THE RESPONSIBILITY OF STATES FOR THE PROVISION OF AIR TRAFFIC CONTROL SERVICE: THE EUROCONTROL EXPERIMENT

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by

Jan Huner

(Bachelor of Law, State University, Leiden, the Netherlands)

Institute of Air and Space Law
McGill University
Montréal, Québec

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SUMMARY

This thesis seeks to clarify the legal background of air traffic control service as provided by states to air traffic within their respective airspaces.

Which rules, if any, govern the provision of these services ? Do these rules contain any obligations for states as to whether, and how adequately, to ensure the safety of air traffic flying through their airspace ? Should these services be provided for free, or are states entitled to impose charges on the users ? These, and other questions are dealt with in the first part of the thesis.

An obvious solution to the problem of high cost of air traffic control is for a group of states to join together, to provide these services by means of a regional, integrated system.

The second part of this thesis examines just such a regional system, as established in the upper airspace over Northwest Europe. It will appear that the advantages of such a system, obvious as they may seem at first sight, have failed to come about.

SOMMAIRE

Cette thèse vise à apporter quelque clarté dans le domaine juridique du service de guidage de la navigation aérienne, service rendu par les Etats à la circulation aérienne qui se trouve dans leur espace aérien.

Quelles règles juridiques, existantes ou non-existantes, régissent ce service? Est-ce que ces règles créent des obligations pour les Etats pour assurer la sécurité de la navigation aérienne, et de quelle façon ces obligations doivent-elles être effectuées?

Est-ce que ces services doivent être rendus gratuitement ou bien les Etats peuvent-ils prétendre à une indemnisation de la part des usagers ? Ces dernières questions sont traitées dans la première partie de cette thèse.

Une solution évidente pour résoudre le problème des frais élevés, causé par le service de guidage de la navigation aérienne, est la cooperation d'un certain nombre d'Etats de rendre ces services à base commune par moyen d'un système régional intégré.

Dans la deuxième partie de cette thèse un tel système, c'est à dire celui de l'organisation Eurocontrol sera soumis à un examen. Il sera démontré que les avantages d'un tel système, si attractifs qu'ils puissent paraître sur papier, ont à peine prouvé leur utilité dans la pratique.

ACKNOWLEDGEMENTS

As relatively little written material exists on the subject of this thesis I have frequently had to turn to officials of international organizations and national governments to obtain information.

The assistance given to me by Messrs. Schulze and Herzberg of the Netherlands Civil Aeronautics Authority ("Rijksluchtvaartdienst") has been of tremendous value, and it is to them that I am especially grateful.

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PART I : THE RESPONSIBILITY OF STATES FOR THE PROVISION OF AIR TRAFFIC CONTROL SERVICE.

INTRODUCTION

On June 20, 1976 almost all air traffic over Canada came to a standstill. This situation remained the same for over a week. It was caused by a strike called by the Canadian Air Line Pilots Association (CALPA) in response to a strike threat made by the Canadian Air Traffic Controllers Association (CATCA).

The cause for the controllers' walkout was the federal government's intention to establish complete bilingual (i.e. French and English) air traffic control in the province of Quebec by the end of 1978. The English-speaking controllers (and the pilots) considered this a threat to aviation safety, as such a system would allow air-ground communication in French at the two large international airports of Montreal, Dorval and Mirabel.(1)

The air traffic controllers had been officially prevented from going on strike by a court injunction issued one day earlier. However, the next day most Canadian air line pilots refused to fly on the ground that the uncertainty of the air traffic control situation made operations potentially unsafe. Encouraged by the

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1. See Aviation Week & Space Technology (hereinafter AW & ST), June 28, 1976, p. 30.

pilots' move, a number of controllers across the country stayed away: at the Winnipeg centre all of them walked out.

On June 21 a federal court issued an injunction, requested by Air Canada and CP Air, prohibiting CALPA members (the pilots) from striking. CALPA responded by pointing out that its members were not on strike: they reported for duty but decided not to fly in view of the "uncertainty of whether there would be more ATC shutdowns".(2)

On June 28 the federal government agreed to further delay the introduction of bilingual air traffic control and to appoint a 3-man commission of inquiry into the safety aspects of bilingual ATC.(3) The next day all Canadian airlines resumed operations.

This whole affair provides a clear example of the vital importance of air traffic control to present-day aviation. Even though the controllers had been prevented from striking through a court injunction, the pilots feared the possibility of some controllers defying the order. Considering the emotional atmosphere that surrounds the issue of bilingual air traffic control in Canada, this was a realistic appraisal of the situation. However,

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2. AW & ST, June 28, 1976, p. 30.

3. AW & ST, July 5, 1976, p. 34.

the result of the controversy was a grounded Canadian civil air fleet, flight diversions and cancellations for foreign airlines serving Canada, and thousands of stranded passengers.

It is the purpose of this thesis to examine the legal background (from the viewpoint of public international law) of air traffic control services as provided by states. Upon what basis rests the legal obligation for states to spend tens of millions of dollars on sophisticated electronic equipment, the training of air traffic controllers, and the provision of various related services such as meteorological information?

One way of reducing the cost of providing adequate ATC service is for a group of states to join together in setting up a regional ATC system. Currently three international organizations exist which have been created for just that purpose. By far the most important of these is the Eurocontrol organization, based on a convention concluded in 1960.

The second part of this thesis will examine Eurocontrol, the continued existence of which is at this time less than secure.

CHAPTER A

AIR TRAFFIC CONTROL: THE INVISIBLE HAND

1. The Special Characteristics of Powered Flight.

The pilots of all types of aircraft (except perhaps helicopters) operate a vehicle with unique characteristics. The most unique of these is the fact that the pilot can only exercise limited control over his vehicle. "Every vehicle from canal boats, bicycles, horse carts, and even sedan chairs can be stopped and backed up in its element. Boats, trains, autos, hovercraft are under the control of the captain, conductor, driver, or engineer. Not the airplane - operating in a crowded traffic pattern".(1)

The modern jet airliner "must change along at two hundred miles an hour or it ceases to be a safe vehicle".(2)

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1. Gilbert, "Air Traffic Control: The Uncrowded Sky", Washington, D.C. (1973), p. vii.

2. Ibid.

Helicopters and other aircraft capable of vertical take-off and landing (VTOL) possess more versatile characteristics, but even they cannot remain in the air indefinitely. So, for aircraft, the old adage "what goes up, must come down" still applies.

2. The Beginning of Airspace Regulation.

In the early years of aeronautics the air seemed an unlimited natural resource. But in those days the pilot did not fly from A to B in a straight line: he followed railway tracks, roads, or even rivers. These "natural" points of reference were sometimes identified by large signs on the ground to let the pilot know what his position was.

Thus, KLM's first regular air service, between Amsterdam and London, opened in 1920, was flown as follows: from Schiphol airport to the North Sea shore which was followed down to Calais on the French side of the Channel. Then the 30-mile wide Strait of Dover was crossed, after which the aircraft (a single-engine, 2-passenger De Havilland DH-16) followed the railway tracks from Dover to London.[3] Total flying time: 4 hours. If the weather did not allow visual contact with the ground, the flight would be

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3. Van der Klaauw, ("From biplane to DC-10"), Amsterdam (1974), p. 16.

cancelled.[4]

By flying along such points of reference the pilots were in effect reducing the vast airspace to a narrow "airway". Consequently, on a given route, two aircraft could very well be on a collision course with neither pilot knowing it. But as operations were restricted to clear weather conditions, the aircraft were few in number, and the speed did not exceed 60 mph, the chances of an actual collision were very low.[5] Still, this potential problem area was recognized by the International Commission for Air Navigation (ICAN), when, in 1924, it developed the "General Rules for Air Traffic". The ICAN, a permanent body of technical experts on aviation, had been created by the Paris Convention of 1919, the first international convention on air navigation.[6] The Rules issued by ICAN, contained in annexes to the Convention, had the force of law, so as to ensure uniform application by the member-states.[6a]

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4. During the first two years of KLM's existence all operations were suspended during the winter (Nov. 1 to Apr. 1).

5. Most general aviation aircraft (the small, low-speed private airplanes) are today flying under virtually the same conditions when outside controlled airspace (in which all aircraft are under ATC guidance). These aircraft fly according to Visual Flight Rules (VFR).

6. League of Nations, Treaty Series, XI, 173.

6a. These included most European states, but not the United States. See also p. 19 et seq.

One of these "General Rules for Air Traffic" required that "every aircraft in a cloud, fog, mist or other condition of bad visibility shall proceed with caution, having careful regard to the existing circumstances".(7) In the early years aircraft would not proceed at all under such circumstances but would attempt to land at the nearest suitable location.

In the course of the 1920's air-ground radio communication was gradually introduced in Western Europe. This allowed the passing on of weather information to the pilot while en-route. Also, with the help of radio beacons on the ground, it was now possible for the pilot to fairly accurately determine his position. Thus the first form of en-route air traffic "control" came into being. Already a local aerodrome control existed at most airfields. This was exercised through the use of visual signals such as flags and lights, in accordance with the international standards developed by ICAN.

Since these standards were binding rules of international law the governments of the member-states were under the obligation to ensure their application in their respective territories. Thus, while airport traffic control was mostly exercised by municipal authorities, it was the central government that had to make sure these authorities applied the internationally

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7. Gilbert, p. 8.

agreed-upon signals and procedures.

This supervisory function of the national governments led eventually to the establishment of Air Navigation Bureau's and similar specialized departments within the government. Most of these departments have through time evolved into semi-independent aeronautical agencies.(8)

3. The Birth of a Government-operated Air Traffic Control System in the United States.

The example of the United States has been chosen for a number of reasons:

1. It is the world's leading aviation country;
2. Although commercial air transport had in America a slower start than in Europe, its expansion in the 1930's has been very rapid;
3. The United States has traditionally been a society suspicious of government interference in commercial activity;
4. ATC technology saw its most rapid development in the U.S.;
5. It provides an interesting example of the division of

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8. e.g. The Civil Aviation Authority in Great Britain, the Civil Aeronautics Board and Federal Aviation Administration in the United States.

authority between federal and local government.

6. The evolution of ATC systems has been similar in most other industrial nations.

Although it signed the Paris Convention, the United States never ratified it: instead, together with a number of Latin American countries, it concluded in 1928 the Pan American Convention on Commercial Aviation in Havana.(9) This Convention differs from the Paris Convention in that there is no permanent commission with legislative power, neither are there any annexes containing standards and procedures. Not surprisingly, the influence of the Pan American Convention on the development of air law has been minimal. Moreover, in practice the United States adhered to most of the technical annexes developed by ICAN.

Thus, in 1926, the United States began with the organization of its airspace by drawing up a body of air traffic rules similar to the ICAN rules mentioned above.(10) A year later the "Federal Airways System" was announced: a network of prescribed air routes connecting the major cities in the U.S. These airways were identified by visual beacons as well as light beacons for

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9. Lissitzyn, International Air Transport and National Policy, 370 et seq. (1942).

10. Gilbert, p. 8.

operations at night. The Federal government, by installing these devices, followed the example of the European states parties to the Paris Convention, even though its action was not based on any treaty obligations.

In 1930 a landmark development took place in the United States with the introduction of two-way radio communication. Radio equipment was installed by the airlines on board their aircraft so as to enable communication with ground stations maintained by those same airlines. Thus, the early form of en-route air traffic control was a wholly private affair.

The introduction of radio communication provided the impetus for the gradual installation of radio-equipped airport traffic control towers at the major airports. This was decided and executed by the municipal authorities who operated these airports.

In 1935 another important step was taken. At the Chicago and Newark airports the major U.S. airlines (such as American, United and TWA) established "Airway Traffic Control Centers". These centres coordinated traffic of the participating airlines through a "flight following system" which, by way of radio communication, "controlled" flights up to a distance of 100 miles from the airport.(11)

It will be noted that most of these improvements in en-route air traffic control were a product of the efforts on the

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11. Gilbert, p. 9.

part of private airline industry, which at that time was going through a phase of large-scale expansion. The cost of the installation and maintenance of the control centres was pro-rated among the airlines according to their respective traffic volume. In other words: the air passenger was paying for his own safety.

The federal government meanwhile had come to the conclusion that such airway control would have to be assumed by the administrations: indeed, it had made the first step in providing beacons along the airways. It had replaced the old visual beacons with radio beacons in the early 1930's. The inter-state nature of the airways meant that the control over them was beyond the jurisdiction of local government (which operated the airport traffic control towers).

Early in 1936 the federal government announced the establishment of a uniform and centralized "Airway Traffic Control", "to direct and coördinate the progress of all flights, whether government, civil, or commercial, over the Federal Airways so as to insure the maximum safety in flight by preventing traffic confusion which might result in collisions, and to direct traffic so as to insure arrivals at airports in an orderly manner".(12) It became apparent that Washington intended to ultimately take over operation of the airport towers from the local authorities, with the aim of making all forms of air traffic control fall

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12. Gilbert, p. 9.

within the responsibility of the federal government. It was, however, only in late 1941, with war pressures building, that a coördinated "United States Air Traffic Control Service" came into being.(13)

First step in the "Airway Traffic Control" program was the take-over of the 3 airway control centres already in operation (at the Chicago, Newark and Cleveland airports) and the construction of an additional five.

In June 1938 Congress passed the Civil Aeronautics Act: it constituted the first comprehensive aviation legislation in the United States. It established the Civil Aeronautics Authority (CAA), which included the Airway Traffic Control Service (after 1941: the Air Traffic Control Service).

One of the Civil Air Regulations (CAR's), a new set of rules created by the Act, required pilots to comply with instructions given them by an airway traffic control centre. This represented a departure from the previous practice where instructions were merely advisory. This innovation opened the door to lawsuits arising out of aircraft crashes blamed on faulty ATC instructions.(14)

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13. Ibid. p. 11.

14. Such lawsuits have become increasingly frequent since the 1950's. See: Levy, "The expanding responsibility of the government air traffic controller", Fordham Law Rev. Vol. 36 (1968), p. 401.

