followed by an ex TWA 707 in November the following year. RIP Phoenix!

Ah! What a wonderful year 1974 was. It might well have been but I'm darned if I can relate the events of yesterday let alone those of eight years since. Perhaps a little mental prodding of the cerebrum might assist the process of recall.
Meyair (MT), Pomair (?), Court Line (OU), Donaldson (DI), Bahamas World, Limburg Airlines (HF). Oh! That 1974!

Seems like only yesterday that Limburg Airlines was fobbing off passengers with such original excuses as "flight cancelled due lack of passengers".
The fact that the allocated aircraft was sitting in a maintenance bay at Woensdrecht coundn't possibly be known by those passengers who did attempt to check in. Or could it?

Limburg Airlines attempted to start a new trend in the airline business - underbooking! It failed. So did they. The company's two Friendships still fly with Air UK.
Later attempt at resurrection in order to penetrate and con the cargo world came to a similar conclusion. Their game was discovered by men wiser than themselves.

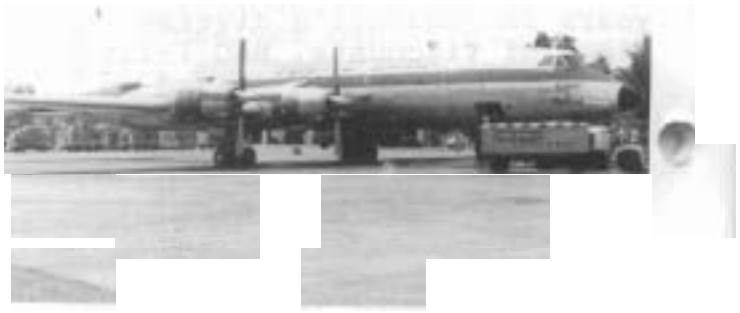
I recollect having scribed a noteworthy (!) epic in days past of the life and times of Court Line and its coats of

many colours. No doubt this significant work still claims pride of place on your book-shelf thereby rendering further biographical script superfluous! Details of Norwegian airline Meyair's Boeing 737 operation would take me a weer to uncover. Regretfully I do not have that period of time available so I'll skip it.

Remember those DC8s 00-AMI, 00-CMB and 00-TCP of Ostend based Pomair?
Well never mind, they probably won't remember you either!

The name Bahamas World will not lie down and pass peaceably into the wild blue yonder. Every couple of years the name reappears only to suffer the same fate as in 1974.
Two of the company's 707s must have carried the curse of doom as in 1972 they had assisted Lloyd International along the road to extinction. This strange quirk was obviously prevalent amongst ex Panam 707s as they produced similar con-sequences for Donaldson.

1975 saw the departure of Modern's (KV) Berlin based Convair 990s and Young Cargo's CL44, the latter much to the relief of residents of apartment blocks in Geleen! But Edouard Lejeune was not deterred. He reformed Young Cargo with Britannias and



707s in order to go through the ignominy in more grandiose style again in 1979!

In January 1975 one Daniel Grew Esq. saw fit to avail himself of the cloudless winter skies and duty frees of the Canaries. Happily clutching their buckets, spades and antacid tablets the Grew family boarded their blood and custard coloured Air Spain (JA) DC8 for the sunshine bound flight south.
Two weeks later, having acquired the necessary insipid dago appearance, said family prepared themselves for the customary hassle synonymous with IT check-ins and the flight home. Only at this point did they discover that Air Spain was no more. It had descended the proverbial tube. Gone to meet it's maker. It was an ex airline I have made a mental note of those who laughed!

Fate had smiled kindly upon the German airlines for the last couple of years but obviously decided that it was to wield the

axe once more. The axe's destructive course sought out Hamburg based General Air (CQ) and dealt its moral blow The company's YAK40s, which had made occasional excursions into the upper airspace, were returned to the Soviet Union and General Air became just unother statistic.

1976 was a quiet year in our part of the world, almost a non event in fact.

Therefore only brief mention need be made of SAM, or Societa Aerea Mediterranea (MQ), the wholly owned charter subsidiary of Alitalia, which was wound up during the year. The company's aircraft, two Caravelles, and staff were transferred to the parent conglomerate.
In December of 1976 the name Saturn Airways (KS) was declared functus officio when their sizeable fleet of Electrs, Hercs and DC8s was taken over by Trans International, later Transamerica.
Nota bene: functus officio is a term normally applied to the quietus state of the Norwegian Blue Parrot, yet strangely is not to be found in that superlative reference "The complete Works of William Shakespeare and Monty Python"!

1977 marked the disappearance of Le Bourget based Catair (QV) whose Caravelles were to be seen at Beek on occasions.

In January 1977 East African Airways (EC) conceded to the financial problems that had beset the airline for some considerable time and ceased operations, almost 31 years to the day since formation as the joint airline of Kenya, Tanzania and Uganda. The company's Super VC10s are presently undergoing conversion to tankers for the British Royal Air Force.
Another departure from the scene that year was a name no doubt familiar to the observant amongst you, namely that of EFS Cargo. The company had commenced operations in 1974 with a CL44 leased from Trans Meridian.
By 1976 the airline had accumulated a total of three leased DC8s for their cargo operations from Ostend and Beek. On its failure in mid 1977 the 8s were returned to Seaboard World and Beek airport authorities were left counting the debts - a sum that would have kept you and I in beer for several weeks!
An EFS flight crew uniform can be viewed at a recently established aviation museum in nearby Ransdaal, Klimmen although access at this stage is strictly PPO.

