





the magazine of the  
EUROCONTROL GUILD of AIR TRAFFIC SERVICES

ISSUE:

1990 - 2

WITH THANKS

TO:

MARTIN GERMANS  
(Artwork)

PAUL DEMELINNE  
(Lay-out)

JOSETTE NOELMANS  
(Word processing)

CONTENTS:

PAGE

○ EDITORIAL by Andy Barnby	2
○ FROM THE EXECUTIVE BOARD	4
○ FROM THE EGATS SECRETARY	6
○ AVIANCA AIRLINES FLIGHT 052	7
○ IFATCA ACAPULCO REPORT	17
○ ORANGE APPEAL by Andy Barnby	19
○ MILITARY MATTERS - The Lippe Page	25
○ MAN MACHINE INTERFACE SYMPOSIUM by Bob van der Flier	26
○ THE EUROCONTROL AB-INITIO TRAINING PROGRAMME by Roger Feyens (TDSP)	30

All correspondence to be  
addressed to:

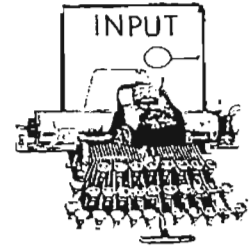
The Editor 'INPUT'  
Postbus 47  
6190 AA BEEK (L)  
The Netherlands



Contributors to input are expressing their personal points of view and opinions, which are not necessarily those of their employers or EGATS. EGATS does not assume responsibility for statements made and/or opinions expressed therein. It does accept responsibility for giving those contributors an opportunity to express their views and opinions.

# EDITORIAL

*by Andy Barnby*



## COMMENT

First of all. Many thanks, for past issues, to Bob van der Flier who is stepping down as Editor of Input due to medical reasons. He has stated, however, that he still wishes to contribute to Input but not under the pressure of a regular writer.

The summer traffic is here, pressure is building up. The Belgian Lower Airspace was, at the time of writing, closed twice a day due to strike action - or inaction! France was suddenly saturated and unexpectedly refused traffic which then had to hold in our airspace. Whatever the reason it affects the atmosphere in the Operations Room.

From the mid-seventies until the late eighties, for almost fifteen years, we at Maastricht lived not only with the annual traffic growth but also a decidedly uncertain future hanging over our heads. Eurocontrol was a dirty word-everyone tried to kill us. A morale destroying situation if ever there was one and yet the atmosphere in the Operations Room could never have been better. Think about the last three years, or so and I believe you will agree that morale and motivation is presently at an all-time low. Why? we now have a future. At the risk of being accused of "blowing one's own trumpet" we have a superb reputation as an A.T.C. unit amongst the World's Airline Crews and Airline Operations departments. The Guild has an excellent reputation with all its contacts and is striving to improve even on this! Morale and motivation should be high - something is clearly wrong.


Where is the interest? Why is the Guild kept going and I mean kept going, by a handful - literally of enthusiastic, professionally minded people.

These volunteers not only have the above mentioned pressures which we all live with daily but also the extra Guild pressures. We are ALL taking the Guild for granted, giving nothing. If it disappeared as a body, what would happen? - THINK ABOUT IT. We would be individuals in the Operations Room with no real bond. The professional feeling would soon dissipate, morale and motivation would sink even further below the present level. Just at the time when we need to be one voice as a professional body we would not be. What is wrong? To give only one example; I was very indignant when I found the recently published "Haren News" in my locker. Where is this place? - The Eurocontrol ATC Centre for almost twenty years at Maastricht maybe? It must be - underground parking, a shop, a bank, social facilities and A CANTEEN WITH OPENING HOURS TO CATER FOR SHIFT WORKING STAFF. No, wrong! It is, of course, the new Headquarters Office-block, Route Charges Office-block and Central Flow Unit in Brussels - do I laugh or cry? Why don't we have these facilities here? The general feeling in the Operations Room is that Maastricht and especially Operations is treated as a backwater, a nuisance. Despite the fact that we are CONSTANTLY expected to work as expeditiously, efficiently and accurately as humanly possible, so long as we do the job well, we are ignored. Our management team should have picked this up a long time ago - but divide and conquer seems to be the preferred style.

We need the Guild to bring this to Management's attention and to get things changed before it is too late. A strong feeling of dissatisfaction is rife in the Operations Room. Note the word WE. Did you laugh at the above? - let us know - letters will be published, anonymously if desired. Do you have ideas? Bring them forward within the

Guild. Better still, give some help in person - maybe your morale index will improve, you could even become more interested! Shouting once a year at the A.G.M. is all very well but let's band together and change things for ourselves. Unless WE do it, nobody else will. WE have the most to lose. START BY WRITING TO INPUT - IT DOESN'T TAKE LONG.

Combined with this issue is a

Working Paper produced by the EGATS Executive Board titled "Comments on the Maastricht Development Plan". This concise paper is concerned with YOUR future, your working conditions vis-a-vis hardware, software, career structure, retirement, promotion, job satisfaction and much more. A lot of time and energy went into this. Read it and react on it - LET'S HAVE YOUR COMMENTS. KEEP IN CONTACT 

## DISCUSSIONS

---

(intentionally left blank)

FROM THE



BOARD

## EXECUTIVE

### Minutes of the Special Executive Board (Crisis) Meeting 06-06-1990.

Present: Messrs. Gordts, Gillett, Habel, Domogala, Ralston and Scholts.

Mr. Gordts opened the meeting with a prepared statement which made reference to the recent turbulent AGM. He felt that sufficient time had been passed to permit a calm discussion. The "en bloc" resignation as proposed by him was not considered by the other members of the Board (09-04-90), but the decisions taken at that meeting were also not appreciated by those members not present. The situation to be made clear.

Mr. Gillett and Scholts explained at length their reasons for offering their resignations. Without going into details in this summary, it was felt that errors and misjudgments had been made on all sides, however that there was no deliberate attempt to mislead either the Board or the members. It was felt that some members had carried their criticism too far to the point of bullying. The Board restated its intention not to give in to the vociferous minority and to continue to pursue professional goals based on majority decisions made by the Executive Board. Individual members who disagree with this attitude may make their feelings known through the usual democratic elections held each year.

Mr. Gillett agreed, after extensive discussion, and at the unanimous request of the E.B. to withdraw his resignation. The E.B. in formulating their request considered that Mr. Gillett had been functioning as spokesman of the E.B. during the AGM debate, and had acted at all times in the best interest of EGATS as he saw it.

The E.B. has apologised to members at the AGM for what was considered by some members to be an error of judgement, and this whole issue is now closed.

Mr. Scholts agreed that, after the request of the other E.B. members, under certain circumstances, which he specified to the E.B., and with which they agreed, he was willing to withdraw his resignation. Mr. Scholts further stated that his offer of resignation had been an reaction to the general functioning of EGATS, which he wants to improve, and an emotional reaction to his frustration with members whose criticisms were obstructive and destructive rather than constructive.

It was unanimously decided to make a new start with the persons elected at the last AGM, to continue the work started in a more dynamic (aggressive) way as indicated by the members at the AGM.

The Maastricht Development Plan working paper which has been produced by EGATS and which has

been circulated among others to the working group formed at the AGM should now be submitted to management without further delay.

Sufficient time for evaluation has passed and replies received will be incorporated into the original document. The final discussion to be held at the Board meeting of 26-06 and the paper to be produced a.s.a.p.

On request of one of our members a letter has been submitted to management protesting the way in which certain decisions have been taken with regard to promotions, which break in an ad hoc fashion with established procedures and long standing tradition. Further requests are pending.

On the last meeting of the E.B. the Editor of INPUT announced he has to stand down due to ill-health. Though he was not able to attend this meeting, he indicated that he would like to make his point before the whole E.B. and not as in May when only half the E.B. was present. In the meantime members had been canvassed to find a potential replacement. Mr. Barnby has made his willingness to serve as Editor of INPUT known and his candidature was accepted by the Board.

The E.B. will encourage Standing Committee Chairmen to attend meetings as observers in order to be fully informed of the E.B.'s programme and the philosophy behind decisions made. Participation in the discussion will be permitted, but voting will be restricted to Board executives.

To avoid a repetition of the unsavoury discussions at this years AGM, Board decisions can only be taken at a full Board meetings, not via the telephone anymore. This probably necessitates more regular short meetings than at present. Due to some unrest and

misunderstanding the E.B. reminded Committee Chairmen (now present), that they are responsible to the E.B. for their activities, as the E.B. is responsible in turn to our members.

Short discussion followed on a number of items :-

Information via team briefing to keep members up to date and perhaps provoke some activity.

Possibility to appoint an own part time secretary for a few hours per week.

The possibility to use Flight Dept. to pressure members to be more active or, at least, more generous with their time.

Board members and Committee Chairmen could attempt to recruit one or two people on a personal basis - this would yield between ten and twenty more "activists".

With regard to Union Syndicale papers: EGATS to attempt to publish a position with regard to actions taken by the Union Syndicale, if different from EGATS opinions, or in support of those papers.





## from the secretary

As you can read from the minutes of the Executive Board meeting of 6 June, which are published in this issue, it was decided not to accept the resignations of Messrs. Gillett and Scholts.

In the interests of the members it was considered that the continuation of this Board was the best long term solution. The experience should not be thrown away.

Next year's elections will possibly bring forth some extra interested candidates ?



Due to health-problems the Editor of INPUT had to give his resignation. Mr. Bob van der Flier is thanked very much for his efforts and results with producing INPUT Magazine.

A new Editor was found in the person of Mr. Andy Barnby, who was involved with INPUT already during the last year.

We hope he finds the necessary support from the members in helping him to get enough interesting articles.

Also your opinion, local problems, ideas etc. can be published.

From Management, the Maastricht Extension Plan was received, an architectural study on the new building/Operations room. Also a report from ICAO on FEATS group was received, a report on the Concept for the Future Air Traffic Management System in the European Region. IFATCA was represented in this working group by Philippe Domogala. A report from the meeting of the ECAC transport ministers, called ATC in Europe, ECAC strategy for the 1990's was also received.

For persons interested these reports are available from the secretary.

During the actions of the Brussels controllers we may have had some situations where controllers had to improvise. Best judgement had to be used on how to clear (get rid of) some aircraft.

If it is true that the Belgian Air Traffic Controllers got a 25% raise of salary it is about time that we start to make some demands as well, since we have only had cuts in salaries during the last years.

Also most of the controllers in Europe got increases in the last few years, early retirement schemes etc. etc.

EGATS should take a FIRM standpoint in this. After all, we have the same Ministers of Transport. They are obviously aware of the demands of the ATC job ?