With the consolidation in 1941 of all the air traffic control functions, the jurisdiction of the airport towers was extended beyond local landing and take-off control to include "approach control" under IFR (instrument flight rules) conditions. This type of control was exercised in an area up to about 20 miles from the airport. Legally it was made possible by a delegation of authority, hitherto held by the centres, to the individual control towers.(15)

By 1946, after ten years of government operation of air traffic control, the CAA was operating 113 control towers and 24 centres employing a total of 1,800 controllers.(16)

4. The United States Air Traffic Control System.

In all countries of the world the primary objective of air traffic control is the prevention of collisions between aircraft. In many states civil and military air traffic is controlled by separate units: in the United States a single common ATC system was considered essential for the optimal use of the airways.(17)

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15. Gilbert, p. 11.

16. Ibid. p. 12.

17. See Federal Aviation Act 1958, Sec. 103 (Declaration of Policy, Secretary of Transportation), para. (e):
"... The development and operation of a common system of air traffic control and navigation for both military and civil aircraft".

Only within certain reserved areas and at their own airports do the military provide their own ATC service, always in close coordination with and as part of the overall ATC system.

Basically there are 3 separate services which make up this ATC system:[18]

1. Air Route Traffic Control Centers (ARTCC's). These centres, 24 of which exist, are responsible for controlling aircraft not engaged in approach or departure manoeuvres. Each ARTCC covers a large portion of airspace, usually many thousands of square miles.
2. Terminal Control Centers (TRACON's), more commonly called Approach/Departure Control. These centres are located on the airport they serve: they control traffic within an area of up to 60 miles from the airport. Approaching traffic is handed off to approach control by the ARTCC: the reverse takes place with departing traffic.
3. Airport Control. The airport control tower normally accepts air traffic from Approach Control at the point where the aircraft can be visually identified from the tower. Airport Control is responsible for directing

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18. This distinction corresponds to ICAO standards; see ch. B. 2.

aircraft manoeuvring on the runways and the platform area.

Radar

Radar represents the heart of all ATC systems. Radio detection and ranging was developed during World War II by the British and introduced in the United States in the early 1950's for civil air traffic control. There are two types of radar. With the initial type, primary radar, a beam of individual pulses of energy is transmitted from the ground station. An aircraft in the path of this radar beam will reflect some of the pulses back to the ground where they are picked up by a receiving element in the same rotating antenna which transmitted them. The reflected pulses produce a bright "target" on the radarscope. There is nothing, however, to tell the controller which aircraft corresponds to which target. Also, the radarscope does not display vertical separation of aircraft: to determine the altitude of the identified targets the controller must rely on verbal reports from the pilots.

To eliminate these shortcomings the "secondary surveillance radar" (SSR) was developed and gradually introduced during the early 1960's. This system works with "transponders" in the aircraft. These transponders, when hit by the pulses from the ground antenna, automatically transmit identification and altitude which are then displayed right next to the target on the radarscope.

The users of ATC service can be distinguished into two categories of operations: air traffic flying under Visual Flight Rules (VFR) and air traffic conforming to Instrument Flight Rules (IFR).(19)

The prime responsibility for avoiding collisions when flying VFR remains with the pilot: "see and avoid". For IFR flights the aircraft must be equipped with specified flight instruments, communication and navigation equipment, and an airborne transponder as described above. The pilot must possess an instrument flight qualification.

Before take-off the pilot must submit a written flight plan to provide ATC with relevant information on his intentions. Having done so he is to comply with ATC clearances and other instructions. Prior approval must be obtained from ATC before the pilot can change his flight plan.(20)

ATC ensures separation between aircraft flying IFR: this separation is applied in three dimensions: lateral, longitudinal and vertical. Thus, each IFR flight is surrounded by a "safety cushion" of empty airspace.

Navigation Aids

As has been explained when discussing the early days of air traffic control the pilot maintains his bearing with

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19. See p. 29

20. See ICAO Annex 2, "Rules of the Air", art. 3.5.

help from radio signals from fixed ground stations. Pilots cannot proceed only with ATC guidance: navigation of the aircraft remains the pilot's responsibility, whereas the air traffic controller ensures the expeditious flow of aircraft and prevents collisions.

The airways in the United States, as in most other states, are identified by means of ground radio stations located in such a way as to delineate the route to be followed.[21] The basic equipment used in this navigation system is the VOR /DME station: the very high-frequency omni-directional range station with distance-measuring equipment.[22] This system was developed in the 1940's in the U.S. to replace the old low-frequency radio beacons. The VOR system provides the pilot with radial bearings throughout 360° going to or from the station; the DME equipment gives the pilot a continuous reading of the distance, in nautical miles, to or from the station.

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21. For a detailed explanation of navigation aids see Gilbert, ch. VIII.

22. In its Regional Plans ICAO has adopted this system as the standard navigation aid.

CHAPTER B

THE PROVISION OF AIR TRAFFIC CONTROL SERVICE UNDER INTERNATIONAL LAW

1. The Chicago Convention.

All the basic rules of international law pertaining to civil aviation have been codified in the Convention on International Civil Aviation, concluded in Chicago in 1944. This Convention serves a dual purpose: Part I contains general rules of international air law, whereas Part II serves as the "constitution" of the International Civil Aviation Organization.

The Chicago Convention can be regarded as the successor to the Paris Convention. Compared to the latter a wholly new element has been introduced, to be found in art. 28:

> "Each contracting State undertakes, so far as it may find practicable to:
> (a) Provide, in its territory, airports, radio services, meteorological services and other air navigation facilities to facilitate international air navigation, in accordance with the standards and practices recommended from time to time, pursuant to this Convention;"

The delegates at the Chicago Conference obviously recognized the indispensable nature not only of airports, but also of air

navigation facilities.

Unfortunately this article cannot be said to constitute a clear-cut obligation, in view of the escape-clause "so far as it may find practicable". The delegates at Chicago must have realized that such an obligation would remain a dead letter when many less-developed, especially those with large territories, would not be able to provide the required facilities.(23) Therefore the ICAO Council has been given the task of watching over the quality of air navigation facilities:

> "If the Council is of the opinion that the airports or other air navigation facilities, including radio and meteorological services, of a Contracting State are not reasonably adequate for the safe, regular, efficient, and economical operation of international air services, present or contemplated, the Council shall consult with the State directly concerned, and other States affected, with a view to finding means by which the situation may be remedied, and may make recommendations for that purpose. No contracting State shall be guilty of an infraction of this Convention if it fails to carry out these recommendations". (24)

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23. The Organization had devised a "second best" solution with its Regional Air Navigation Plans. For each of the 9 ICAO regions the Plan enumerates the facilities to be provided by contracting states. The Regional Plans, formulated and revised at regular Regional Air Navigation Meetings, are so designed that, when implemented, they conform to a uniform air navigation system.

24. Art. 69 Chicago Convention.

If a state is unable to carry out the recommendations it will usually "conclude an arrangement with the Council for giving effect to such recommendations" in which "the Council may agree, at the request of the State, to provide for all or a portion of the costs".(25)

Also on the request of the country concerned the Council itself may "provide, man, maintain, and administer any or all of the airports and other air navigation facilities" that it considers necessary within that country's territory.(26) Finally, art. 76 of the Convention provides that the country concerned may at any time take over facilities that the Council has provided in its territory.

All these provisions clearly show that the drafters of the Chicago Convention realized the vital role that air navigation services were to play in post-war civil aviation. The detailed provisions dealing with possible direct aid by ICAO to countries setting up or improving their airports and air navigation facilities are one of several instruments available to the Organization of implementing its main objective: uniformity in facilities, practices and procedures, so as to achieve maximum

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25. Art. 70. Conv.

26. Art. 71. Conv.

safety in the air.(27)

At the ICAO Assembly's first meeting in 1947 a Committee on Joint Support of Air Navigation Services was created; it was to concern itself with the execution of the tasks which the Organization could assume under the articles mentioned above. Such joint support has been provided through a number of international agreements.(28)

The Fourth Assembly in 1950 passed a resolution proposing the creation of an international agency which would be responsible for providing air traffic services and navigation aids. However, the Council, realistically, considered this idea not to be practicable.(29)

The most common way to implement the Regional Plans is the offering of technical advice and /or operational assistance

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27. "To ensure safety, regularity and efficiency of international civil aviation operations, international standardization is essential in all matters affecting them; in the operation of aircraft, aircraft airworthiness and the numerous facilities and services required in their support such as aerodromes, telecommunications, navigational aids, meteorology, air traffic services, search and rescue, aeronautical information services, and aeronautical charts". (Walter Binaghi, President of the ICAO Council, as quoted in "Memorandum on ICAO", Montreal 1975).

28. The most important ones are the Agreement on North Atlantic Weather Observation Ships (1946, revised in 1949 and 1954) and the 2 Agreements on Joint Support of Air Navigation Services with regard to Iceland and Greenland (1948 and 1949).

29. See ICAO Doc. 4968, A4-P/1, p. 61.

by the Organization to member-states under UNDP (United Nations Development Programme) projects, and under Funds-in-Trust arrangements between states and the Organization.(30)

2. ICAO Standards.

Art. 28 of the Chicago Convention requires air navigation facilities to be "in accordance with the standards and practices recommended or established from time to time, pursuant to this Convention". The "standards" referred to in this article can be found in the Annexes to the Convention: they are adopted by ICAO pursuant to art. 37 and deal with such matters as Rules of the Air (Annex 2), Airworthiness of Aircraft (Annex 8), and Air Traffic Services (Annex 11).

Before going into the contents of the standards it is useful first to examine their legal status as compared to the Convention itself.

A standard has been defined as follows:

> "Any specification for physical characteristics, configuration, material, performance, personnel, or procedure, the uniform application of which is recognized as necessary for the safety on regularity of international air navigation and

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30. See "Memorandum on ICAO", Montreal, 1975.

> to which Member States will conform in accordance with the Conventions; in the event of impossibility of compliance, notification to the Council is compulsory under art. 38 of the Convention". (31)

The language used in this definition would suggest that member-states are bound to conform to ICAO standards. However, art. 38 of the Convention makes it clear that no obligation exists for states to comply with a standard if they find it "impracticable" to do so. Their only obligation is to notify differences between its current regulations and those contained in the standard.

It was not the intention of the drafters of the Chicago Convention that ICAO standards (and procedures) should be binding rules of international law, comparable to those contained in the Chicago Convention: if so the standards would simply have been incorporated into the Convention.(32) But "hope of keeping the standards up to date would disappear if they were to be incorporated in the Convention and fresh ratification by all the participating governments were required whenever a change were made. The expedient chosen was to give the permanent Council full power to adopt, amend or annul technical

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31. First Assembly Resolution A1-31 (1947), Doc. 7670.

32. The technical annexes to the Paris Convention formed an integral part of, and had the same effect as, the Convention itself.

annexes to the Convention at any time by a two-thirds vote; but those annexes are not to be given compulsive force. There will be no binding obligation on any nation to keep to an international standard".(33)

This quotation from an authoritative source leaves little doubt as to the legal status of ICAO standards. Buergenthal concludes that it is because the Annexes are of a non-obligatory nature that ICAO has been able to achieve a reasonable level of standardization: under the present regime states can leave the implementation of standards to their aeronautical authorities, without the involvement of their foreign offices in any ratification processes.(34)

The standards are usually formulated at Air Navigation Conferences or Divisional Meetings, convened by the Air Navigation Commission. Standards pertaining to air traffic services (which include air traffic control) are formulated by the Rules of the Air and Air Traffic Services Division. The purpose of such conferences and meetings is to provide contracting states with an opportunity to participate in the formulation of standards. Moreover, all proposals for, and amendments to, standards must be submitted to contracting states

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33. Warner, "The Chicago Air Conference, Blueprint for World Civil Aviation". Publ. 2348, Conference Series 70, Dept. of State (Washington, D.C., 1945), p. 24.

34. Buergenthal, "Law-making in the International Civil Aviation Organization"; Syracuse, N.Y. (1969), p. 119.

after review by the Air Navigation Commission.(35) The Council must then adopt the standards with a two-thirds majority vote of its membership: they become effective at a date determined by the Council.(36) This procedure provides another indication as to the legal nature of ICAO standards: the adoption of Annexes is a "unilateral act" by the Council. Furthermore, Annexes do not require formal ratification by contracting states, as pointed out before: their very nature demands more flexible methods for their coming into force.

On the basis of the previous considerations it is submitted that the ICAO standards occupy a position approximately mid-way between mere recommendations and binding rules of international law such as contained in the Chicago Convention. They are "in effect, recommendations of the greatest importance, directed by the Council to contracting States".(37)

Having thus established the legal nature of ICAO standards we must now examine the contents of those standards concerning air traffic control service. These are incorporated in Annex 11 "Air Traffic Services", first issued in May, 1950.(38)

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35. See Buergenthal, p. 63. Only those standards concerning facilitation of air traffic (Annex 9) are reviewed by the Air Transport Committee.

36. Art. 54(1) and (m), art. 90, Chicago Convention.

37. Sheffy, "The Air Navigation Commission of ICAO", J. Air L.& Com. (1958), p. 431.

38. Annex 11 "Air Traffic Services"; Sixth Edition (September 1970, amendments as at July 1976).

The title "Air Traffic Services" was chosen by the Council "in order to make it clear that air traffic control service is a part of the services covered by Annex 11, together with flight information service and alerting service".(39)

Of prime importance is that provision which defines the objectives of air traffic control service. Art. 2.2 of Annex 11 states that they are:

> "1) to prevent collisions between aircraft;
>
> 2) prevent collisions between aircraft on the manoeuvring area and obstructions on that area;
>
> 3) expedite and maintain an orderly flow of air traffic;"

These definitions have been taken over almost verbatim by contracting states in formulating national regulations concerning air traffic control service.(40)

To execute the threefold task mentioned above an air traffic control service is to be divided into three distinct but interconnected services:(41)

> 1) area control service, in order to accomplish objectives 1) and 3); this service is more commonly known as en-route control.

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39. Annex 11, foreword.

40. See ch. A.4 and ch. C.

41. Annex 11, art. 2.3.1.

2) approach control service; it, too, accomplishes objectives 1) and 3). This service provides guidance to controlled flights engaged in the arrival or departure stage: more specifically, it determines the sequence of departures and arrivals, as well as separation between approaching (or climbing) traffic.

