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**COMMISSION COMMUNICATION TO THE COUNCIL
OF COMMUNITY INITIATIVES CONCERNING
AIR TRANSPORT INCIDENTS AND ACCIDENTS**

Summary

The liberalisation policy of airtransport requires the adoption of accompanying measures to ensure its smooth operation. Airsafety is a vital component of this policy. This communication analysis the different aspects which are linked to aviation incidents and accidents and suggest a number of Community action which could be taken in three main areas.

Community action in the field of mandatory incident reporting systems will concentrate on the study designed to implement a system for coordinating existing databases.

Community action with regard to confidential voluntary incident reporting systems will concentrate on setting up a European system.

With regard to accident investigations, it will be necessary to adapt the existing regulations, establish the criteria for the basic structures in each Member State, provide for basic and further training for investigators, reinforce the investigation bodies, establish closer contacts between the heads of these bodies, create a Community task force and improve the dissemination of information.

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COMMISSION COMMUNICATION TO THE COUNCIL
ON COMMUNITY INITIATIVES CONCERNING
AIR TRANSPORT INCIDENTS AND ACCIDENTS

I. INTRODUCTION

1. Civil aviation is an extremely safe transport mode. Although over one billion people travelled by air throughout the whole world in 1980, there were only 51 accidents involving civil aircraft in air transport world-wide, which resulted in the death of 641 people.¹ While there are still too many victims in absolute terms, there is no denying that the risk of an accident occurring in air transport is very limited.
2. In addition, the level of safety varies considerably in the different parts of the world. Europe has a very good record in this field, being involved in only about 10% of fatal accidents although it accounts for approximately 34% of world air traffic.² Between 1980 and 1980, there were 22 civil aviation accidents involving fatal injury in the Community.
3. This high standard of safety can be improved or maintained only by the constant diligence and sustained efforts of all the players in air transport. Moreover, all the indications are that safety levels, which until now have been constantly improving, are beginning to plateau. Consequently, the foreseeable increase in air transport could in future result in an increase in the number of accidents and of victims, which would be unacceptable.³

1 By way of comparison, 631 people were killed in road accidents in the same year in Denmark, a country whose road safety standards rank among the best.

2 See Annex I.

3 See Annex II.

4. It is therefore necessary not only to improve current aviation safety measures and procedures, but also to explore ways of introducing new ones in areas where there is room for substantial progress without increasing the burdens on operators, e.g. the human factor, which is implicated in one way or another in 80% of air transport accidents. These areas must therefore be carefully identified. For this purpose, valuable information can be drawn from the results of air accident investigations and the analysis of the large number of incidents which, fortunately, did not lead to accidents.

II. AIR SAFETY IN THE COMMUNITY CONTEXT

5. Under Community air transport policy which has been in place since December 1987 there has been a movement towards liberalization of the sector with a package of measures being introduced to harmonize the industry. This will ensure that the single European market has a tailor-made air transport industry by 31 December 1992. To achieve this, accompanying measures will also have to be taken to ensure its smooth operation.
6. Air safety is a vital component of this common air transport policy and appropriate measures should be adopted accordingly. Parliament has repeatedly pointed to the need for practical action. The resolution on Community measures in the field of air transport safety which it adopted on 15 September 1987 in fact contain a large number of specific proposals for Community action.⁴
7. The Commission, concerned to maintain the high safety standard of European air transport, has studied ways of meeting the challenges presented by the expansion of this sector and sought the views of interested parties. A symposium on air safety was held in November 1987.

⁴ OJ C 281, 19.10.1987, p. 51.

The broad range of opinion expressed at this event has enabled the Commission to identify a number of areas in which Community action to improve air safety would be desirable.⁵

8. Any Community action in the field of air safety must take account of the general international context and the work of the relevant international organizations, such as the ICAO and the ECAC.

In the light of the basic principles established by the ICAO, Community action should permit the application of the strictest standards reflecting the Community's level of technological advancement.

9. Any future initiatives taken by the ECAC in this field can only be of benefit to the Community since the twelve Member States' scheduled carriers alone account for 85% of the traffic of the scheduled airlines in the ECAC.⁶ In addition, the Community initiatives should be of a nature that they can also be applied by the member countries of the ECAC who so desire.

5 Proceedings of the Air Safety Symposium, Office for Official Publications of the European Communities, Luxembourg, Catalogue No: CB-54-88-215-EN-C.

