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INPUT



INPUT

the magazine of the
EUROCONTROL GUILD of AIR TRAFFIC SERVICES

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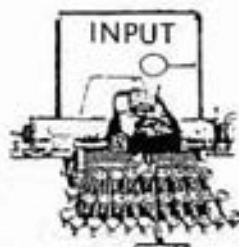
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EDITORIAL

by Patrice Béhier

"Summer Thoughts"

Can we already summarize the summer '87 traffic in Europe? Probably, but of course we ought to let some time pass by, for the events to "cool down" a bit.

However, we have enough material to allow our brains to function a little: around 10% increase in air traffic movements, not bad, better than the average return on capital investment; several strikes and slow-go actions from ATC personnel in various countries, again! What right have these privileged employees to inconvenience their customers? Many new airlines started operations in the charter field, and considerable development of IT traffic all over Europe have together, resulted in a increase in airline business.

What else? Flow control overload? units swimming through restrictions. Anything else? Le Bourget in bad weather, and chaos in the USA ATC scene and aviation in

general, yes but it is not in Europe, is it? No that is true, but we always follow them with some delay don't we? What about, say, 1992 and after?

Let us be optimistic, and we can always think that we, Europeans, are realistic and clever people and we won't let things become as bad as this, we will make a "clean" deregulation, no doubt; for example we could have a unique organisation to perform efficiently, the ATC services at low cost and maximum productivity, to let the "Deregulated" airlines develop economically. The name of such an organization would be "EURODREAM" or similar, but anyway it must go quickly, because 1992 is close and will be even closer in the future!!!

Anyway, "INPUT" magazine keeps you in touch with the aviation scene in various fields, and as always, some humour is necessary to help comprehend the many complex intricacies of ATC and the related fields in the aviation business.

Travelling at home and abroad
For individuals and groups



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30 NOV. 1987

EMERGENCE OF A NEW



CHARTER AIRLINE

by Alvaro Middelmann and Patrice Béhier

It is always with great interest and curiosity that we, air traffic controllers, observe the birth of airlines their lives and development.

Although 1986 and 1987 have seen the creation of many charter airlines, as mentioned in INPUT No. 2-87, one of them will specially attract our attention, not only because the managing director Mr. Alvaro Middelmann is a friend of mine but also, and above all, because it is named LT not S not U but E, LTE International Airways S.A., it sounds familiar already to ATC ears particularly in the Maastricht UAC.

It is not by accident that this Spanish registered airline is named LTE, the shareholders are: Mr. Pedro Montaner and Imigo Cotoner holding 75 % of the shares together, and LTU, here we are, holds 25 % of the shares (LTU GmbH & Co. KG Düsseldorf).

The head office is in Palma de Mallorca, Gran via Asima 4 - 07009 Palma - the capital 500,000,000 pesetas.

The fleet will comprise two Boeing 757/200 in a Y 200 seats configuration to start with, arriving in October and November this year.

The network will start from the Canary Islands and the Balearic islands, to the Federal Republic of Germany, Austria, Switzerland and Scandinavia and no doubt it will expand very shortly.

LTE will introduce on all new service standard in European charter

aviation, namely the FUN CLASS Product; this means an excellence in "in-flight" on-board service: more seat comfort, careful service, hot meals with free wine or beer, video films, eight music channels, welcome drinks, special attention for children and a carefully selected tailor made on board sales shop.

The management of LTE has assured itself the collaboration of a group of highly skilled persons, experts in the Charter Business adding the know-how of LTU and LTS to enable LTE to develop itself towards the status of a leading European charter airline.

The Managing Director, Mr. Alvaro Middelmann, born in Madrid in 1948,



ALVARO MIDDLELMANN

Managing Director LTE

has been in contact with aviation since his childhood, since his father used to work for IBERIA after finishing high school.

Mr. Middelmann worked for various airlines, such as IBERIA and AVIACO. He came into contact with charter aviation through A. PAUKNER S.A., which is the leading charter airline representative in Spain. He then joined Transeuropa Compania de Aviación, which he left as a commercial manager, to join LTU two years ago, when he was sent to Mallorca to lead the foundation of LTE and consequently



to assume responsibility for its management.

No doubt this combination will result in a high quality product and we'll be happy to help LTE develop, by giving it the best possible ATC service. Since the airlines are our customers, they deserve not only safety but all the expedition we can offer.



— LISTEN - READ BACK - COMPLY —

by Captain Tom Kreamer

Reprinted from AIR LINE PILOT, used by permission.

"Thunder Air two twenty, slow to two seventy, turn right heading zero five zero, and descend and maintain one three thousand," calls the controller.

"O.K.", comes the reply over the controller's headset.

But who transmitted the reply - Thunder Air 411, Pride Air 917, USAir 707, Flying Tiger 321?

Three minutes pass and the controller hears "Dart Air four twenty two. Just had a nearmiss by 200 feet with a 747 at our altitude".

The controller, totally taken off guard, requests Dart Air 422's altitude.

"Just levelling one three thousand, Center".

"Negative, Dart Air. Climb immediately and maintain one five thousand; the previous clearance was for Thunder Air two twenty. Let's listen up, gentlemen", comes the response from the center controller.

An exaggeration? Not at all. It has happened innumerable times. It is happening today, and I assure you, it will happen in the future. We can only hope that the poor communications techniques will not cause a disaster.

What would have avoided this near midair collision? A simple "Roger, Dart Air four twenty two" read-back would have told the controller that the wrong aircraft had copied the clearance.

Somewhere the communications loop broke down, but more than one problem appears in the breakdown. First, the controller issued entirely too many instructions in one clearance, and a

multiple clearance tends to create problems. Secondly, the controller should have warned the pilots of several aircraft having similar call signs. And the Thunder Air 220 pilot should have read back the clearance. Further, the unidentified "O.K." could have come from anyone, and sure enough, it didn't come from Thunder Air 220. Another unidentified party is



"just levelling one three thousand", and finally some Dart Air aircraft on the frequency is instructed to climb to one five thousand. The potential for other troubles is high.

Proper Communication

Each of us should take the time not only to listen to the air traffic control (ATC) communications between other aircraft and the air traffic controller, but also to try to understand the replies.

Those of us involved in ALPA's air safety structure are seeing a great increase in FAA filings of alleged violations. Too many result from poor communication techniques used by pilots and controllers. In doing



research for this article, I read through the glossary of both the Federal Aviation Administration Air Traffic Control Handbook and the Airman's Information Manual (AIM). I found the following key words and their meanings used in our everyday radio communications:

"Affirmative" - Yes

"Negative" - No

"Negative contact" - Used by a pilot to inform ATC that:

- previously issued traffic is not in sight (it may be followed the pilot's request for the controller to provide assistance in avoiding the traffic);

or

- the pilot was unable to contact ATC on a particular frequency.

"Roger" - "I have received all of your last transmission". It should not be used to answer a question requiring a yes or a no (see affirmative/ negative).

"Wilco" - "I have received your message, understand it, and will comply with it".

I searched everywhere I could think of and never found it listed as proper phraseology, the use of such words as "Okey dokey", "Yep," "O.K." "10-4," "See ya," or "We'll do all that".

What's the rush?

While the words above apply mostly

to pilots, the pilots are complaining about receiving clearances with words as "expedite," "best rate", and "immediately".

When an air traffic controller tells a pilot to expedite, the pilot senses an urgency that may just border on an emergency - perhaps conflicting traffic in the immediate vicinity.

As for "best rate," the expression has no definition - it can mean anything from a climb or descent that is comfortable to the extreme or one that causes the passengers to watch their ice cubes leave their refreshment glasses and float majestically by in front of their eyes. Sometimes when there is less than 1,000 feet to go in reaching an assigned altitude, I hear a voice coming through my headset requesting "Best rate to _____ feet, please."

In a discussion I've had with controllers, I've found few who realize that the last 1,000 feet of climb or descent should be accomplished at a rate of 500 feet per minute. Though it is not in their handbook, it is in the AIM (New-generation flight and performance management systems seem to have a difficult time with this one also).

And finally, "Cleared for immediate take-off". One must wonder, why the rush? If traffic is so close, we might want to wait. What happens

during an "immediate take-off" if we abort? Obviously this places another strain on the ATC system, because now the aircraft that was two or three miles out on final must go around and remain in the system.