3) aerodrome control service, to accomplish all 3 objectives. This service is responsible for guiding aircraft manoeuvring on the ground.

Next it should be examined what obligations, if any, Annex 11 imposes on contracting states to provide air traffic services. Art. 2.1.1. states that

> "Contracting States shall determine, in accordance with the provisions of this Annex and for the territories over which they have jurisdiction, those portions of the airspace and those aerodromes where air traffic services will be provided".

It is therefore for each state to decide whether it considers the provision of air traffic services to be necessary, either in part or in the whole of its airspace.

Which criteria are to be used in determining the need for these services?

> "The need for the provision of air traffic services shall be determined by consideration of the following:
> 1) the types of air traffic involved;
> 2) the density of air traffic;
> 3) the meteorological conditions;
> 4) such other factors as may be relevant". (42)

42. Annex 11, art. 2.4.

It cannot be said that these rather obvious criteria provide states with much guidance: in practice it appears that even states receiving only a minimal amount of air traffic in their airspace have found it impossible not to provide air traffic services, least of all air traffic control service. Air transport today cannot function without guidance from the ground, as the ATC strike in Canada clearly demonstrated. If a state wants to attract air transport services (as most states do) it will find that providing an adequate airport is only the first step: it will have to provide air traffic services which fit the requirements of modern aircraft.

A state may elect to delegate its responsibility for providing air traffic services to another state, whereas

> "Those portions of the airspace over the high seas or in airspace of undetermined sovereignty where air traffic services will be provided shall be determined on the basis of regional air navigation agreements". (43)

What are the ICAO guidelines once a state has determined that it must provide air traffic control service? Chapter 3 of Annex 11 contains the standards applicable to ATC; it

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43. Annex 11, art. 2.1.2.

"shall be provided:

1) to all IFR flights in controlled airspace;(44)

2) to all VFR flights in controlled airspace;

3) to all aerodrome traffic at controlled aerodromes".(45)

The other standards in chapter 3 deal with more specific aspects such as clearances, separation of aircraft and transfer of responsibility for control from one ATC unit to the other.

3. Conclusion.

Looking at the rules of international law and the ICAO standards concerning air traffic control it must be concluded that nowhere does one find unequivocal obligations for states to provide ATC service. Nevertheless, in practice it appears that states consider it to be their responsibility, as national legislation often shows.(46)

In theory absolute safety in the air would require that every state should have to provide impeccable ATC guidance to all flights, with the help of the latest, automated, equipment.

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44. In controlled airspace ATC service is mandatory for all flights, whether IFR or VFR.

45. Annex 11, art. 2.1.2.

46. See ch. C.

All communications should have to be in one language, world-wide,[47] and ATC procedures should have to be uniform, based on ICAO standards and recommended practices.

Such absolute safety is unlikely ever to be attained, and it is very doubtful whether binding rules of international law to oblige states to provide adequate and uniform ATC service would have a more favourable effect that the present system of Annexes to the Chicago Convention, supplemented by Regional Air Navigation Plans.

The ultimate objective of ICAO standards is to encourage states to adopt them into their national legislation. This is the most effective way of ensuring uniformity in international air navigation procedures. The reason that the implementation of ICAO standards and recommended practices still leaves much to be desired lies mainly in what FitzGerald calls the 3-M gap: the lack of money, men and material in most developing states.[48]

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47. ICAO has recommended that some form of simplified "aviation English" be developed for universal use in air-ground communication. See: Air Line Pilot, August 1976, p. 8.

48. FitzGerald in Schwebel (ed.), "The Effectiveness of International Decisions", Leiden (1971), p. 202.

CHAPTER C

AIR TRAFFIC CONTROL SERVICE UNDER THE NATIONAL LAWS OF SOME LEADING AVIATION NATIONS

1. United States.

Government responsibility for the regulation of civil aviation in the United States has been divided over two separate agencies.[49] The economic regulation (fares, route awards) is in the hands of the Civil Aeronautics Board (CAB), whereas the technical and safety aspects of civil aviation are watched over by the Federal Aviation Administration (FAA).[50] The latter is a semi-independent agency within the Department of Transportation: the formal head of the FAA is the Secretary of Transportation.

The powers of both these agencies have been laid down in the Federal Aviation Act of 1958, the "constitution" of regulation of civil aviation by the U.S. government.

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49. This division has been created by the Federal Aviation Act of 1958.

50. Investigation of accidents has, since 1967, been delegated to the National Transportation Safety Board, another semi-independent body within the DoT.

Among the duties of the FAA is:

> "The control of the use of the navigable airspace of the United States and the regulation of both civil and military operations in such airspace in the interest of the safety and the efficiency of both"(51)

and, consequently,

> "The development and operation of a common system of air traffic control and navigation for both military and civil aircraft". (52)

Section 307 of the Act "authorizes" the Secretary of Transportation (i.e. the FAA):

> "within the limits of available appropriations made by the Congress
>
> 1) to acquire, establish, and improve air navigation facilities;
>
> 2) to operate and maintain such air navigation facilities; ....
>
> 4) to provide necessary facilities and personnel for the regulation and protection of air traffic".

The proviso "within the limits of available appropriations made by the Congress" points to a dependence of the FAA upon specific appropriations made to it every year by the Congress. This weak spot was largely removed by the Airport and Airway Act of 1970, which created the Airport and Airway Trust Fund. The Act was

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51. Federal Aviation Act, sec. 103 (d).

52. Fed. Aviation Act, sec. 103 (e).

announced as the "legislative response to the problems posed by civil aviation's extraordinary growth during the 1960's".(53) This growth had resulted in an increasing strain on the ATC system, a strain which culminated in serious air traffic jams during 1968 in the "Golden Triangle", the overcrowded airspace between New York, Chicago and Washington, D.C.

The Airport and Airway Trust Fund receives its funds from revenues generated by charges levied directly and indirectly on aviation users.(54) This provides a much more secure source of income than the previous annual competition for appropriations by the Congress out of General Treasury funds. However, all this does not mean that the Trust Fund receives sufficient revenue to meet all expenditures on air navigation facilities: each year contributions out of federal funds are made to the Trust Fund as necessary supplements to revenue from user charges.(55)

Being the government agency responsible for aviation safety the FAA has repeatedly been criticized by various interest groups such as the Air Line Pilots Association (ALPA) and the Professional Air Traffic Controllers Organization (PATCO).

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53. "FAA Historical Fact Book", Washington, D.C. (1974).

54. These charges include an 8% transportation tax on the sale of tickets for domestic flights, and a $3 departure charge for international flights.

55. See also p. 49

ALPA has often criticized the FAA for failing to equip smaller airports with control towers, or for not installing Instrument Landing Systems (ILS) at airports receiving a considerable number of commercial airline flights.(56) PATCO has in the past accused the FAA of not employing enough controllers: it has claimed that controllers often are forced to handle more aircraft than safety would allow.(57)

The Congress itself has sometimes voiced criticism at the FAA: a report issued in 1970 by the House Committee on Government Operations directed severe criticism at the FAA for failing to carry out the modernization of the U.S. ATC system. At the time of the Kennedy administration the FAA had launched "Project Beacon", containing a scheme for a drastic modernization program for the ATC system. The key recommendation of "Project Beacon" was the creation of the National Airspace System (NAS), based on automation of many ATC procedures, aided by ultra-modern radar equipment. However, in November 1971, ten years after the launching of "Project Beacon" no significant element of the new National Airspace System was in operation, although completion of the project had been scheduled for mid-1968.(58) This delay was considered the

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56. See: Power-Waters, "Safety Last", New York (1975).

57. See: Hearings before the Subcommittee on Transportation and Aeronautics of the House Committee on Inter-state and Foreign Commerce, June 8-9, 1971.

58. See: Ryther/Aug, "Who's watching the Airways?", New York (1972), ch. X.

more serious as air traffic had shown a consistent strong growth throughout the second half of the 1960's, leading to the chaotic situation described earlier.(59)

2. Great Britain.

In contrast to aerodromes the successive British governments have from the outset recognized their responsibility for providing air navigation facilities; it was a consequence of their duty to secure the safety of civil aviation.(60) Thus, when direct air-ground radio communication became technically feasible the Maybury Committee in 1937 recommended, i.a.:

> "In this examination and in framing our recommendations (that the necessary radio facilities and air traffic control organization should be provided by the State) we have considered that an appreciable measure of Government assistance is desirable, and indeed essential at this stage, to secure a satisfactory degree of development, and that such assistance should be given with the objective of eventually rendering civil aviation economically self-supporting".(61)

The policy that the full cost of air navigation services should ultimately have to be paid by the operators had already been established prior to the Maybury report.(62)

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59. See p. 33.

60. Great Britain, Ministry of Aviation, "Civil Aerodromes and Air Navigational Services", London, H.M.S.O. (1961), p. 4.

61. "Civil Aerodromes and Air Navigational Services", p. 4.

The legal basis for ATC service provided in British airspace can be found in the Civil Aviation Act of 1971. Section 28 of the Act reads:

> "It shall be the duty of the Authority:(63)
>
> 1) to provide air navigation services
>
> (a) in the United Kingdom; and
>
> (b) for any area outside the United Kingdom for which the United Kingdom has, in pursuance of international arrangements, undertaken to provide air navigation services;
>
> to the extent to which it appears to the Authority that such services are necessary and are not being provided by the Authority...."

Although this provision reveals a clear obligation for the State subsection (3) of section 28 makes it equally clear that the State cannot be held responsible for the non-performance of the duty imposed on it:

> "Without prejudice to any right of action in respect of an act or omission which takes place in the course of providing air navigation services in pursuance of this section, no action shall lie in respect of a failure by the Authority to perform the duty imposed on it by subsection (1) or (2) of this section".

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63. "Authority" is the Civil Aviation Authority (CAA), the body to which government responsibility for civil aviation has been delegated.

The duty to provide ATC service has been delegated to the National Air Traffic Control Service: it was set up in 1962 as a joint defense and civil body, responsible jointly to the Ministry of Defense and the Civil Aviation Authority.(64)

3. The Federal Republic of Germany.

In the Federal Republic of Germany (FRG) government regulation of civil aviation has been delegated to the "Luftfahrt-Bundesamt" (Federal Office of Aviation). As in Great Britain responsibility for air traffic services has been sub-delegated to a separate body, called the "Bundesanstalt für Flugsicherung" (Federal Agency for Air Navigation Safety, BFS). The BFS was set up in 1953 by a special Act, the "Gesetz über die Bundesanstalt für Flugsicherung".

According to art. 1(1) of the Act it is the general duty of the BFS to watch over the safety of air navigation, which includes the provision of air traffic services (ATC, flight information and alerting service) and navigation aids. In implementing its duties the BFS may require managers of aerodromes to cooperate.(65)

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64. See: Board of Trade, "Civil Aviation Policy", London, H.M.S.O. (1969), p. 31.

65. "Gesetz über die Bundesanstalt für Flugsicherung", art. 1,(4); in Wegerdt/Reuss, "Deutsche Luftfahrtgesetzgebung" (1970), p. 386.

Art. 2 of the Act contains a detailed enumeration of the duties of the BFS: these include the installation and maintenance of navigation aids (notably ILS installations at airports), the training and licensing of ATC personnel, the provision of radio and telex service for ATC purposes.

Upon directions given by the BFS the airport managers are responsible for the procurement of all facilities needed for the safety of take-off and landing procedures, as well as for en-route ATC equipment (if such service is provided from the airport grounds).(66) Those facilities not mainly used for take-off and landing procedures will be paid for by the federal government: in other words, the airport manager will have to recover the costs incurred in providing all other facilities from airport or landing charges, assuming the absence of financing by the local government.(67)

The BFS does not possess legal personality: it is subordinate to the federal minister of transport.(68) The legal powers of the minister are defined by art. 10 of the Act. As in the case of the U.S. Secretary of Transportation regarding the FAA, the German federal minister of transport is responsible for the actions undertaken by the BFS. He is authorized to define,

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66. Ibid. art. 9.

67. Ibid.

68. Ibid. art. 1(2).

by regulation, the nature and extent of air navigation facilities, as well as the procedures used in air traffic control. It is interesting to note that such regulations do not require the approval of the Bundesrat (the upper house of the German Parliament) if they are based on ICAO standards and recommended practices.

Using the powers given to him by the above-mentioned art. 10 the minister of transport has issued regulations containing further definitions of air traffic services.(69) Articles 6 to 12 of these regulations define air traffic control service along the lines of Annex 11 to the Chicago Convention.(70) Art. 29 requires that in drawing up instructions for the implementation of these regulations the BFS must take into account the appropriate ICAO standards and recommended practices, as well as other relevant ICAO recommendations.

As in the United States the federal government of the FRG has repeatedly been criticized for not adequately ensuring the safety of air navigation in German airspace. Most of this criticism is directed at the lack of coördination between civil and military ATC operations, and it is backed up with figures of near- collisions between civil aircraft and military jet

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69. These regulations are the "Allgemeine Verwaltungsvorschriften des Bundesministers für Verkehr zum Gesetz über die Bundesanstalt für Flugsicherung".

70. See p. 25 seq.

fighters which have occurred in recent years: During 1972 a total of 342 near- collisions were reported, climbing to 363 in 1973, and falling to 250 in 1974.(71) This has prompted critics to say that German airspace is dangerous, criticism which intensified when near- collisions during the first half of 1975 proved to be increasing once again.(72)

This adverse publicity, coupled with a prolonged go-slow action staged by all German air traffic controllers during summer and autumn of 1973, virtually forced the Bonn government to announce the complete integration of civil and military ATC operations.(73)

4. Conclusion.

The examination of the national legislation concerning the provision of air traffic control in the United States,

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71. Source: Riwola, "Anfänge Europäischen Flugsicherung am Ende", TID 9/1975. The author mentions that of the 250 near- collisions during 1974 150 were such that "only the Lord had his finger in between". Several examples are mentioned, one of which deserves to be cited: on Jan. 28 1974 a British Airways VC-10 is en-route from Beirut to London. At an altitude of 30.000 feet, while over the city of Hanau, its path is suddenly crossed by a Lockheed F-104 jet fighter. The captain reported the estimated distance from the nose of his aircraft at 150 feet.