January, 1, 1977 saw the merger of Bavaria (BV) and Germanair (DV) with the latter name

gradually ousting that of its new partner.
Three months later Hapag-Lloyd announced its intention of taking over the combination but due to Federal objections the new merger was not effected until 1979.

SATA's (VS) disappearance was one of only two significant failures in 1978. The airline's Caravelles and DC8s ceased operating on October 31 but was succeeded by CTA (RU), a Swissair subsidiary, the following day. The Caravelles continued to fly under the new banner.

The other failure was short lived company Maverick who claimed to be the "World's biggest bull shippers"! They bull shipped their way into obscurity.

Followers of the Beek scene would have been familiar with the activities of British company Transmeridian Air Cargo (KK), the airline's DC8s and CL44s being frequent visitors to the airport. On August 15, 1979 TAC was merged with Gatwick based IAS Cargo Airlines (FF) to form British Cargo Airlines. The venture was short lived howver, as by March 1980 the company succumbed to the pressure of substantial financial losses and ceased operations.

Seattle based Aeroamerica (EO) centred its operations on Berlin. Those operations ground to a halt on November 15, 1979 following a Civil Aeronautics Board decision to revoke the company's operating authority. The airline's Operating Certificate was subsequently surrendered to the FAA who had expressed grave concern over financial and safety of the Aeroamerica operation.

Although the recession had begun to make its grip felt on world finance none of the airlines transiting the Maastricht airspace was yet to suffer the ultimate repercussion - closure.
Those airlines that did make their exit during 1980 did so for totally different reasons. Itavia (IH), for instance,

had its Operating Certificate withdrawn by the Italian government and ceased operations on December 10.

Miami based National Airlines (NA) fought long and hard to resist takeover bids from Panam, Eastern, Air Florida and Texas International, finally conceding to Panam at 1700 on January 7.
National continued to operate as a Panam subsidiary until full integration was effected later in the year.

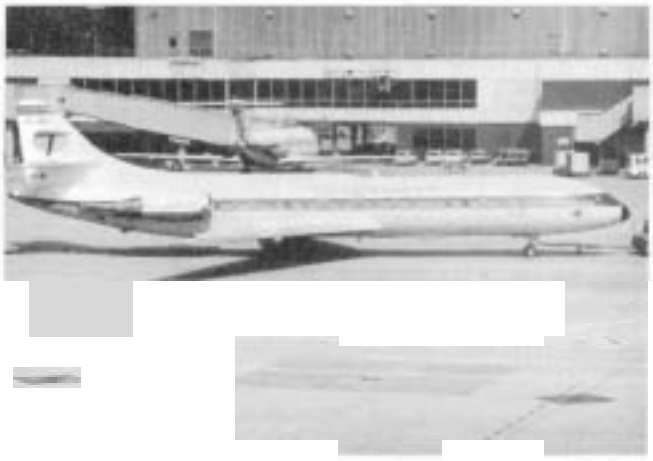
Seaboard World (SB) put up much less of a fight to deter Flying Tiger's acquisition of company stock, with the result that Seaboard's fleet of Boeing 747s and DC8s were absorbed into Tiger's similar fleet on October 1, 1980.

Without any fuss or commotion Transvalair (VX) went into voluntary liquidation on May 31. Amen.

The pinch began to tell in 1981 with Montana (OF) ceasing operations on July 28 due to financial ailments and Scimitar (JA) declaring bankruptcy two day before Christmas.
The lives of both airlines were but brief when compared to the thirty five years that Miami based Airlift International (RD) had been in existence at the time of its demise on May 23.
The company announced its intention of restructuring and reactivating its cargo operations, but apart from a limited number of military charters this aim does not appear to have been successful.

SAS obviously decided that its charter operations could be equally well served by aircraft from its own fleet which resulted in Transair Sweden (TB) operating its final revenue flight on September 8. The company's four 727s were disposed of and the callsign "Viking" replaced "Scanair".

American Eagle (WX). 1979 - 1981. Deceased.

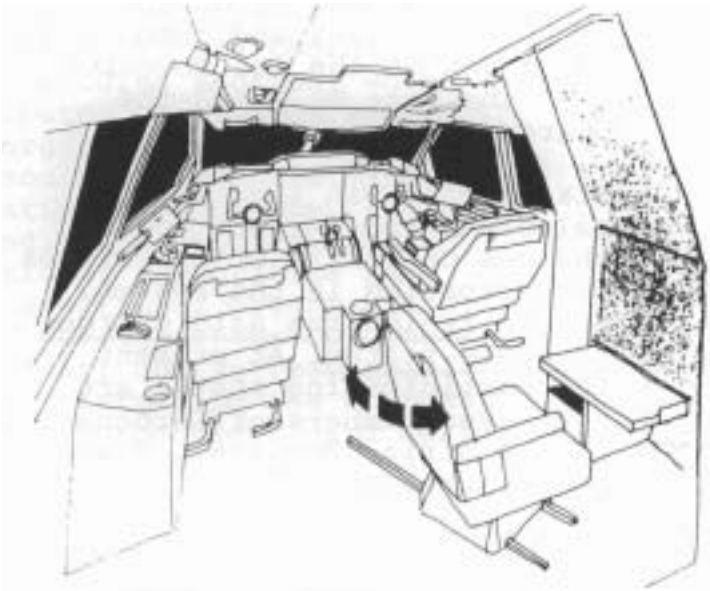


Spanish operator Trans Europa(TR) ceased operations during 1981, the airline's routes being taken over by its two holding companies, Iberia and Aviaco. TAE (JK) followed suit shortly after.

