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EUROCONTROL

GATCM

INPUT

MAGAZINE OF EUROCONTROL GUILD OF AIR TRAFFIC SERVICES

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EDITOR: J.C. BOUTON

CO-EDITOR: J. ELLERMANN

SECRETARY: -

ASSISTANTS: P. DOMOGALA
M. GERMANS

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THE EUROCONTROL GUILD OF AIR TRAFFIC SERVICES

Member of IFATCA

Due to the acceptance of the Eurocontrol Guild of Air TrafficSServices'Constitution and the Guild as a full member of IFATCA, the Guild has to be re-organised as to include the now assured Bretigny Lodge. The Maastricht Lodge will continue in its present form until new internal regulations can be written for your approval. The actual activities of the Maastricht Lodge will not change. The only major difference being that eligible staff working at Eurocontrol Centres will be able to join EGATS and form respective Lodges.

Small changes however, have to be made to the Constitution to allign it with Dutch law and allow Military staff working in a Eurocontrol unit to become members of the Guild. The membership changes include a three-step system : Professional,Members,Ordinary members, Associate members. The Professional membership is basicaly for operational staff, Ordinary membership for facilities, Associate membership is for other persons wishing to join the Guild but these members would not be able to vote or entitled to IFATCA benefits.Naturally all membership is subject to Executive Board approval. These changes are still subject to your conformation and approval.

The original Lodge Constitution,which was unacceptable as an IFATCA Constitution, will be the subject of a special general meeting.

The Executive Board of EGATS which has been dormant since the inauguration , is in the main only provisional. The positions are subject to conformation at the special meeting (16 th January) , and will continue until next May when under the terms of the Constitution new elections will have to be held. The revival of the Board is due to the emergence of interest in the Guild in Bretigny. This has created a need for an overall Board to coordinate Guild activities and is required under the terms of the IFATCA recognised Comstitution.

The first major task for the Executive Board of EGATS has been to write to the IFATCA President advising him of the delicate situation we have found ourselves regarding our future.We hope ,as you can see from the letter, that the solidarity and support we have given to fellow organisations,even when we were not members of the IFATCA, will be returned in this instance.

R.S½ Bartlett.

Provisional Executive Secretary

EUROCONTROL GUILD OF AIR TRAFFIC SERVICES,
Secretariat,
"Kenan",
van Oldenbarneveldstraat 23,
Sloten (1),
Nederland.

23-11-1973.

The President,
IFATCA,
Mr. J.D. Renia,
45 Avenue des Morgines,
1213 - Petit Lancy, Geneva,
Switzerland.

Dear Sir,

We wish to express our concern with regard to the future of our employing agency, Eurocontrol.

As you will know, Eurocontrol has been and still is in a crisis situation. Eurocontrol lives under a Convention signed in 1960 by the ministers of the seven contracting states. This Convention no longer appears to be workable by at least three member states, whilst the remaining are hesitating to give their support to its executive functions and development.

To solve this political malaise either a new Convention in 1983, or other tasks for Eurocontrol have to be found. It is doubtful that the present Convention can be continued after 1983; other tasks therefore could lead to withdrawal of the executive and operational functions of Eurocontrol. This insecure situation has a direct and adverse effect on the morale of the Eurocontrol operational staff, indeed, many came to build an operational career as a controller in one of the Eurocontrol Area Centres i.e. Maastricht or Karlsruhe. They now realise that their future is in jeopardy, moreover because it is not clear, how the various national administrations will be able to ensure career continuity.

It is sad to see that recently, a fellow IFATCA association took a very negative attitude towards Eurocontrol whilst effecting direct negotiations with their parliament. In the process of this negotiation, incorrect and unsubstantiated information was conveyed. We consider that this action was unprincipled, because it breaks down the spirit of good understanding and mutual cooperation which we, in an international environment, have always tried to create and maintain.

We can understand however, that concern exists in some national associations with regard to the development of Eurocontrol.

Our association would welcome advice and information from fellow associations in this respect, but would appreciate prior consultation before they envisage taking any action with their governments, in regard to national Eurocontrol policy.

Unilateral actions by fellow associations could have serious and damaging effects through the news media and so result in adversely affecting the career expectancy of our members.

We trust that in IFATCA their is a spirit of solidarity and cooperation as all member associations are bound by the same constitution and consequently strive for the same aims be it in a national or international context.