72. Ibid.

73. See p. 85

Great Britain and the Federal Republic of Germany has brought to light expected similarities and unexpected differences. The legal basis for the provision of ATC service in the U.S. is surprisingly vague: whereas the applicable British and German laws lay down clear duties and responsibilities the Federal Aviation Act only "authorizes" the Secretary of Transportation (i.e. the FAA) to "acquire, establish and improve air navigation facilities wherever necessary"(74) and to "provide necessary facilities and personnel for the regulation and protection of air traffic".(75)

In all three countries it has been found necessary to integrate, or at least strictly coördinate, military and civil ATC operations: if only for that reason the provision of air traffic services is firmly in the hands of the central government.

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74. Federal Aviation Act, sec. 307(b)(1).

75. Ibid., sec. 307(b)(4).

CHAPTER D

ARE STATES RESPONSIBLE FOR THE COST OF PROVIDING AIR TRAFFIC CONTROL SERVICE?

By now it will be clear that adequate air traffic control service can only be realized with the help of sophisticated electronic equipment. The cost of installing and maintaining such equipment, and the cost of training and hiring personnel to work with it, has risen to phenomenal heights.(76)

The drafters of the Chicago Convention foresaw the possibility that states would impose charges not only for the use of airports but also for en-route air navigation facilities and services provided by them. Thus, art. 15 of the Convention

76. To provide an illustration: in 1952, when radar was just being introduced for ATC operations, the U.S. government spent $10 million on facilities and equipment, appropriated for that purpose by the Congress. In 1972, with revenues from user taxes flowing into the Airport and Airway Trust Fund, the Congress appropriated $647 million as a federal supplement to the Fund. Out of the Fund the FAA spent $455 million on facilities and equipment, and $1,076 million on operations. (Source: FAA Historical Fact Book, 1974).

reads:

> "Any charges that may be imposed or permitted to be imposed by a contracting State for the use of such airports and air navigation facilities by the aircraft of any other contracting State shall not be higher,
> (a) As to aircraft not engaged in scheduled international air services, than those that would be paid by its national aircraft of the same class engaged in similar operations, and
> (b) As to aircraft engaged in scheduled international air services, than those that would be paid by its national aircraft engaged in similar international air services.
>
> All such charges shall be published and communicated to the International Civil Aviation Organization: provided that, upon representation by an interested contracting State, the charges imposed for the use of airports and other facilities shall be subject to review by the Council, which shall report and make recommendations thereon for the consideration of the state or states concerned".

Although it clearly established the principle of non-discrimination this article contains no guidance as to principles upon which charging systems should be based. Thus, in the late 1950's, a number of states considered it desirable that the ICAO Council perform its duty under art. 15 of the Convention and requested it to make recommendations as to rules governing the imposition of charges for en-route air navigation facilities and services (route facilities).

To this end a "Route Facilities Charges Conference" was convened at ICAO Headquarters in Montreal in March 1958. The (cautious) final conclusion of the Conference was that

states had the right to impose route charges (such a right had implicitly been recognized by art. 15 of the Chicago Convention). However, in doing so states should be guided by the users' ability to pay, as well as by the economic benefits each country received from international air transport in general.(77)

These principles have been incorporated in a "Statement by the Council to Contracting States on Route Facility Charges", published in November 1958.(78)

The airlines, speaking through the International Air Transport Association (IATA), did not subscribe to the principles adopted by ICAO: the provision of en-route air navigation facilities was, and should remain "inherently the responsibility of governments".(79)

In 1967 a "Conference on Charges for Airport and Route Facilities" was convened by ICAO in Montreal. Among the observers at the conference were IATA and EUROCONTROL, the European Organization for the Safety of Air Navigation. Four of this organization's member-states (the Federal Republic of Germany,

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77. See ICAO Doc. 7874, RFC/2.

78. ICAO Doc. 7941-C/913.

79. The IATA observer at the Charges Conference; Doc. 7874, RFC/2, p. 7.

the Netherlands, the United Kingdom and Ireland) took the initiative in proposing more detailed principles on charges and charging systems. In spite of initial opposition from some other states represented at the conference (among them the United States) the proposals were largely adopted. They were incorporated in the Conference's recommendation concerning "principles applicable to charging and changing systems".(80) The relevant elements in these principles are:

1) Non-discrimination.

2) Account to be taken of the economic situation of both user and provider.

3) The charges should not discourage the use of facilities that are necessary for safety.

4) The charging system should be simple, equitable, and suitable for regional or global application.

The conclusion of the Conference as to the criteria to be used in a charging system was that, pending further study,

> "the charge should be based essentially on the following elements: distance and weight, combined as appropriate with any other aircraft characteristic capable of affecting the nature of the services rendered". (81)

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80. Recommendation 15; Doc. 8675, CARF.

81. Doc. 8675, CARF, p. 40.

These criteria were at that time already in use as the basis for the charging system developed by ASECNA (Agence pour la Sécurité de la Navigation Aérienne), a multinational organization of French-speaking African states providing common air traffic services.(82) They were also adopted for the Eurocontrol common charging system which was introduced in 1970.(83)

In March 1973 a third conference was convened in order to review and up-date ICAO's position concerning user charges.(84) The recommendations adopted by this conference were incorporated in a new "Statement by the Council to Contracting States on Charges for Airports and Route Air Navigation Facilities".(85) Paragraph 22 of the Statement contains the general principle that

> "where route air navigation facilities or services are provided for international use, the providers may require the users to pay their share of the related costs".

Any doubt as to what "their share" may be interpreted to mean

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82. See p. 79 seq.

83. See p. 90 seq.

84. The Conference on the Economics of Route Air Navigation Facilities and Airports, ICAO Doc. 9053-ERFA.

85. Doc. 9082-C/1015 (1974).

is removed by para. 25:

> "the approach towards the recovery of full costs should be a gradual progression".

The Statement sets out specific guidelines as to the standardization of charging methods: the system must be

> "simple, equitable, and generally applicable",

it should

> "constitute a single charge for all route facilities and services provided by a State or group of States for the airspace to which the charge applies. The charge should be based essentially on:
> 1) the distance flown within a defined area;
> 2) the aircraft weight". (86)

This weight factor

> "should be applied by means of a weight scale using broad intervals which should be standardized as far as possible. This weight scale should take into account, less than proportionately, the relative productive capacities of the different aircraft types concerned".(87)

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86. Statement of the Council, para. 28

87. Ibid.

The question whether states should bear the cost of air traffic control service and other air navigation services is an important one, not in the least for the users of those services. Does the responsibility of states for air traffic services entail that states should also be responsible for the cost of those services? The unanimous answer nowadays is in the negative: the users should pay "their share". As mentioned earlier, the Chicago Convention, in its art. 15, implicitly recognizes the right of states to levy charges for the use of both airports and air navigation services.

The principle seems fair: it would not be acceptable if the high cost of modern air navigation facilities were financed exclusively out of tax revenues. The users derive considerable benefits from them and it is therefore only fair that they contribute their share in the costs.(88) However, should that share necessarily mean the full cost? Although the majority of states strive towards full recovery, backed by the ICAO Council Statement, the question remains whether full recovery means a "fair share". The argument may well be used that part of the cost incurred in providing air

88. A clear example of totally arbitrary charges is that of the route charges proposed by Laos and Vietnam: both these countries are demanding route charges approximately 10 times higher than those imposed by Western European countries for routes of comparable distance. These demands have delayed the negotiations for reopening the civil air routes across Vietnam and Laos. See AW&ST, Nov. 22 1976, p. 25.

traffic services should be paid out of public funds. The state itself benefits from a well-developed air transport system in many ways, as does the average tax-payer, even if he never takes a commercial flight himself. Air transport provides quick communication, rapid delivery of mail and goods, and a considerable source of employment.

It is therefore submitted that a "fair share" should be interpreted to mean that the users should pay 60 to 75% of the cost of providing air navigation facilities and services. In this respect the United States provides a useful example: the Airport and Airway Trust Fund is financed partly out of revenues from various aviation user taxes and partly out of supplemental appropriations by the Congress out of federal funds.(89)

However, the trend in Western Europe seems to be firmly towards full recovery. As early as 1937 the British Maybury Committee advised that the help (i.e. air navigation facilities and services) given to the new industry (air transport) was to be of a temporary nature,

> "and that such assistance should be given with the objective of eventually rendering civil aviation economically self-supporting". (90)

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89. See p. 33

90. Great Britain, Ministry of Aviation, "Civil Aerodromes and Air Navigational Services", London, H.M.S.O. (1961), p. 4.

The British government announced in 1961 that it would introduce route charges:

> "... The aim will be to increase the fees progressively until the cost is borne entirely by the civil aviation industry". (91)

The background for these charges was the idea that they would

> "provide the best way of meeting the two fundamental aims of their (the government's) policy, namely to ensure the continued efficiency of the ground services and to make air transport self-supporting as soon as possible in orden to secure the long-term prosperity of the industry". (92)

91. "Civil Aerodromes and Air Navigational Services", p. 10.

92. Ibid.

CHAPTER E

THE RESPONSIBILITIES OF THE AIR TRAFFIC CONTROLLER

1. The Air Traffic Controller.

Having examined the responsibility of states for providing air traffic control service we should now take a closer look at the responsibilities of the air traffic controllers themselves.

After the description of air traffic control systems and equipment which has been given above it will be clear that the air traffic controller is, and has to be, a highly-trained specialist. In addition to this requirement the controller's working conditions are far from favourable: irregular hours of duty, prolonged periods of utmost concentration, and frequent pressure caused by dense air traffic, bad weather, or emergency situations.

It is not surprising, therefore, that in most countries air traffic controllers receive compensation in the form of high salaries, ample possibilities of advancement, early retirement,

and other fringe benefits.(93)

The responsibilities and duties of air traffic controllers are primarily set out in manuals for ATC operations and procedures, normally issued by the government authority responsible for the provision of ATC service. This authority is usually also responsible for the training and licensing of air traffic controllers: in the United States the FAA maintains an Aeronautical Center in Oklahoma at which the controllers receive their training. After successfully passing the appropriate examinations the trainee is awarded a certificate or license by the appropriate governmental agency. Such a license is normally valid for one class of ATC service only, which later may be expanded.(94)

In a number of states, notably in the U.S., the duties of air traffic controllers as contained in their manuals have in recent years been amplified by court decisions arising out of aircraft accident cases. Consequently, more and more attention

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93. In the United States "air traffic controllers are the highest paid body of federal employees, both in terms of entrance requirements and rapidity of advancement". (McDermott, "Air Traffic Control En-Route and Terminal" in "Small Aircraft Litigation", American Bar Association, Washington, D.C. (1975).

94. See: Gilbert, op. cit., p. 20

is being devoted in legal circles to the liability of governments for errors committed by its air traffic controllers. Although this subject is beyond the scope of this thesis such decisions by national courts have shed more light on the responsibilities and duties of the air traffic controller, especially in relation to the pilot's responsibility.

The discussion around the controller's responsibility and court decisions defining this responsibility has been most extensive in the United States: therefore we shall concentrate on developments in that country.

2. Manuals and Regulations.

The general task of air traffic controllers in the United States is described in one of the "Position-Classification Standards", drawn up by the FAA and published by the Civil Service Commission:

> "The principal objective of air traffic control work is to ensure the safe, orderly, and rapid movement of aircraft through the nation's airspace....Along the airways and around airports they keep aircraft properly separated by issuing speed, altitude and heading instructions to pilots....Responsibility for life and property is the primary characteristic of positions in this occupation". (95)

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95. McDermott, op. cit., p. 47.

The task of controllers who work with radar is described as follows:

> ".... The radar controller tells the pilot (flying in controlled airspace) exactly what heading to take, when to ascend, descend, or turn, and at what speed and altitude to fly. By issuing these instructions second by second, the controller exercises a very positive and continuing control over each aircraft within his assigned sector of airspace". (96)

When looking at this last provision the question rises where this leaves the pilot's responsibility when flying in controlled airspace.

Federal Aviation Regulation, Part 91.3(a)[97] states:

> "The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft".

Supported by this regulation the FAA holds the position that a pilot flying under VFR assumes the entire responsibility for the safety of his flight, and that guidance provided by the air traffic controller is merely of an advisory nature. While an acceptable appraisal of normal VFR flight conditions,

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96. Ibid., p. 49.

97. First issued in 1955 as Civil Air Regulation Part 60.

this rule becomes less realistic when applied in conditions prevalent in IFR flight in controlled airspace. In these conditions the pilot has no choice but to rely heavily on instructions given by the controller, especially in conditions of reduced visibility.

FAA operations and procedures manuals[98] further define the controller's tasks, which vary according to the controller's position, and type of ATC facility.

3. The Influence of Court Decisions.

In aircraft accident cases involving alleged air traffic control errors courts in the U.S. have increasingly recognized and defined the responsibilities of controllers in various types of flight conditions. The general trend in these court decisions is a recognition of the fact that flights in controlled airspace require the cooperation of both ATC and the pilot; this relationship was well described by the U.S. Supreme Court in Neff v. U.S.:

> "Whenever a plane is moving, whether on the ground or in the air, the captain has the final and ultimate responsibility. He is, however, in constant

98. Most important among these is the FAA "Air Traffic Control Manual, ATP 7110.1h".

> contact with the ground and guided by the Government control facilities.... there is a close working relationship between the Government-operated tower, control centers and weather facilities on the one hand, and the crew on the other. The responsibility is mutual and coördinated at all times. Each, however, has superior knowledge in some respects over the other. The crew knows the condition of the aircraft, its capabilities, and must deal with the unexpected in flight. The tower, in this age of electronics, has the superior knowledge and capability where questions of traffic control and weather are involved.... The crew is highly dependent on and relies on accurate and sophisticated weather guidance from the tower, a responsibility which the Government has undertaken and must fully and completely carry out". (99)

The above considerations, although well formulated and establishing an important precedent, do not reflect the continuum of varying degrees of interdependence between controller and pilot. They do, however, acknowledge the concurrent responsibility of controllers for the safety of flight in airspace controlled by them.