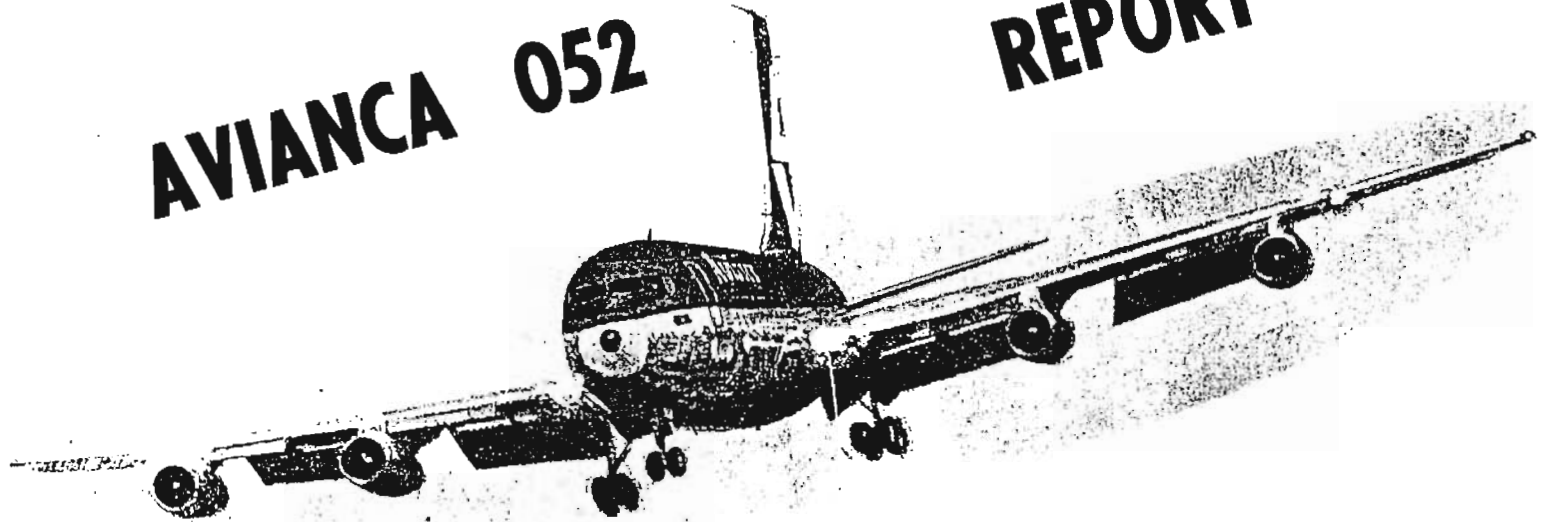
From a newspaper article I understood that the Belgian Operators are even prepared to pay more in landing fees at Brussels so that the increase can be financed. Perhaps our Controllers could be upgraded to an Operational "A" grade, the FDA assistants to a "B" grade.

There is room for necessary improvements. ✈



# AVIANCA 052

# REPORT



On January 25, 1990, about 2134, Avianca Airline flight 052 (AVA052), a Boeing 707-321B (Columbian Registration HK2016), crashed in Cove Neck, New-York, during an approach to land at John F. Kennedy International Airport (JFK), New-York. AVA052 was a scheduled international passenger service flight from Bogota, Colombia, to JFK with an intermediate stop at Medellin, Colombia. The flight crew had executed a missed approach after conducting the initial standard instrument approach to land on runway 22L at JFK. While receiving radar vectors for a second approach, the flight crew of AVA052 informed the controller at the JFK air traffic control tower (JFK TOWER) at 2124:07 that "... we're running out of fuel ..." later, at 2125:07 and again at 2130:40, the flight crew said "... we're running out of fuel..." to the controller at the New York Terminal Radar Approach Control (NY TRACON),. Subsequently, at 2132:51, AVA052 advised the NY TRACON that "we just lost two engines and we need priority please". Shortly thereafter the flight apparently experienced fuel exhaustion and crashed. Of the 158 persons aboard, 73 were fatally injured, including the 3 flight crew members and 5 of the 6 flight attendants, 82 were seriously injured, and 3 received minor injuries.

The National Transportation Safety Board is continuing its investigation of the facts, conditions, and circum-

stances involving the accident of AVA052. As a result of evidence developed thus far in the invention, the Safety Board believes that immediate corrective action is needed to ensure that standard communication and coordination procedures and phraseology are used between commercial air carrier flight crews and air traffic controllers and among air traffic control (ATC) facilities. Preliminary evidence gained from the investigation indicates that there may have been incomplete communication between the flight crew of AVA052 and controllers at the New York Air Route Traffic Control Centre (NY ARTCC), the NY TRACON, and the JFK TOWER - and during inter-facility coordination among controllers at NY ARTICC, NY TRACON, and JFK TOWER. Also, air traffic controllers at all three facilities apparently did not perceive the urgency of AVA052's fuel state because of the non-standard phraseology that was used by the flight crew. As a result, the information was not forwarded from facility to facility, and AVA052 was not provided with additional ATC assistance and traffic priority consistent with its critical fuel status.

The Safety Board is focusing on many areas during its continuing investigation and has not concluded that any specific communication or coordination problems were causal to the accident. Notwithstanding its current position with respect to the cause of the accident, however, the Safety Board be-



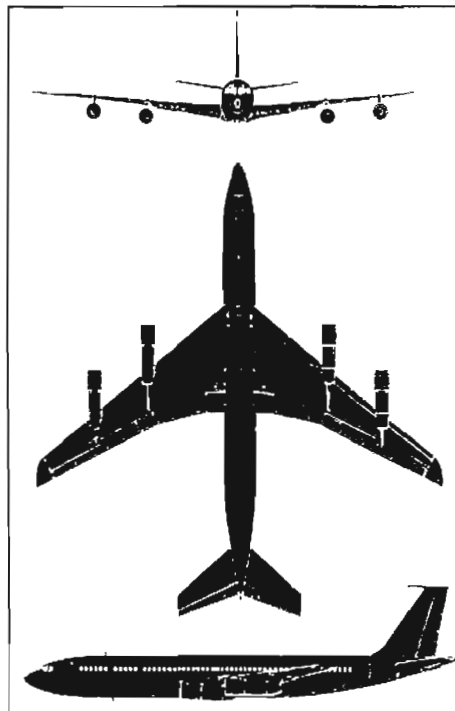
believes that the Federal Aviation Administration (FAA) should take immediate action to make certain that flight crews operating in the U.S. National Airspace System (NAS) are thoroughly knowledgeable of the flight operating and ATC rules and procedures, including standard phraseology, for operating in the NAS; and that all air traffic controllers are alert and vigilant to communications from flight crews, especially those involving foreign air carriers, that may convey the need to declare an emergency and provide additional ATC assistance even in instances when flight crews use non-standard phraseology.

### History of the Flight.

AVA052 departed Medellin at 1508 en-route to JFK on a filed flight plan that took the airplane via an oceanic route over Bimini, Bahama Islands, and then northbound toward the east coast of the United States. The flight was cleared into U.S. airspace by ATC via Atlantic route 7 to Dixon, North Carolina, jet airway 174 to Norfolk, Virginia (ORF), direct to Sea Isle, New Jersey, and then via the CAMRN TWO ARRIVAL to JFK to maintain flight level 370 (FL 370). AVA052 was delayed three times for ATC purposes as the flight proceeded en-route up the northeast coast of the United States. The flight was cleared to circle in holding patterns over ORF for about 19 minutes (1904-1923); over the BOTON navigational intersection (near Atlanta City, New Jersey) for about 29 minutes (1943-2012); and over the CANRN navigational intersection (35 miles south of JFK) for about 29 minutes (2018-2047). Between ORF and CAMRN, AVA052 was cleared to descend from FL 370 to several lower FL's and altitudes. The flight entered the CAMRN holding pattern at 14,000 feet msl, and subsequently was descended to 11,000 feet in the pattern.

At 2044:43, while holding at CAMRN, the NY ARTCC radar controller advised AVA052 to expect further clearance (EFC) at 2105 (the flight had previously been issued EFCs of 2030 and 2039). The flight crew responded, "... ah well I think we need priority we're passing out of (garbled)." The radar controller inquired, "... roger how long can you hold and what is your alternate (airport)." At 2046:03, the

flight crew transmitted, "Yes sir we'll be able to hold about five minutes that's all we can do." The controller replied, "... roger what is your alternate." The flight crew responded, "Ah its Boston but its ah full of traffic (I) think."



A hand-off controller who was assisting the radar controller at the NY ARTCC, and who was able to monitor most of the transmissions described above, initiated a call to the NY TRACON at 2046:23. The hand-off controller advised the NY TRACON controller that "AVA052 just came out at CAMRN and can only do five more minutes in the hold. Do you think you can take him or should I offer him his alternate?" The NY TRACON controller responded, "What's his speed now," and then stated, "Slow him to one eight zero knots and I will take him." The hand-off controller asked for a repeat of this information. The NY TRACON controller responded, "Slow him to one eight zero knots and I'll take him ... he's radar ... three southwest of CAMRN." The hand-off controller replied, "One eighty on the speed, radar contact, and I'll put him on a forty (040 degree) heading." This coordination between the NY ARTCC hand-off controller and the NY TRACON controller terminated at 2046:44.

While the hand-off controller was talking to the NY TRACON, he did not hear AVA052's response to the request to identify the flight's alternate airport. At 2046:24, the flight crew advised the NY ARTCC radar controller, "it was Boston but we can't do it now we ah we will run out of fuel now."

After being advised by his hand-off controller that the NY TRACON would be able to accept AVA052, the NY ARTCC radar controller, at 2046:47, instructed the flight, "... cleared to the Kennedy airport via heading zero four zero maintain one one thousand speed one eight zero." After acknowledging the clearance, the flight crew was instructed to contact the NY TRACON. Recorded air traffic control radar data indicates that AVA052 departed the holding pattern at 2047:00.

At 2047:21, AVA052 established initial communications with the NY TRACON feeder controller. The flight crew was provided routine radar service, including descents to lower altitudes and radar vectors, to sequence it with other airplanes that were en-route to JFK. At 2054:40, the feeder controller cleared the flight to "turn right, right turn heading two twenty I'm going to have to spin you (make a 360-degree turn) sir," At 2056:15, the feeder controller advised, "... I have a windshear for you ah at fifteen ah increase of ten knots at fifteen hundred feet and then an increase of then knots at five hundred feet reported by seven twenty seven." At 2056:24, AVA052 acknowledged receipt of the windshear advisory and, at 2102:38, the flight crew was instructed to contact the NY TRACON final controller.

AVA052 contacted the NY TRACON final controller at 2103:07 reporting level at 5,000 feet. During the next 7 minutes, the flight crew received routine radar service including numerous heading changes and further descent clearances to 3,000 feet and finally to 2,000 feet. At 2111:06, the final controller stated, "... you're one five miles from the marker maintain two thousand till established on localizer cleared ILS two two left," and at 2115:08 the flight crew was instructed to contact JFK TOWER.