We trust that you will appreciate our concern and through IFATCA channels be able to assist our association in these difficult days.

We have only been able to convey a small part of the "Eurocontrol Crisis Situation" but would furnish you with more information if required. Furthermore we would welcome the opportunity to receive an IFATCA Executive Board delegation at Maastricht in order to discuss in detail the present situation.

Yours faithfully,

B. Smeeth,
President,
GATCA.

R.S. Bartlett,
Provisional secretary,
GATCA.

PILOT-CONTROLLER FORUM 1975

A very successful evening was held on the 23 rd October when our first Forum took place.

The chair was taken by M. WATKINS who kept things moving along at a pace. The first point raised by the pi-lots was their need to get requested levels whenever possible and as soon as possible. Captain LEONARD highlighted this problem with reference to Berlin corridor operations and the fact that from certain departure points on long level flights , with restricted runway lenghts and high temperatures, they ended up flyimg very close to the legal limits in case of di--version.
Optimum descent profiles: (in most cases as late as possible) was also very wel--come and Captain LEONARD praised MAAS-RICHT for their approach to these pro--blems.

Captain V. d. STROOM was more critical of MAASTRICHT operations in that he found flying into and out of Amsterdam still carried a lot of level restrictions wich had economic penalties. In this opinion, the split into Upper and Lower Airspace also had an adverse effect on short range operations.

It was pointed out that these restrictions were imposed by adjacent centres and that MAASTRICHT had, in the past year, negocia--ted quite a few improvements, not least of which were JB5 procedures. Captain V.d. STROOM agreed that there had been improvements and noted for the first time the existence of military crossing windows affecting this route. Optimum descent for him was to leave or pass FL 300 at range100 nm from touchdown.

Pilots would rather know required restrictions in advance so as to arran--ge their climb and descent accordingly rather than have to use " expeditious climb/descent " at last minute.
The use of high level approaches was brought up after some discussions . It was agreed that in large high density airspaces, these were not feasable , although late descents and fast climbs approximated the procedure anyway.

Letters of agreement came in for critici and Captain V.d. STROOM thought that pilots should be brought in during thesse negociations and that letters of agreemen should take more notice of the wide rang of aircraft performance capability.

Captain WOUTESSE , the German airlines representative , brought up the question of computer incompability throughout Europe.In his opinion, taking into ac--count the technology levels available,

it should be possible for a controller in Bremen to talk to a controller in MAASTRICHT " on screen " .
The Chairman confirmed that a lot of innovations along those lines are pos--sible, but that often for political reasons progress remained slow.

The Chairman introduced for discussion navigational aids available and whether pilots were satisfied with them.There was general agreement among the pilots that VOR/DME coverage in MAASTRICHT area was fully satisfactory. In this context, the use of short cuts was introduced for which pilots were very enthusiastic,and a figure was given for DC8 aircraft of a saving of 100kg of fuel per mn.

At this point, our military representative drew atten--tion to potential dangers in use of short cuts during the period of military activi--ties . Military traffic carry priority in " off-route " airspace and their IFR departure and arrival patterns could be interfered with. Additionally,,Air Defen--ce units were not made aware of " off-route " clearances.

Controllers from the floor registered complaints on two counts against pilots at this point :

- Firstly about aircraft levelling off (without notifying the controller) du--ring a long climb .
- Secondely about the increased tenden--cy for pilots to attempt queue-jumping by planning at a low level then asking for higher when in the air.

The first point was explained in detail , making reference to charged atmospheric conditions, pitch and optimum climb per--formance, and indicating that with pre-setting of instruments , the pilot was not always aware of the change.
the second point was diplomatically igno--red.

After a refreshments break, Flow Control was tackled. As expected, pilots are highly critical of the present Flow-Control procedures but were at a loss to suggest any alternative solutions.

Their main point was the present Flow Control , inflexible application of some procedures when apparently not needed. Captain WOUTESSE spoke out strongly on this point , suggesting that we were now slaves of the system :
- " Flow Control was created to cope with potential or near saturation, yet it is applied at all times , Why ? ".

No satisfactory answer was given to this question , perhaps because it is a valid criticism ?

"I dread to think what the congestion will be like when people start

Further discussion along well paths of slot times, company scheduling , company lists led to no firm conclu--sions . The possibility of reduced Flight Level spacing was discussed , bearing in mind France's desire to make FL 300 available , but pilots remainedd cool to this suggestion.