"Immediately" is an important, sometimes critical word - when used in the proper context. "Expedite" and "immediately," in the controllers' own glossary, stress that the flight crew should comply to avoid an imminent situation. "Best rate" - who knows?

A revealing study

In 1983, the National Aeronautics and Space Administration issued a report titled "Addressee Errors in ATC Communications: The Callsign Problem", prepared by Capt. William P. Monan of Battelle Columbus Laboratories. Previously the regional director of flight operations for an international airline, Monan studied deidentified Aviation Safety Reporting System (ASRS) reports to prepare his study.

Users of the aviation system submit a great deal of worthwhile information to ASRS. Some of the comments about and reasons for the communication errors may help us all, pilots and controllers, to improve our communicating skills.

A few of the miscommunicated ideas, as well as some of the information given by crews, general aviation pilots, and controllers follows:

- The deliberately over-abbreviated callsign - for various reasons, from workload problems to complacency, both controllers and pilots either made or were reported to have made intentionally shortened aircraft callsigns during call-ups and in acknowledgements.

A pilot calling a center or reading back a clearance must use the full callsign. Using only the flight number or only the company name serves no purpose, except to degrade safety. Too often more than one aircraft have similar sounding flight number, and generally more than one company flight is on the frequency.

This is a problem not only for pilots but also for controllers. Many times a controller issues a clearance using just a flight number, only to receive a read-back from a pilot for whom the clearance was not intended.

- Errors related to frequency

congestion - the AIM clearly points out that we must be certain that aircraft identification is complete before taking any action on an ATC clearance. It also reminds us that all read-backs and acknowledgements should be preceded by aircraft identification. As the AIM says, "The requirement becomes more important as frequency congestion increases".

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Errors related to frequency congestion fall into three categories: anticipation, non-stop ATC transmissions, and clearance amendment problems.

- Anticipation - How many times have you been cleared into position and, as the controller transmitted a clearance, started to release the brakes and advance the throttles, only to hear the clearance issued to another aircraft on a crossing or parallel runway? This same type of anticipation occurs in other areas, such as awaiting a clearance for a previous request for a higher or a lower altitude.

Remember: LISTEN - READ BACK - COMPLY - don't take an action on your own.

- Non-stop ATC transmissions - A controller's non-stop transmission should make you realize that that controller is involved in a heavy workload situation and alert you to exercise caution in listening and responding to clearances.

If an overload situation is the problem, however, we must address FAA to correct that problem. We must not excuse the controller for the non-stop transmission, but neither can we excuse the crew who "thought" they received a clearance, were "unable to break in" for a read-back, and simply complied with the clearance - only to discover that the clearance was not for them.

- Clearance amendment problems, or "I can be a better controller" - Can you remember the times you were racked with frustration on being cleared 2,000, 3,000, 5,000 feet at a time, the infamous step climb or descent, only to have to stay at the assigned altitude for an extended period of time? Or just as you arrived at the cleared altitude and began to retard the throttles, received another altitude clearance? Or you received so much vectoring you were sure the controller had no idea where your destination was? Frustrating? You bet! Can you do it better? Can you see all of the traffic the controller is working? Of course not! But some pilots - private, corporate, and air carrier - believe the controller is giving them a raw deal.



One unfortunate problem that arises when some people get itchy for a clearance is that they initiate an argument over the radio - questioning the controller, asking for traffic, etc... Needless to say, this adds only tension and confusion to the system. There is no excuse for arguing over the radio.

Operating an aircraft in today's ATC system is considerably different from just a few years ago. With traffic at many terminals more than double what it was a short time ago, we are experiencing over-saturated frequencies and, in some cases, almost non-stop radio transmissions. These things, coupled with the system's having some controllers still in on-the-job training and some controllers working many hours of overtime, add an "edge" to a system that once had an almost relaxed atmosphere.

Recent report on hear-backs

In March 1986, NASA published "Human Factors in Aviation Operations: the Hear-Back Problem," written by Monan, who again spent a great deal of time studying deidentified ASRS reports.

Monan opens his remarks by saying: "Every week during a two-and-a-half-years period, three to four "Where are you going?!" hazardous occurrence reports have been submitted to the Aviation Safety Reporting System:... deviations from assigned altitudes, unauthorized taxi crossings of active runways, non-adherence to DME [distance measuring equipment] crossing altitudes, turns to incorrect vector headings, and various flights over the wrong jet or Victor airways. In all, 417 such errant actions were attributed by ATC controllers and airman reporters to misunderstood, misinterpreted, mistransmitted, or unheard numbers in ATC-to-cockpit communications exchanges. Of the 417 incidents reported, 85 reports were submitted by ATC controllers and 332 by crew members".

What is greatly disturbing is that many of these actions precipitated near midair collisions, go-arounds, traffic conflicts, aborted take-offs, and, in some cases, certificate action by FAA. In other cases, the immunity granted by the use of the ASRS program aided in the pilots' avoiding

certificate actions and ensured the reporting of these problems so they could be analyzed.

Of greater importance than the certificate action, which only the ASRS immunity prevented, is the absolute potential for disaster.

Monan points out that "perhaps no other essential activity in aircraft operations is as vulnerable to failure through human error and performance limitations as spoken communication. Decades of operational experience in aviation developed the read-back/hear-back confirmation procedure. When ATC messages pass unmonitored and unverified through the communications loops, the conflict alert frequently signals the occurrence of a misheard, unheard, or mishandled communication".

Enter the data link! ALPA, FAA and the aviation industry have spent and will spend considerable time and resources developing a system enabling you to actually verify your clearance on a cathode ray tube display in the cockpit. Although this capability is still in the future, work is progressing steadily.

Subtle errors

In a great many ASRS reports, Monan notes, even though the controller received a read-back, it was incorrect and the controller did not catch the mistake - the conflict alert system did.

Many other reports, however, indicated that the non-flying pilot "assumed" the flying pilot had heard a new clearance or "thought" the flying pilot would change the new altitude in the altitude alert equipment. Assumptions, of course, have no place in the cockpit and almost invariably lead to serious conflict. We must all realize that communication does not end when the microphone button is released. Crew coordination must be followed through to ensure that the entire crew is aware of a clearance.

Improving the system

For passenger and crew safety, we pilots must set the standard in using proper procedures. A pilot who notices deficiencies in the system - poor communication techniques; argumentative controllers; extended step climbs, descents, or vectoring; or any other problem that degrades the



overall ATC system - should call the ALPA Air Safety Hotline at 800-424-2470 and outline the problem encountered. In addition, the pilot should complete and mail a NASA ASRS form. The ASRS form will assist NASA and other responsible parties to pinpoint trouble areas within the system.

Remember, a pilot may complete and mail these forms as often as desired. Immunity is invoked only when FAA files a violation against the pilots. Attaining the highest level of safety possible in day-to-day flight operations instead of degrading it is every pilot's goal.

To help achieve this goal, a pilot should:

- always use complete callsigns;
- read back clearances, including numbers such as headings and altitudes, which if misread could cause serious incident;
- listen and make sure the clearance acknowledged is the clearance given for that pilot;
- if unsure of a clearance, ask the controller to "say again";
- be especially cautious when a controller is involved with non-stop transmissions and/or multiple clearances;
- not argue with the controller (we are in the system together);
- not make unnecessary requests from ATC when the controllers are busy;
- consider using headsets;
- LISTEN - READ BACK - COMPLY.

Tom Kremer, A DC-9 captain for USAir, is the vice-chairman for operations of ALPA's Air Traffic Control Committee and a member of ALPA's Human Performance Committee.



FUTURE SYSTEMS

SATELLITES



IN AVIATION

by Roger S. Bartlett, Amraes

Limit the number of aeroplanes to say 200, flatten the earth, use three DME stations and we have the beginnings of a world wide navigation system. Faced with the slight problem of a globe, if we fix the DME's a little higher, we should be able to see at least one third of the world at a glance. Multiply that by six, make them all geostationary and we have in simplistic terms, the basic requirements for a global navigational system.

The fuse panel of a Boeing 747 has shown for many years, a contact breaker switch labelled SAT/COM. The provision for the use of satellites stopped there.

During the sixties a satellite was fitted with a transponder for VHF services, but was only used for test purposes. Later due to an initiative of ICAO, the Aerosat Evaluation Programme began in 1972, but due to lack of support and funding for the space segment, finished in 1977. Supply and demand have now come together, resulting in a new impetus in the development of satellite technology for the aviation world. Like many of the rules and regulations in aviation, this impetus, is in some degree a result of work already completed for the merchant marine.