6 See Annex III.

III. COMMUNITY ACTIVITIES IN THE FIELD OF INCIDENTS AND ACCIDENTS

10. In an area where technical, economic and political change is particularly rapid, air safety must be founded, among other things, on the recognition and analysis of weaknesses, needs and trends from the moment they appear. This calls for effective detection tools which cover a base broad enough to be statistically relevant while remaining of a manageable size. The data needed to supply such tools may be derived from the incidents registered daily at every stage of air transport and from the conclusions of the investigations following any aircraft accident.

11. In 1978 the Council acknowledged the fundamental importance of these data and their suitability for processing at Community level by including accident investigation in the list of air transport priorities.⁷ Consequently, one of the first legislative measures adopted in this area by the Council was the 1980 Directive on future cooperation and mutual assistance between the Member States in the field of air accident investigation.⁸ This Directive organizes mutual assistance, stipulating that each Member State must endeavour, at the request of a Member State conducting an investigation, to make available installations, facilities, equipment and experts.

It also provides for the exchange of information on incidents and the results of investigations of accidents involving aircraft of less than 5 700 kg.

In view of the progress towards European integration and the completion in 1993 of the internal market, the time has come to make this Directive more effective by updating it to take account of experience gained in this field.

⁷ List of priorities in air transport, adopted by the Council of Transport Ministers in June 1978.

⁸ Council Directive 80/1266/EEC of 16 December 1980 on future cooperation and mutual assistance between the Member States in the field of air accident investigation - OJ No 375, 31.12.1980, p. 32.

12. The opinions expressed in the course of Parliament debates, the Commission symposium and numerous contacts with interested parties have led to the identification of a number of issues that can serve as a guide for future Community work. In order to expand these issues and lay the foundations for a future work programme, four studies were carried out in 1989 at the Commission's request.

(a) PROBLEMS RAISED BY THE DOUBLE ENQUIRY INTO AIR ACCIDENTS

A double enquiry is usually conducted when an air accident occurs. This involves:

- an administrative or technical investigation conducted, in some Member States, by a permanent investigation agency, and, in others, by a commission set up by the Minister of Transport for each air accident. The sole aim of such an enquiry is to determine the causes of the accident to prevent it re-occurring;
- a judicial enquiry usually in the form of a criminal investigation. This is conducted under the authority of a public prosecutor or an examining magistrate or by the police.

This study analyses:

- the legal and institutional foundations of the double technical and judicial enquiry in the twelve Member States of the European Community;
- the relations between technical investigators and judicial authorities in the case of air accidents, particularly the conflicts of interest which may arise between them. Case studies have been made from the technical and judicial investigation dossiers of air accidents that have occurred in Europe;
- the elements of a Community strategy which could be implemented to solve the problems raised by the double enquiry into air accidents.

The study concludes that there is a need for Community initiatives grouped around three priority objectives: promoting the adaptation of the existing legal and institutional framework; harmonizing national legislation on the double enquiry; strengthening cooperation between Member States.

(b) COOPERATION AND SHARED UTILIZATION OF AVAILABLE RESOURCES IN AIRCRAFT ACCIDENT INVESTIGATION

This study analyses the situation regarding accident investigations in each Member State with regard to the legislation in force, current practices, the means available and financial problems, the exchange of information during and after accidents and relations with international organizations and non-Community countries.

It reveals the inadequacy of resources in most Member States to deal with a major aviation disaster and recommends a number of Community measures concerning the organization of meetings of accident investigators, adaptation of legislation, setting up of a task force, joint training of investigators, financing and compilation of accident reports.

The conclusions of this study broadly confirm those of the study referred to in paragraph (a) above.

(c) COMMUNITY AIR SAFETY INFORMATION SYSTEM

The objective of this study was:

- to obtain an inventory of existing regulations on mandatory incident reporting systems and to analyse their content, methods, procedures, storage of data and dissemination of information;
- to make a similar study of the existing confidential voluntary incident reporting systems and examine briefly their legal aspects;
- to survey the opinions of international organizations active or participating in these areas.

It emerges that close examination of the circumstances of aviation incidents can make a substantial contribution to improving safety standards. With regard to mandatory incident reporting, only seven Member States have established systems, which in general are mutually incompatible. The study therefore recommends setting up national systems in the other Member States and examining the possibility of making the data gathered compatible in order to give each Member State access to a broader and, hence, more significant statistical base. The study also demonstrates the potential benefits to safety of confidential voluntary incident reporting systems and stresses the overwhelming desire in aviation circles for the creation of a European system. This is an original initiative of obvious relevance to safety.