Besides the controller's general duty to ensure the safe and expeditious flow of air traffic and prevent the collision of aircraft there are three specific areas in which the definition of the controller's responsibilities has given rise to discussions. these are separation of aircraft, weather information, and wake turbulence warnings.

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99. (1968) U.S. Aviation Reports 55.

1) Separation. The FAA procedures manual distinguishes between VFR and IFR operations: the application of separation between VFR flights occurs mainly during take-off and landing manoeuvres, guided by approach/departure control.(100) No specific criteria apply to separation of VFR traffic.(101)

In contrast, IFR traffic is provided with ATC separation from take-off to landing. The appropriate controller's manuals contain detailed prescriptions for the separation of IFR traffic. Consequently, the standard of care and scope of duty expected of the controller is much higher, and courts in the U.S. have imposed an accordingly higher standard of care upon the air traffic controller.(102)

2) Weather information. Meteorological information is one of the air traffic services as defined by Annex 11

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100. The Terminal Air Traffic Control Manual, 7110.8C, defines separation as the "Spacing of aircraft to achieve their safe and orderly movement in flight and while landing and taking off".

101. This fact, coupled with FAR Part 91.3(a), has led the FAA to claim that the controller has no responsibility (see: McDermott, op. cit., p. 47/48). This reasoning has generally been followed by U.S. courts.

102. See: Early et al., "The Expanding Liability of Air Traffic Controllers", 39 J. Air L. & Com. (1973), p. 599.

to the Chicago Convention.[103] Section 310 of the Federal Aviation Act directs the Secretary of Commerce (as the official Head of the U.S. Weather Bureau) to:

> "provide meteorological service necessary for the safe and efficient movement of aircraft in air commerce".

The U.S. Weather Bureau and the FAA jointly operate a system for the dissemination of current weather information which is available to the pilots before take-off. However, during the flight, or even before the actual take-off the weather en-route or at the destination may have changed: such change must then be communicated to the pilot by the air traffic controller.

The controller has two ways of obtaining information about current weather conditions: first, information from the Weather Bureau radar system is directly available to the controller at the centre or tower; second, areas of precipitation and turbulence (thunderstorms) are visible on the controller's radarscope.

FAA operating manuals require controllers to relay relevant weather information to flights in controlled airspace: court decisions have affirmed the controller's

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103. Annex 11, art. 4.2.

duty to report accurate, complete and current weather conditions.(104)

Does the controller have the right to deny a pilot's request for clearance in below-minima weather conditions? The FAA maintains that the controller may not refuse to issue a requested clearance, but he should explicitly warn the pilot of below-minima conditions.(105)

3) Wake turbulence. Wake turbulence is a relatively new hazard to aviation. At take-off and landing large aircraft, such as the Boeing 747, generate wingtip vortices which create air turbulence in the airspace through which it has passed. Weather conditions define the intensity of this wake turbulence, as well as its duration, which may be as long as 10 minutes. Therefore, light aircraft following or crossing the path of large aircraft can be severely upset by wake turbulence generated by the latter.(106)

In the early cases in which wake turbulence was

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104. In Ingham v. Eastern Air Lines, Inc. the Circuit Court held that the controller had a duty to accurately disseminate visibility information to an aircraft making a final landing approach in marginal weather conditions. (373 F.2d 227 (2d Cir.), cert. denied, 389 U.S. 931 (1967)).
105. This position was adopted in Smerdon v. U.S. (1955), but rejected in Stark v. U.S. (1967). See: Lewy, "The Expanding Responsibility of the Government Air Traffic Controller", 36 Fordham L. Rev. (1968), p. 401 at 419/420.
106. In fact, to be affected an aircraft does not even have to be all that light: it has been determined that a DC-9 may be upset by wake turbulence caused by a DC-10.

shown to be a factor courts in the U.S. affirmed the controller's duty to warn pilots of probable or reported turbulence, as indeed the manuals instruct him to do. The "breakthrough" case was Funumizo v. U.S.[107]; the Hawaii district court stated that the Federal Aviation Act had imposed a duty on the FAA to ensure aviation safety, a duty which was reflected in the controller's manuals. The court stressed the concept of concurrent responsibility and concluded that the controller was not bound to slavishly follow his manuals but was expected to exercise judgment and use the authority the manuals conferred upon him to increase separation between aircraft, especially if he knew or should have known that wake turbulence could be expected.[108] However, later cases did not continue along this line: there, the courts held that the pilot knew or should have known of the turbulence risk, while the controller could not reasonably have foreseen turbulence which lasted longer than usual.[109]

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107. D. Hawaii, 1965, affirmed 1967.

108. See: Levy, op. cit., p. 417.

109. See: Booth, "Governmental Liability for Aviation Accidents Caused by Air Traffic Control Negligence" 1 Air Law (1976), nr. 3.

4. Conclusion.

This chapter will have made clear that the responsibility of the air traffic controller has not been definitively established, and it is unlikely that it even will be. For the division of responsibility between pilot and controller varies from case to case and is determined by such variables as type of flight (VFR or IFR) and weather conditions. Controller manuals, such as those issued by the FAA contain detailed instructions, but there are numerous situations in which the controller will have to apply his own judgment, and it is there where uncertainty as to responsibility begins.

Courts in the United States have increasingly recognized the controller's responsibility by imposing

> "an affirmative duty on controllers to take reasonable action to prevent accidents...consistent with the reliance which users of airways place upon the Government, and with the Government's responsibility to establish and foster aviation safety". (110)

In many countries the responsibility of air traffic controllers has hardly or not at all yet been explored. Such exploration is often only set in motion by accidents which prove that controllers, like pilots, are human beings capable of making mistakes: this fact was grimly illustrated by the recent mid-air collision

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110. Levy, op. cit., p. 401.

over Zagreb, Yugoslavia.(111)

111. On Sept. 10, 1976, a British Airways Trident and an Inex Adria DC-9 collided at an altitude of 33,000 ft. near the city of Zagreb. The Trident was en-route from London to Istanbul, while the DC-9 had been cleared by the Zagreb centre to climb to 35,000 ft. after taking off from Split for a flight to Cologne, Germany. Three major airways converge over Zagreb: each of the two jets was on a different airway.
Immediately following the accident four controllers at the Zagreb centre were arrested on suspicion of responsibility for the collision. Subsequent hearings concentrated on the question of how the DC-9 could have been cleared to climb to an altitude which brought it on a collision course with the Trident. The collision killed all 176 persons on board the two aircraft.

PART II : THE EUROPEAN ORGANIZATION FOR THE SAFETY OF AIR NAVIGATION " EUROCONTROL ".

CHAPTER A

TOWARDS EUROPEAN AIRSPACE

The most revolutionary event in the history of international air transport has been the massive transition in the early 1960's to high-capacity, high-speed jet aircraft. This revolution had far-reaching effects on air traffic control systems as provided by states: it quickly brought to light the inadequacy of primary radar for reliable en-route control.(1) More importantly, the high speed of the new jets entailed rapid transfers from one ATC centre to another, resulting in increased pressure on the controllers, especially those working with approach control.

As early as 1957 a number of Western European states informally discussed the possibility of a multinational air traffic control system. At the same time the North Atlantic Treaty Organization (NATO) set up a "Committee for European Airspace Integration" to study and make plans for the coordination of civil and military air traffic over Western Europe.

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1. See p. 15

It was no coincidence that these activities first took place in 1957: in that year, on March 25, efforts to bring about an integrated Europe culminated in the signing of the Treaty of Rome establishing the European Economic Community and the European Community for Atomic Energy.

At the Fourth European-Mediterranean Regional Air Navigation Conference of ICAO, held in January 1958 in Geneva, a proposal for a European air traffic control agency was brought forward by the Federal Republic of Germany, the Netherlands, Belgium and Luxemburg. It was argued that the combination of small territories and high-density air routes made it indispensable to

> "re-organize control methods, to organize pre-determined routes and create a small number of control centres equipped with advanced electronic devices and integrated into a unified system". (2)

The Belgian government envisaged an organization analogous to the EEC, with the same membership: a further step to complete integration of the European Continent. The Netherlands government took a more pragmatic approach and stressed that for operational reasons (trans-Atlantic flights!) membership of the United Kingdom in such an organization would be indispensable.

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2. R. Bulin, "Eurocontrol, a European Organization", 69 Journal of the Royal Aeronautical Society (1965), p. 140.

The Belgian government succeeded in attracting the participation of France and Italy in exploratory talks and thus the member-states of the European Communities were united on a new project of European integration.

Preparatory meetings of representatives of the six countries took place throughout 1958 and early 1959: a draft convention was drawn up which envisioned the setting up of an agency to be responsible for the common provision of air traffic services in the upper airspace of the participating states. It was the desire of all 6 states that the convention should be such that any state wishing to accede at a later date could easily do so.[3] Also, cooperation agreements between the organization and non-member-states should be encouraged and legally made possible.[4]

In June 1960 a meeting was convened of the ministers responsible for civil and military aviation: upon invitation from "The Six" the United Kingdom was also represented. At this meeting comments on the draft convention were presented, followed by a discussion on the legal and operational consequences of a common air traffic control service. It was determined that the

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3. In 1965 the Republic of Ireland acceded to the Eurocontrol Convention. Since then no other states have joined.

4. Art. 12 of the Convention provides for such agreements.

creation of the organization, to be called "Eurocontrol" would not entail any transfer of sovereignty of the airspace over the territory of the member-states: they would only delegate their responsibility for providing air traffic services in their upper air space, in whole or in part, to the Eurocontrol Organization.

The activities of the organization were to be confined to the upper air space (generally that part of the airspace above 20,000 feet) as it was there that the new generation of jet aircraft operated and was guided by en-route ATC. Until recently this portion of the airspace was only used by military jet aircraft.

A preliminary diplomatic conference, convened in Paris in September 1960, revealed an unexpected surprise: the Italian government announced its decision not to participate in Eurocontrol, or, in its own words, "to postpone its accession".(5) The reason for its decision has never been made public by Italy, but it is a public secret that Italian aeronautical authorities foresaw coördination problems between military and civil ATC units. Contrary to the other Eurocontrol member-states all air traffic control service in Italy is provided by the military: had the Eurocontrol Convention provided for common ATC service

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5. "Eurocontrol: Growth, Aims, Structure", Brussels, (1975), p. 4.

for both military and civil air traffic Italy would have adhered to it. However, as a compromise to the existing situation in the Federal Republic of Germany and the Netherlands, where military air traffic was controlled by separate ATC units, the Eurocontrol Convention applies only to military air traffic which "conforms to the procedures of the International Civil Aviation Organization". (6)

The International Convention relating to Cooperation for the Safety of Air Navigation, "Eurocontrol", was signed for a period of twenty years on 13 Dec. 1960, at a diplomatic conference in Brussels. The signatory states were:

Belgium
France
The Federal Republic of Germany
Luxemburg
The Netherlands
The United Kingdom

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6. Art. 3, Eurocontrol Convention (text in "Yearbook of Air and Space Law", 1965, Montreal, (1967), p. 157.)
It is also a public secret that art. 3 was inserted at the instigation of NATO, which feared political influence on military air operations.
In 1966 Italy concluded a (vaguely worded) cooperation agreement with the Eurocontrol Organization.

In view of the lengthy process of ratification by the respective national parliaments the representatives at the conference concluded a protocol to cover the interim period until the entry into force of the Convention.(7) This protocol set up a Eurocontrol Association (a corporation under French law), its purpose being the study of future ATC systems and procedures. When, on March 1, 1963, the Convention entered into force the Eurocontrol Organization established its permanent headquarters in Brussels.

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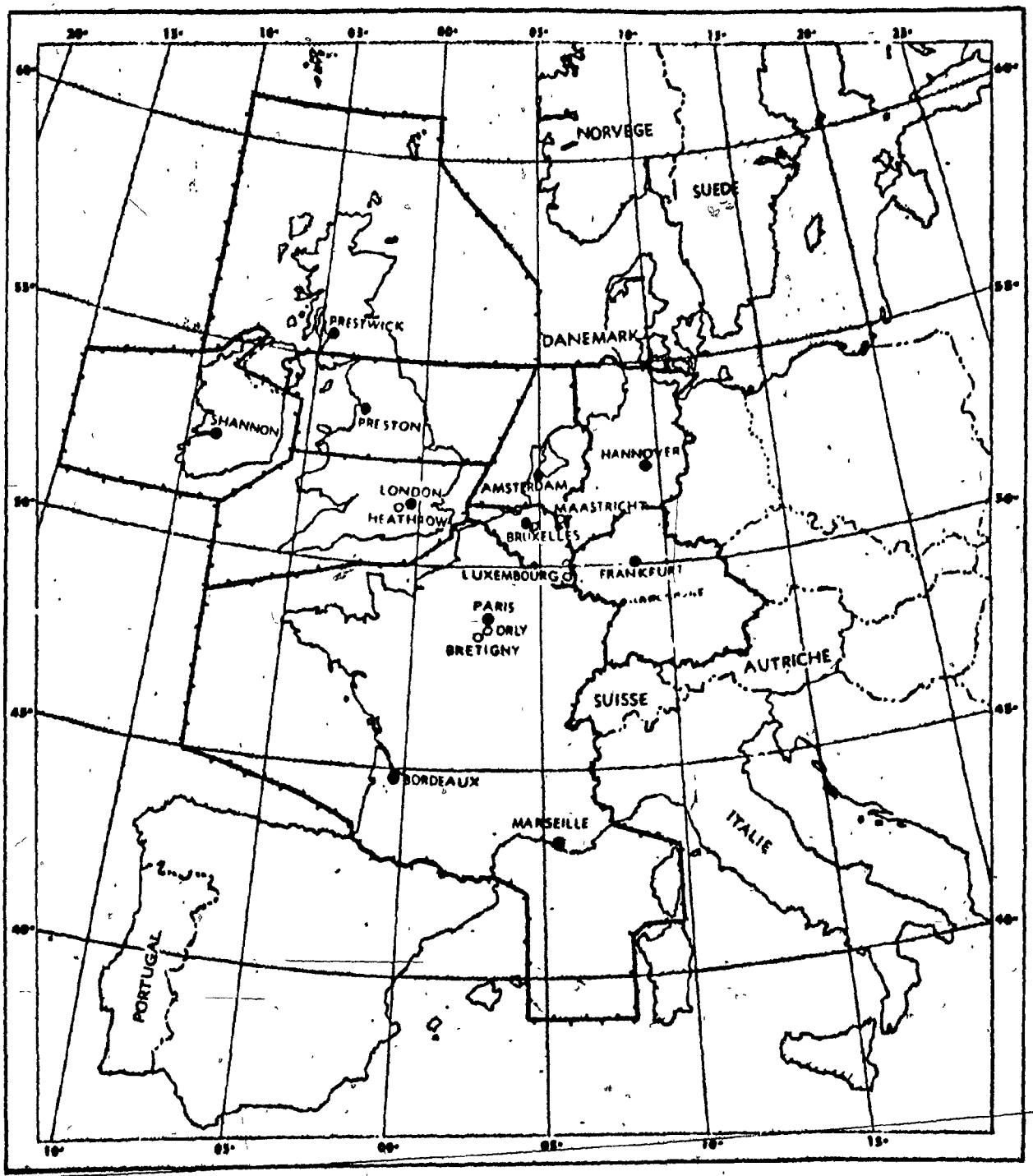
7. Besides the ratification delay a more practical reason was behind the creation of the Associations by 1960 the jet age was well on its way, and Europe's airspace was increasingly filled with the new aircraft, led by the Caravelle and Boeing 707.