The supply, although slowed by the Challenger accident and Ariane problems, can be satisfied in part by the various satellites already in position. Together with planned systems, the aviation world will be well served.

The demand, has come from airlines, air traffic and support services. Requirements include direct

instantaneous world wide communication, the phasing out of HF, provision of secure data links and the more economic use and closer monitoring of remote areas of the world. More important is the demand from the people we serve, the passengers, for direct, trouble free communication.

In 1979 the frequencies allocated to satellites, for aeronautical mobile communications, were in the 1500/1600 MHz L-Band. However, it is now felt that this allocation will be inadequate for world wide use and an extension to the band may be necessary, for extra public correspondence generated by satellite communication. The options include using the 20/30 GHz K-Band or an allocation in the S-Band. It is hoped that the World Administrative Radio Conference for Mobile Services will be able to agree to a solution to this problem in 1987.

Satellite Systems

There are numerous satellite systems planned or in service, for various mobile users. However, the aviation world is on the brink of its exploitation of the medium and this year will see the first test of the European Space Agency "Prodat" system together with the introduction of various commercial telephone links.

Some of the systems planned or in service:-

Global Positioning System (GPS)

This is a system from the US Defense Department, eventually to consist of 21 satellites including back-ups. presently there are 7 satellites in orbit. The accuracy of the system for civil use is expected to be of about

100 meters at 95 % probability, this allowing for at least CAT 1 approaches to be made. The military will be able to have a coded access for accuracies down to 18 meters. Even with this constellation, for certain time periods there are small holes in the system coverage.

Navsat

This is a planned European Space Agency System, for accuracies of 6 meters. This may be a development of the proposed French Granas system.

Tsikada

Low orbiting Russian system, giving position updates, using doppler shift from each orbit. Like the sister "Transit" system, is only useful for slow moving mobiles such as ships.

Inmarsat

This system has been set up primarily for maritime use but the experience thereby gained will be of obvious use to the aviation world. This system has been operating for the last five years providing a reliable and quality services. The second generation of Inmarsat satellites, with extended aeronautical capabilities, is due for launch in 1989. Inmarsat has nine satellites in orbit, three in operation and six on "hot standby". They are so positioned as to provide coverage to a limit of 75 degrees north and south latitude, although tests have shown that this could be extended to high flight levels, in polar regions, for aviation communication purposes.

Satellite Services for Aviation

Air Traffic Control

The Future Air Navigation Committee (FANS), was set up by ICAO in 1983 and as part of its brief, was to assess

the potential and capabilities of the use of Satellites. The FANS committee found two areas of the world, i.e.: oceanic and large uninhabited areas, which would benefit from Satellite Technology.

The limitations of HF communication is well known and its elimination and replacement is one of the prime objectives of the use of satellites. This would allow real or actual reporting of position by VHF relay links.

The use of satellites for Automatic Dependant Surveillance over the ocean and other areas of the world will lead to the more efficient use of airspace. The use of a satellite transponder, together with information from the on-board navigational equipment, will be supportive in the argument to reduce oceanic separation standards. Thereby allowing more aircraft to fly on or closer to the optimum track.

The FANS Group 3, 5/4 recommendation on "validating the ADA concept", has lead INMARSAT to offer its system free, for experimentation in aeronautical services.

The European Space Agency, Eurocontrol, France, Spain and UK, together with the Société Internationale de Télécommunications Aéronautique, (SITA), will, using the Prodat system and INMARSAT, conduct experiments in late 1987, to evaluate low data communication. These experiments will be conducted using Racal-Decca Satcom antennas, on aircraft of Air Portugal, European Falcon Service, Sabena, Varig and the UK CAA. The experiments which will take two years, will be used to determine how this information can be used for the monitoring of traffic by ATC and airline companies.

The services to be offered by the Prodat system include:-

1. sending of messages between fixed/mobile and mobile/mobile stations;
2. sending broadcast messages;
3. request and reply messages;
4. periodic polling of mobiles;
5. paging.

Cockpit

Company communications are divided into two categories, Airline Administrative Communication AAC, and

INPUT
magazine

Airline Operational Communications AOC.

In the USA, AAC/AOC data is transmitted by the Aircraft Communication Addressing & Reporting System, ACARS. This is known in Europe as AIRCOM. The VHF ground stations are provided by ARNIC in the USA and SITA in most other parts of the world. Satellites will be able to extend or provide an alternative routing, for the relay of information by these systems.

Other examples of data that could be passed by satellite data link include ATC clearances, MET information and information for updating the flight management system. ATC clearances could be fed directly into the flight management system.

The links being two-way, would allow immediate updating of wind and temperature information for both the Meteorological Authorities and Air Traffic Control Centres.

Cockpit workload can be reduced by the automatic transmission of maintenance data, fuel, route and block times. This will result in better turn-around times and improved efficiency.

Air Safety

The possibility of avoiding such incidents as the Korean 007 tragedy, through ground verification of FMS data, or monitoring of the intended track, can be achieved with satellites and related technology. The carriage of alcohol has always presented a safety and weight problem. The ordering of duty free goods by direct satellite link could improve safety and contribute to fuel economy.

Passenger Communication

The USA is covered by a network of 68 ground stations, which provide an in-flight telephone service. Over 800 aircraft will be fitted with the GTE Airphone system by the end of 1987. The extension of such a service for ocean flights would require satellite technology.

British Airways in association with British Telecom and Imarsat, will fly three Boeing 747's in 1988, equipped with passenger telephones. The BT Skyphone service will enable passengers to communicate world wide at one common price. Satellite commu-

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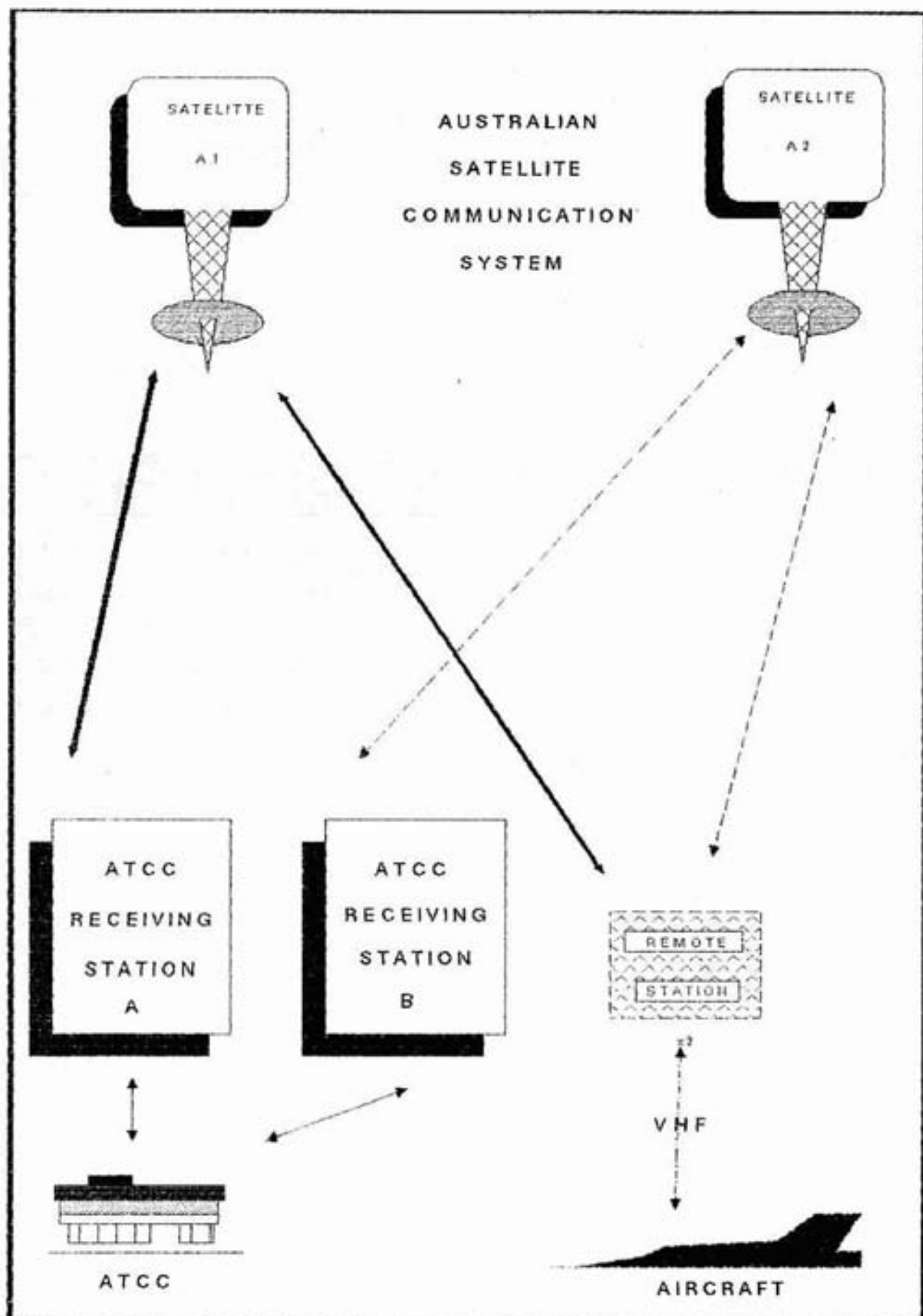