At 2115:20, the flight crew contacted JFK TOWER and stated that AVA052

was "established two two left." The JFK TOWER responded that the flight was number three to land following a Boeing B-727 that was on a 9-mile final. The tower controller requested twice that AVA052 increase airspeed 10 knots for sequencing and at 2119:57 stated, "... wind one nine zero at twenty cleared to land." At 2123:33, AVA052 advised the tower controller that it was executing a missed approach. The tower controller cleared the flight to climb to 2,000 feet and turn to a heading of one eight zero degrees. The flight crew acknowledged the clearance, and shortly thereafter, at 2124:07, told the tower, "... ah we'll try once again we're running out of fuel." The tower controller replied, "Okay." The tower controller cleared the flight to turn further left to a heading of one zero degrees and at 2124:39 cleared it to contact the NY TRACON final controller.

At 2124:55, the flight crew contacted the NY TRACON final controller for the second time and stated that it



# amro bank your banker in the Netherlands

*As the leading commercial and investment bank in the Netherlands, we are also one of the country's largest retail banking organisations.*

*We can offer you all the banking facilities you need, including foreign exchange as well as bank accounts and savings deposits in any currency.*



# amro bank

Beek, Airport phone 043 - 646191  
Beek, Markt 11 phone 04490 - 74466

had just made a missed approach and repeated the heading and altitude clearances received from JFK TOWER. The final controller stated, "... good evening, climb and maintain three thousand (feet)." The flight crew responded at 2125:07, "Climb and maintain three thousand and uh we're running out of fuel sir." The final controller replied, "Okay ah fly a heading of zero eight zero." At 2126:36, the final controller advised AVA052 that "... I'm going to bring you about fifteen miles northeast and then turn you back on for the approach is that fine with you and your fuel." The flight crew replied, "I guess so thank you very much."

At 2129:19, the flight crew asked, "When can you give us a final ...," and the final controller responded, "... affirmative turn left heading zero four zero (degrees)." At 2130:36, the final controller recleared AVA052 to maintain 3,000 feet and the flight crew replied, "Ah negative sir we we just running out of fuel we okay three thousand ...". During the next two minutes, AVA052 was given three heading changes and then at 2132:51 the flight crew advised, "... we just lost two engines and we need priority please." The final controller then turned the flight to a heading of two five zero degrees, advised that it was 15 miles from the outer marker and cleared for the ILS approach to runway two two left. At 2134:00, the final controller asked AVA052, "You have ah you have enough fuel to make it to the airport?" There was no response from the flight crew.

#### Weather Conditions.

During the period AVA052 was approaching the New York City metropolitan area through the time of the accident, the coastal sections of central and southern New England and the mid-Atlantic States were in the warm sector of a complex frontal system associated with a deep surface low over extreme northern Lake Huron. Conditions in the warm sector were characterized by low or obscured ceilings with visibility reduced by rain, drizzle, and fog, and gusty south to southwesterly winds. At 2100, preceding the accident, the hourly weather observation for JFK was indefinite ceiling, 200 feet obscured, visibility 1/4 mile in light drizzle and fog. The wind was from 190° at 20

knots gushing to 28 knots, and the runway visual range measured at the approach end of runway 4R was 1,800 feet variable to 2,200 feet.

A special observation recorded for JFK at 2135, immediately after the accident, reported a partial obscuration with the ceiling measured 300 feet overcast, visibility 3/4 mile in fog. The wind was from 190° at 20 knots and the runway visual range measured at the approach end of runway 4R was 5,500 feet variable to 6,000 feet plus. At 1900, the winds aloft at Atlantic City, New Jersey, the upper air station closest to New York City, were observed to have been from 195° at 53 knots at 1,000 feet and from 200° at 50 knots at 2,000 feet. These weather conditions had a substantial and adverse effect on traffic operations at JFK. The low ceilings, low visibility, and adverse wind conditions resulted in major delays to air carrier flights to and from JFK. Some flights were delayed at their departure points, others were delayed in holding patterns en route and in the terminal area, and many flights were diverted to their alternate or another airport.

#### Operational and Air Traffic Control Rules and Procedures.

Commercial air carrier flight crews must be thoroughly knowledgeable of the flight operating and ATC rules and procedures, including standard phraseology, for operating in the U.S. NAS, and must be particularly familiar with pilot duties and responsibilities affecting flight operations and safety which include fuel supply, emergency conditions, requests for assistance, declaring a state of minimum fuel, and declaring an emergency for additional ATC assistance to ensure a safe landing. This information is contained in several publications: Part 1 of Annex 6 to the Convention on International Civil Aviation, the U.S. Federal Aviation Regulations (FARs), the Air Carrier's Operational Specifications issued by the Administrator of the FAA, the U.S. Airman's Information Manual (AIM), Notices to Airmen, Advisory Circulars, and the U.S. Air Traffic Control Handbook 7110.65F. For example, the AIP, AIM, and 7110.65F all contain specific procedures, guidance, and phraseology for use by pilots when it is necessary



to advise ATC of a "minimum fuel" status and for use by controllers when they receive such an advisory. The information is nearly identical in all three publications; that contained in the AIP follows (from Rules of the Air and Air Traffic Services, ATC Clearance and Separation - Pilot/Controller Roles and Responsibilities, Minimum Fuel Advisory, paragraph 6.15):

#### **6.15 Minimum Fuel Advisory**

##### **6.15.1 Pilot**

- Advise ATC of your "minimum fuel" status when your fuel supply has reached a state where, upon reaching destination, you cannot accept any undue delay.

- Be aware this is not an emergency situation but merely an advisory that indicates an emergency situation is possible should any undue delay occur.

- Be aware a minimum fuel advisory does not imply a need for traffic priority.

- If the remaining usable fuel supply suggests the need for traffic priority to ensure a safe landing you should declare an emergency, account low fuel, and report fuel remaining in minutes.

##### **6.15.2 Controller**

- When an aircraft declares a state of minimum fuel, relay this information to the facility to whom control jurisdiction is transferred.

- Be alert for any occurrence which might delay the aircraft.

Further, the AIP urges pilots to declare an emergency and request immediate assistance when they first become concerned about the safety of their flights. This guidance follows (from Search and Rescue, Procedures and Signals for Aircraft in Emergency, paragraph 4, Emergency Condition - Request Assistance):

#### **4, Emergency Condition - Request Assistance**

(a) Pilots do not hesitate to declare an emergency when they are faced with distress conditions such as fire, mechanical failure, or structural damage. However, some are reluctant to report an urgency condition when they encounter situations which may not be immediately perilous, but are potentially catastrophic. An aircraft is in at least an urgency condition the moment the pilot becomes doubtful about position, fuel endurance, weather, or any other condition that could adversely affect flight safety. This is the time to ask for help, not after the situation has developed into a distress condition.

(b) Pilots who become apprehensive for their safety for any reason should request assistance immediately. Ready and willing help is available in the

form of radio, radar, direction finding stations and other aircraft. Delay has caused accidents and cost lives. Safety is not a luxury. Take action.

The AIP, AIM, and 7110.65F contain the following terms pertaining to aircraft in emergency:

EMERGENCY- A distress or an urgency condition.

DISTRESS- A condition of being threatened by serious and/or imminent danger and of requiring immediate assistance.

URGENCY- A condition of being concerned about safety and of requiring timely but not immediate assistance; a potential distress condition.

MAYDAY- The international radio-telephony distress signal. When repeated three times, it indicates imminent and grave danger and that immediate assistance is requested.

PAN-PAN- The international radio-telephony urgency signal. When repeated three times, indicates uncertainty or alert followed by the nature of the urgency.

Air traffic controllers have defined duties and responsibilities to provide ATC separation and service to users of the NAS. The procedures, guidelines, and phraseology are contained in 7110.65F. As it pertains to receipt of a "minimum fuel" advisory from a pilot, paragraph 2-8, Minimum Fuel, advises the controller:

If an aircraft declares a state of "minimum fuel", inform any facility to whom control jurisdiction is transferred of the minimum fuel problem and be alert for any occurrence which might delay the aircraft en route.

Chapter 9, Emergencies, provides the controller with direction in how an emergency may be determined. Specifically, paragraph 9-1, Emergency Determinations, advises that an emergency can be either a distress or an urgent condition. A pilot who encounters a distress condition should declare an emergency with the word "mayday" repeated three times; and for an urgency condition, the word "pan-pan" should be used. Further, controllers are advised that if these words are not used and they are "in; doubt that a situation

constitutes an emergency or potential emergency, handle it as though it were an emergency". Finally, controllers are instructed that, "when you believe an emergency exists or is imminent, select and pursue a course of action which appears to be most appropriate under the circumstances and which most nearly conforms to the instructions in this manual".

#### Interviews with Air Traffic Controllers.

All of the air traffic controllers who directly or indirectly provided service to the flight crew of AVA052 were interviewed by Safety Board investigators. These interviews focused on what the controllers perceived and what their actions were in response to that information provided to them by the flight crew of AVA052.

The radar controller at the NY ARTCC told Safety Board investigators that he had four airplanes, including AVA052, in the holding pattern at CAMRN that were destined for JFK. He was required to provide 20 miles-in-trail spacing between successive arrivals to the JFK airport. The controller was asked his interpretation of statements from the flight crew, "I think we need priority" and "we'll be able to hold about five minutes that's all we can do." He stated that he believed the flight crew was advising him they would only be able to stay in the holding pattern about 5 minutes and that they needed "priority" to come out of holding and proceed to the JFK airport. When asked why he requested information about the alternate airport from the



flight crew of AVA052, he stated that he wanted the information in the event the NY TRACON could not accept the airplane; he then would be able to develop another strategy for providing service. He was asked about his understanding of the statement "it was Boston but we can't do it now we ah we will run out of fuel now." He replied that he believed that by issuing the flight crew an immediate clearance out of holding and toward the airport, he was complying with the pilot's request to shorten the time in the holding pattern; and since the airplane was being vectored to JFK, the lack of sufficient fuel to go to Boston was no longer relevant. He also stated that because he had complied with the pilot's request, there was no requirement to pass to the next facility the flight crew's request for "priority." He stated that had the flight crew advised that they were fuel critical, minimum fuel, or in an emergency situation, he would have provided them with emergency service.

The NY ARTCC hand-off controller told Safety Board investigators that while monitoring the transmissions between the radar controller and airplanes, he immediately initiated coordination with the NY TRACON after hearing the flight crew of AVA052 state that they would "be able to hold about five minutes and that's all we can do."

He stated that he passed on this information and asked the NY TRACON controller if he could take the airplane or if the alternate airport should be offered to the flight crew. Because the NY TRACON controller accepted the hand-off on AVA052, the hand-off controller stated that he believed he was fulfilling AVA052's request for priority by initiating action that would take the airplane out of the holding pattern. He did not believe the flight crew's request constituted anything more than to leave the holding pattern. He stated that he did not believe it was necessary to pass on a request for "priority" if the request had been met. He stated that he did not hear the flight crew of AVA052 inform the radar controller that, as a result of their fuel state, they could not reach their alternate airport, nor was this information given to him by the radar controller.