The main idea seemed to be that if the use of reduced vertical spa--cing could be proved to be as safe as present operating levels, then pilots would accept them.
From the floor, it was pointed out that all these procedures : Flow control, use of non-semi circular flight levels and FL allocation sys--tem though often restrictive in ef--fect, their purpose was safety and any interference leads to a higher potential for aircraft conflict.
It became a question of controller responsability whether or not he accepted such deviations,
Pilots nevertheless insisted that greater use more economic use could be made of the airspace in quiet traffic periods.

Our appreciation of familiarisation flights was expressed at this time . and a
Pilots made a point about the desi--reability of receiving traffic in--formation, when traffic permits , on jumbo-jets even when such aircraft have vertical separation , and parti- - larv in early morning and evening light conditions. A number of inci--dents were described when avoiding action had been taken by pilots who were misled by the visual appearance of a large-bodied jet which was in fact up to 3000 feet below. In this respect there is a working committee in UK under which BALPA are studying a system of coded callsigns which would give a clue to other pilots of a given aircrafts'size.
This discussion of visual sightings , etc., led on naturally to perhaps the hot-point of the evening : military VFR operations.

Attention was drawn to the experiences in USA, where there are increasing reports of VFR collisions. Steps should be taken before collisions . The German military re--presentative indicated that in German air--space, VFR flights amounted to 4/ of total operations , and that although he appreciа--ted civil/controller/pilot apprehension, from a military stand point the use of visual contact separation down to close proximity was acceptable. The Belgian military repre--sentativesuggested that it was largely a question of getting the information that visual contact was established through to the civil controller and hence to the civil pilot.
Additional safety would exist when total use of mode C was available. There was immediate dissent from the civil pilots present who, while in no way questioning the competance of military pilots, expressed doubts on the ability to make such close judgements at total closing speeds of mach 2 or mach 3.

The military colleagues from the floor pointed out that as long as the rules permit--ted these kind of operations , then any mi--litary controller would be expected to con--trol accordingly.
A strong point was made nevertheless that a civil pilot could conceivably take avoiding action on unnotified military traffic which could lead to a simultaneous manoeavre resul--ting in collsion.

The chairman then took some of the heat out of the discussion by giving a short description of future deve--lopments which would lead to pilots having a short range presentation of traffic , available on a cockpit screen. He then went on to describe the recent successful trials completed giving on screen conflict warnings to controllers.

C. van d. Stroom then came in to say that although all these and other ad--vantages associated with SRR result in improved services , the present Eu--ropean code system creates additional workload for the pilot , and compared it unfavourably to the american system where one code is given and that is all. His attention was drawn to ORCAM and the fact that it isńt in total use throughout Europe was no fault of Eurocontrol.

Area navigation then came up with the question whether pilots would be willing to fly parallel lanes with 5 nm. lateral separation under their own navigational contol, monitored on radar. Pilots again indicate thatprovided technical equipment guaranteed present safety levels , they would accept this form of route flying.
In this context, pilots were invited to express their opinion on a possible re--duction of the present minimum : 5 nm. radar separation. Whilst accepting that Maastricht radar capability made this possible , pilots resisted this sugges--tion on the basis of the unknown forces involved in the vortex and turbulent wake problems .
Pilots however are quite happy to accept less than 5 nm. visual climboor descent through, provided all parties are aware of what is going on.

The reduced separation available under certain conditions in the lower airspace of 3 nm. tends to lead to increased air--miss reports again partly due to visual perception misleading the pilot.

From the floor, the criticism was levelled at pilots that they appear to be inexpli--cably reluctant to change to a secondary frequency in the event of a blocked frequen--cy . Capt. LEONARD defended by saying that after a relatively short period, if a pi--lot thought his flight was being endan--gered , he would certainly change to an agjacent or the emergency frequency.

Time ran out and the evening was brought to a close. It was obvious that many of the subjects brought up could have been indivi--dually discussed all night and this first attempt has, we hope, paved the way to further contact of this kind with pilots and other aviation organisations.

C. OPS COMMITTEE

S. RALSTON.

&

CONFLICT ALERT
SHORT TERM CONFLICT DETECTION AND WARNING

Eurocontrol is currently preparing an operational requirement for a conflict alert program to be in-corporated into the MADAP programs.