REGION EUROCONTROL



Limites des régions supérieures d'information de vol _ Limits of upper flight information areas

Centres de contrôle de l'espace supérieur _ Upper airspace control centres

Service extérieur d'Eurocontrol _ Outside departments

Etats coopérants _ Cooperating states

CHAPTER B

EUROCONTROL: FUNCTIONS AND STRUCTURE

1. Functions.

The aims of the Eurocontrol Organization have been put into one compact sentence by art. 1.1 of the Convention:

> "The Contracting Parties agree to strengthen their cooperation in matters of air navigation and in particular to provide for the common organization of the air traffic services in the upper air space".

This article raises two questions:

1. Where does the "upper air space begin"? The Convention itself nowhere defines this boundary: such a definition was purposely omitted as operational practice might necessitate a revision of this boundary, which would then require a time-consuming amendment to the Convention. Also, the level at which the upper air space begins is also defined by the pattern of air

traffic over each individual country.[8]

In view of these considerations the general boundary between lower and upper air space was set at 20,000 feet[9] by a decision of the Permanent Commission of Ministers, the supervisory organ of the Organization.

2. Which categories of air traffic are controlled by Eurocontrol? This question is answered by art. 3 of the Convention which provides that

> "For the purposes of the present Convention the expression "air traffic" comprises civil aircraft and those military, customs and police aircraft which conform to the procedures of the International Civil Aviation Organization (ICAO)". (10)

The primary function of the Organization is the actual exercise of air traffic control service in the upper air space. Before examining the other Eurocontrol functions it is helpful first to describe its structure.

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8. The pattern of air traffic over the Eurocontrol states does indeed show considerable differences: en- route traffic is much more numerous, percentage-wise, in the airspace over Belgium than it is in the airspace over the Netherlands: in the latter, air traffic which remains at an altitude higher than 20,000 ft. constitutes only 19% of the total of air traffic passing through its airspace.

9. In air navigational terms 20,000 ft. is referred to as Flight Level (FL) 200.

10. Art. 3.

2. Structure.

Responsibility for the realization of the Organization's functions rests with two organs:[11]

(1) The Permanent Commission of Ministers (the Commission).

(2) The Air Traffic Services Agency (the Agency).

(1) The Commission. The Commission, the plenary body of Eurocontrol, is composed of two representatives of each member-state, whose vote counts as one.[12] As a rule these two representatives are the ministers responsible for civil aviation and defense, respectively: this makes the Commission comparable to the Council of Ministers of the European Communities.

The Commission's duties and responsibilities are spelled out in detail in the Convention; it is the Commission's overall responsibility to

> "promote, in cooperation with the national military authorities, the adoption of measures and the installation and operation of facilities designed to:
> ensure the safety of air navigation;
> ensure an orderly and rapid flow of air traffic within defined air space under the sovereignty of the Contracting Parties on in respect of which the air traffic services have been entrusted to those Parties under international agreements".(13)

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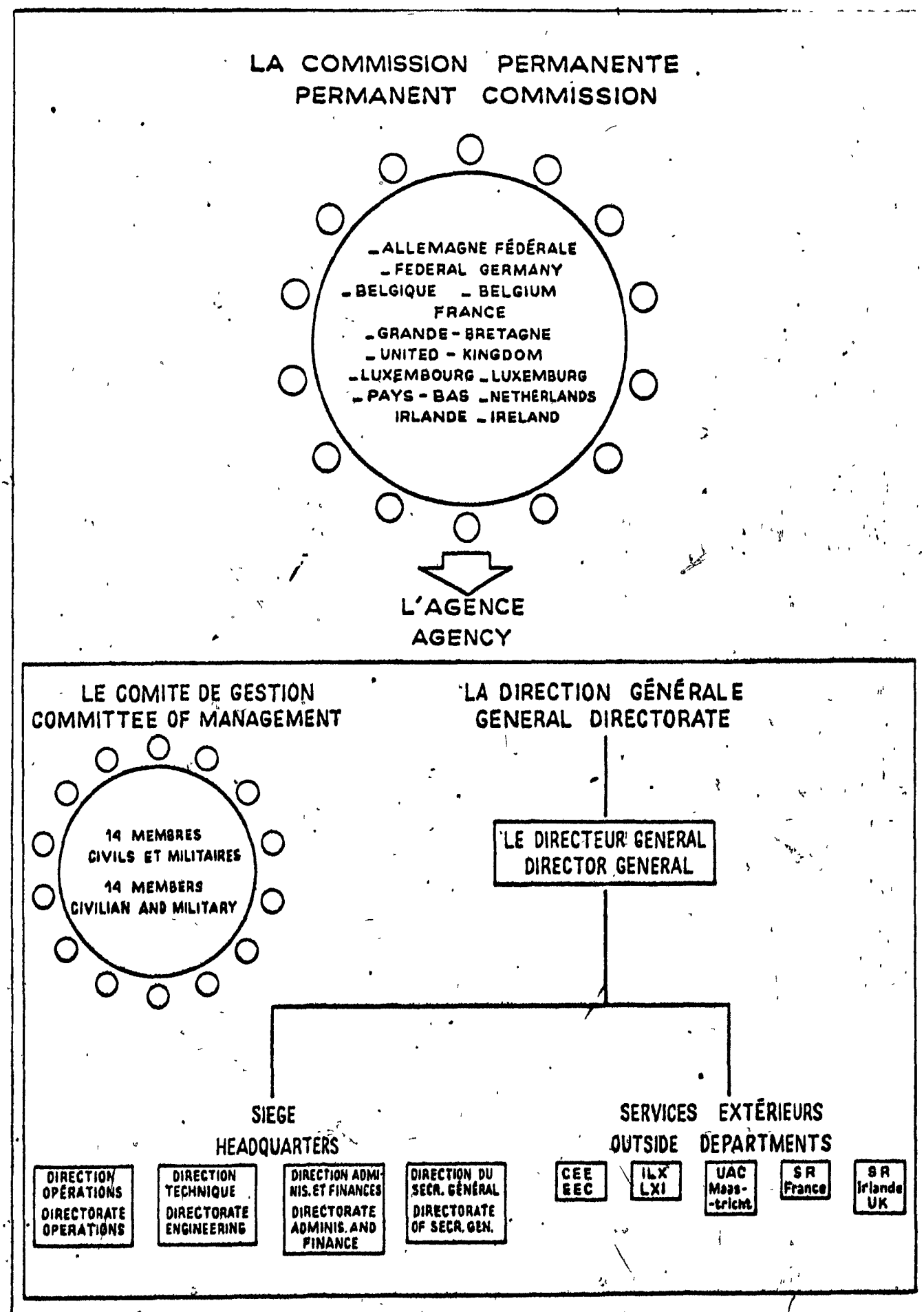
11. Art. 1.2.

12. Art. 5.

13. Art. 6.1.


LA COMMISSION PERMANENTE
PERMANENT COMMISSION
- ALLEMAGNE FÉDÉRALE
- FEDERAL GERMANY
- BELGIQUE - BELGIUM
FRANCE
- GRANDE - BRETAGNE
- UNITED - KINGDOM
- LUXEMBOURG - LUXEMBURG
- PAYS - BAS - NETHERLANDS
IRLANDE - IRELAND
L'AGENCE
AGENCY
LE COMITE DE GESTION
COMMITTEE OF MANAGEMENT
14 MEMBRES
CIVILS ET MILITAIRES
14 MEMBERS
CIVILIAN AND MILITARY
LA DIRECTION GÉNÉRALE
GENERAL DIRECTORATE
LE DIRECTEUR GENERAL
DIRECTOR GENERAL
SIEGE
HEADQUARTERS
SERVICES EXTÉRIEURS
OUTSIDE DEPARTMENTS
DIRECTION OPÉRATIONS
DIRECTORATE OPERATIONS
DIRECTION TECHNIQUE
DIRECTORATE ENGINEERING
DIRECTION ADMINIS. ET FINANCES
DIRECTORATE ADMINIS. AND FINANCE
DIRECTION DU SECR. GÉNÉRAL
DIRECTORATE OF SECR. GEN.
CEE EEC
ILX LXI
UAC Maas-tricht
SR France
SR Irlande UK

Art. 6.2 lists the specific functions and duties of the Commission, the first of which is

> "the study, on the basis of the Standards and Recommended Practices of the ICAO and having regard to the requirements of national defence, of the standardisation of national regulations governing air traffic and the standardisation of the operation of the services responsible for ensuring the safety and regulation of air traffic".

What are the policy-making instruments at the disposal of the Commission? These are in order of importance:

a) Decisions; these are taken by unanimous vote and concern matters of general policy such as the determination of the configuration of the airspace in respect of which the air traffic services are entrusted to the Agency.(14) Also, the conclusion, on behalf of the Organization, of agreements with other international organizations or with states (members or non-members) is exclusively the domain of the Commission.(15) Decisions are binding on member-states.(16)

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14. Art. 6.2(d). Upon this provision is based the Commission's authority to determine the boundary between lower and upper airspace.

15. Art. 12.

16. However, this is no reason to assume that the Eurocontrol Organization possesses supranational powers, as has erroneously been concluded by Collester and Burnham("Eurocontrol: A Reappraisal of Functional Integration", Journal of Common Market Studies, June 1975, p. 345 at 356). Only if the Commission could adopt decisions by majority vote would the organization possess supranational powers.

b) Directives; these are normally directed at the Eurocontrol Agency and are applied to establish i.a. the tariffs and conditions of application of those charges which the Organization is entitled to collect from users.(17)

a) Recommendations; these are aimed at the standardization objectives as mentioned above. Recommendations are also used for submitting proposed amendments to the ICAO Regional Air Navigation Plans.(18) Recommendations are adopted by majority vote.

d) Conclusions; these are formulated in respect of the Commission's task of general supervision over the activities of the Agency. The Commission also employs conclusions for the reference of appeals to the arbitration tribunal: this tribunal may be formed on the request of one of the parties to any dispute

> "relating to the interpretation or application of the present Convention or of its Annexes and which it has not been possible to settle by direct negotiation or by any other method". (19)

Directives and conclusions both require an absolute majority to be adopted. However, in this case the votes are weighted

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17. Art. 20.

18. Art. 6.2(c).

19. Art. 33,1.

according to the Gross National Product (GNP) of each member-state.[20] Furthermore, the votes must represent the majority of all member-states.

(2) The Agency. The operational functions of the Eurocontrol Organization are carried out by the Agency:

> "The Agency shall provide the air traffic services ..... in the upper air space above the territories referred to in the preceding article (the airspace above the territories of the Contracting Parties)"[21]

Transfer of responsibility for ATC in the upper air space to the Agency is mandatory under art. 14 of the Convention: "The Contracting Parties shall entrust to the Agency the air traffic services...." To carry out this task the Agency may install its own facilities,[22] or it may use existing facilities employed by member-states.[23]

The Commission is not responsible for the administration of the Agency: to this end a "Committee of Management" has been set up, which is also composed of two government officials from each

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20. Weighting is prescribed in a table in art. 9 of the Convention. The GNP is computed according to statistics from the Organization for European Economic Cooperation (OEEC).

21. Art. 38, Convention.

22. Art. 28.1, Convention; art. 2.2, Statute of the Agency.

23. Art. 28.2, Convention.

member-state.[24] This Committee is to submit proposals for the installation of control centres, for the establishment of research- or experimental centres, and for ATC training schools.[25] The Committee also appoints a Director General of the Eurocontrol Organization, who heads the Agency's seat in Brussels.[26] The Director-General represents the Organization in legal proceedings, as well as for all civil purposes.[27]

3. The Legal Status of Eurocontrol.

The Commission, representing the Eurocontrol Organization as a whole, is empowered to conclude agreements with other international organizations or with states.[28] From this it can be concluded that the Organization possesses international legal personality. However, Eurocontrol differs from most other international organizations in that it was founded to fulfil a specific function, namely the provision of air traffic services on an integrated, international basis. Responsibility for providing such services has been expressly delegated to the Eurocontrol Agency under the Convention.[29]

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24. Artt. 3 and 4, Statute of the Agency.

25. Art. 9, Statute of the Agency.

26. Art. 13, Statute of the Agency. This position has from 1963, without interruption, been held by M. René Bulin from France. He has been re-elected twice.

27. Art. 13, Statute of the Agency.

28. Artt. 12 and 13, Convention.

29. Art. 14, Convention.

For this reason the Organization describes itself as an "International Public Service", so as to distinguish itself from "normal" international intergovernmental organizations. Does the organization have any supranational powers, or, put differently, does the Convention bestow any power on Eurocontrol organs to lay down rules which are directly binding on its member-states and their nationals? Only article 20 of the Convention could be said to approach a certain element of supranationality:

> "The Agency shall establish, where applicable, in application of the directives of the Commission formulated in accordance with the provisions of para. 2(e) of article 6 of the present Convention, the tariffs and conditions of application of those charges which the Organization is entitled to collect from users. The Agency shall submit those tariffs and conditions for the approval of the Commission".