(d) LEGAL PROBLEMS POSED BY THE IMPLEMENTATION OF A COMMUNITY VOLUNTARY INCIDENT REPORTING SYSTEM IN THE FIELD OF AIR SAFETY

This study analyses the legal problems likely to arise in France and Spain revealed in the study referred to in paragraph (c).

The analysis shows that the problems identified in these two countries could arise in other Member States, but it also appears that there is not really any genuine legal obstacle in the two countries considered to the introduction of a confidential voluntary incident reporting system.

13. The four studies were widely distributed among the civil aviation administrations of the Member States and the organizations representing the sector. The Commission then organized meetings at which the studies' conclusions and recommendations were examined in detail, and government and private experts had the opportunity to express their opinion both at these meetings and through submission of written comments.

This has enabled the Commission to identify the components of a work programme for the areas in which Community initiatives would be desirable. This work programme is discussed in the following.

IV. INCIDENT REPORTING SYSTEMS

14. The number of accidents in air transport is - fortunately - extremely limited and the valuable information they provide on safety clearly can be gathered only after the event. By contrast, the number of incidents is higher in relative terms. Knowledge and analysis of these incidents therefore make it possible not only to detect trends with the support of a more significant statistical base, but more particularly to take preventive measures.
15. There are two types of incident report: mandatory reports, which are usually administered by the national authorities, and confidential voluntary reports, which are less common and are sometimes administered by independent bodies (there are even some private sector systems). As there are major differences between the two systems, possible Community initiatives in the field will be studied separately in the following.

A. Mandatory systems

16. A system of mandatory incident reporting generally necessitates detailed regulations setting out the categories of persons to which it applies and the type of incidents which have to be notified. The main problem here is that it is extremely difficult to draw up an exhaustive list of incidents which includes all incidents relevant to air safety without at the same time overloading the system with a flood of unimportant information.

17. It is also necessary to distinguish different types of incidents which may call for different treatment: for example, there are incidents of an operational nature such as near-misses, or more technical incidents such as premature wear of a mechanical part, notified by an operator to the aircraft manufacturer and then passed on by the latter to the national authorities. Moreover, different types of incident are covered by separate regulatory texts in national legislation.

18. Seven Member States have mandatory incident reporting systems. These vary in their organization and sophistication. They are generally operated by the national civil aviation authorities. In view of the value of such systems in accident prevention, all countries should have one and all significant incidents should be registered. A first step by the Community could therefore be to establish a number of basic criteria with which these national systems should comply. This would enable countries with no system at present to create one on a harmonized basis. Countries which already have a rudimentary system could improve it on the basis of these criteria. Finally, countries with more advanced systems could check their conformity with the basic criteria to ensure their compatibility with the other countries' systems.

19. It would probably be desirable in the context of a general review of the operation of incident reporting systems to consider the possibility of introducing some measure of immunity for the authors of reports. It should be examined whether refraining from taking sanctions against someone who admits to having committed, in good faith, a minor breach of the aviation regulations might not be beneficial to safety on the whole by enabling a larger number of incidents to be examined.

20. At Community level, it would be desirable to notify all Member States of incidents recorded in any other Member State, as this would both provide better information and broaden the statistical base. As a number of national systems already exist, rather than creating a completely new system, it would be better to try to find a way of making those systems compatible with each other. Following consultations organized by the Commission, Member States were asked to designate their specialists for nomination to a group of technical advisers charged with assisting the Commission's Joint Research Centre in a study designed to develop a coordination system for existing data bases.⁹
21. Such a system would give all Member States access to the data available in the other Member States, making optimum use of the existing infrastructure. In this way, each Member State would remain responsible for its national system and the data in it. If necessary, non-Community countries could also join the system without major technical difficulties. This scope for enlargement would be particularly welcome in view of the growing trend towards specification of technical regulations at international level in the framework of the JAA.¹⁰
22. Account should also be taken in creating this European coordination system of the existing ADREP system of the ICAO in order to avoid recording the same incident twice. Furthermore, by setting up a Community system requiring Member States to adhere to a procedure of systematic incident reporting, it will also be possible to encourage them to be more diligent in feeding the ADREP system, as this leaves something to be desired at present.

⁹ See Annex IV.

¹⁰ Joint Aviation Authorities.