nication systems will also allow the sending of telex messages and the provision of hotel, care or onward flight bookings.

Australian First

The vast area of Australia prohibits the economic terrestrial coverage by VHF. Outside the VHF coverage area, separation standards have to be increased to account for the limitations of HF communication.

The improved technology in the L-Band has given the Australian Department of Aviation the possibility of providing a total area VHF service, to aeromobile stations. The Aussat system provides a VHF service to aircraft above 20,000 feet. Coverage can be extended, where traffic density requires, to lower levels. The system supports critical voice and data channels, with high reliability, redundancy and quality. Ground stations have dual equipment allowing for simultaneous transmission through the two Aussat satellites. The best



transmission is selected automatically.

The satellites, have two transponders each and are leased from Aussat. The first stage is in operation with 99 satellite receiving stations. There are 46 at manned ATCC;s or FIS centres and 53 collocated at VHF ground outlets at remote sites.

See diagram.

Conclusions

The impact of satellite technology will under the guidance of the FANS concept radically change the operating procedures of companies and ATC authorities.

Oceanic and continental areas of low traffic density will be subject to monitoring and perhaps control by ATC. However, the sovereignty of airspace may prohibit collective application. The authority for such monitoring would have to be vested with a UN-ICAO, sponsored organisation.

The direct benefits for companies

will lead to improved efficiency and economy, together with an extension of passenger services.

Present Air Traffic Authorities will be able to compliment radio telephony and monitoring services. Real time information will be available on a global scale and be of direct benefit to Flow Management.

However, avoiding the telephone will become more difficult.

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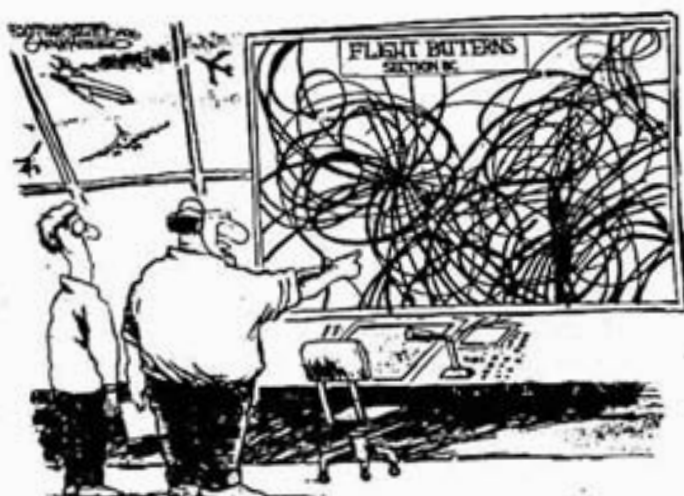
Aeronautical Satellites - the next logical step for Imarsat, O. Lundberg, Director General, Imarsat.

Satellite Services for Aviation, G.Selves, British Airways.

ATC by Satellite, H.B. O'Keeffe, Department of Aviation, Australia.

Navigation by Satellite, Captain F. Ryan, Imarsat.

Produt Aeronautical Communication System, R. Rogard & M. Pinelle, European Space Agency.



"THIS'LL BE THE SECTION YOU'LL BE IN CHARGE WITH WINDSORTH, AND REMEMBER TO KEEP THOSE NEAR MISSES TO A MINIMUM."

DANGER FACTORS:



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ROUTINE + DISTRACTION + FALSE ANTICIPATION

by Hauptmann Höreth

THE CRASH OF AN ALPHA-JET AT THE FELDBERG (BLACK FOREST) SEEN FROM THE ATC POINT OF VIEW

Factors of danger:

1. Routine
2. Distraction
3. False Anticipation

On 22nd November, 1984, an Alpha-Jet of the Belgian Air Force crashed against the Feldberg (4905 ft.) in the Black Forest.

The aircraft was under radar control and at the place of the accident it was heavily snowing and completely overcast.

Both pilots, instructor and flight trainee, died. The official accident report of the bi-national investigation commission gave as the reasons for the accident, that the flight trainee continued the initiated descent through

- the altitude of 8000 ft., several times correctly issued by the approach control unit,
 - the minimum safe altitude of 6000 ft., valid for the region of Bremgarten,
- until ground contact at 4905 ft.

So far, the facts; the case seems to be clear, the investigations are terminated, the documents ad acta? In the statistics of the BAF the notion "human deny" most probably will appear as the reason for the loss of two human lives and one aircraft.

What was really happening on board the Alpha-Jet?

- What was the reason to deviate from the TACAN-approach, as planned during the pre-flight briefing and why had a radar approach been accepted?
- Did any technical problems exist?

- Were there some misunderstandings between instructor and trainee?
- Was concentration on the flight path and/or altitude affected?
- Had an emergency situation been simulated by the instructor during the training flight?
- Did the crew itself feel too safe by being under radar control (and therefore became negligent)?
- Did the crew not realize that they were flying over mountainous terrain (Black Forest), in spite of precise position reports given by the radar control centre?

But it is useless to look for answers and to discuss it. There is no information about what was really going on in the cockpit and all considerations are based on presumptions. It is necessary to understand the problems of a training flight and to learn from this accident. Deviation or variations, not planned or agreed on before the flight, should be handled with special caution. In one's own interest, one should not deviate from the observation of safety regulations or - determinations or let oneself be distracted.

On most of the fields of the BW, ATC stations are equipped with the Surveillance Radar ASR-910. A continuous automatic height read-out indication is not foreseen. The manual interrogation is usually working without faults, but is complicated and time-consuming. During a greater density of traffic it can be used only sporadically. A permanent height observation of more than one a/c by means of the lightpen is not practicable and would distract and hinder the controller from his actual work.

During the radar guidance of the Alpha-Jet, the necessary flight altitude of 8000 ft. valid for this region of airspace, had been issued three times whilst changing the course direction. During the first two times the trainee pilot acknowledged "Flight Level 80". Obviously the radar controller put no special attention to this imprecise acknowledgement, because a flight at FL 80, with the given barometric pressure, was safely in controlled airspace.

During a third change of direction the pilot had been instructed once more, to continue his descent to 8000 ft. He acknowledged the new heading correctly, but the unchanged altitude he read back as 4000 ft. This false acknowledgement had not been received by the controllers present in the operations room and therefore it was not rectified by the controller in charge. The heading change had been observed on the radar and therefore the controller assumed that the altitude, issued three times, had been received correctly as well.

The request to read back the missed acknowledgement has not been made, particularly because the aircraft had been transferred to TWR/GCA immediately afterwards. The standardized telecommunication consoles of the ATC stations are technically constructed, that several working frequencies are switched to ONE speaker. During simultaneous transmissions either

- only the strongest will be audible, others being suppressed or will be unheard

or

- all transmissions will be unreadable due to overlapping.

This unsafe aspect could be eliminated or at least reduced by the installation of single speakers at certain working positions.

Discounting this technical source of mistakes, two questions remain;

- How is it possible that a controller misses a transmission?
- Under which circumstances can it happen that a controller does not insist on the prescribed read-back or acknowledgement?