The NY TRACON feeder controller advised Safety Board investigators that when he was informed by the NY ARTCC hand-off controller that AVA052 could only hold for 5 minutes, he believed that after that time (5 minutes) the airplane would have to proceed to its alternate airport. He stated that the flight crew of AVA052 provided no information to him that indicated that the flight had minimum fuel problems, nor was he ever made aware that the flight could not reach its alternate airport.

The NY TRACON final controller advised Safety Board investigators that during the time AVA052 was receiving vectors for the first ILS approach to runway 22L, there were no communications pertaining to a minimum fuel status or to an urgent condition. The flight was given routine radar service, cleared for the approach, and then cleared to contact the JFK TOWER controller.

The JFK TOWER controller advised Safety Board investigators that, following the missed approach, he did recall the flight crew of AVA052 telling him about a "fuel problem", but that he assumed the JFK TOWER assistant controller, who was monitoring his frequency, had heard this information and passed it to the NY TRACON. He also



stated that he believed the flight crew's comment meant that they could make another approach and then proceed to their alternate airport. The JFK TOWER assistant controller advised Safety Board investigators that he did not hear the flight crew of AVA052 advise that they were running out of fuel because he was on an inter-phone line coordinating the flight's missed approach with the NY TRACON.

The NY TRACON final controller advised Safety Board investigators that when the flight crew informed him following the missed approach, "... and uh we're running out fuel sir", they did not convey anything urgent or an emergency situation which "triggered my sixth sense". He stated that the pilot's tone was very matter of fact. He



stated that he turned the airplane on downwind right away and advised the flight crew of AVA052 of his intentions to resequence the flight for landing. He asked the flight crew, "... is that fine with you and your fuel", and they replied, "I guess so thank you very much". When the flight crew of AVA052 advised him that they had just lost two engines, he understood this to mean that they had just lost the No. 2 engine, so he immediately turned the flight toward the localizer and then issued the approach clearance.

#### Discussion.

The Safety Board is concerned that the flight crew of AVA052 did not communicate either their "minimum fuel" or "emergency fuel" condition to ATC and did not use the proper phraseology if it was their intent to indicate either of those conditions. The flight crew was certainly aware of the major delays for traffic landing at JFK after being held at ORF, BOTON, and CAMRN for a total of 1 hour 17 minutes. Also, while holding at CAMRN, the flight crew advised ATC that they would run out of fuel if the flight had to proceed to its alternate airport at Boston. Later, they asked, "... do you have any estimates sir", and were advised by the NY ARTCC controller that "it's an indefinite hold at this time". Shortly thereafter, NY ARTCC issued the flight a third extension to hold for an additional 20 minutes at CAMRN until 2105. The flight crew repeated the new EFC time and then stated, "... I think we need priority ...". The communications by the flight crew of AVA052 failed to alert the NY ARTCC controllers to a need for any priority beyond leaving the holding pattern.

Following the initial missed approach, the flight crew told the JFK TOWER first and the NY TRACON second that "we're running out of fuel". While these messages were explicit, they, too, failed to alert the controllers to an emergency condition. The use of terms and phrases such as "I think we need priority", "it was Boston but we can't do it now we will run out of fuel now", "we're running out of fuel", and "when can you give us a final" may have been an attempt by the flight crew to communicate to ATC that they were in an emergency condition. However, because

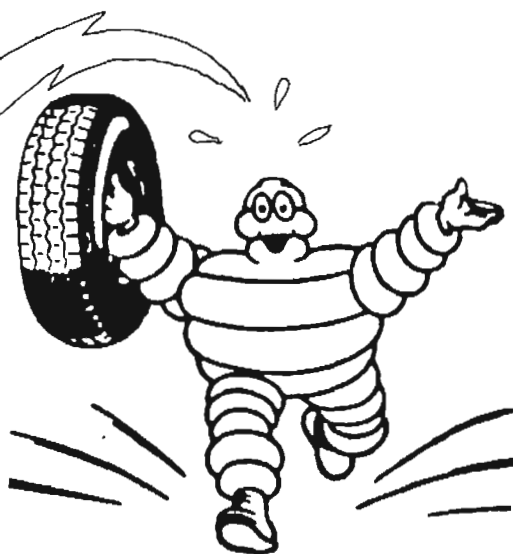
precise terms such as "minimum fuel" and "emergency" were not included in the communications, the air traffic controllers did not attach a distress significance to them; hence, the information was not forwarded from facility to facility, and the flight was not provided with additional ATC assistance.

Controllers believed that they had satisfied the flight's request for priority and that it was not necessary to pass on the advisory that insufficient fuel was available to reach the alternate airport. Another controller, after being advised that the flight was running out of fuel, believed that his assistant controller had passed this information to the next control facility. A second controller, after receiving the same message twice, did not question the flight to determine the exact amount of fuel remaining in minutes of flying time. Instead, the flight was vectored 20 miles northeast of the airport where it was sequenced to land behind three other airplanes. Further inquiries by any one of these controllers to clarify the flight crew's meaning and to determine the amount of fuel remaining, might have established that the flight was in a distress situation and, as a result, required additional ATC assistance and traffic priority to ensure a safe landing. The Safety Board believes that air traffic controllers should question flight crews when there is any indication that flight safety may be compromised.

The Safety Board further believes that, to achieve a safe, orderly, and efficient flow of traffic in the NAS, both pilots and air traffic controllers must rigidly adhere to proper flight operating, ATC, and communication procedures. These are contained in appropriate international and governmental publications that include specific rules, regulations, procedures, and communications phraseology. The Safety Board believes that these operational and ATC rules and procedures are comprehensive and thorough. Both pilots and controllers must comply with them to achieve effective management of the NAS. Pilots-in-command are responsible for the safe operation of their aircraft, and controllers are responsible for aircraft separation and emergency



choose  
**KICKEN**  
*a right choice*



- Independent advice of tires for all purposes
- Modern service equipment
- Extremely professional personnel
- Wheel-balancing and wheel-alignment with the new visualiner

#### **Bandenspecialist Kicken b.v.**

Valkenburgerweg 41 Voerendaal	Tel. 04406-1700
Bemelerweg 90 Maastricht	Tel. 043-621515
Bergerweg 59 Sittard	Tel. 04490-10707
Kaldenkerkerweg 96 Tegelen	Tel. 077-33433

assistance when it is requested. Both exist and interface in the NAS through continuous two-way communication involving clearances, advisories, pilot requests and reports, and occasionally the declaration of an emergency situation. The Safety Board believes that the contents of this safety recommendation letter should receive the widest distribution possible to commercial air carrier pilots, dispatchers, safety and training departments, and to air traffic controllers - all of whom are cooperative participants towards achieving the safest possible NAS.

The Safety Board is aware of similar misunderstandings of communications between flight crews and air traffic controllers, especially in the traffic environment around New York City. The Safety Board is investigating at least three other incidents involving deficiencies in communication that occurred on and since January 25, 1990. Two of these incidents involve U.S. air carriers and the third, a foreign carrier. Also, the Safety Board notes that the FAA's recent System Safety and Efficiency Review of the Northeast Corridor

of the U.S. identifies poor communications between pilots and controllers as a problem. This review, which was prompted by the Safety Board's Safety Recommendation A-88-157 issued to the FAA on November 15, 1988, concludes that poor communications between pilots and controllers adversely affect the safety and efficiency of the NAS. Further, the review states that poor phraseology is one of the factors contributing to the communication problems "... which are significantly intensified within the Northeast Corridor's complex airspace". The Safety Board believes that difficulties in communication can be a serious problem for users operating in the NAS and, if not corrected, could lead to an erosion of safety. Therefore, the Safety Board urges the FAA to reemphasize to pilots and controllers the need to use proper procedures, phraseology, and good judgement during normal flight operations, and especially when confronted with or exposed to potential or actual emergency situations.

Therefore, the National Transportation Safety Board recommends that the

## Federal Aviation Administration:

Immediately notify all domestic and foreign air carriers to emphasize that all pilots operating commercial air transport flights in the United States (U.S.). National Airspace System (NAS) must be thoroughly knowledgeable of the flight operating and air traffic control (ATC) rules and procedures, including standard phraseology, for operating in the U.S. NAS. This information is included in several publications: Part 1 of Annex 6 to the Convention on International Civil Aviation, the U.S. Federal Aviation Regulations, the Air Carrier's Operational Specifications issued by the Administrator of the FAA, the U.S. Aeronautical Information Publication, the U.S. Airman's Information Manual, Notices to Airmen, Advisory Circulars, and the U.S. Air Traffic Control Handbook (7110.65F). Pilots must be particularly familiar with their duties and responsibilities affecting flight operations and safety which include fuel supply, emergency conditions, requests for assistance, declaring a state of minimum fuel, and

declaring an emergency for additional ATC assistance to ensure a safe landing. (Class I, Urgent Action) (A-90-9).

Immediately disseminate the contents of this safety recommendation letter (A-90-9 through -11) to all air carrier operators involved in commercial air transport operations in the United States national Airspace System. (Class I, Urgent Action) (A-90-10).

Immediately issue a General Notice (GENOT) directing management of all air traffic control (ATC) facilities to formally brief all air traffic controllers on the circumstances of the January 25, 1990, accident of Avianca Airlines flight 052 and to emphasize the need to request from flight crews clarification of unclear or ambiguous transmissions that convey a possible emergency situation or the need for additional ATC assistance. (Class I, Urgent Action) (A-90-11).

KOLSTAD, Chairman, COUGHLIN, Acting Vice Chairman, and LAUBER, Member, concurred in these recommendations. BURNETT, Member, did not concur. ✈



# Corp representatives



CORP stands for: Confidential Occurrence Reporting and Procedure.  
Your representatives are:

EHAM Sector:	Henk	Heepke	L. 23	043-634157
EBBR Sector:	Jean-Paul	Vriamont	L. 118	09-32-12-237227
EDDV Sector:	Hans-Dieter	Busch	L. 47	04493-4740
FDA Group:	Arthur	Lieuwen	L. 133	04490-73650

# IFATCA

## ACAPULCO

## REPORT



### Committee A

IFATCA started with a special meeting on the restructuring of the Federation. Several changes to the Constitution and Bye-Law changes were discussed and decided on. The big change is that now the former Regional Vice Presidents are part of the Executive Board of IFATCA, consisting of 9 members.

After a day of freedom the meeting started on Tuesday and as usual several late papers were presented, even papers from RVP's reporting on last year's events. They should be able to have those reports available in time, one should think.

Applications for membership were made by APCA (France), Aruba Poland and Burkina Faso (the former Upper Volta, Africa). The above were accepted, while an application from St. Maarten was, after several long discussions throughout the week, refused as St. Maarten is part of the Dutch Antilles and as such represented by the Dutch Antilles Association.