23. The Community incidents data base must not simply be an end in itself. Instead, it must constitute the point of departure for action designed to improve air safety. To this end, it is first necessary to classify incidents by their safety criticality. The more important incidents would therefore be subject to detailed investigation as in the case of accidents.

The next step would be to establish a method of classification and statistical processing which, on the basis of the information contained in the data base, would make it possible to determine trends, alert thresholds and safety indices.

Finally, the users and beneficiaries of the system should also be informed of the results obtained. This will require a study of the most appropriate resources and forms for efficient transfer of the information to the end-user.

24. The incidents subject to mandatory reporting are generally fairly well defined and, as a result, the information obtained most frequently concerns technical shortcomings. Consequently, the mandatory incident reporting systems contain little information on incidents due to human error. Some countries have introduced a confidential voluntary incident reporting system to remedy this situation.

B. Confidential voluntary reporting systems

25. In a confidential voluntary incident reporting system, pilots, air traffic controllers or any other qualified person are requested (and not obliged) to notify any event liable to affect safety in which they may have been involved or which they may have witnessed. Since notification of this type of incident may show up an error or breach of rules for which the report's author could be held responsible, it is necessary to guarantee some degree of confidentiality.

26. If such a system is to function, potential users must be able to transmit their information in total confidence, without fear of being punished as a result of their disclosures. In practice, this appears to exclude the air transport regulatory authorities from setting up a system. In general, these systems are run by bodies independent of the authorities, and the report forms are so designed that the author's personal particulars can be separated from the report itself.

27. The system functions as follows: when an incident report is received, it is immediately examined by a specialist who, if he considers it necessary, will contact the author to obtain additional information. The part of the report containing the identity of the author is returned to him as a receipt, while the circumstances of the incident are registered with care taken to remove details (date, time, etc.) which could serve to identify those involved. This procedure guarantees some immunity to the authors of incident reports to the extent that no deliberate offence or criminal act is involved. Such immunity is in fact automatically guaranteed in the USA by production of the notice of receipt of a voluntary incident report.

28. There are a number of confidential systems in operation at present throughout the world, only one of them in the Community. The two best known are the American ASRS system¹¹ administered by NASA,¹² and the British CHIRP system¹³ administered by the Royal Air Force Institute of Aviation Medicine (RAF-IAM).

Since it was set up, the ASRS has recorded about 60 000 reports and currently receives around 2 000 per month; CHIRP, whose area of cover is limited to the United Kingdom, for its part receives around 200 per year. Generally speaking, the users and operators of these systems are extremely positive about their value to air safety.

29. Consultations organized by the Commission have clearly shown that there is definite interest in the Community in the establishment of a confidential system of voluntary incident reporting. Thus, apart from the UK which has a system in operation, Germany is also considering setting up a system which is currently being studied by the Technical University of Berlin.
30. Given the current state of air transport safety, the human factor is one field in which considerable progress can still be made. A system of confidential voluntary incident reporting is an effective way of gaining insight into the mechanisms of the human factor, and such a system should be independent of national authorities and have a multinational geographical cover. The Commission therefore considers the establishment of a Community system of confidential voluntary incident reporting desirable.

11 Aviation Safety Reporting System.

12 National Aeronautics and Space Administration.

13 Confidential Human Factors Incident Reporting Programme.

This system should be capable of being extended to other European countries wishing to participate and should be compatible with the American ASRS system in order to permit the exchange of information on the data and the resulting analyses.

The system should be established and administered at Community level. It may, however, emerge that daily operation (receipt and initial analysis of the reports) can more effectively be done at national level or at the level of groups of States of similar culture or with certain affinities.

31. From the legal point of view, some national provisions may have to be changed to allow a system guaranteeing confidentiality and some measure of immunity, as this is crucial to the participation of the potential users. However, the results of the study conducted for the Commission show that, while there may be some legal obstacles, they are far from being insurmountable.
32. In contrast to a mandatory system, a voluntary incident reporting system must not be restricted by a list of incidents subject to notification. On the contrary, it must be left to the individual to decide whether an incident he considers important to safety should be notified. This will also enable the voluntary system to offset any shortcomings in the list established for mandatory reports.
33. Like mandatory incident reports, the voluntary system is a basic air safety tool; consequently, the information obtained should be analysed to draw important lessons, and the results, accompanied by any recommendations, transmitted to the regulatory authorities. Finally, the users of the system must be informed of the circumstances of significant incidents and of the resulting action taken.