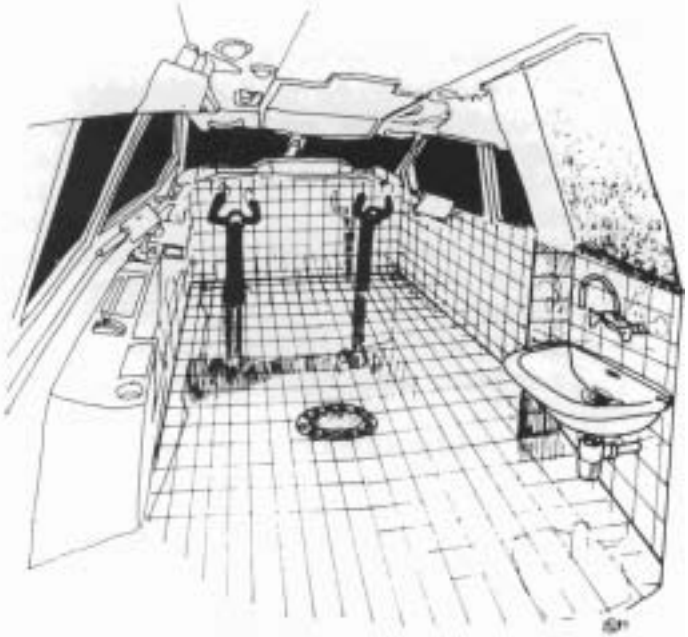
As Maastricht UAC approached its ten years of succesful operation the aviation world was rocked by the news of the collapse of Laker Airways and

associated companies. The Laker story has received more than sufficient coverage and needs no further comment from me, but it undoubtedly provides food for thought.
Is this just a taster of things to come?
Three months later, on May 13 1982, Braniff International filed for bankruptcy with immediate cessation of services.

It is a satisfying thought that the power of politics will permit Maastricht UAC to continue building upon the obvious success that it has thus far achieved.
But unless the current recession genuinely bottoms out just how many airlines are set to "Out-Laker Laker"?■



A 310 Cockpit Layout:
Pilot's proposal



A 310 Cockpit Layout:
Cleaner's proposal

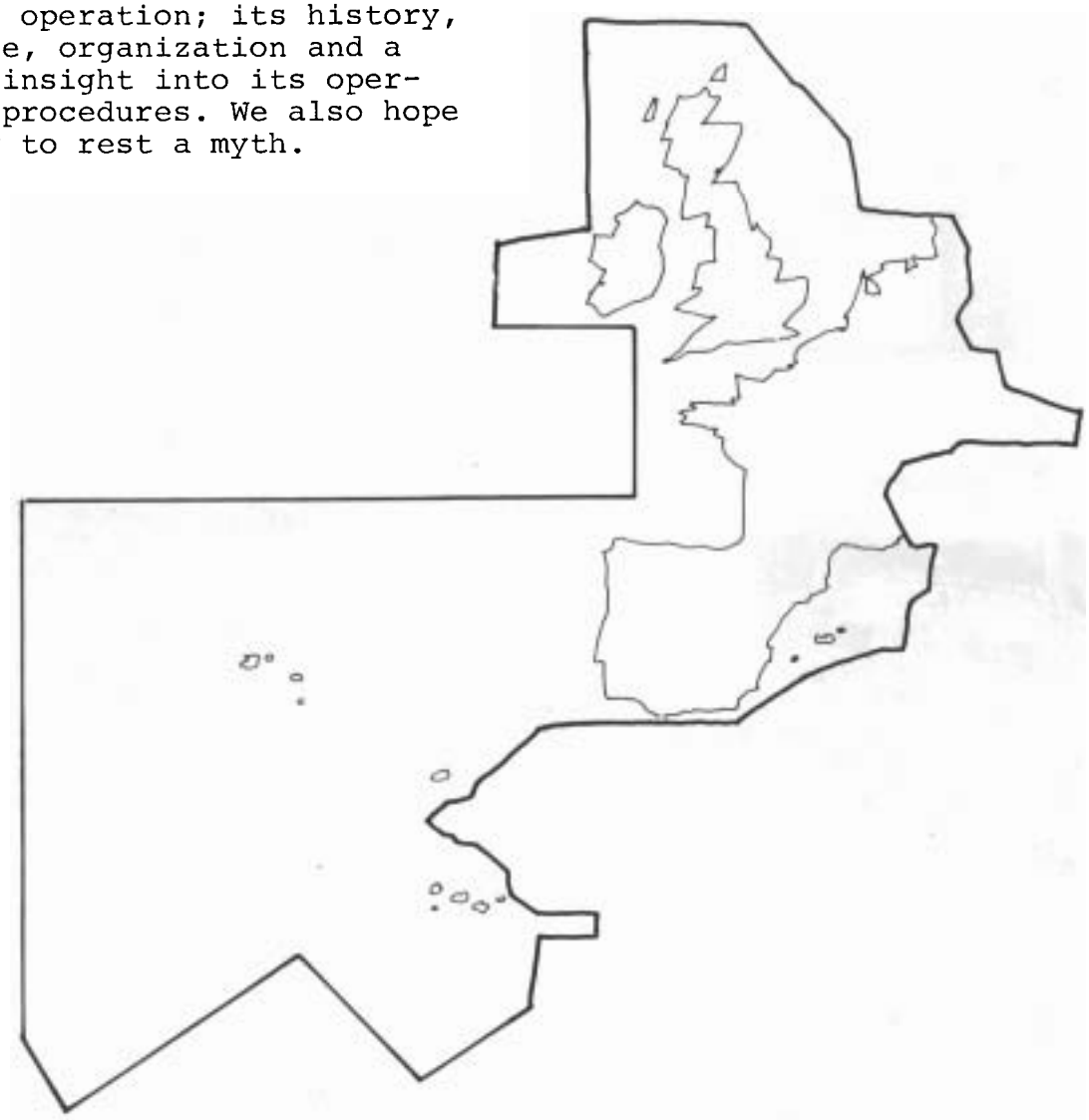
A 310 Cockpit Layout:
ATC proposal

CENTRAL ROUTE CHARGES OFFICE

Much has already been written on the Eurocontrol Central Route Charges Office (CRCO for short), most of it much better than we are capable of realising in such a general account as this.
Our aim here is to provide a general idea of the scale of the operation; its history, purpose, organization and a basic insight into its operating procedures. We also hope to lay to rest a myth.