It can be assumed that an approach controller has to guide several aircraft simultaneously perhaps on

different frequencies. It is conceivable, that after a "Routine instruction" his attention is drawn already to another "User of his services" and that he does not expect a mistake by the air crew.

Coordinations with the GCA controller about the imminent radar transfer or coordinations about departure-, landing- or route instructions can impair the necessary attention for the incoming acknowledgement.

Distraction - there are plenty of possibilities; an official instruction



by the Supervisor, a private talk in between, the conversation with a technician or the presence of visitors in the operations room can contribute to endanger the safety of air traffic.

It remains a fact, that pilots and controllers are obliged to acknowledge information and instructions, necessary and important for the conduct of flight, in order to exclude misunderstandings. Nevertheless, did not in this case the well-intentioned, continuously - added instruction of flight altitude to the change of heading, create a new unintentional source of misunderstanding?

It is normal to acknowledge a given pressure, setting an assigned runway or an en-route clearance. The ear is trained to it, faults are expected, immediately recognized and corrected.

But, in the case of instructions for headings and/or altitudes during known approach and departure procedures, both sides intend to transmit the necessary acknowledgements almost automatically.

The ROUTINE nature of such acknowledgements tends to make one with just a "Roger" or a callsign.

In the interest of air safety everybody should always make sure, that all instructions and information have been correctly and completely understood.

THE JOYS OF PARACHUTING



by Philippe Domogala

In 1965, a large campaign was made in France for Aeronautical Sports which included gliding, parachuting and aero-modelling. This was part of a Governmental Effort to "Modernize France". Young boys and some girls between 15 and 17 years old were dragged into airfields with various degree of motivation.

First we had to learn numerous aeronautical subjects on Saturdays afternoons for 6 consecutive months. Half of that time was spent on learning Aviation History, from the French point of view of course, Clement Ader, Mermoz, St. Exupery, Blériot, Caravelle, Concorde, etc...

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After the "Propaganda" we all had to pass an examination, called "Elementary Licence for Aeronautical Sports" and were finally sent to the airfield to choose our discipline on the next Sunday. God only knows why but while the aero-modelling and gliding courses were starting at a civilized 0930 hrs., the parachuting ones were starting at 0600.

So there we were, still sleepy from the previous Saturday night out with respective girlfriends, at 0600 in front of a huge paratrooper in battle dress calling us "his boys" and desperately trying to convince us of the joy of jumping from an aeroplane at 1000 meters altitude. While time passed we learned the difference between 25 kg ropes, 50 kg ropes, the joy of folding, de-folding, checking, re-checking, etc... We learned how to fold and de-fold for 3 consecutive weeks. We also spent considerable time climbing a ladder and jumping from the top, into the grass below dressed with big battlefield shoes, strapped with ventral and back-side bags and wearing a metallic helmet. This "jumping" training generally took place during warm sunny afternoons, when the temperature was at its best. Finally the big day came and a French Air Force NORDATLAS Piston-engined aircraft came and loaded the 35 survivors of the course for their first jump.

Inside the NORDATLAS it was incredibly noisy. Everybody was frightened to death except our coach of course, who seemed cynically happy. We were all seated with our backs to the hull, watching that stupid cable running along the aeroplane wall, until the open door, while wondering what in hell we were doing there... Suddenly our coach shouts: "OK boys, stand-up and fasten your snap-hook to the cable!". He then counted the heads with his fingers, then counted the number of snap-hooks hanging to the



cable = the same OK! ... "Remember", he said "do nothing! The cable will open your parachute automatically!"

The rest went very fast, the first one of the lot is pushed outside and you just had to follow, the door comes, tremendous noise, wind, you are sucked outside and find yourself immediately in the turbulence of the propeller, (the door being just behind the engine's flux, you spin in all directions reaching a degree of fright never experienced before amid the turbulent air and noise. Then suddenly you are pulled upwards by the cable, and how! surprise ... everything stops! ... The noise, the turbulence ... you look up and you see the enormous reassuring dome above your head ... HURRAH! it works ... but what!... Somebody is walking on MY parachute!... Yes steps and feet can be seen clearly through the nylon. The walking stops, and another guy is passing beside you also hanging from a parachute. This was the guy just after you on the plane ... he probably jumped too close after you and found himself trapped in your parachute when it opened. Then you look down, Shee... eet! the ground is coming too fast, you think you are going to crash, and you remember in a flash: "Bend the legs, roll! ..." before you realize it you are on the ground trying to fight your way out of 1 1/2 km of nylon ropes ... you then feel great! ... Helas, another coach is shouting: "OK, guys, come up!, you have 20 minutes to fold before the next jump!"

... "20 minutes?" 20 minutes to fold? but it took us almost 2 hours to fold it the first time! "You don't think the French Air Force is going to have its aeroplane waiting 2 hours on the ground for you do you? ... "Heu ... No Sir" ... "Then start folding!" We then frantically started to fold our parachutes the best we could but 25 minute later only 18 out of the initial 35 pioneers were ready and they only, could re-board the NORDATLAS, to my personal immense relief. We then waited, sitting on the grass watching the fate of our 18 "colleagues" up there ... The first 5 went OK, but number 6 had an interesting experience ... In his haste to fold his parachute he unfortunately mis-

placed a 50 kg rope, which now was above the cupola, splitting the parachute dome in two, making the whole parachute asymmetric. The immediate result of this, was that instead of descending in a regular straight line, the whole thing was swinging, as the half dome without exhaust hole is filled with compressed air. Of course the amplitude of the swing increases with time, and as one get closer to the ground. Our "colleague" understandingly wanting to get out of such a situation, decided to open his emergency-ventral parachute. But this one, can only operate when sufficient speed allows it to deploy, (i.e. when the normal parachute does not deploy) - so the result there was that the ventral defolded itself, lifted a bit in the air, but with the next swing of our unfortunate friend, it got back in its face and wrapped around him. After a couple of more swings he found himself completely wrapped inside the second parachute. So we had a swinging mummy coming down towards the airfield's hangars while most of the coaches were running towards the E.P.C. (Estimated Point of Crash) and shouting advice to the poor guy.

When we finally found him, between a hangar and the airfield! fence we were all relieved to hear (very) nasty words, about aeronautics in general and parachutes in particular, coming out of a heap of cloth and rope.

Most of us the following Sunday were queuing around the gliding hangar, while the most sensible went directly to aero-modelling classes - only a few fanatics or lunatics remained parachuting. We referred to them as "mads" and they referred to us as "no-balls".

As to the "flying mummy" as we nicknamed him, he continued parachuting, having been convinced by his coach that his "incident" only happened once in thousands, so he could now be assured (statistically speaking of course) to have years of trouble-free jumps in front of him.

The last I heard of him, he was flying helicopters and spraying vineyards in the Bordeaux Area. —



Airbus-News

AIRBUS INDUSTRIE - A TRULY TRANSNATIONAL ORGANIZATION

Airbus Industrie is responsible for the development, manufacture, marketing and support of the current A300, A310 and A320 aircraft programmes, as well as of the A340 and A330 programme. It is the only organization that customer airlines and aircraft operators deal with, when seeking to purchase aircraft marketed by the consortium. Airbus Industrie is also responsible for coordinating the activities of its major contractors in the field of Airbus aircraft production.

The Airbus Industrie partners - and shareholders - are Aerospatiale of France with 37.9 per cent, British Aerospace with 20 per cent, MBB or West Germany through Deutsche Airbus with 37.9 per cent and CASA of Spain with 4.2 per cent. Fokker of the Netherlands and Belairbus of Belgium are associates.

Airbus Industrie was created in December 1970, some 18 months after the official launching of the A300 programme by its two major - and at that time only - partners, Aerospatiale and Deutsche Airbus GmbH. Being a single entity, Airbus Industrie is fully responsible for the management of the programme, thereby avoiding a leader/subcontractor relationship for the partners. The Spanish company CASA joined Airbus Industrie in December 1971, and so did British Aerospace (British Aerospace has participated as an associate through Hawker Siddeley since the beginning) in January 1979.

Airbus Industrie thus comprises the major aerospace companies in Europe, and can rely on their full resources in order to produce, develop and expand its aircraft programmes.

In aviation terms, Airbus Industrie is still a young company - its first product, the A300, entered service in May 1974. Today, some 13 years later it has achieved its goal of having a complete airliner family. This record compares favourably with Boeing, which took some 20 years to reach its extensive product line (from 707 entry into service to 767 launch).