Reports from E.B. and Finance were all found in order, the work programme of the different Standing Committees made and new officers to IFATCA elected. The new Executive Vice President for Europe comes from Danmark and is Mr. Preben

Falkman-Lauridsen, who follows in the footsteps of Mr. Domogala and Mr. Kirr.

Mr. Charles Stuart (Australia) was elected President of IFATCA and Mr. Sture Ericsson (Sweden) the new Treasurer.

The agenda item "member associations problems" usually taking a whole afternoon and a good part of the next morning only took 15 minutes this conference. The members having financial problems were all supported while several from which there is no news from for quite some time were suspended or their membership was terminated (Uganda, Ivory Coast, St. Kitts and Nevis).

The Scroll of Honour was awarded to Mr. Eric Sermijn for ten years hard work for IFATCA. Trinidad and Tobago (capital Pot of Spain) was confirmed as the venue for 1991 IFATCA conference.

An offer to host the 1992 conference by the United Kingdom was accepted while Israel, New Zealand and Japan offered to host the 1993 conference.

Due to the high workload it was decided that conferences should normally last five days, also giving the secretariat a chance to produce the papers for the final plenary.

## Committee C

The workload of Committee C for this years conference was not quite as heavy as in 1989 in Frankfurt but nevertheless some very interesting and important matters were on the agenda, which is divided into 2 major parts:

1. Environmental & Human Factors.
2. Legal Matters in ATC.

As you might know EGATS is providing the Chairman of SC VII (dealing with legal matters) and is member of SC IV (dealing with Environmental & Human Factors). To name some items from the agenda, which in my opinion are very interesting for our profession in the future:

- a. Human factors in ATC;
- b. Stress related to the ATCO's profession;
- c. Licensing of ATCO's;
- d. Minimum ATC service (during industrial actions);
- e. Manning of AFTM units.

From the legal point there were also some interesting items on the agenda:

- a. Presentation of Policy on Accident/Incident Investigation;
- b. Voluntary Reporting Systems (Anonymous Incident Reporting System);
- c. Legal impact of privatisation of ATC;
- d. Study on legal aspects on the implementation of mandatory drug testing).

After sometimes very long and contrary discussions, MA's came to a conclusion or solution for IFATCA's new or revised policy.

Two items amongst others I would like to mention here:


1. Minimum ATC service during industrial actions.

Here the opinions of the MA's were quite different and long discussions took place. New definitions had to be found, rephrasing of conclusions had to be formulated. But after all we still could not come to an agreement, so the WP was sent back to the MA which prepared it, in order to come up with a new one for next year's conference.



### 2. The mandatory drug testing

It was very difficult for the MA's to give any input to this matter, because until now only the USA have this, and the controllers there, are not happy with the procedure how it is applied at the present. Because the USA are no member of IFATCA at the moment, one of their observers got the opportunity to give some more detailed information about this subject. After this the opinion of the MA's was: to refer this WP to SC IV for further study on professional policy and to work in conjunction with SC VII on the legal implications.

If you want to have more information about the different results, EGATS has all the reports and working papers ready for you. 

---

There are many travel agencies, however there is only one which is aware of and can assist with the special and individual wishes of EUROCONTROL AND EGATS travelling staff:

S O L A I R

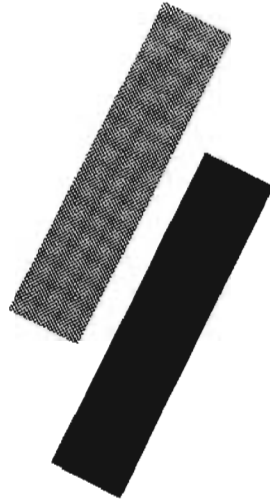
Therefore, why bother to go anywhere else, when Anita or Renate can help you figure out any (special) trip you'd like to make. Bangkok, the gate to Asia, Indonesia, Thailand or more the wide wilderness of Brazil.. You name it and SOLAIR provides you with a complete standard or individual tour, in the way YOU like it.

Contact SOLAIR, without any obligation, to find out the possibilities to finally take up that particular trip you have been dreaming about.

S O L A I R: THE INDIVIDUAL TOUCH  
IN ADDITION TO YOUR EXISTING TRAVEL  
FACILITIES.....



# ORANGE



# APPEAL

by Andy Barnby

I think most of us noticed, that each Tuesday during the winter season, Air Holland flew from Amsterdam to Monastir via Beek, returning to Beek in the evening around five o'clock and then back on to Amsterdam. On one of the last round trips of the season several members of the Air Holland "family" took advantage of the half-empty Boeing 757 flight between Amsterdam and Beek, paying a visit to Eurocontrol, organised by Henk Van Hoogdalem.

Promptly at 0945 on 20th March the 757 taxied to a halt outside the terminal building. Our visitors disembarked almost as soon as the steps had rolled up to the aircraft. Within minutes they were whisked around the airfield and taken to the Briefing Room to be welcomed and thoroughly briefed by Henk. Later there was a short break for coffee and vlaai before Henk concluded his very detailed outline of the history and aims of Eurocontrol. Philippe Domogala then ably replaced Boris who was foreseen to give an explanation of the necessity and methods of Flow Control. By this time it was almost midday when Ron Heeren, Head of Operations and Marian Meijer the Public Relations representative would talk to Input putting us in the picture about their operation. Whilst this was taking place the main group would spend the next hour visiting our Operations Room. Air Holland was founded in 1984, being slightly delayed due to pressure from Martinair and Transavia. Ironically the founder of Air Holland, John Block, was the co-founder of Transavia! April 2nd 1985 was the great day of the first

flight to Malaga using a Boeing 727. In total 50,000 passengers were flown during 1985 using this and a second B727, acquired from Tunis Air. A third 727 was added in 1986 when 130,000 passengers were transported. Most of the Dutch travel organisations are related to Martinair and Transavia, as can be seen from the multitude of tour brochures obtainable at any travel agent. Arke and Neckermann, along with John Block saw a gap in the market. Using the only independent charter airline in the Netherlands they organised up-market tours, using quality as a theme, for the "bucket and spade brigade". It worked, by 1987, three Boeing 727s moved 200,000 passengers, Air Holland was on the road to success.

With this sort of annual passenger increase and stricter noise limitations on the very vociferous 727s, a fleet change was instigated. In 1988 all the 727s were sold and three new Boeing 757s were financed by three major banks to take over a steadily expanding route structure. By the end of that year 275,000 passengers had been flown across Europe - 1988 was a very good year. The new aircraft had given the airline the opportunity to improve its cabin service. The company uses Royal Doulton china-ware, real knives and forks and spends, on average, five guilders more per meal than other companies. Flight Safety demonstrations

**air ho/and**

were also introduced on the aircraft's in flight video screens, instead of the usual fashion parade, before take-off.

The result of all this was a deluge of mail complimenting the company on its service and the seat pitch in the new aircraft.

By 1989 there were four 757s in the fleet and 300,000 passengers were given the Air Holland treatment that year. Cairo and Mombassa were now part of the network in an interesting deal with a Canadian company, Canadian tourists are flown by KLM to Amsterdam, where they have a night-stop and the following day are taken on to Cairo by Air Holland on the same flight which takes Dutch tourists to Mombassa-Cairo being an en-route stop.

The plan in 1990 is to fly six aircraft. One, leased from Inter European which, at the time of writing is parked in Eurocontrol's back yard waiting to be painted, will go to Aruba. From 12th April this aircraft will fly for Air Aruba, which is 20 % Air Holland owned. Using Air Holland cockpit and cabin crew it will fly a scheduled, daily, Aruba-Miami-Aruba service and a service to Brazil. The sixth aircraft will come direct from Boeing and will

be leased out to Sterling Airways from August. Traffic Rights to Colombo in Sri-Lanka and Male in the Maldives have been filed. The Far East is opening up to tourism, being especially attractive, pricewise, to those who have seen Spain and the Canaries several times and have been bitten by the travel bug. Tentative future fleet plans include the Boeing 767, despite the fact that the Air Holland 757s are cleared for the highest possible maximum take-off weight of 250,000 lbs. Longer range flights and more passengers due to popularity and "brand loyalty" make a larger aircraft type an economic necessity - the 767 would be a logical choice retaining a Boeing fleet commonality. The 757s are maintained by British Airways at London Gatwick and each Thursday one aircraft flies there for checks. Air Holland has been trying for quite a while to build its own hangar at Schiphol but until now has been unsuccessful due to a lack of space!

Air Holland takes its roll in life very seriously, no bad thing considering the competition for business. The customer is King and this can be seen by the fact that a week after the Eurocontrol visit, eighty passengers who



## REIS- EN PASSAGEBUREAUX

GARANTIEFONDS  
REISGELDEN

Nieuwstraat 19 6211 CR Maastricht

Telefoon 043-211451 Fax 043-252114

Renate Hits

Anita Germans



Stationsstraat 52 6221 BR MAASTRICHT

Telefoon 043 - 211515 Fax 043 - 212799



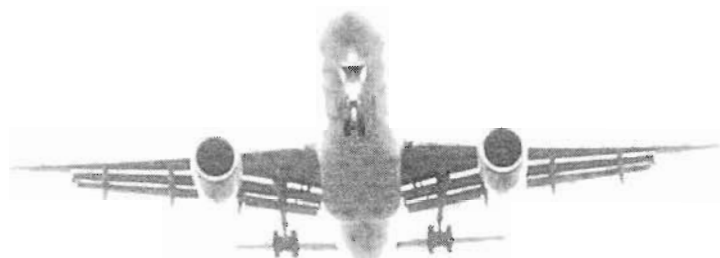
Til Maessen

had written letters of compliment or with suggestions, were invited as guests of the company to try out new meals at Cuisinair. There was to be a choice of four meals and a wine tasting. Afterwards the guests would be treated to a seventy minute flight over The Netherlands in a company 757. Advice was to be asked from the guests communicating on what they want to pay for. Requirements for passenger appeal are more and more demanding each year, especially as Air Holland aims to attract the families of people who fly Business Class during the working year and expect something extra whilst away on holiday. These passengers know what is available. There are two different hot meals, two different cold meals, two different breakfasts and children's meals. The company tries to vary the meals for outbound and return flights so far as possible. All these meals are changed every twelve months and passenger comments are acted upon. If a meal is reported to be too spicy, for example, it would be looked into and might be changed accordingly.

From an operational point of view, Air Holland, along with Martinair, Transavia and other European charter companies sits to discuss problems at the International Air Charter Association (IACA) meetings. The biggest problem being is that all the hotels and tour operators want the change-over of tourists on the same day, making cleaning costs, bussing costs to and from the airport, etc... cheaper. This means, for example, that Monday is Faro-day, Friday is Iraklion-day, etc.. This, in turn, leads to Air Holland, Transavia and all other European charter aircraft converging on the same airport at the same time - result; chaos and delays. It has now been decided that the tour operators will be approached to stagger the traffic, giving more of a spread over Europe. It is interesting to note that the Euro-control CDB/DBE was used for this purpose, so tour operators are now using Eurocontrol information.