The CRCO was set up on the 1st October 1969 and commenced operation on the 1st November 1971 the date on which the charges became effective.

Its function in life is to calculate and collect route charges on behalf of the states participating in the system, and to re-imburse said charges to these states. At present the participating states are the seven members of Eurocontrol, plus Austria, Portugal, Spain and Switzerland.



The CRCO has a staff of 65 and comprises: a Coordination and Studies Section, which computes cost bases and charging rates, deals with all associated financial and statistical matters, and handles relations with national authorities and international organization; and three bureaux. Of these bureaux; one is responsible for determining the charges, identifying users, and defining the weight and distance factors for establishing the basic billing data for computer file purposes; the second is the data processing section equipped with an advanced computer system; the third is responsible for the collection of charges and reimbursements to the states, managing individual carrier accounts and the central accounts, and dealing with operator's claims.

Now we must attempt briefly to explain how a figure representing the route charges for a flight is calculated, and here we may come unstuck. Please bear in mind that this is necessarily only a general description of the process, those interested in the more detailed aspects may like to peruse the Eurocontrol publications on the subject.
Briefly then, each state participating in the system provides an estimate of its operating costs for the year to be charged for, including administrative costs and depreciation and interest on capital expenditure. This estimate of costs is reduced to take account of exempted flights and then divided by the estimated number of chargeable service units to provide the service unit rate for each country.
These service unit rates are revised annually and take effect on 1st April taking into account changes in en-route navigation facilities and traffic trends etc.
These unit rates are then applied to a formula which takes into account the distance flown and the aircraft weight, this latter only being of secondary importance in the calculation to determine the route charge for the flight.
The distance factor is equal to one hundredth of the great circle distance, expressed in kilometres, in respect of each state between the aerodrome of departure or point of entry into the system and the aerodrome of destination or point of exit.
The air route taken into account is that most frequently used between the two aerodromes concerned in the flight, 20 km being deducted from the total distance for each take off and each landing within the participating states, to allow for services provided by aerodrome approach facilities which normally entail payment of separate aerodrome charges.

Where the most frequently used route cannot be determined the shortest route is used in calculating this distance factor.

The weight factor of the whole operation is obtained (deep breath!) by taking the square root of the quotient from dividing 50 into the maximum authorised take off weight of the aircraft concerned, expressed in metric tonnes.
You want a formula? Try this:

$$P = \sqrt{\frac{\text{max. take of weight}}{50}}$$

Distance and weight factors are reviewed annually on 1st April (come on now, no April fool jokes!) taking into account new routes and information obtained from operators about their fleets. Ownership of aircraft is continuously reviewed by contact with operators


RCO

and the states concerned.

All aircraft flying wholly or partly under IFR using civil air route navigation facilities are normally liable to pay a charge. Exeptions in the case of non-revenue flights by state, military, SAR, check and test flights may be made at the discretion of the appropriate states concerned with the flights.

States participating in the system are responsible for supplying the basic data required in the calculation of charges and veracity of such data; responsibility lying with the state on whose territory the flight originates or enters the zone of participating states.

These data comprise: the date of the flight and time of entering or departure from within the charges area, aerodrome of departure and destination, type of aircraft and, identity of its operator (obtained from the aircraft identification).

There exist in the system computer programs to prevent the same flight being billed more than once, e.g. consequent on being reported by 2 transmission offices.

A catalogue of distances is available for purchase each year covering some 45.000 international distances as well as a large number of internal routes. The catalogue also states the charge applicable for an aircraft having a weight of 50 tonnes (equivalent to coefficient of one) for each distance.
About four weeks after the month in which a flight was performed the users are issued three statements; first a daily return for the month of all that operators flights, second a list of permanent flights and third a bill for the month in question.
Payment is made to a Eurocontrol account and possibly this is the basis of the myth of the "EurocontrolTax" (the latest term we heard bandied about) or "Common Market Tax" (yet another).
Although the payments are made to Eurocontrol accounts, the CRCO is responsible for the distribution of these moneys to the participating states"..... as soon as possible and in any case not later than six months after collection". This is a quote from the bilateral agreement between Eurocontrol and the Member and Contracting States.

In practice all revenue received from the collection of charges (about 800 million U$ dollars per year) is returned to the participating states every 15 days.

Less than 1% of the total charges goes toward collection costs (which include CRCO's operating costs) and the costs incurred by participating states, in the collection and transmission of data to the CRCO).