The description which follows isaa general explanation of the require-ments and working of such a program and is not directly related to the forthcoming operational requirement.

The philosophy of conflict alert is that it is not a normal control tool but should only act when the radar controller has left unresolved an im-minent potential conflict , thus it acts as a final safety net.
Because of this, it must act as late as possible, to avoiddfalse alarms, but not so late that the controller has no time to react. It appears that warning time of two minutes before infringement of separation standards is a good compromise value.

Obviously, such a program will have little value if it produces so many false alarms that the controller i-gnores all warning indications.
Much effort is devoted therefore to confirming that there is a real dan-ger of infrigement of separation .

In the horizontal plane, the search for conflicts is based on radar data, that is , it is assumed that aircraft will continue to fly for the next two mi-nutes at the speed and in the direc-tion known to the tracking programs at the time the search is carried out. Special procedures are used for aircraft in a turn.
In the vertical plane, mode C equipped air-craft are considered to continue climb or descent at a rate indicated by successive mmde C readings or to maintain level flight. The vertical search area will be limited by the warning time or by the level which the program knows the aircraft to have been cleared to if it will reach this level within the warning time.
Non-mode C flights must be considered as being at all levels , unless this can be limited, for example by input of the hori-zontal arrow. Most false alarms will be caused by these flights.

The conflict alert program will run at about 5 s. intervals and initially at least will be limited to tracked aircraft.

The program :

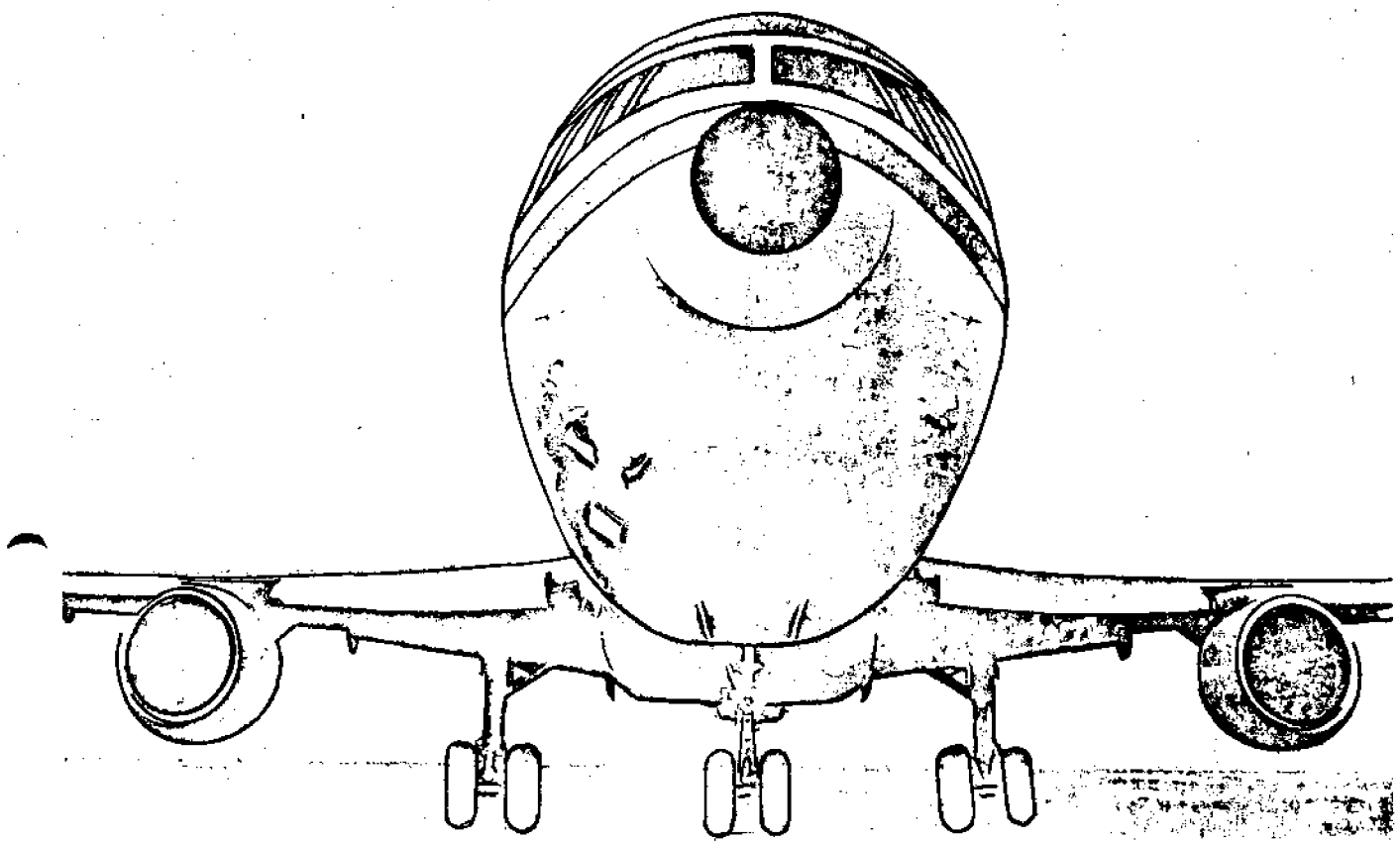
The program works as a serie of filters. First a rough geographical check is carried out to eliminate pairs of aircraft which cannot possibly conflict in the next two minutes. The remaining pairs are then exa-mined in detail to see if horizontal sepa-ration standards will really be infringed. Those pairs which remain as potential con-flicts are then examined to see if there is also an infrigement of vertical separation standards. Those pairs which infrigge both horizontal and vertical separation are real potential conflicts and are drawn to the attention of the controller.