As a relative newcomer, Airbus Industrie had to work hard to establish itself - faced with a choice of existing aircraft from well established manufacturers, airlines had to be offered a good reason to change. That Airbus Industrie succeeded is history - there are only three places in the world where major airliners can be obtained today, and Toulouse is one of them. One of the reasons for the consortium's success is its continual striving for innovation - some 20 per cent of its aircraft development costs are invested in technological advances.

Legally speaking, Airbus Industrie is a "Groupement d'Intérêt Economique" (G.I.E.) or "pooling of common economic interests", permitted under French law for a single legal entity with clearly defined aims. Its responsibility to third parties is assured by making the partners jointly and individually liable for the total undertakings of the Group. In other

words, although having no capital, Airbus Industrie has behind it the full financial resources of all its partners, which are responsible for both their own share in the programme - and for the shares of the other partners in the unlikely event that one steps out or fails. This naturally ensures the continuity of Airbus programmes. Airbus Industrie's organizational make-up also enables it to widen its cooperative membership to involve other industries within or outside Europe.

Airbus Industrie's headquarters are in Toulouse, southern France, close to the A300/A310 and A320 final assembly lines. Toulouse was selected as the site for the assembly line after careful consideration of all locations - in addition to its other facilities, Toulouse offers an "open sky" in which Airbus aircraft can fly without hindrance. Airbus Industrie's staff numbers about 1,200 and includes 16 nationalities - the bulk of which are British, French, German, and Spanish. The consortium has been headquartered in Toulouse since January

1974, having been in Paris beforehand.

Today, Airbus Industrie's excellent reputation for product quality, marketing efficiency and support is well established in the world market, and the consortium is regarded as the major competitor for the biggest American manufacturers. Airbus Industrie aims to expand further, thus offering airlines the benefit of truly international competition.

Orders during July

Two unannounced customers placed firm orders for five A320s and two A310-300s during July. They bring A310 and A300-600 sales to 460 aircraft from 60 airlines, and A320 sales to 287 from 18 customers, making a grand total of 747 firm sales to 69 customers. In addition, A340/A330 orders and options comprise a further 130 commitments from ten airlines.

A 320



First six months were consortium's best ever

The first six months of this year were highlighted by the winning of important new customers, the start of A320 flight-trials and the launch of the A340/A330 programme.

Airbus Industrie won commitments during this time for a total of 223 aircraft - comprising firm orders for 47 A310s and A300-600s, 46 A320s, and orders and options for 130 A340s and A330s - its best ever first-half results. This compares with sales of 63 aircraft - 19 A300s and A310s and 44 A320s in the first half of 1986 - the consortium's best. Just as importantly, the Airbus customer family grew by ten new customers - Air Malta, Air Niugini, All Nippon Airways, American Airlines, GPA Airbus 320, International Lease Finance Corporation (ILFC), TAP-Air Portugal, UTA, Wardair and an unannounced client.

As a result, Airbus Industrie held firm orders for 740 aircraft - 458 A310s and A300-600s and 282 A320s - from 68 customers by the end of June which, together with the 130 A340/A330 commitments and 160 A320 options, took the consortium past the 1,000 aircraft milestone.

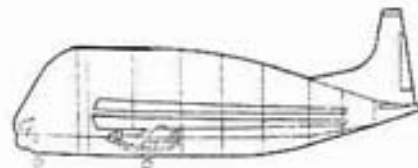
During the first half of 1987 Airbus Industrie delivered 16 aircraft to nine airlines - including new Airbus operator Royal Jordanian - bringing deliveries at the end of June to 375 A300s and A310s, and the number of Airbus operators to 61.

The first flight of the A320, on 22nd February, marked the start of successful flight-test programme - a quarter of which is now complete (see story on page 7). As the first airliner with computer-driven fly-by-wire controls and side-stick controllers, the flight and subsequent work toward certification in spring next year are leading the way for the next airliner generations. And with 439 orders and options from 16 airlines at the time of first flight, the A320 has already set a record for more commitments than any other airliner at the same stage.

Following the approval of its major shareholders and partners, Airbus Industrie was able to launch the A340 and A330 as a combined programme on 5th June. The go-ahead for the very long-range four-engined A340, and the medium to long range

twin-engined A330, represented the achievement of a key element of the European consortium's strategy - that of offering a complete family of aircraft to satisfy airline needs. With 130 commitments from then airlines at the time of launch, the A340/A330 programme is already off to a good start.

Another significant event was winning European and US certification for the 310-300 powered by the new



Pratt and Whitney PW4000 engines, in May and June respectively, making Airbus Industrie the first to have flown and certificated both of the new-generation American large-turbofans. Pan Am put the combination into service in June.

Airbus Industrie has begun using its expanded mock-up centre (see story on page 8 of Airbus Letter 2/87L) to highlight two new features - a rest area beside the cockpit for pilots, and another one for the cabin crew. The crew-rest areas are especially important for very long-range aircraft such as the A340, on which sector flight times could be as much as twelve to 18 hours.

The pilot's rest area will be directly behind the cockpit, and features a panel that can be slid aside to reveal an unobstructed view of the crew and their instruments. It thus allows the captain to be at the nerve centre of the aircraft at all times, and hence better placed to respond to emergencies than if resting elsewhere without this possibility of direct contact.

The compartment has two bunk-beds, each 1.90 m/6 ft 3 in long. The upper bunk can be hinged upward to provide seating for two on the lower bunk, with a view of the cockpit (in addition to the provision for two observer seats in the cockpit itself). It also features stowage for coats and carry-on baggage, a cabin interphone and, for each occupant, an entertainment system with television display, fresh-air blower, reading light and emergency oxygen-supply.

For the cabin-crew, here too a lot of thought and attention to detail has gone into creating an attractively furnished compartment with five beds. In addition, there is a changing room, refrigerator, cabin interphone and, for each occupant the same entertainment system and services as those provided in the pilots' rest area.

A330



Reached through an entrance with stairs leading downward from the main cabin, the crew-rest compartment will be a self-contained room the size of a large LD6 container that has been "stretched" to a length of 2.44 m/8 ft., mounted at the forward end of the rear cargo-hold. The entrance and crew-rest compartment are quick and easy to fit and remove, giving airlines increased flexibility in operation. A hinged panel also allows the entrance area to be converted into additional storage space, when access to the crew-rest compartment is not required.

Airbus Industrie - jointly with its partner MBB - is the first manufacturer to produce a crew-rest compartment of this kind, and has already begun receiving a positive response from airlines - some of which have even expressed interest in offering the concept to first-class passengers.

COMBINED A340 AND A330 PROGRAMME IS LAUNCHED

Airbus Industrie launched the A340 and A330 as a combined programme on 5th June, following the approval of its major partners. At the time of launch, Airbus Industrie had 130 commitments (89 A340s and 41 A330s) from ten customers - Lufthansa, Air France, Northwest, Air Inter, Thai Airways International, UTA, Interna-

tional Lease Finance Corporation (ILFC), Royal Jordanian, TAP-Air Portugal and an unannounced airline.

The launch of the very long-range four-engined A340 and medium to long-range twin-engined A330 has long been a goal of the European consortium, and gives it from now on a complete airliner family. It means that Airbus Industrie now has four major product-lines which are, in order of increasing size and range, the A320, A310/A300-600, A330 and A340.

In naming UTA as an A340 launch customer during the Le Bourget Air Show, Airbus Industrie President and CEO Jean Pierson highlighted the French airline's exclusively long-haul route network. "Without the A340 Airbus Industrie would have been unable to satisfy the needs of UTA and many other airlines, thereby conceding an important part of the market to Boeing and McDonnell Douglas", he

said. "This is the best proof that we really needed the new aircraft, without which we would have been unable to win this type of customer".

The Le Bourget Air Show also saw Lufthansa reaffirm its commitment to the A340 equipped with CFM International CFM56-5C-1s. "The CFM engine now offers satisfactory performance and fuel economy, and we very much look forward to operating the A340 - for which we have long had a need", said Lufthansa Vice Chairman Reinhardt Abraham.

Lufthansa and UTA will be the first airlines to take delivery of the A340, in May 1992. The first airlines to take delivery of the A330 will be Thai Airways International and Air Inter, in October 1993.