It is tempting to propagandise such a shining example of centralised efficiency, and no one has any doubts about the efficiency of the CRCO with a systematic recovery rate of over 99% of charges billed. Surely the sheer logic and proven effectiveness of the operation are proof of its viability.
There can be little doubt that without the services provided by the CRCO the costs of European air transport would be considerably higher than is currently the case ■

LUCHTVAARTMAATSCHAPPIJ TRANSAVIA HOLLAND BV

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Eurocontrol Guild of
Air Traffic Services

Postbox 47
6190 AA Beek

Your ref. Our ref. PBM/jdw/OD 82 151 Date: 14th July 1982

Dear Sir,

Referring to your letter of June 1982 we like to congratulate you on your tenth anniversary, as nowadays it is quite an achievement to exist more than ten years in aviation related business.

Without any doubt Transavia Holland is benefitted by a smooth and efficient functioning air traffic control organization.
On the other hand airlines are confronted with a great variety of increase in different operating costs which makes is more and more difficult to make both ends meet.

Apart from the economic point of view where international route charges are concerned, Transavia Holland does not feel any need to comment on your center or your controllers.
Where possible we will continue to grant your requests for familiarization flights of your members which gives our pilots the opportunity as well to look behind the screens of Eurocontrol.

Wishing you a pleasant tenth anniversary, we remain,

Yours truly,

K. Peereboom
Manager Operational Division

U.A.G.B.P.A.R.S.

a letter

The Upper Agbrigg Gentlemen's Beverage Proofing and Automobile Relocation Society proudly salute you on this occasion of your Tenth Anniversary.

In celebration of this momentous achievement in your history, we the U.A.G.B.P.A.R. (Officials) propose to proof a specially consecrated barrel of Mr. Theakston's Old Peculiar to the toast " Onward to the Score".

You may rest assured that on completion of this barrel our President will no doubt bring the matter up again. He always does.

May we point out that one of your members, who goes under the alias "Scoop", is one of our founding members, and we find it gratifying that one of our Old Boys should find success on foreign shores.

Please remind him of the many happy days spent in our company, and of the round he owes from the 3rd May 1969. And the mayor would like his car back as soon as it can be dredged from the canal. A cheque for the sum of £ 1.2. shilling and sixpence (£ 41 new money) should suffice to clear this misunderstanding ■

On the 6th anniversary of my non-promotion please do not come to the canteen for a drink, because I'm not giving any!

Tom Cowan

MATCAB

REMINISCENSES ON TEN YEARS OF COOPERATION

a personal view

Raymond Poissonnier

In these days of technology, little regard seems to be paid to the old fashioned values and the humans behind the push buttons. Ten years ago we made the big step from raw radar, passive SSR decoding and direct man to man contact to the era of video extractors and computer links. Computer links which took the place of a team of UAC controllers working at our station, assisting us to keep OAT and GAT apart.

In fact, it all started in the early sixties when, with the increasing performances of civil aircraft, the need was felt to organize the traffic in the upper airspace. A centre was created by the Belgian Air Force at Semmerzake to provide radar services to Operational Air Traffic. A staff of UAC controllers was delegated to coordinate the growing traffic. I remember them listening to the frequencies and writing down on a board the transitting traffic and the estimates over the reporting points, two lines for each flight level was enough in those days.

We learned to appreciate each other, we had so much in common and their presence eased a little the military discipline. When they left us, it must be ten years by now, something changed in our station, it was pleasure to have them among us.

Later during the maintenance periods of our radar, we had the opportunity to work at UAC Maastricht. At first it scared us a little to go to that multi national community, but after a couple of stays it turned out to be like the old days with "elbow coordination" and easily obtained direct routings.
At night we learned to drink "elzenkruidjenever", a local booze and to eat spaghetti.

I must admit, the computer link between our two stations gives satisfaction but it is my personal belief that nothing can beat sitting side by side in the same room, working the same airspace.

Our long and still improving cooperation proves that it is quite possible to make two different kinds of traffic operate in the same airspace without major problems just by the goodwill of those humans behind the push buttons.

Happy anniversary Maastricht.
Happy anniversary EGATS ■

Raymond POISSONNIER
Secretary

On behalf of President H.H. Henschler, the Executive Board and Members of the Federation may I offer congratulations to your Members for their operational efficiency and contributions to the safety of air traffic over Europe during the past ten years.

"Input" has been read with considerable interest, and though some articles have been critical of the Federation, comment has normally been constructive in nature. I am sure that your readers are aware that IFATCA as a Federation of Associations must take cognisance of all its Members Associations in any given situation and formulate policy accordingly. Politicians regrettably lack knowledge of our profession and yet make decisions affecting the livelihood of many Controllers.
It is therefore, incumbent on us all to "educate" politicians and administrators wherever possible.

Your equipment is first-class, and Controller expertise equal to the best. Thank you for your continued support especially in the developing regions of the world.