Something else which readers may have noticed over the last two years, certainly if you have been a passenger,





was a rather unsuccessful attempt to avoid the slot problem. This was of course, the early morning departure, for example a 0700 Ibiza departure moved forward to 0600. Apart from the fact that the flow delays still built up over the rest of the day, the passenger now had to "check-in" at 0430 thus leaving home at 0330, or earlier if one lived down in Limburg. This is not a good way to start a holiday especially with children and paying passengers do not want this sort of solution, at any price.

Air Holland is still affected by the present Flow Control measures but not as badly as that infamous year - 1988. This year should be more or less as in 1989, so there is a certain amount of relief because last year was somewhat better. Air Holland prefers to fly around the Flow Restrictions taking, for example, an Oceanic Routeing via the U.K. and Land's End to avoid a bad delay for a more direct French routeing to Las Palmas. So-called "ghost slots" i.e. requesting a slot ahead of an actual aircraft arrival is a "no-win" situation and is not good in general - in the end it will jeopardise the whole system.


Concerning the future in Air Traffic Control terms, Air Holland remains optimistic. There is a general concern at the available limited capacity but the attention is now there and being focused in the right direction. The only problem is that things are not moving so fast as they should or as the airlines want them to! The general opinion is that the RLD, Eurocontrol, Governments and other organisations should have given the problems more attention, much earlier - wise thoughts!

There are no plans to fly scheduled services, as for example Transavia does between Amsterdam and London Gatwick, Air Holland considers that it is happy flying scheduled charters and the role of the tour operator will remain as it is at present. The average holiday passenger wants a package, so the tour operator needs the airline and vice-versa - Mombassa is not a realistic destination for a so-called "camping flight" in the way that Malaga is, for example.

After lunch in "Harry's Diner" and a further visit to the Operations Room

everyone gathered in the VIP-Room for a drink. A few enthusiasts crept back upstairs to witness the first-call and initial descent of their Air Holland flight arriving from Monastir inbound to Beek.

On the way back to the airport check-in a photograph of the Air Holland group was taken by the Approach lights with the company 757 beginning its flare-out, overhead a short final.

Altogether an excellent day from both sides' point of view. Not only does contact like this make life more interesting but mutual problems can be discussed and hopefully solved, leading to a more orderly and expeditious flow of Air Traffic, and that's the aim of our work. 

GARDENCENTRE -  
LANDSCAPE GARDENING -  
LAYING - OUT AND MAINTENANCE

# arthur speetjens

FROM OWN NURSERY:

- Conifers, all types
- Shrubs and climbing plants ...

EXTENSIVE ASSORTMENT:

- SODS
- All types of heather
- Roses

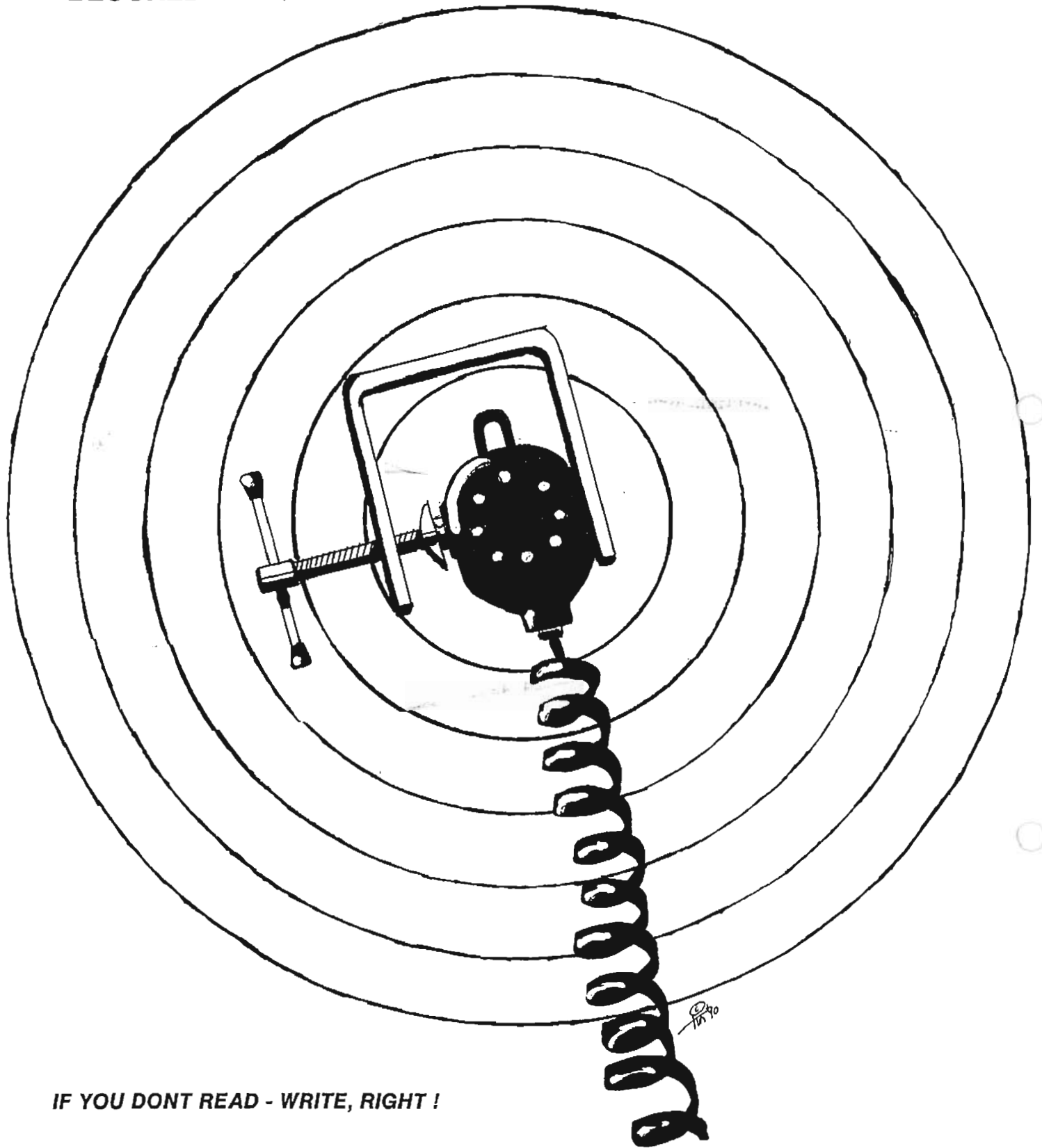
LAYING-OUT OF TERRACES:

- Peat, manure and fertilizer, etc.
- Greenhouses
- Renovation of existing gardens
- Plowing and harrowing



Geverikerstraat 111 (Geverik) Beek  
Tel. 04490-71417

**BLOCKED FREQ ?**



**IF YOU DONT READ - WRITE, RIGHT !**

# MILITARY MATTERS

## The Lippe Page



After the 10th amendment for the change of the German air traffic law has been discussed in the committee of the "Bundestag", a final draft is now available. With this the future situation of German ATC is still uncertain, but a few points became clear:

1. The future organisation for the performance of civil ATC will be a GmbH;

2. The new law will be valid on Jan 1st 1993.

3. Initially the present dual system of civil ATC on the one hand and military ATC on the other will continue after Jan 1st 1993.

4. According to paragraph 3 of the final draft (Personen, die das Flugsicherungsunternehmen von der Bundesanstalt für Flugsicherung übernommen hat und die als Bedienstete der Bundesanstalt für Flugsicherung Flugsicherungsaufgaben erfüllt haben, bedürfen keiner Erlaubnis im Sinne des § 4 Abs. 5 LuftVG. Dasselbe gilt für andere Personen, die bereits bis zum Inkrafttreten dieses Gesetzes mit der Wahrnehmung bestimmter Aufgaben aus dem Bereich Flugsicherung betraut waren.) also military licences will very possibly be recognised by the new GmbH.

Not very interesting you might think, but I'll try to point out some consequences that we are going to face.

### a. History.

Until about 2 years ago a dual government system of 2 equal types of ATC (civil and military) with an equal pay scheme incl. extras (Zulagen, Aufwandsentschädigungen) existed. Of course with all problems for both sides caused by the increase of air traffic.

### b. Situation now.

About 2 years ago additional extras (Zulagen, Aufwandsentschädigungen) were granted with the purpose to increase motivation among the workforce of the ATS personnel. These extras were paid

to the civil side 3 months after being implemented. It took a year and military controllers going to court before these extras were paid to us. To my mind a "keep them quiet" tactic was used during that time by our commanding officers (medium level up) and not much useful information got to us. (Also as a result of this the "Military Air Traffic Service Organisation Germany MATSOG" has been established last year). Last year the additional extras were negotiated and raised again, but from that time on there is a split in payment between civil and military from controllers level down (the higher "Beamten" and our commanding officers in ATC have a 1 to 1 raise). This and some problems regarding promotion on our side may be some reasons for a few rumours and a high willingness to quit with the military. For example according to a questionnaire of our "Vertrauensmann der Offiziere" out of 57 controllers more than 25 % will take it into consideration to- and more than 50 % would change to civil ATC.

### Future outlook:

With the situation described above @ 3 of the new law and the shortage of controllers in Germany there is more than just a chance that the German military will loose 30 %+ of its present workforce. Taking into consideration that in the future the civil ATC job will be much more attractive I also cannot see young people joining the Air Force to perform ATC under these conditions. It should also be mentioned that a definite plan to improve the military situation is either non existent or at least not known to me.

Last the still open (uncertain) items:

a. How long will this dual ATC system exist? In a report about the final draft, it is clearly pointed out (without opposition) that a single combined ATC system would be much more efficient in costs, the use of airspace and safety. But for the time this is politically impossible. Nevertheless the political situation within Germany is changing more from day to day.

b. What will happen to Maastricht? Eurocontrol is not the GmbH. Who will handle the air traffic (willingness to quit)?



# MAN MACHINE INTERFACE SYMPOSIUM



by Bob v.d. Flier

Last December I had the pleasure, again, to be the guest of the students of the Technical University of Delft, Netherlands. This time a highly interesting symposium was organised with the attractive title: **Man Machine Interface Aspects in Civil Aviation**. This symposium was organised by "Het Avionica Dispuut", the avionics students' association. Their main goal is to encourage contact among the avionics students that are scattered over the many laboratories of the Faculty of Electrical Engineering in Delft. In their brochure to the symposium they say: "The strong growth of civil aviation in recent years has stressed the importance of a good interface between man and machine. This interface problem, however, is not only relevant in aviation. In every organisation where man has to deal with automated control systems the question

raised: **How to prevent the machine from living an autonomous life**. Especially in aviation, there has been a lot of research in order to adapt systems to the cockpit crew. The solutions found here can easily be made suitable to familiar problems outside aviation. In order to point out these problems and to present techniques to solve them this symposium is organised.