The method of display of potential conflicts can also help to reduce the impact of false alarms.
A conflict between two correlated GAT flights must be shown to the controller responsible for them in the most attention drawing way possible.
On the other hand, a conflict between a correlated GAT flight and a non mode C flight crossing an airway could be shown but in a less urgent way.
Finally, in sitaations where the aircraft are both correlated but are being worked by different controllers (units) the conflict could be shown only to the controller responsible for providing separation. A good example of the latter would be a conflict between a GAT flight and an OAT flight under the control of the German Air Force MATRAC working at the Maastricht UAC.

A simulation of the conflict alert function was carried out recently at the Eurocontrol Experimental Centre at Bretigny and the Maastricht controllers who assisted were unanimous in their desire to see such a program in service.

If you are a good radar controller you may never see the program in action. On the other hand, it is a comforting thought that if you are distracted and forget something , the system will act to draw your attention to a situation which at best may be embarassing and at worst dangerous.

LOCKHEED L-1011
-TRISTAR-



HISTORY

Marketing commercial versions of the military transports (Hercules, Starlifter, C5A Galaxy) having failed, Lockheed, in the effort to fill the vacuum left by the closure of the Electric production line, embarked on two major projects in the " sixties ".

The first of these, shorting in 1963, was the design of a supersonic transport, which,failed and the contract for prototype construction went to Boeing.

A few months before, the FAA turned down the Lockheed SST, American Airlines had drawn up an outline requirement for an " Airbus " , a larger capacity short-to-medium transport which could take full advantage of the big new technology turbofan engines then becoming available, and this led to Lockheed's second major attempt to re-enter the airline market place.

In its Airbus specification, American Airlines was looking towards an aircraft with approximatively the same performances as the B 727 , but with about 300 passengers and of course better economy. By the end of 1966, after initial contacts with the major U.S. airlines, a list of objectives and design requirements for the new project was brought forward, including the following :

- improved passenger comfort and appeal.
- double the payload of existing jetliners on short-to-medium routes.
- higher cruising speeds than then available.
- lower operating costs.
- ability to use existing runways , taxi--ways and handling facilities.

- lower noise level.
- higher utilization through faster turn-round.
- automatic landing capability.
- increased flight safety through improved structural and system design.
- designed for ease of maintenance.
- availability in the early seventies.

In the process of establishing a design which would meet these requirements and have the necessary performance, Lockheed " built and flew" 66 different configurations on a computer. So far, throughout the design evolution of the Lockheed L-1011 , the choice of power-plant was left open and the contest between Pratt & Whitney, General Electric and Rolls-Royce to provide the engines for both the L-1011 and the DC-10 was no less intense than that between the airframe makers.

All three realised that their future in the airline market required that they have available a large " new technology" high by-pass turbo-fan. Pratt & Whitney already had such an engine, the JT9 D for the B 747, General Electric had the basis of such an engine in production to power the Lockheed C5 A Galaxy,whilst Rolls-Royce had ample commercial airline experience but no very clear-cut future for its advanced turbofans derived from the three-spool RB 178 demonstrator engine , other than the intended use of the RB 207 in the european Airbus and offered a scaled-down RB 207 under the designation RB 211.