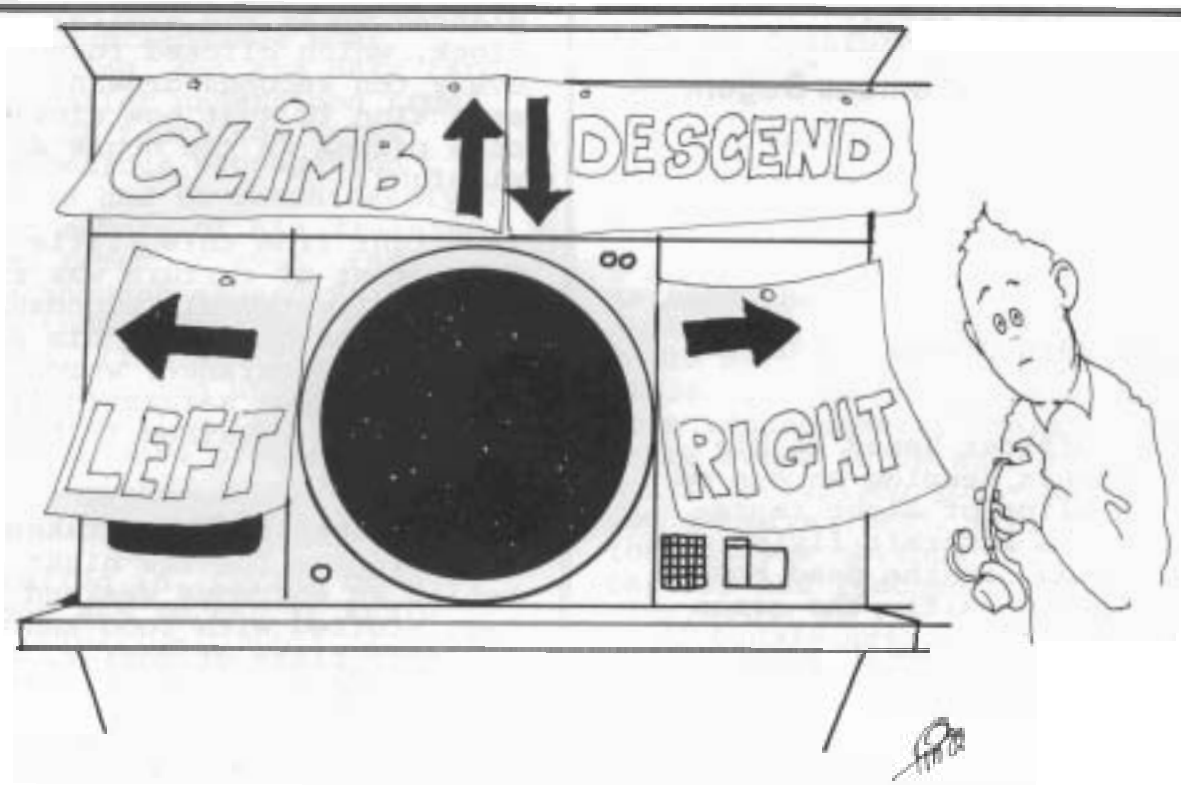
Congratulations for ten years of Service to our profession.