"The symposium will cover various issues related to ergonomics and safety. Topics like human behaviour, the use of warning systems, 4-D navigation and Air Traffic guidance systems will be discussed. Furthermore we will point out the necessity to keep the man in the control loop. Finally the attitude and role of the government in the certification of new cockpit systems will be mentioned."

Having read this brochure, I was curious enough already to apply for an invitation to participate at this symposium, and I can tell you that I was not at all disappointed. It was a well organised symposium with a good balanced selection of speakers, who in turn touched the different fields related to Man Machine Interface.

Chairman of the day, Prof. Ir. F.J. Abbink from the Dutch National Aerospace Laboratories (NLR) opened with his extensive introduction on "Automation in civil aviation: Developments, promises and problems", saying: The safe, orderly and expeditious operation of commercial air transport is becoming more and more dependent on electronic automatic systems, in the aircraft as well as on the ground.

Pilots and air traffic controllers have to operate these automatic systems and monitor their correct functioning. In case of a malfunction the pilot or air traffic controller has to take over and ensure the safe continuation of the flight.

The expected doubling of air transport in the next decade will require a more efficient use of airspace and airports than the present Air Traf-

fic Control system allows.

Via his interesting historical review, Prof. Abbink arrived at the next chapter:

**Human factors problems with glass cockpits.**

In 1983 the first new generation wide-body aircraft equipped with glass cockpits and many automatic systems entered airline service.

-----

Earl Wiener, Professor of Management Science and Industrial Engineering of the University of Miami surveyed 200 airline pilots from two airlines that flew the Boeing 757.

The pilots, who had different levels of Boeing 757 experience, answered questionnaires on two occasions. The main conclusions of the study are:

- At least half of the pilots said they felt automation actually **increased workload**. One year later these pilots showed no shift in their opinion, despite having gained more experience.

- Nearly half of the pilots were concerned about the possible **loss of aviation skills** with too much automation. About 90 % of the pilots said they hand-fly part of every trip to keep-up their skill.

- More than half of the pilots were concerned about too much **reprogramming** of the Flight Management Computer Systems because of **ATC-induced flight plan changes** below 10.000 ft and in the terminal area, resulting in too much **head-down time**.

- Nearly 70 % of the pilots admitted that they had sometimes been surprised by the **unexpected behaviour** of the automatic systems because of its not fully understood complexity.

It is also important to note that the **overall impression** the pilots gave of the glass-cockpit environments is **positive**. About 90 % of the pilots surveyed said that the glass-cockpit instruments and displays are a big step forward. They especially praised the:

- map mode of the Navigation Display;

- Flight Management Computer System;

- Flight Warning Computer Systems.

Furthermore Prof. Abbink mentioned the developments in ATC, like the **Future Air Navigation Systems Committee (FANS)** recommendations of ICAO, NAVSTAR and GLONASS satellite navigation sys-

tems, Microwave Landing Systems (MLS), so as to come to the chapter:

**Towards automated Air Traffic Control.**

The development of the Flight Management Computer Systems (FMCS) has provided the pilot with the capability to plan and predict the most cost-effective flight path and profile and to fly it automatically. The FANS indicated satellite-based **Communication, Navigation and Surveillance (CNS)** systems will provide high-quality communication, navigation and surveillance capability over the entire world. To cope with the predicted growth in air traffic a next step has to be taken to further improve ATC capacity and efficiency. This next step will have to be the integration of the airborne and ATC computer systems by means of a digital datalink.

An automatic digital datalink may provide ATC with more knowledge on the aircraft state (heading, ground speed, airspeed, roll angle, mass, fuel, configuration, etc...) and its intentions, requirements and restrictions. An automatic digital datalink may provide the aircraft with information on the ATC constraints and ATC clearance as well as with meteorological data, data on the runways in use, the possible braking efficiency on the runway, etc...

Furthermore it was mentioned that EUROCONTROL is working on the "Programme for Harmonised Air Traffic Management Research in the Eurocontrol organisation (PHARE)".

Finally the NLR's Air Traffic Research Simulator (NARSIM), the Research Flight Simulator and its Fairchild Swearingen Metro research aircraft were mentioned as tools in this PHARE research programme.

Concluding Prof. Abbink said: Before these new ATC concepts can be put into operational use, extensive studies and tests will have to be executed to demonstrate the feasibility and reliability of all the elements. A proven, adequate solution of all human factors aspects associated with the increased automation (monitoring, complacency, response to malfunctions, etc...) is a pre-requisite to the success to these new automated ATM systems. In Europe under the umbrella of EUROCONTROL the national research institutes in the ATC avionics area are developing the tools to execute this

research into new ATC concepts. ....

Next speaker, **Elwyn Edwards**, Professor Emeritus of the University of Aston, where he was appointed to Chair of Applied Psychology, nowadays being a consultant in Human Technology, concerned with Human Factors aspects of aviation and MCI. He went into the more theoretical side of the MMI problem. I just take out one line of his interesting presentation: System can be regarded as comprising three types of resource, viz. Software, Hardware and Liveware; these resources interact together, and with their Environment.

Traffic Alert and Collision Avoidance System, better known as TCAS was another interesting lecture, which in my opinion should not simply be reprinted, but be reproduced live. Therefore I have forwarded a proposal as such to our E.B. (editor).

This brings us to the speaker from **Hollandse Signaalapparaten B.V.**, Ir. Gietema (replacing Mr. Erik Priebee, who had to be elsewhere, who named his lecture:)

**Trends in the Man Machine Interface (MMI) in Air Traffic Control Systems.**

The Man Machine Interface (MMI) in a semi-automatic Air Traffic Control (ATC) system is viewed from various perspectives with its user, the air traffic controller, kept in focus all the time .....

User satisfaction is critical to successful system operation. For short: User and MMI shall operate under one umbrella. The man-machine interaction plays a significant part in this.

User participation is therefore essential in defining this interaction and should be definitely encouraged .... Explaining the so-called Air Traffic Control Functional Loop, speaker said, a human operator (the air traffic controller) supervises the process, aided by radars, computers, displays, communications, direction finders, etc... The air traffic controller is thus an essential factor in the process .... Since I think this was an interesting lecture, especially for air traffic controllers (and their management!), let's quickly run through some more highlights.

#### Why MMI?

For the proper discharge of his duties the air traffic controller needs a variety of unequivocal data which are to be made instantly available to him.

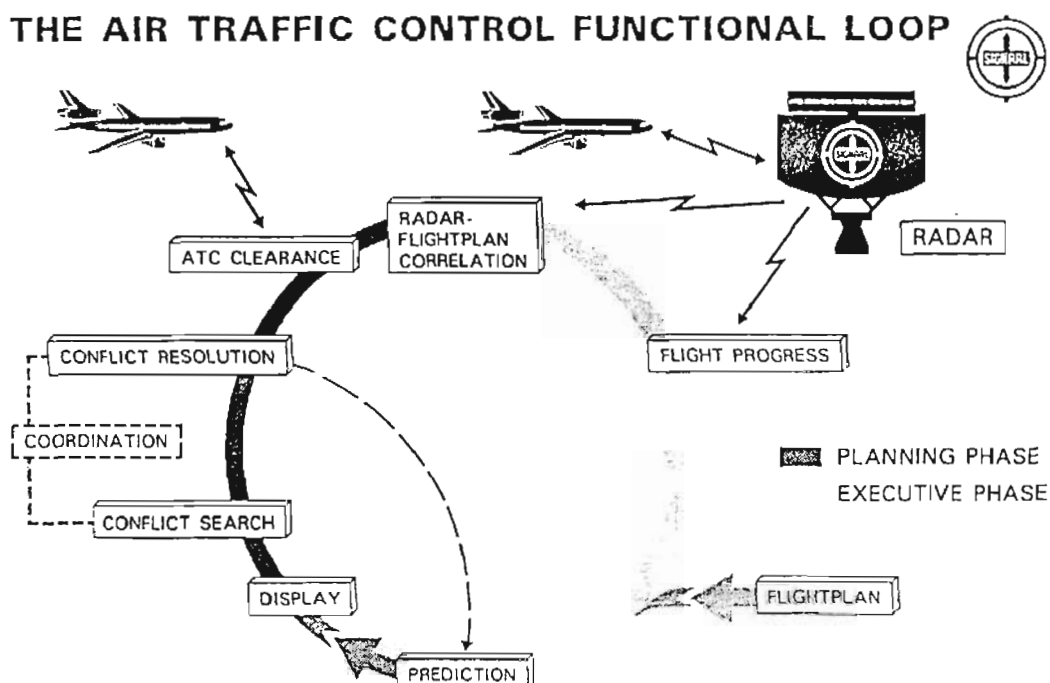
#### What is MMI?

A medium for information exchange between the user and the system. MMI forms the communication link between the human operator (the air traffic controller) and the system (the machine).

#### What does MMI do?

Presenting the user information supplied by the system, passing on to

## THE AIR TRAFFIC CONTROL FUNCTIONAL LOOP





the system of information provided by the user.

#### What does MMI comprise?

##### a. Functional provisions:

- Output methods of data presentation: geographical, alphanumerical, graphical.
- Input methods, such as through keyboards, rolling ball or visual display units.
- Techniques applied for implementing the man machine communication, such as windows, pull-down menus, etc...

##### b. Ergonomical provisions:

- Arrangements of the user workstations, e.g.
  - orderly and easy to operate,
  - location of the input and output devices,
  - right-handed as well as left-handed operation,
  - safety (radiation hazards),
  - minimal noise nuisance,
  - lighting conditions,
  - air conditioning.

(Can you imagine that I enjoyed this part? Ed.).

#### For whom MMI?

- a. On line : Air traffic controller.
- b. Off line : Maintenance staff.

#### Aspects of MMI.

- Response time;
- Consistency;
- Task complexity;
- Menu selection;
- Fault reports;
- Flexibility;
- Authorisation;
- Error handling;
- Predictability.

Consideration of the above aspects helps to formulate the requirements which an MMI concept will have to satisfy.

Another interesting chapter read: User interface (MMI) design, which opened with the line: **The design of the user interface shall be based on the assumption that the entire ATC system is to be used by a human operator, or to put it differently, the system shall be user-friendly, the user being the AIR TRAFFIC CONTROLLER.** To achieve this, the design shall be focused on the user.