34. If the purpose of the incident reporting systems is to detect potential hazards and, hence, prevent possible accidents, another important objective is to improve the operation of air accident investigations in the Community.

V. AIR ACCIDENT INVESTIGATIONS

35. When an aviation accident occurs, the causes and circumstances have to be established for a number of reasons. As a result, special attention is focused on the accident site and any witnesses by representatives of the judiciary, the accident investigation bureau, the civil aviation authorities, insurance companies, the manufacturer and aircraft operator, the media, etc. The accident generally gives rise to a legal enquiry to determine responsibility and a technical investigation to determine the cause of the accident. There may also be an administrative enquiry to ascertain whether there was a breach of civil aviation rules, as well as various other enquiries pursuing diverse goals or motivated by specific interests.
36. The ICAO, in Annex 13 to the Chicago Convention, stipulates that the basic objective of technical investigations of air accidents is the prevention of future accidents or incidents and that investigations are not in any way designed to apportion blame or responsibility.

It is therefore the technical enquiry which is of fundamental importance to air safety. However, it has emerged from the studies conducted on behalf of the Commission and the resulting consultations that, in spite of the generally excellent work of the investigators, many aspects of the enquiries leave a great deal to be desired and there is scope for action to improve the way they function.

37. Any Community action in the field of air accident investigation should be based on the principles established by the ICAO and, in particular, the standards and recommended practices set out in Annex 13 to the Convention on International Civil Aviation. Consultations with national experts have shown that it is necessary to use Annex 13 as a general framework and to adapt it to the specific situation of Member States in order to bring about a set of Community rules which harmonize, strengthen and update national regulations.
38. In order to adapt its rules to the development of civil aviation, the ICAO for its part plans to organize a consultation meeting in 1992 on air accident investigations. This meeting should culminate in the revision of Annex 13. At its 14th triennial meeting in June 1991, the ECAC decided to coordinate the positions of its members for the ICAO meeting. This is therefore a good time to take the initiative at Community level and adopt an updated set of regulations. Europe's influence on the revision of the ICAO standards would be all the greater if some measures already had the force of law in the Community which accounts for a major share of world air transport.

A. Preliminary harmonization measures

39. There appears to be a great diversity in the organization of air accident investigation bureaux in the Community both with regard to the extent of the resources (human and material) and to independence vis-à-vis the national aviation authorities. One of the first Community initiatives should therefore be to establish a basic structure in each country which meets certain well-defined minimum criteria.

40. As a result of the establishment of these minimum criteria, there will be a need to recruit and train investigators or to improve the technical skills of some staff in place. It will therefore be necessary to provide training courses open to Member States' nationals. Joint training would facilitate future cooperation between national investigation bodies; Community participation to this end should be considered. In addition, if there is to be greater harmonization of investigators' level of knowledge, joint training should not be limited to basic training but also include continuing training and adaptation to the state of the art. For this purpose, training courses for investigators from all Member States could be organized under the auspices of the European Community.
41. Community measures in the field of student and employee mobility could serve as a basis for organizing long-term training schemes or exchanges between investigation bureaux. In this way, harmonization could also be done "on the job".

B: Measures to strengthen the investigation bodies

42. If the national investigation bodies (and more particularly their representatives sent to the scene of an accident) are to complete successfully the mission entrusted to them, their powers need to be reinforced. Community legislation aimed at strengthening the hand of national technical investigation bodies should probably take account of freedom of access to the information sources necessary to the enquiry, i.e. the wreckage, flight and cockpit voice recorders, victims' bodies, witnesses, etc. It should also define the status of the investigator responsible, particularly with regard to his relations (and possible cooperation) with the judiciary. In Switzerland, for example, technical investigators have equivalent powers to those of the judicial investigators. It should therefore be examined whether this approach can also be applied in the Community.

C. Measures to strengthen cooperation

43. The 1980 Directive on future cooperation and mutual assistance between Member States in air accident investigations laid the foundations for cooperation at Community level. Ten years on, we now have the opportunity to adapt to the latest developments and, if possible, to take a further step towards closer cooperation.

44. Improved cooperation between the various investigation bodies in the Community will necessarily involve the establishment of personal contacts between investigators from the different Member States and also between the heads of these bodies. To this end, an annual or biannual meeting of heads of investigation bureaux could be held, for example, in the country invested with the Council Presidency at the time of the meeting. In addition, seminars could be organized for investigators from the different countries to enable them to swap notes and acquire new knowledge on a uniform basis. These contacts should not always be strictly limited to Community personnel but could also be open to representatives of other European countries, the USA, Canada, the ICAO and the ECAC, as their participation could prove beneficial to all members.