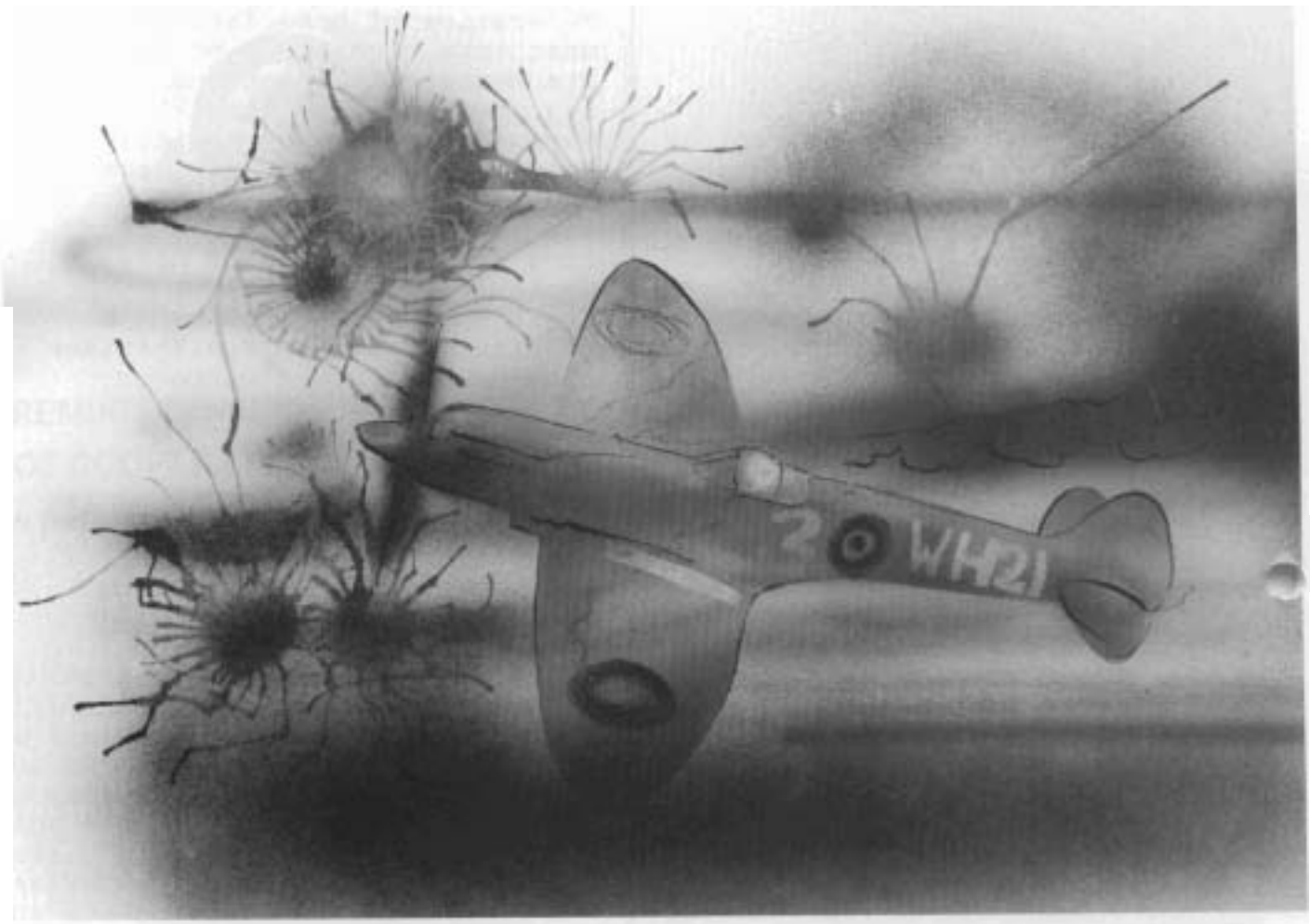
Yours sincerely,

E. Bradshaw.

E. BRADSHAW

Executive Secretary





THE SPIRIT OF THE SPITFIRE

Clemens Degenaar

Tuesday 29th October, 1981
00.15 Z

The ATC officer gazed at his radar screen, keeping an eye on the few blips of light representing the aircraft flying over Germany in the dead hours of the night shift. The green light from the screen etched the tired contours of his face as he sat thinking "Only another five hours to go".

As he suppressed a yawn he glanced up at the digital clock, which clicked round every ten seconds drawing attention to just how slowly time passes in the hours after midnight.

The light from this little instrument of torture was red and highlighted his bloodshot eyes prefectly giving him a ghoulish appearance, which his colleagues sarcastically remarked he retained in broad daylight.

The ATC assistant had taken up residence for the night behind an enormous weekend bag, stuffed with food and gigantic flask of coffee, and only emerged reluctantly to pass estimates when necessary.

His attention was almost totally comitted to a book of doubtful content, and he was feeding continuously on "automatic", hand plunging into plastic bag, feeds face, returns to standby. Repeat process every two minutes.

The subdued lighting in the spacious radar room and the coloured variety of lights on the consoles gave a somewhat alien appearance to the two men, in spite of their common earthly behaviour.
It had been an irritating shift, with a number of technical problems caused according to the technicians by "unusual atmospheric conditions" beyond their control. Heavy traffic put you under stress and made you tired, but "technical problems" drove you up the wall.

The interference on the radio frequencies had been particularly noticeable and a number of pilots had complained of strange voices garbling transmissions. Even the normally very reliable radar picture had not been entirely free from hitches. The technicians had earlier tried to explain in their own language what was happening, but the only term the controller understood from the flow of technical terms was, "anomalous propagation". and he had had to reach deeply into the memory of his training years to remember even that one. He thought amusedly about all the technicians and specialists who, like medical people, insisted on using unpronounceable words to describe relatively straight forward processes.

00.20 Z

BA638 called in. flying on URIS from ALS to EEL at FL310 with destination London Heathrow. After the standard exchange of information and instructions the pilot explained about voice modulation on the frequency, and shortly afterwards reported again a weak call on 135,45. The controller turned the loud speaker up to its full volume and could just hear a very weak voice but was unable to catch the identity of the caller or to understand his message.

"Station calling Maastricht on 135.45 you are unreadable try again", said the controller turning his attention to the loudspeaker. This time the voice was a little clearer with a pronounced British accent, however, it was still very fuzzy with that strange echoing effect caused by oxygen masks.

The assistants' book fell to the floor as he swung sound to an adjacent console and started adjusting the screen to maximum range and cover on the off-chance that he might spot an emergency squawk.

"Calling Maastricht-reading you very weak, say your message again" said the controller with an edge of tension in his voice. This time the tinny voice was a little stranger. "All stations, all stations, this is Spitfure Mark Twelve 3WH21 over".

The controller looked a little pale, but the assistant relaxed giggling into his chair; "Somebody fooling around - a practical joke". The controller grinned sheepishly, not knowing quite what to do. Before he could make an appropriate reply BA638 blasted through the fully open loudspeakers, "Maastricht there seems to be an - er - Spitfire calling you - did you receive him?". From his tone it was obvious that the captain had reached the same conclusion as the assistant and thought it was a "jolly amusing little joke".

Air Traffic Controllers have a near infallible instinct for knowing when something unusual is happening on a colleagues working position, and the controller became aware of his military counterpart and two colleagues from the adjacent sectors standing grouped behind him.
"Call the Supervisor" he said, then transmitted again, "3WH21 this is Maastricht. I read you strenght 2, what is your position, over". All eyes were on the radar screen now trying to find any blip that was not known.

"Ah - Mestrich, this is 3WH21, last known position was Dortmund about four minutes ago, angels 8, heading 270°, engine running rough, been hit, unable to maintain altitude, request assistance".

00.25 Z

The controller clenched his teeth in irritation. BA638 wisely maintained silence "1981 and we still get fools misusing the R/T...".."There!" exclaimed the military controller pointing to a faint point about 20 miles West of DOM. The blip appeared for a few seconds, tracking West, but then faded from the screen.

"Losing 2000' per min... afraid can't make it...sorry too late.." followed by a few seconds carrier wave then silence. If this was a joke it was being carried to extraordinary lengths.
The little group looked at each other a few moments then the controller followed his instincts and took it seriously. "Call Dusseldorf", he yelled, "find out if he can land there - maybe he'll have to ditch - well that's his decision"

"3WH21 this is Maastricht do you read?" he tried again. Only silence. An attempt was made by BA638 to contact the Spitfire for relay purposes. However, he also had no reply and it was obvious that he also thought the humour had gone out of the situation and was glad to transfer over to Amsterdam's control.

The supervisor had witnessed the last phase of the action and hesitated with the daily log in his hand. To log what was probably a practical joke or not? No one felt, very sleepy for the rest of the night, a few weak comments were made, but everyone felt deeply inside that it was no joke.