Although the final decision was left to the airline customers , who had to consider commercial and political aspects as well as technical merit, Lockheed tended to favour the RB211 engine , which was lighter and had lower fuel consumption than either of its U.S. counterparts at similar thrust ratings.

Even so after the 1967 devaluation of sterling, it was also cheaper .

In the 20 months between go-ahead and first flight, the Tristar and its RB 211 naturally underwent some refinement and the L 1011 made its first flight on the 17th of November 1970 at Palmdale for a 2 h. and 25mn. flight with project pilot H.B. Dees in the left-hand seat.

TECHNICAL SPECIFICATIONS

Power plant:

- 3 RR RB 211-22B three shaft turbofans flat rated at 19.050 kgp each at temperature up to 840 F.
- An auxiliary power unit(APU) providing
  / cabin air conditioning and electrical power while the aircraft is on the ground
  / air for starting the main engines located in the rear of the fuselage with its exhaust beneath the aircraft's starboard tailplane.
- Integral fuel tanks in each wing providing a total capacity of 19.400 I. gal. (88.200l)

Performances:

Max. cruising speed at 35000ft : M 0.9
Long range cruising speed at 35000 ft : M 0.
Initial rate of climb : 2800 ft/ mn.
Service ceiling : 42000 ft.
Range with max. payload : 2878 nm. (4630 km.
Range with max. fuel and 40.000 lb. (18145 kg payload = 4.467 nm. (7190 km.).

Weights :

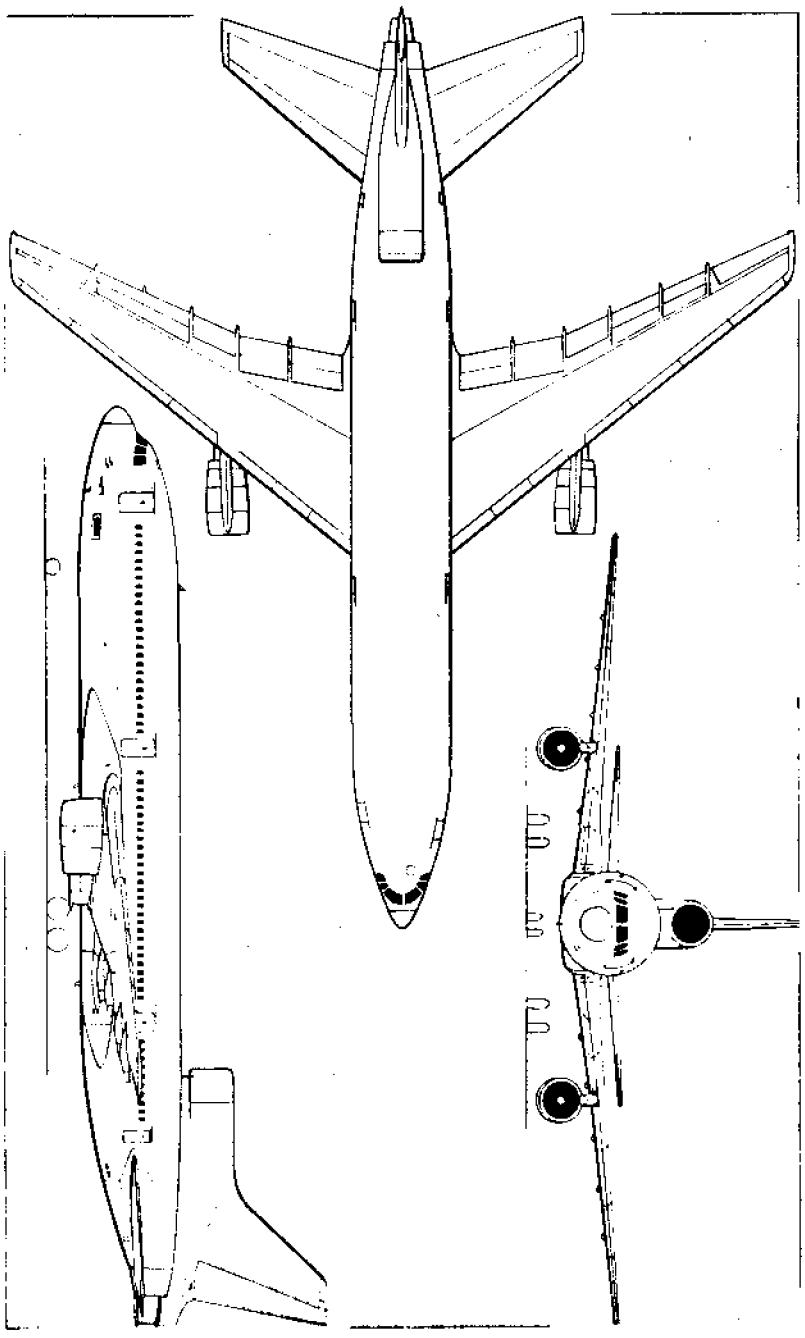
- operating weight empty : 106.265kg.
- max. payload : 41.150kg.