And further: Large high-resolution displays (SDD), gradually with colour presentation, are enabling side-by-side presentation of radar data and flight data on a single viewing unit. The air traffic controller no longer

needs to divide his attention between several viewing units; all relevant information is concentrated on one screen. The era of printing flight progress paper strips gradually being phased out. The Hollandse Signaal speaker finished with summing up the advantages of the rasterscan displays, which will be used in the near future. But I leave this chapter for another occasion (Ed.).

Finalising this review of the MMI Symposium, I would like to make mention of the presentation by Wim den Braven and Aad van Dorp, who both work for the Dutch National Aerospace Laboratory (NLR) in Amsterdam, or at least are related with this institute.

They presented together a lecture, titled: **NARSIM and EFMS: Tools for Research on integrated ATM.**

NARSIM stands for NLR ATC Research Simulator. EFMS is Experimental Flight Management System. Both highly interesting for air traffic controllers, so I will try to arrange for a visit to the NLR, so as to obtain more information, which then will be published at a later stage.

Finally let me compliment the organisers of this interesting symposium with their great success, congratulate them with the high quality of speakers and their lectures and thank them for their fine hospitality, which I enjoyed. Avionics Dispuut can be proud again!

#### A few good ones:

IFR stands for : I follow Rivers, Roads and Railways.

MMI: There are more software interface problems than hardware, whereby the interpretation of information is a bigger problem than the way of displaying the information.

Sometimes software more looks like hardware and hardware more like concrete ware.

#### Who is responsible?

The competent manufacturer, the aircraft manufacturer, the customer or the certifying authority?

Future cockpits will be occupied by one man and his dog. The man is trained to look and watch and the dog is trained to bite, if the man touches anything. ✈

# THE EUROCONTROL

## AB-INITIO TRAINING PROGRAMME

by Roger Feyens (TDSP)

EUROCONTROL, as most of the National Administrations, is in a bitter need of qualified Air Traffic Controllers. The Agency has been given the green light to recruit and train two intakes of Ab-Initio students since 1985.

In our Centre we all regularly meet new faces belonging to Ab-Initio 6, Ab-Initio 7, Ab-Initio 8, etc... Only the "initiated" know (more or less) who belongs to which group. These students then suddenly disappear and, some time later, one sees them again. What happened to them in the meantime?

The aim of this article is to give an answer to these questions and to illustrate the heavy training programme that Ab-Initio students have to undergo.

During about ten years, no Ab-Initio students were recruited and trained by the Agency. The Ab-Initio 6 course started in November 1985 and as of 27 February 1990, Ab-Initio 6, Ab-Initio 7, Ab-Initio 8, Ab-Initio 9, Ab-Initio 10 and Ab-Initio 11 are all present in Maastricht U.A.C., training at different positions.

The recruitment of Ab-Initio 12, who will start their training at the Institute for Air Navigation Services (I.A.N.S.) in May 1990, has taken place. Recruitment of Ab-Initio 13 will be organised in our Centre during the week of 12 March till 16 March 1990. What is now the training programme administered to these students between recruitment and final qualification? Training will be conducted in three main Phases. The basic and more theoretical parts take place at the I.A.N.S. The practical parts are conducted in Maastricht U.A.C. The duration of the total training lasts from three and a half to four years.

PHASE 1 at the I.A.N.S.

Duration : 15 weeks.

Contents :

- navigation
- radio-navigation
- aerodynamics
- airborne instruments
- aircraft performances
- aircraft types
- air traffic services
  - . tower control
  - . approach control
  - . A.C.C.
  - . U.A.C.
- telecommunication
- radiotelephone
- phraseology
- meteorology
- international organisations :
  - . I.C.A.O.
  - . I.A.T.A.
- practical training on approach control.

Aim : to provide the students with a serious and detailed background, as recommended by O.A.C.I. At the end of this Phase (as for all three Phases), three types of examinations will be organised :

- a written examination
- an oral examination
- a practical examination

The pass mark for each examination is 70 % and a reset can be granted. If the student has successfully passed these exams, he will follow a two weeks Automatic Data Processing Course (A.D.P.).

Finally, an examination for ostentation of the German R/T licence (A.Z.F.) will be taken in Frankfurt. At this stage, and before joining Maastricht U.A.C., the students will be given the opportunity to visit different Centres of interest such as:

- Amsterdam, Brussels or Reims.
- Lufthansa in Frankfurt.
- A.T.C. school in Langen.

- Military Units such as Milligen, T.C.C. Semmerzake, C.R.C. Glons, Wing Meteo of the Belgian Airforce, Coxyde Rapcon, Search and Rescue, etc.
- Data Bank EUROCONTROL and Route Charges.

#### PHASE 1 continued in Maastricht:

Duration : about 32 weeks.

Contents :

- flight plan contents
- flight plan treatment in MADAP
- procedures and regulations for Flight Data Assistant Work.

Aim : to qualify the trainees for working at all the Flight Data positions in all the sectors of Maastricht U.A.C. This training part gives the students a thorough understanding of the Maastricht operations and teaches them to organise their work and particularly to set their priorities right. In order to have access to further training at the I.A.N.S., the students must successfully pass these Flight Data qualifications.

Note: for these qualifications, map drawing, written tests and practical examinations are set.

#### PHASE 2 at the I.A.N.S.:

This Phase has been subdivided in two parts, a and b.

##### PHASE 2 a:

Duration : 10 weeks

Contents : procedural control without any assistance of radar

Aim : train to

- analyse traffic situations
- detect traffic problems
- solve these problems making use of procedural separations only
- familiarise the student with "three dimensional thinking".

The practical part of this training is conducted on a simulator in a more or less fictitious area (a simplified Ruhr Sector).

The students are thereafter submitted to a written, an oral and a practical examination. If successful, they have access to PHASE 2 b.

##### PHASE 2 b:

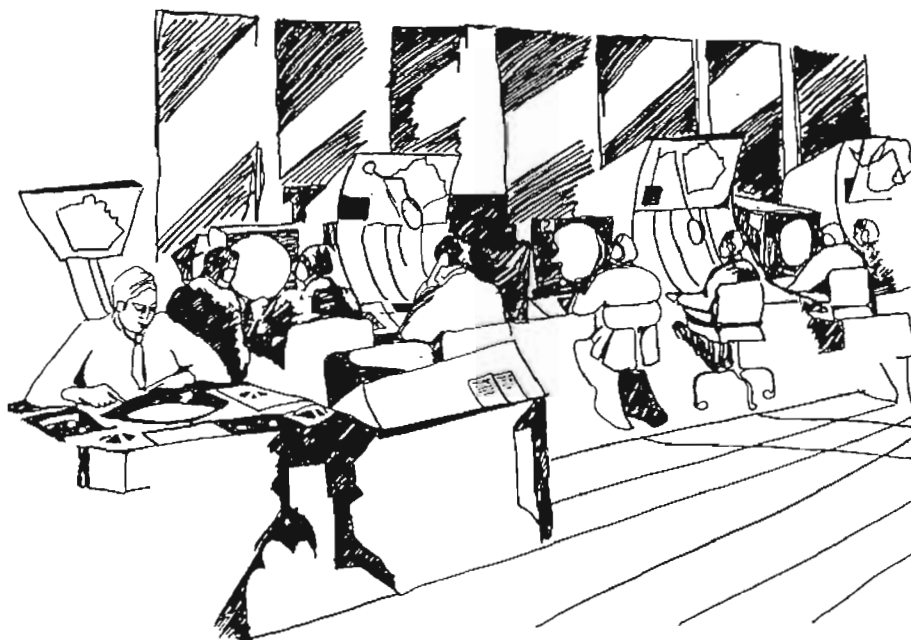
Duration : 4 weeks

Contents :

- planning control, completely Maastricht oriented, using planning separations and the assistance of a radar controller.
- relate radar positions to strips.

This phase is entirely conducted and organised by Maastricht Instructors. No examination is set, but students are daily briefed, debriefed and assessed. At the end of this simulator training, the Instructors will make available a final course assessment to the "Ab-Initio Controller recruitment and Coordination Group", who can decide upon the eventual interruption of training for an Ab-Initio student whose potential, to become a controller, is doubtful.

This Phase is followed by a two weeks A.D.P. course before the train-



ees join Maastricht again, to be administered a 10 days course based on procedures, Letters of Agreement etc... At this stage, the remaining students are allocated to the individual U.I.R.'s, (Amsterdam, Brussels or Hannover) taking into account the staff needs in these sectors, the ability demonstrated by the students during the previous training Phases and their expected potential for adaptation to the particular environment and difficulties of each Sector.

This Planning Controller training takes place entirely in a team, under the supervision of the Team's Training Officer and the Training Section.

During this practical training period, the Ab-Initio student must qualify himself at the most busy sector of the U.I.R. that he is training in. To obtain this qualification, he has to successfully undergo a written test, an oral board, "planning" oriented, and a practical check-out. During this period the student will be given the opportunity to do a familiarisation flight with Lufthansa or with Sabena, to enable him to make an "airborne" experience.

If the student qualifies as a planning controller, he has access to the Phase 3 training.

### PHASE 3 AT THE I.A.N.S.:

This Phase has also been subdivided in two parts, a and b:

#### PHASE 3 a:

Duration : 8 weeks

Contents :

- radar techniques
- radar procedures
- primary and secondary radar
- basic radar training

Aim :

- teach the student how
- to identify radar targets
- to judge radar distances
- to separate aircraft according I.C.A.O. standard separations.

At the end of this course, again written, oral and practical examinations will be administered. If successful, the student has access to Phase 3 b. The latter is entirely organised and conducted by Maastricht Instructors.

#### PHASE 3 b:

Duration : 4 weeks

Contents: this practical radar training course is completely Maastricht oriented. This means that Brussels Sectors' students will be trained for the Brussels West Sector, whereas the Hannover Sectors' students will be practising in the Hannover East Sector.

Procedures, Letters of Agreement, coordinations as well as special occurrences, week-end routes, and special flights are realistically simulated.

Aim : this intensive radar training, conducted at the I.A.N.S., fills the gap between the basic radar course and the on-the-job training.

As for Phase 2 b, the trainees will be daily briefed, debriefed and assessed. This assessment is communicated to the students and to the "Ab-Initio Controller Recruitment and Coordination Group" who may decide upon an eventual interruption of training.

Before being re-integrated in their individual teams, an A.D.P. course will be administered in Maastricht, more particularly oriented towards radar data processing and MADAP features.

Students will then be expected to qualify at the executive position of the most busy sector of the U.I.R. they are training in.

After qualification in this sector, the Ab-Initio student will be established and a licence will be issued. He will continue training in the other sectors of the Brussels or the Hannover U.I.R.

In the future, Amsterdam Sector training, combined with Hannover Ruhr and Coastal Sectors will be organised. This detailed training scheme hopefully explains the continuous coming in and out of new faces, that staff could see since end of 1985, and draws the attention to the very heavy training task that we all are confronted with to help the Ab-Initio students to become qualified and reliable controllers of our Maastricht Centre.