Having achieved A340/A330 go-ahead, Airbus Industrie and its partners are now concentrating their resources on design and production. The schedule calls for the ordering of major vendor-supplied parts to begin this autumn, for the assembly of jigs and tools to get under way at the end of this year, and for the cutting of metal on A340 parts to start in mid-1988.

A310-300 IS FIRST AIRCRAFT TO BE CERTIFICATED WITH PW4000S

Airbus Industrie won FAA certification for the A310-300 with Pratt & Whitney PW4000s on 10th June. It had previously achieved certification of the combination by the French DGAC and West German LBA on 27th May, and was then the first to obtain approval for an aircraft with the new engine. Certification followed some 300 flight hours of Airbus Industrie's A310-300 demonstrator with PW4000s, beginning on 8th November, 1986. The engine develops a maximum thrust of 52,000 lb/230 kN in this role, for which it is designated the PW4152.

Pan Am took delivery of the first of twelve PW4000-powered A310-300s on 17th June, becoming the first airline to use the new engine and the first US operator of the type (see page 3).

Flight trials of Airbus Industrie's A300-600 demonstrator, powered by 56,000 lb/250 kN thrust PW4156s, are continuing.

Airbus Industrie is thus first manufacturer to have flight-tested and certificated both of the new US-built

large turbofans - the General Electric CF6-80C2 first entered service on the A300-600 in October 1985 - demonstrating its commitment to continuous product improvement.

THIRD AIRCRAFT JOINS A320 FLIGHT-TEST PROGRAMME

The third Airbus A320 flew for the first time on 18th June, in a mission lasting three hours and ten minutes. Painted in the colours of Air Inter, the aircraft is one of four in a 1,200 hour flight-test programme that will lead to certification of the CFM International CFM56-5 powered version in February 1988.

By the end of June, the three aircraft had accumulated a total of 318 hours and five minutes in 157 flights.

Airbus Industrie's pilots and flight-test engineers finalized the control-laws programmed into the A320's fly-by-wire (FBW) computers in mid-May, and aircraft handling is thus representative of the A320s that will enter service in spring 1988. With this important milestone achieved, and with about a quarter of the planned flight hours completed, the focus is now on performance - in take-off, cruise and landing - as well on the behaviour of systems such as air conditioning, hydraulics and electrics. Much of the performance measurements will be made with the first and second A320s, while aircraft number three will concentrate on systems.

In addition, the representatives of the certificating authorities in Europe and the USA have already had the opportunity to fly the A320, and pilots of the A320 launch customers are also being given a chance to make similar evaluations.

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A340

KENYA AIRWAYS IS TOP OF AIRBUS UTILIZATION LEAGUE

Kenya Airways achieved an utilization of 4,100 flight hours with its first A310-300 in its first year of operation, becoming one of the leading Airbus operators in terms of hours flown per aircraft. This represents an average daily utilization of eleven hours and 14 minutes and almost four flights per day. The airline also achieved an outstanding technical dispatch reliability of 99.5 per cent during its first year of operation.

Kenya Airways was the first African operator of the A310-300, when it received its first aircraft in May 1986 and a second in September of the same year.

Kenya Airways is using the two A310-300s on non-stop services from Kenya to Europe, as well as on regional routes. Its network includes the longest non-stop sector currently being flown by an Airbus aircraft - London-Mombasa, a distance of 3,910 NM/7,250 km, which represents an average flight time of about nine hours.

Other Airbus operators with a high daily utilization include Cyprus Airways and Sabena with their A310s, Conair, Dan Air, Karair, Luxair, Orion

Airways, Wardair and Continental with their A300s, and Lufthansa with its A300-600s.

Average technical dispatch reliability of the A310, now in service with 20 operators, is 98.9 per cent, while average daily utilization is six hours and 49 minutes and four flights a day. Corresponding figures for the A300 are 98.7 per cent and seven hours and seven minutes in four flights a day, while those for the A300-600 are 97.8 per cent and six hours and 34 minutes and three flights a day.





— NEWS FROM OUR NEIGHBOURS —

Germany

You might have seen in recent weeks, some advertisements in the German press placed by the controllers, of the type: "62 Düsseldorf fully qualified controllers immediately available for any job anywhere ...". These adverts (similar ones were placed by Bremen, Frankfurt controllers etc. ...) caused certain reactions, especially in the Press, Radio and Television included.

The action was by the controllers themselves and not by the VDF (German ATC Association). What provoked these actions was, according to the VDF, the disappointment of the controllers with regard to their working conditions, promotion prospects and lack of a proper salary for the job done (the argument that a 20 years old LUFTHANSA stewardess is receiving after 7 weeks of training more than a 45 years old experienced radar controller was mentioned. Other points of friction are the fact that, according to the VDF, the bonuses for ATC duties (maximum 350,-- DM per month) have been defined in 1973 and have never been reevaluated since, not even for inflation. Promotion prospects seem to be blocked due to the fact that all superior posts are occupied (a known story ...).

One of the German Controller's Advertisement in "Die Welt".

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73 Düsseldorfer Fluglotsen

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Zuschreiben an:

Gerd Kupfermann
Arbeitsstr. 68, 4000 Düsseldorf 30

France

The "1987 summer strike" that lasted 14 weeks ended in a very

by Philippe Domogala

IFATCA RVP EUR. WEST

interesting way. If the result in itself was received by the French controllers with some mixed feelings, it has, however, some very valuable consequences as we will see later. You may remember that the French controllers started this strike mainly in order to improve their pensions, by including the special bonuses they receive (that can reach up to 40 % of their salary) into the calculation of their pensions. The Government always refused this, arguing that it was not the practice in the Public Service, and that above all, it would create a "dangerous precedent" for categories of public servants ...

After 2 months of strike, the Minister of Transport made a proposal to "privatise" or better, to create an Agency, removing the controllers from the public service, enabling a salary raise and various pension scheme possibilities.

The Unions balloted their membership and 92 % of it rejected the Agency offer. As a result of this situation, a solution had to be found within the public service and within a few days, a compromise was agreed upon between the Unions and the Government.

From now on, controllers with more than 35 years of age, more than 12 years experience at maximum qualification and already exercising certain functions (such as training officer or "chef de quart") will be transferred to the A Category of the public service (A category is the highest category of personnel, similar to the Eurocontrol system. This will mean a net raise of basic salary, enabling a raise of pension of about 1.000,-- FF per month (320,-- Dfl). Initially a low number of controllers will qualify

(about 20 % of them) and the actual raise of pensions (about 12 %) leaves most of the controllers worrying about the compromise. Negotiations are still going on to extend the scheme to more controllers. A very interesting development that EGATS will monitor closely.