-max. take-off weight: 195.045kg.

- max. landing weight: 162.386kg.
- max. zero fuel weight : 147.415kg.

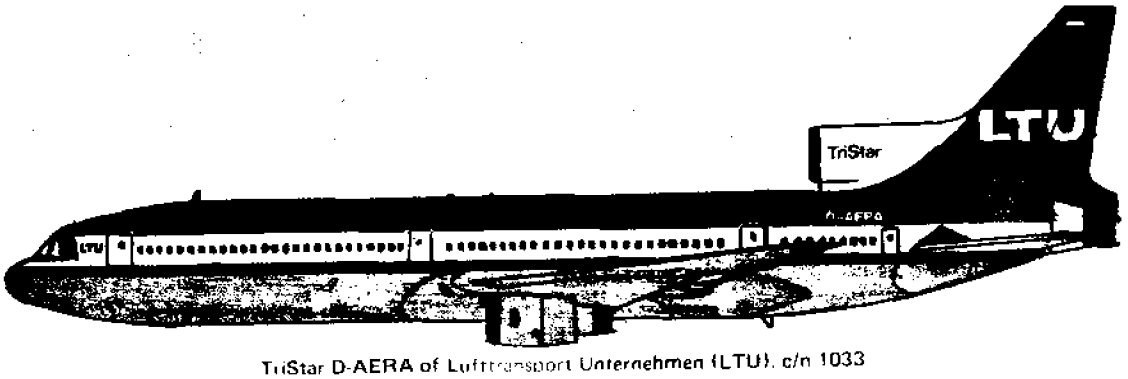
Dimensions :

- span : 47,34m.
- lenght : 54,35m.
- height : 16,87m.
- undercarriage track : 10,97m.
- wheelbase : 21,34m.



Accomodation :

Flight deck laid out for two pilot operation with third and fourth flight crew members according to airline requirement. Forward electronics lay underneath , and accessible from the cockpit via a trap-door. Main passenger cabin is 41,28m. long with a width of 5,77m. and max height of 2,49m. Typical mixed-class accomodation is for 256, and maximum all-economy class layout is for 400 passengers. Space provision for galley at lower level subject to airline preference. Under-floor baggage can accomodate standard containers.



TriStar D-AERA of Luftransport Unternehmen (LTU), c/n 1033

Its Operators

First operator of the L-1011 Tristar given the name of " Whisperliner " was Eastern Airlines making its inaugured flight on the 30th of April 1972 from New-York to Miami., followed by TWA who introduced the aircraft on its St. Louis - Los Angeles route on the 25th of June 1972, Air Canada , Delta Air Lines , All Nippon Airways , and better known to us : Court Line's G BAAA and G BAAB which we all remember. Our almost daily client LTU's D-AERA , better known to us under its LT+ flight number label on our scopes is operating since June 1973 with services from Dusseldorf to various Mediteranean resorts and the Canary Islands.
It has an all-economy layout but the passenger total is a comparatively low 330 , arranged nine abreast, so allowing more elbow and leg room. An elevator brings you to its lower deck galley with the catering facilities.
The LTU Tristar has a crew of three : captain, first officer and flight engineer, who sits at a panel on the starboard side behind the first officer. The flight deck displays vertical-scale engine instruments .

Last but not least , on the INS box you have a continuous digital read-out of the ground speed and the true-course.
The Tristar is equipped for automatic landing on ILS cat.III .

R.F.G. PAUWELS