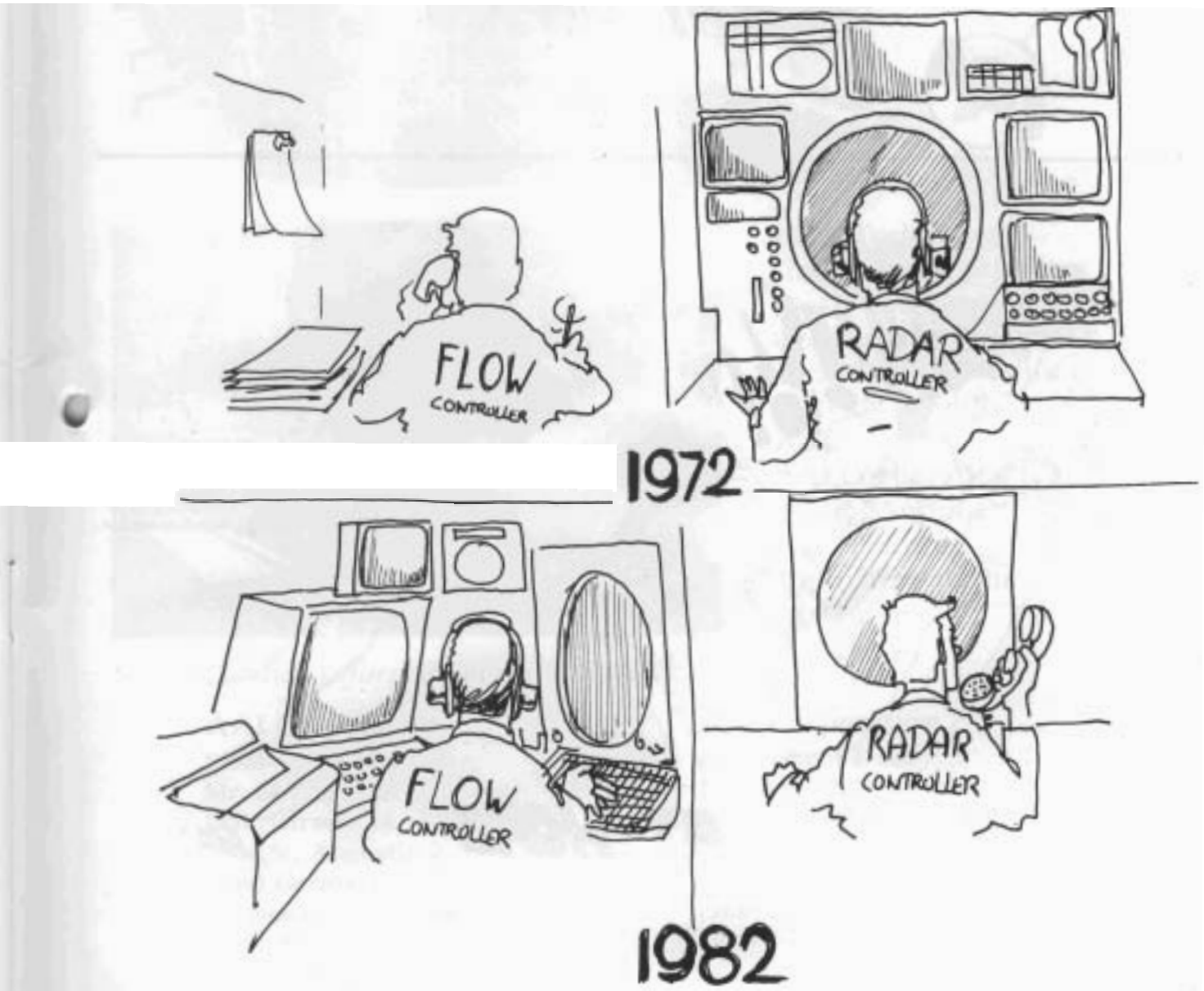
The next few days the controller spent trying to find out about 3WH21. But he didn't quite know where to begin seriously and anyhow something prevented his wholehearted endeavour - he wasn't sure he wanted to know.

The official investigation didn't reach any very positive conclusions but felt that a) the staff were victims of a bad joke and b) the previous sequence of interference and extraordinary atmospheric conditions had made the staff susceptible to the suggestion made by the person misusing the frequency.
And that apparently was that.

Months later, when the event had become just another tall story, a new assistant recently arrived at the Centre sought out the controller to ask him about the incident.

This assistant had already acquired a reputation for encyclopaedic knowledge of all aircraft, tying callsigns to total history.
To assist him at weak moments he carried around a small archive listing details of all winged contraptions of our planet.

The controller wasn't all too happy to go over the old story again. However, he went through it again up to and including the call sign 3WH21. The assistant nodded, almost unhappily, and looked around the corridor to check that they were alone.
"Very strange". he said, "take a look at this". He held out an old photograph for the controller to examine ."This photo was taken at an airbase in 1941 - I had to search for a while in my old records, but finally found 3WH21 not as a call sign but as a registration of a Spitfire which crashed during W.W.II.
The controller looked at the photo which clearly showed three Spitfires on the apron one of which was 3WH21. A young non was visible in leather flying cap, waving at the photographer.
Under the photo was a caption which mentioned Spitfire 3WH21 had disappeared over Germany on 29-10-1941 on a night reconnaissance mission. Last known contact had been at 0028 Z. The controller looking a bit pale went to the Supervisors desk in the Ops. Room and searched through the log records until he found the one for 29-10-81. Among other everyday reports the Supervisor had made a small entry about the "practical joker" It finished with the words"Last known contact at 00.28 Z"■




AT WORK


AT HOME