Belgium

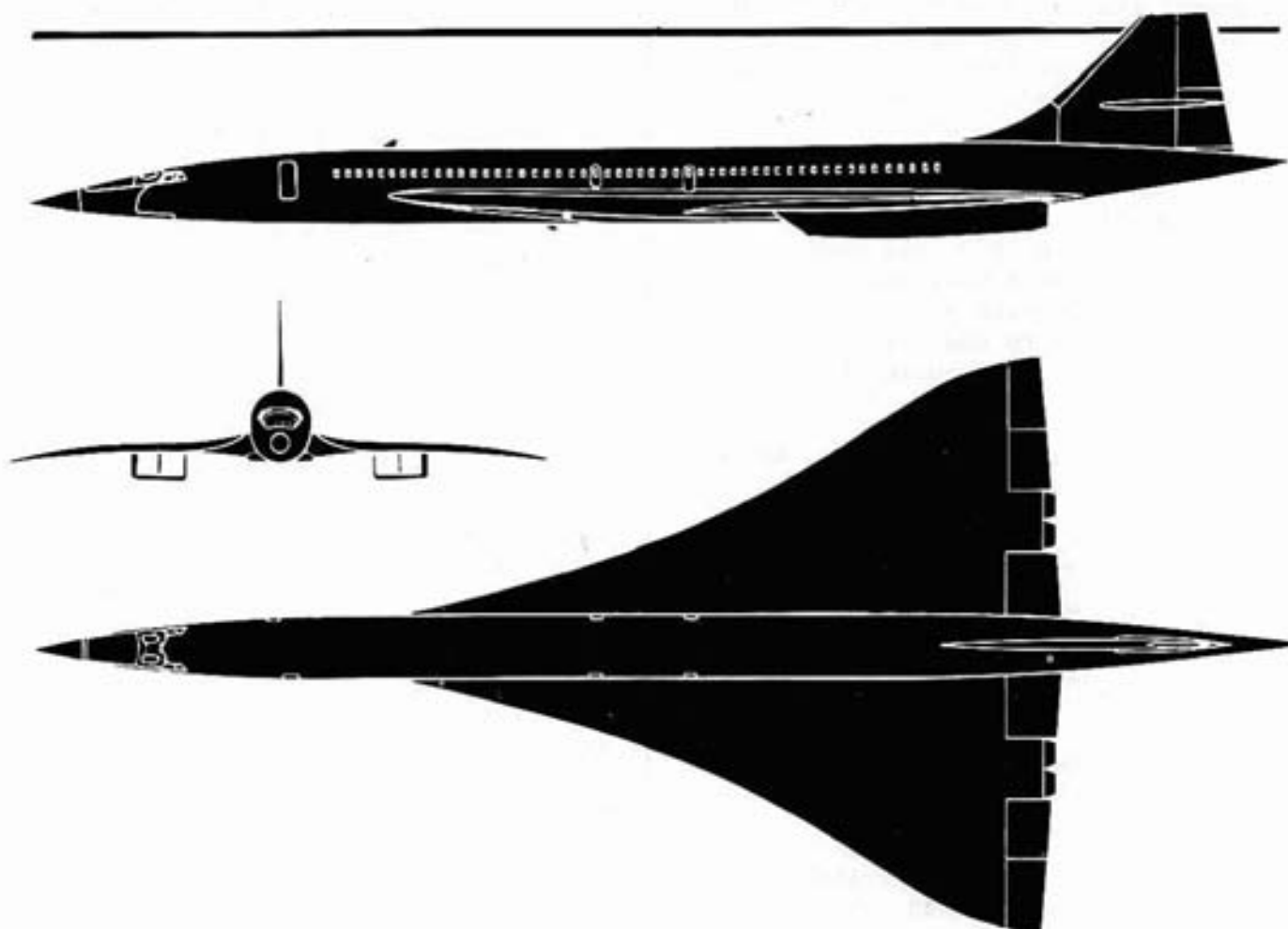
Last month we learned with sadness of the sudden death of 2 controllers from Brussels, Filip Kyndy and Jean-Marie Stapels. They were 35 and 38 years old. Our sincere condolences to their families and our sympathy to their colleagues and friends in Brussels.

Luxembourg

The long lasting problems between the controllers and the Luxembourg Government continues. There have been numerous meetings in which some positive decisions were taken such as the construction of a new control tower, promised for 1990, and an increase of staff from 26 to 32. But no recruitment has taken place to date and salaries have not been increased. This summer, in addition to the normal

leave planning, one controller became sick and another left ATC for another job. Confronted with a serious lack of qualified personnel, the Airport had to be closed at night.

The Government reacted by recruiting 5 British controllers from I.A.L. to overcome this problem and called for a meeting with the Guild. At the last minute, the meeting was cancelled by the Minister. The next day 23rd July, 1987, all controllers reported sick and the airport was practically closed the whole day. The same evening an urgent meeting between Government and controllers was arranged and a compromise found. A series of "serious discussions" were tabled for September on the future of Luxembourg ATC, the controllers accepted to cooperate with the 5 I.A.L. controllers who had been recruited for one year. The airport Management declared the Luxembourg TMA "uncontrolled airspace" at night, in order to allow take-offs and landings for the period 25th July, 1987 till 15th August, 1987, when no Approach controller was available (this last point was strongly condemned by the Luxembourg Guild).



THE AS 100



Aerospatiale is currently working on a preliminary aircraft project (AS 100) based on new propulsion concepts. Indeed, the oil crisis which greatly affected air transport in the 1970s led the industrialists to reconsider a certain number of data in this field.

As a matter of fact, the introduction of recent technologies gave a fresh impetus to the propeller propulsion and extended its scope of application to speeds up to now reserved to jet engines.

Hamilton Standard which was the forerunner in this area is presently proposing the Propfan in partnership with Pratt and Whitney and Allison : two contrarotating coupled fans of conventional architecture (engine + gearbox + propeller) which is due to be flight tested by the end of this year.

More recently, General Electric decided to develop the UDF (Unducted fan) with contrarotating propellers directly driven by the turbine without any gearbox. Flight tests have been

carried out in the second half-year of 1986.

For its part, Aerospatiale has, for some years, been conducting a study for a preliminary aircraft project well suited to this type of propulsion : the AS 100, will be a short/medium haul transport with about 110 seats; nominal range : 1500 NM; cruise Mach number between 0.74 and 0.78 at an altitude of 30000 ft. Such aircraft will benefit from all the new technologies available when it enters service, due to be in 1995, in fields as varied as aerodynamics, materials and systems.

Measured against a comparable turbofan powered aircraft, the fuel saving should be on the order of 30 %, that is to say direct operating cost lowered by 10 %.

EGATS E COMMITTEE H

by Henk van Hoogdalem - TC Chairman

Input Operator on all Sectors

After the trial period in the Brussels Sectors of an input operator per sector, the TC sent a letter to Operations Management, strongly supporting the presence of an input operator/strip distributor on all sectors. In the Hannover Sectors, some hardware re-arrangements are required by the positive outcome of the input operator now being directly involved in the traffic of the sector concerned makes these changes necessary. The T.C. proposes that CPL and warning strips be printed on the sector where these strips are to be used and so no strip runners would be required anymore.

Callsign Confusion

After many articles from different sources and some frightening incidents caused by callsign confusion, the T.C. is aware that finally this problem is being taken seriously by the appropriate authorities and by our Management (briefing sheet and internal note MAS-O/196.4.1). The T.C. encourages controllers to make log-entries if they experience callsign confusion since these entries are useful when companies have to be advised.

No Internal Reference on ACT Reception

The T.C. is preparing a proposal to have a short plan presented if an ACT message is received which cannot be treated automatically. As long as the ACT is in queue awaiting manual action from the input operator, no information is supplied to the controller but all details to make a short plan are available. To overcome this shortcoming, an automatic short plan should be created by the system, to inform the radar- and planning

controllers about the flight. The short plan is automatically replaced by a normal presentation as soon as the manual action by the input operator is finished.

QDM List

The T.C. proposes to replace TRS (Trosa) by PER (Peter) since Copenhagen prefers the concerned flights direct to PER.

For your remarks and proposals, contact the T.C. Members: Jan Van Eck, John Doyle, Herman Mertz, Ralf Hülsher, Ernst Vreede, Paul Hooper and Henk Van Hoogdalem.

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== „REVISIONS” ==

by Geoff Gillett

In this, the first of a new series of occasional articles, Geoff Gillett recalls some events, major and minor from the year - would you believe it - 1977.

April 19th - New elected Maastricht Staff Committee has on the agenda, "Pension age of Controllers".

May 10th - Eurocontrol Maastricht organizes the annual European Controllers' Cup Football Tournament - 24 teams participate. A German Air Force TA16 flies in with the Bremen team - Paris wins the cup - a mammoth farewell party held in "The Kwien", Vroenhoven.

May 16th - Zagreb district court sentences controller Gradimir Tasic, to seven years imprisonment - EGATS writes to Yugoslavian Ambassador expressing controllers' concern and requesting support for a petition to President Tito.

August 10th - 70 Eurocontrol trainee controllers faced with redundancy, following decision to establish a BFS ATC operation at Karlsruhe - letter

sent to trainees signed by Director General, R. Bulin.

August 12th - Denis Watkins, Head of Operations Division Maastricht - a popular and respected boss, retires due to ill health, taking with him many messages of goodwill and a champagne bucket presented by EGATS.

September 13th - Eurocontrol demonstrates ADMAR System (Abgesetzte Darstellung von MADAP Radar Daten - Remote MADAP Radar Display) to representatives of German Ministry of Defence, Ministry of Transport, BFS and Air Defence Commanders - Director Operations, Mr. G. Trow, also present.

October 6th - Canadian Commission on bilingual Air Traffic Services visits Maastricht UAC.

October 7th - Qantas Airways receives United States Flight Safety Foundation Award for its exceptional safety record - 25 years of flying carrying 13,132,827 passengers, without a single fatality.

November 20th - Director Maastricht, Dr. von Villiez sees Abraham. ———