It will be recalled that the Commission adopts directives by weighted majority vote, and thus it would seem that the Agency were permitted to establish tariffs by its own. However, what is given with one hand is taken away by the other as, to be effective, such tariffs need the approval of the Commission, which can only do so by (unanimous) decision.

4. A Look at Eurocontrol's African Counterpart, ASECNA.

The first multinational organization for the common provision of air traffic services was founded in West Africa in 1959. On December 12 of that year 11 African states, almost all of them former French colonies, concluded a "Convention Relative à la Création d'une Agence Chargée de Gérer les Installations et Services Destinés à Assurer la Sécurité de la Navigation Aérienne en Afrique et à Madagascar (ASECNA)".(30)

The "Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar" (ASECNA), according to art. 2 of the Convention, is responsible for the management of installations and services established for the provision of air traffic services.

To this end "Les Etats signataires s'engagent à mettre à la disposition de l'Agence les installations et moyens actuels nécessaires à son fonctionnement".(31)

The Agency, which calls itself an "Etablissement Public", is administered by an Administrative Council. The original

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30. Text (extracts) in "Yearbook of Air & Space Law", 1965, p. 116. The contracting parties were the Central African Republic, Congo, Ivory Coast, Dahomey, Gabon, Upper Volta, Mauritania, Madagascar, Niger, Senegal and Chad.

31. Art. 2, ASECNA Conv.

composition of this body, such as it existed until 1972, clearly revealed the actual division of power within the Organization: of the 24 seats France occupied 12, while the African members each occupied one. This, added to the fact that the Organization's headquarters are located in Paris, and that initially 99% of the skilled personnel was French, justifies the conclusion that ASECNA was primarily created as a form of development aid by France to its former colonies.

Looking at the legal setup of ASECNA it is noteworthy that France, while not a contracting party to the Convention, is nevertheless represented in the Administrative Council: as noted earlier it occupied half of that body's seats until 1972. Furthermore, the Organization's Headquarters are located in the territory of a non-contracting state (France), wholly outside the scope of its activities (West Africa).
These facts contribute to the impression of ASECNA as an organization of a rather peculiar legal nature. The Independence of the Organization seems equally disputable.

Eurocontrol and ASECNA differ most clearly in the fact that the ASECNA Convention does not provide for any transfer of ATC responsibility by its member-states to the Organization. ASECNA only manages and operates the facilities provided by each of its members. Also, ASECNA personnel do not all work under uniform conditions:

> "Les personnels détachés auprès des Services de l'Agence installés dans chaque Etat continuent à être administrés dans leur cadre d'origine, ou suivant leur statut d'origine par l'autorité qui a compétence pour les administrer.
> Ils sont rémunérés par l'Agence conformément à leurs règles statutaires d'origine sauf accord de l'autorité qui les administre". (32)

The predominant position of France within ASECNA has, in recent years, been reduced due to two revisions of the Convention. The first one, agreed upon in 1972, reduced the number of Council seats occupied by France to 8, while the African members obtained 14 seats. The most recent revision, which took effect in 1974, introduced the one-state-one-vote principle to the Council, thus formally making France an "ordinary" member.

Most noteworthy of ASECNA's achievements has been the introduction, in 1962, of a common route charges system.(33) This system today provides for the main part of the Organization's financing.(34) It was the announcement of this charges system that triggered off the debate on this subject, as described in Chapter D of Part I.

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32. Art. 4, ASECNA Convention.

33. See p. 46

34. See: SanMarco, "L'Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar", in Revue du Secretaire-Général à l'Aviation Civile, no. 150, 15 Mai 1974, pp. 134-138, at 135.

CHAPTER C

THE ACHIEVEMENTS OF EUROCONTROL

1. The Operational Functions.

On March 1 1963 the Eurocontrol Convention entered into force: exactly 1 year later the first effective transfer of ATC responsibility took place when the Eurocontrol Agency took over upper area control in the Brussels FIR.[35] During the next few years, however, no other member-state announced its intention to allow for a similar transfer: it was stated that much more time was needed to study the technical and operational consequences of a transfer of ATC responsibility over part of their airspaces.

In 1966 a way out of this dilemma was presented to the Eurocontrol Commission: in the so-called "Meroni Report" it was suggested that ATC responsibility over the upper airspace should be

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35. The Brussels FIR covers the whole of the territory of Belgium and Luxemburg. Air traffic services were exercised through existing national en-route facilities.

transferred to Eurocontrol, while actual operations would continue to be exercised through existing national installations, be it no longer under the responsibility of the national government.

Through this "legal fiction" the contracting states found a solution for the implementation of art. 14 of the Convention, which requires the transfer of ATC functions in the upper airspace to the Eurocontrol Agency. Thus, the governments of the Federal Republic of Germany, Great Britain, Ireland, France, and the Netherlands each concluded bilateral agreements with the Eurocontrol Organization which created the situation as envisioned by the Meroni Report. This situation has changed only little since then: only Belgium and Luxemburg have entrusted operational ATC responsibility for the upper airspace to the Agency,[36] while the FRG has only done so for the northern part of its territory.[37]

The highlight in the short history of Eurocontrol was the entry into operational service on March 1, 1972 of the Maastricht Upper Area Control Centre (UAC).[38] This Centre was the

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36. Since 1972 these services are being provided from the Maastricht Centre, operated by Eurocontrol.

37. Upper area control for the southern part of the FRG was to be provided from a separate Eurocontrol centre.

38. Maastricht is located in the southern tip of the Netherlands, close to both the Belgian and German bordens.

first one to be operated exclusively by Eurocontrol, for the provision of air traffic services in the upper air space oven Belgium, Luxemburg, the Netherlands, and the FRG. The Maastricht UAC makes use of an advanced system of ATC automation, called the Maastricht Automatic Data Processing and Display System (MADAP). Initially the Centre only provided services in the Brussels FIR: on March 1, 1974, it also assumed air traffic services responsibility for the upper airspace of the Hannoven FIR (the northern half of the FRG). However, transfer of ATC responsibility for the upper airspace of the Netherlands has been delayed until at least 1978. The Dutch aeronautical authorities have stated that the reason for this delay is that the pattern of air traffic owen Dutch territory is such that intensive coordination is required between the Maastricht UAC and the national control centres. Both Eurocontrol and the Dutch government have acknowledged the existence of this problem. However, an additional problem is not mentioned in such official statements: government air traffic controllers at the Amsterdam Centre regard a transfer of ATC functions to the Maastricht UAC as a threat to their jobs. When the latter assumes ATC responsibility for the upper airspace of the Netherlands the controllers employed there will work under more favourable terms of contract than those employed by the Dutch government. Furthermore, there is no guarantee that those controllers who will become redundant as a result of the transfer will be able to work at the Maastricht

UAC: as a European organization Eurocontrol must follow a European employment policy, analogous to the European Communities.

A similar problem has contributed to the unusual situation which has arisen around the second Eurocontrol Upper Airspace Control Centre near Karlsruhe, Germany. Originally, the Maastricht Centre was to have been responsible for air traffic services in the upper airspace over all of the Federal Republic: a series of events, however, caused the federal government to change its mind about delegation of ATC responsibility to the Maastricht Centre. As has been mentioned earlier,(39) the number of near-misses between civil and military aircraft in Germain airspace climbed to an unacceptable level during the 1960's. A record-high of such incidents in 1969 prompted the federal government to decide for complete integration of civil and military ATC operations. Obviously this would conflict with obligations arising out of the Eurocontrol Convention, whose article 3 states that the Agency only provides services to that military air traffic which conforms to ICAO procedures. A compromise was found in transferring to the Maastricht Centre air traffic services only for the Hannover FIR: civil air traffic was to be controlled by Eurocontrol personnel, while military operational traffic not

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39. See p. 40

conforming to ICAO procedures would be controlled from Maastricht by German Air Force controllers, using Eurocontrol facilities, but under the responsibility of the German Air Force. This way facilities available for the control of the upper airspace over the southern part of the FRG could still be used, and a conflict with the Eurocontrol Convention was avoided. This situation has now existed for a number of years, and it provides another example of how member-states have found it necessary to employ legal subtleties in order to avoid conflicts with obligations imposed on them by the Eurocontrol Convention.

This manoeuvre caused the German federal government to be faced with a new problem: the upper air space over the southern part of its territory would still have to be brought under Eurocontrol "jurisdiction". In November 1970 the Eurocontrol Permanent Commission accepted the proposal brought forward by the FRG to set up a Eurocontrol UAC near Karlsruhe which would provide services in the remainder of German upper airspace. As in the case of the Maastricht Centre the German Air Force would provide services to military operational traffic from the same location.

Thus, the unusual situation would be created whereby a Eurocontrol centre was to provide services over the territory of one member-state only. This centre would never have been built if it were not for the consequences of the decision of the German federal government to integrate civil and military air traffic control in its airspace.

Naturally, these developments did not escape the attention of the air traffic controllers employed by the Bundesanstalt für Flugsicherung, the government agency responsible for all air navigation services in the FRG.(40) They were aware of the fact that controllers employed by Eurocontrol received higher overall salaries, coupled to attractive fringe benefits, due to their status as a European civil servant.(41)

All this contributed to a prolonged go-slow action staged by all German air traffic controllers during the summer of 1973 which severely disrupted air traffic all over Western Europe.(42)

By that time it had dawned upon the German federal government that its membership to Eurocontrol had turned out to be a liability rather than an asset: developments subsequent to the conclusion of the Eurocontrol Convention had simply caught up with it.

After consideration of ways of pacifying the air traffic controllers the federal government, in the course of 1976, announced its intention to man the Karlsruhe Centre with its own controllers rather than leaving its operation to the Eurocontrol Agency. The government argued that the operational conceptions

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40. See p. 37

41. See p. 84

42. Near-misses in German airspace rose to a record-high during that year; see p. 40

upon which the present Convention is based have proved to be obsolete.(43)

The decision has yet to be approved by the Eurocontrol Permanent Commission, but this can be regarded as a mere formality.(44) The result will be that in the airspace over southern Germany the lower part will continue to be controlled by BFS controllers from the Frankfurt Centre, whereas the upper part will receive services from the new Karlsruhe Centre, scheduled to become operational in February 1977. This centre, although operated by the BFS, will remain a Eurocontrol installation, operations falling under its responsibility. This complicated set-up will last until 1983 when, upon the expiry of the present Eurocontrol Convention, the Karlsruhe Centre will be converted into a fully national undertaking.

The events recited above will have illustrated the doubtful achievements of Eurocontrol in the operational field. Although the Maastricht UAC is equipped with ultra-modern electronic aids most air traffic control experts seem to agree that it does not constitute the significant breakthrough in air traffic control it was meant to be. Efficient guidance of jet aircraft

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43. By this is meant the division of the airspace into upper and lower portions. This view is shared by officials in most other member-states (Source: Handelingen der Tweede Kamer der Staten-Generaal, Zitting 1975-1976, p. 4153).

44. Such was the opinion of the Director of Public Relations of Eurocontrol Headquarters in Brussels.

could equally well have been provided by the national en-route control centres, given a certain degree of coördination. These same experts also question the division of the airspace into an upper and a lower part. At the time of the conclusion of the Eurocontrol Convention it was predicted that the new jet airliners would mainly be used for medium and long-haul routes. However, by the end of the 1960's it appeared that short-haul routes such as London-Paris and Frankfurt-Amsterdam were being operated exclusively with jet aircraft. Most of these flights do not exceed Flight Level 200 for more than 20 minutes, thus making a separate control centre for this portion of the airspace an unnecessary complicating factor for the pilots. So, ironically, practice has proved that Eurocontrol often achieves exactly the opposite of its overall aim, i.e. simplification in air traffic control procedures.

2. Other Eurocontrol Functions.

a. Research and Training.

Problematical though the operational functions of Eurocontrol have proved to be, two other categories of activities have met with more success. These are, first of all, the Eurocontrol Experimental Centre and the Institute of Air Navigation Services.

The Experimental Centre, located at Brétigny, near Paris, was founded at an early stage in order to allow experiments with and evaluation of control procedures and ATC equipment.(45) Its most noteworthy accomplishment is an air traffic control simulator, the only one of its kind in Europe. The simulator has been linked to the Concorde flight simulator at Toulouse, in order to allow controllers to familiarize themselves with handling supersonic aircraft.

The Institute of Air Navigation Services was built in the late 1960's near the city of Luxemburg. Its purpose is the provision of air traffic control training courses: these courses are available not only for prospective controllers from member-states but also for those from third states. In addition to controller training advanced and specialist courses are given for various categories of air traffic services personnel. The ultimate aim of the Institute is the standardization of the training of controllers on a European basis, and the harmonization of instruction given at national training schools.(46)

b. The Common Route Charges System.

Perhaps the most successful function that Eurocontrol performs today is the maintenance of a Central Route Charges Office,

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45. See for more details: "Eurocontrol: Growth, Aims, Structure".
46. See: "Eurocontrol: Growth, Aims, Structure".

which collects charges based on a common route charges system. Having devoted attention to the increasingly controversial question of charges imposed by states for the provision of air traffic services at an earlier stage[47] the Eurocontrol charges system merits a more detailed description. In fact, this system has played something of a key role in the development by ICAO of principles applicable to such charges.[48]

In July 1969 the Permanent Commission approved a uniform system of charges for the use of en-route air navigation facilities provided by Eurocontrol member-states. The system, scheduled to go into effect as of November 1, 1971, had been developed by an intergovernmental working group on route charges, set up in 1965. The intention was to gradually recover the costs incurred by both the Organization and the member states. Motive for this decision was that civil aviation, with the imminent introduction of wide-body equipment, was evolving into a mass transport facility competing with surface transport. Therefore, as in the case of the latter, it would be reasonable for air transport to bean a fair share in the cost of facilities provided by the states fon its use.

At the time of the signing of the Convention the introduction of such charges had already been foreseen, as witnesses

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47. See p. 42

48. See p. 44

article 20:

> "The Agency shall establish, where applicable, in application of the directives of the Commission formulated in accordance with the provisions of paragraph 2 (e) of Article 6 to the present Convention, the tariffs and conditions of application of those charges which the Organization is entitled to collect from users. The Agency shall submit those tariffs and conditions for the approval of the Commission".

The announcement of the proposed Eurocontrol charges caused a considerable stir in the air transport world, even though a number of states were already levying route charges.(49) Criticism was mainly directed at Eurocontrol's intention of ultimately recovering full cost. In response the Organization pointed out that the proposed system was wholly within the ICAO guidelines as set forth in the 1967 Council Statement to Contracting States, reflecting the recommendations adopted by the 1967 Conference on Charges for Airports and Air Navigation Facilities.(50) In September 1970 an agreement relating to the collection of the charges was signed between the member states and the Organization.(51) The most important element in this agreement is the

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49. Among these states were Canada, Ireland, Australia and New Zealand.

50. See p. 44

51. Text in Eurocontrol "Agreements", Brussels, 1972.

setting up of a Central Route Charges Office at Eurocontrol Headquarters in Brussels. Its function is to calculate and collect the route charges on behalf of the member states.

At that same time the Organization offered other European states to collect, using its system and Central Office, charges to be levied by these states for air navigation services rendered by them. This offer was accepted by Austria, Switzerland, Spain and Portugal, so that in 1971 the Central Office started sending out bills on behalf of 11 European states.
All participating states concluded bilateral agreements with the Organization in order to entrust it, on their behalf, with the authority to collect the charges.(52)

The key element in the system is that the user receives only one bill for every international flight, irrespective of how many of the 11 countries have been overflown. This represents a considerable simplification which has much more practical value than the actual Eurocontrol ATC operations discussed above.
It also relieves the national governments of an unwelcome administrative burden, which in turn results in a savings both in terms of manpower and tax money.
In accordance with the ICAO guidelines the charging system is based on distance flown and aircraft weight, and the approach towards full recovery is a gradual one. Distance flown is measured

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52. Texts ibid.

in stretches of 100 km. each: each 100 km. flown represents one distance factor.

After lengthy discussion the aircraft weight factor was defined as the square root of the aircraft's maximum take-off weight

> "support for which was found in the view of certain economists that, for a given class of aircraft, productivity increases with the square root of its weight". (53)

The unit weight was set at 50 tons at take-off, which roughly corresponds to such jets as the Boeing 727-100 or DC 9-30, which account for most of the flights in the Eurocontrol region. This results in the following formula for the weight factor:

$$\sqrt{\frac{\text{maximum take-off weight}}{50 \text{ tons}}}$$

Remembering that the distance factor was set at 100 km. we see that a DC 9 (weight factor 1) flying 100 km. (distance factor 1) generates one "service unit", which in turn determines the route charge.

However, the service unit varies from country to country, that

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53. C. Silvain, "A Route Charges System for the Whole of Europe?", Eurocontrol Review 2/71.

However, the service unit varies from country to country, that of the Netherlands (the highest) being 3 times as high as that of Ireland (the lowest). This is to reflect factors such as services provided and traffic density. Therefore, the route charge for a given flight is determined by multiplying the number of service units generated in the airspace of a given state by its service unit rate.

In contrast to Eurocontrol's operational functions the charging system applies to the use of both the upper and the lower airspace: the participating states have completely transferred the charging authority to Eurocontrol. Only the approach and departure control services (which extend up to about 20 miles from the airport) have been excluded, as charges for these services are frequently included in the airport fees.

The initial recovery rate was set at 15% of costs, based on 1969 figures. On November 1, 1973, the rate was doubled to 30% (based on 1971 costs), and on November 1, 1975 this rate was again doubled to 60% (based on 1973 costs). Recently the Permanent Commission decided to increase the rate of recovery to 75%, as of November 1, 1977. This amounts to an increase of only 25%, a sharp departure of the 100% increases which had been imposed until now. This move may largely be attributed to pressure from the flag carriers of the Eurocontrol member states upon their national governments. Most of these carriers, particularly Air France and SABENA, are in a precarious financial situation. They

have stressed that an increase to full recovery in 1977 (as had originally been planned) would thwart theim attempts to return to profitable operations.

3. Conclusion.

In spite of the initial objections brought forward by the air carriers the Eurocontrol charging system has been functioning as expected. The gradual progression in the rate of recovery is conform the appropriate ICAO recommendations, as is the timely announcement of new increases. It remains to be seen whether the step to full recovery of costs will be taken before the present Convention expires. As we have mentioned earlier(54) a rate of recovery of between 60 and 75% nepresents, in our view, the maximum to which states should go in making users pay for air navigation services rendered to them. Consequently we would argue that the rate of recovery in the Eurocontrol common route charges system remain at the present level of 75%. The "community benefit" of a well-developed air transport system such as it exists in Western Europe represents a persuasive argument to make the community (i.e. the taxpayer) bear the remaining 25% of the costs of air navigation services.

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54. See p. 49 seq.

CHAPTER D

THE FUTURE OF EUROCONTROL

On November 20, 1975, a Eurocontrol press release was issued bearing the title "Eurocontrol's Future Assured". This language implicitly suggests that Eurocontrol's future had up to then not been all that certain, as indeed it had not, and still is not.

The conclusion that the Organization's future was assured had been drawn by the then President of the Permanent Commission, Netherlands Minister of Transport, Tjerk Westenterp. The Commission had requested him to undertake a fact-finding mission among Eurocontrol's member states to collect points of agreement as to what the Organization's tasks should be after the present Convention expires in 1983.

Westerterp managed to establish agreement on 10 points. Of these the nos. 1, 6, 7 and 9 are of interest for our purposes. Point 1 starts out as follows:

> "It is the Member States' view that Eurocontrol must continue to exist beyond 1983 and that the bases of a new Convention should be established well in advance of that time".

This sentence contains the announcement of the scheduled death of Eurocontrol in its present form. Since no member state wishes to prolong the present Convention at least one of them shall, according to its article 39, paragraph 2, have to denounce the Convention. Intention of such denunciation must be communicated to the Belgian government at least two years before the expiry of the current period: if no state does so the Convention will be automatically prolonged for periods of five years each.(55)

Point 6 reads:

> "The Member States are agreed that Eurocontrol must be organised and managed with a high degree of efficiency, inter alia, in order to justify the route charges levied on the users".

Reading between the lines this sentence reveals criticism at the Organization for not having worked very efficiently in the past. Such criticism is particularly directed at the General Directorate in Brussels. However, it is the member states themselves who earn the major share of criticism for Eurocontrol's lack of efficiency: for a variety of reasons, admittedly sometimes beyond their control, these states have not allowed Eurocontrol to become what it was intended to be. This situation has not been

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55. Art. 39, para 2, Convention.

conducive to a high degree of efficiency in the management of the Organization. Thus the General Directorate has more or less led a life of its own.

As early as 1967 it was observed that Eurocontrol's achievements in its first few years had been strictly limited, partly because of its "somewhat ponderous structure as an international organization".(56) The same observer noted that

> "both successes and obstacles are due essentially to an organization structure that is inevitably rather cumbersome and cannot entirely exclude national political and economic interests, however great may be the good will displayed by the various participants". (57)

It is evident that if the good will displayed by the participants becomes less and less, the national political and economic interests will become increasingly prominent, creating even larger obstacles. Precisely this has been the fate of Eurocontrol.

Returning to the "Westerterp Points" nr. 7 reads as follows:

> "The Member States are in agreement that full membership of Eurocontrol does not necessarily entail the transfer of control of all or part of a State's airspace".

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56. "Eurocontrol - Organization and Planning", Interavia 7/1967.

57. Ibid.

This sentence acknowledges the failure of the starting-point of the present Convention: the transfer by the member states of their responsibility for air traffic services in the upper airspace to the Eurocontrol Agency.[58] Consequently, a next Eurocontrol Convention could go only as far as to make such transfer optional. Meanwhile, the Maastricht Centre is certain to be the first and the last supranational ATC centre in Europe. Although the Dutch government has stated its reasons for delaying the transfer of its ATC responsibility for the upper airspace over its territory, Belgium is now pointing its finger at the Netherlands for frustrating Eurocontrol's further development. Moreover, the Dutch government, on its part, will find it a political impossibility to further delay transfer of ATC functions to the Maastricht Centre.

In Ireland, a projected Eurocontrol Upper Airspace Centre at Shannon is being delayed by the Irish government, which is not convinced of the advantages in any Eurocontrol ATC responsibility over its own airspace.

France and Great Britain have, during recent sessions of the Permanent Commission, made it clear that they do not contemplate any actual transfer of ATC responsibility to Eurocontrol. In fact it has been France which was behind the creation in 1966 of the

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58. See art. 14 Convention.

fictional transfer of responsibility recommended by the Meroni Report.(59)

Lastly, nr. 9 of the "Westerterp Points" deserves quotation:

> "Transfer of air traffic control to Eurocontrol by Member States will depend on national defence considerations as well as those of a political, operational, technical, economic and social (60) nature and must be compatible with the overall aim of ensuring, on a permanent basis, the safest and most efficient air traffic control possible in the Member States' airspace".

It is safe to say that this provision, read in conjunction with point 7, effectively kills off any future possibilities of further transfers by states of ATC operations to Eurocontrol. It is this combination of points 7 and 9 upon which the German federal government based its decision to operate the Karlsruhe UAC itself, with the aim of turning it into a fully national centre upon the expiry of the present Convention. In view of the obligations under the Convention the Karlsruhe Centre will have to be operated on behalf of and under the responsibility of

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59. See p. 82

60. This is a hidden reference to the fear of air traffic controllers of losing their jobs, and complaints about higher salaries earned by Eurocontrol personnel; see p. 84.

Eurocontrol, but the controllers will be supplied by the BFS.[61] At this time (November 1976) this decision by the German government still needs the approval of the Permanent Commission, but as operations outside German airspace are not directly affected it is expected that approval will be obtained.

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61. After the announcement of the German federal government's intentions concern was reported among Eurocontrol personnel about their job security ("De Volkskrant", June 23, 1976). The Director-General of Eurocontrol informed the 40 controllers being trained to work at the Karlsruhe UAC that Eurocontrol could no longer employ them if the German decision would be approved. However, the majority of this group is of German nationality, and the BFS has guaranteed their employment at the Karlsruhe Centre. (Handelingen der Tweede Kamer, Zitting 1975-1976, p. 4153.)

CHAPTER E

CONCLUSION

Is Eurocontrol's future really assured? After examination of the "Westerterp Points", and the developments leading up to the current crisis in Eurocontrol's existence, the answer would have to be in the negative. A continuation of the Organization in its present form seems impossible. It appears certain that none of the member states will want to see the Organization continued on the basis of the present Convention.

Has, therefore, the multinational, integrated provision of Air Traffic Control service proved to be a failure? Not necessarily. In the case of Eurocontrol, subsequent developments made obsolete the operational basis for the Organization's functions.(62) In particular the division of the airspace into upper and lower portions has proved to be a concept which provided no advantages to ATC services as required by jet aircraft.

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62. See p. 88-89.

Additionally, the large member states (Great Britain, France, and the Federal Republic of Germany) appeared to lose interest in Eurocontrol not long after the entry into force of the Convention. France, in particular, became aware of the political and operational difficulties that would be the result of the transfer of ATC responsibility as envisaged by the Convention. For that reason it took the position, embodied in the Meroni Report, that a transfer of ATC responsibility could be carried out on paper only, with services continuing to be provided by the existing national installations.(63) It was the adoption of this position by the other member states in 1966 which marks the beginning of the end of Eurocontrol.

This line of development has now culminated in a situation in which all Eurocontrol member states (with the possible exception of Luxemburg) find themselves bound to an organization from which they have not derived any real benefits in terms of simplification of ATC procedures, as was the objective of the Convention. In fact the only successful function performed by Eurocontrol, as has been pointed out earlier,(64) has been the common route charges system, administered by the Central Route Charges Office in Brussels.

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63. See p. 82.

64. See p. 90.

What, then, is the real future of Eurocontrol? This will largely be determined by the political courage to be displayed by the present member states: before the end of this decade one or more of them will have to take the initiative and produce a draft for a new Eurocontrol Convention, to succeed the present one in 1983.

It seems certain that the Benelux states and the FRG will want to continue the Maastricht Centre: it would be unthinkable, both economically and politically, to discontinue operations at that centre, built at considerable cost, and re-locate them at national centres. Just how the Maastricht Centre will be incorporated into a new Convention (if at all) remains to be seen: its operations do not directly affect the remaining member states.

What does seem certain is that no similar centres will be called for in a second-generation Eurocontrol Organization: the setting up of such centres will be made optional at best.

Another function that is certain to survive is the Central Route Charges Office. Apart from its successful operation another factor strongly contributes to its continuation: a number of third states (Spain, Portugal, Austria and Switzerland) participate in the system. A possible discontinuation would certainly not be welcomed by these states.

Summing up it is safe to predict that only the name "Eurocontrol" will continue to exist. The new organization, if

it does come into being, will be a far cry from the ambitious goal of an integrated Ain Traffic Control service for European upper air space. The new Convention is likely to concentrate on coöperation and coördination, and may include a coördinated training of air traffic controllers at the Eurocontrol Institute of Air Navigation Services in Luxemburg.

The actual provision of, and responsibility for, ATC service will remain within the domain of the national sovereignty of states. In spite of the disappointing outcome of the Eurocontrol experiment, the possibility of an integrated European Air Traffic Control Authority is not dead yet. Experts are convinced of the technical and operational feasibility of such an authority: it would assume control responsibility as soon as the aircraft leaves the departure control area. The aircraft would then remain under the control of the Authority until it approaches its destination, upon which (national) Approach Control would take over. Such a set-up would function without any division of the airspace in upper and lower areas.

The only obstacle that stands in the way of such a plan is the political will of national governments: the Eurocontrol experiment has furnished proof that this obstacle is a formidable one.

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