45. On the operational level, it is necessary to have a sufficient number of qualified investigators when a major accident occurs. Few European national bodies have available on a permanent basis the human resources necessary to cope with such a situation, and this is anyway justified by the low probability. At present, in such an eventuality, the country responsible for the enquiry can call on experts from other sources (e.g. representatives of the aircraft or engine manufacturers) or on specialists from other countries on the basis of the 1980 Directive. The major drawback here is that it is always the same countries that come to the aid of the others, often free of charge, which can only accentuate a situation of technical and economic imbalance.

46. It would therefore be desirable to have a pool of resources that could be made available in case of need and at the request of a Member State, particularly if these resources can be reinforced at national level by the measures recommended in paragraphs 39-41 above. A Community "reinforcement team" should therefore be set up, to which all Member States could contribute and on whose services each Member State could call. This would both ensure that the best specialists from each country were available and enable trainee investigators to participate in large-scale operations and thus more rapidly gain the necessary experience. The specific operating expenses of this task force could be funded by the Community.

47. In the same spirit, the Community could be given a role in major, costly investigations such as, for example, when it is necessary to retrieve or gain access to the wreck of an airliner that has crashed into the sea in order to determine the causes of the accident. The costs of such an investigation frequently go beyond the means of national bodies. It might perhaps be necessary to study the possibility of setting up a disaster fund to intervene in such cases.

D. Measures to disseminate information

48. There are many problems concerning the flow of information during or after an investigation. Rules should be established on the flow of information during an investigation, particularly vis-à-vis the media and victims.

Reports published after an investigation should be standardized (based on the work of the ICAO) and their distribution (or publication of significant passages) to interested parties improved, particularly through personal contacts such as described in paragraph 44.

VI. CONCLUSIONS

49. Although air transport has an excellent safety record and the mandatory incident reporting systems and accident investigation bureaux function satisfactorily in most Member States, the current situation could be further improved to arrive at a minimum uniform level throughout the Community.
50. Community action in the field of mandatory incident reporting systems will concentrate on the study designed to implement a system for coordinating existing data bases and the establishment of basic minimum criteria to which the system established (or to be established) in each Member State should conform. The latter will involve defining and establishing a list of incidents, identifying categories of participants in the system and establishing criteria to determine incidents which must be investigated.
51. Community action with regard to confidential voluntary incident reporting systems will concentrate on setting up a European system that takes account of the procedure already existing in the United Kingdom and in the process of being established in Germany. It should also be compatible with its American counterpart.

52. With regard to accident investigations, it will be necessary to adapt the existing regulations taking Annex 13 to the Chicago Convention as a reference, establish the criteria for the basic structures in each Member State, provide for basic and further training for investigators, reinforce the investigation bodies, establish closer contacts between the heads of these bodies, create a Community reinforcement team, study the possible creation of a disaster fund and improve the dissemination of information. The Commission will ask a group of national representatives to define a medium-term programme and, in particular, to

- draw up proposals for the harmonization of national legislation on the basis of Annex 13 of the Convention on International Civil Aviation;
- promote joint training of investigators;
- study the scope for, and practical aspects of, setting up a reinforcement team able, at the request of Member States, to assist in serious accident enquiries both within and outside the Community;
- develop procedures to centralize and distribute information on air safety with the aid, among other things, of data bases, and
- determine and administer the means necessary to the implementation of these objectives.

53. The realisation of these initiatives is founded on the necessary adaptation of the 1930 directive to the evolution of air safety. The Commission intends to submit as soon as possible to the Council a number of pragmatic measures of technical nature intended to fulfill the workprogramme described in paragraphs 49 - 52. At the same time research will be started on the study of human factors in aviation accidents in order to enable the relevant organisations to formulate new operational procedures if deemed necessary.

FATAL ACCIDENTS 1980-1990

1) By nationality of carrier

	USSR AND EASTERN EUROPE	AFRICA	SOUTH AMERICA	NORTH AMERICA	MIDDLE EAST	ASIA AUSTRALASIA	EUROPE	TOTAL
Scheduled	25	8	29	19	6	32	5	124
Non-scheduled	7	7	26	18	2	8	10	78
Regional	3	11	35	47	1	46	18	161
Total	35	26	90	84	9	86	33	363

2) By place where accident occurred

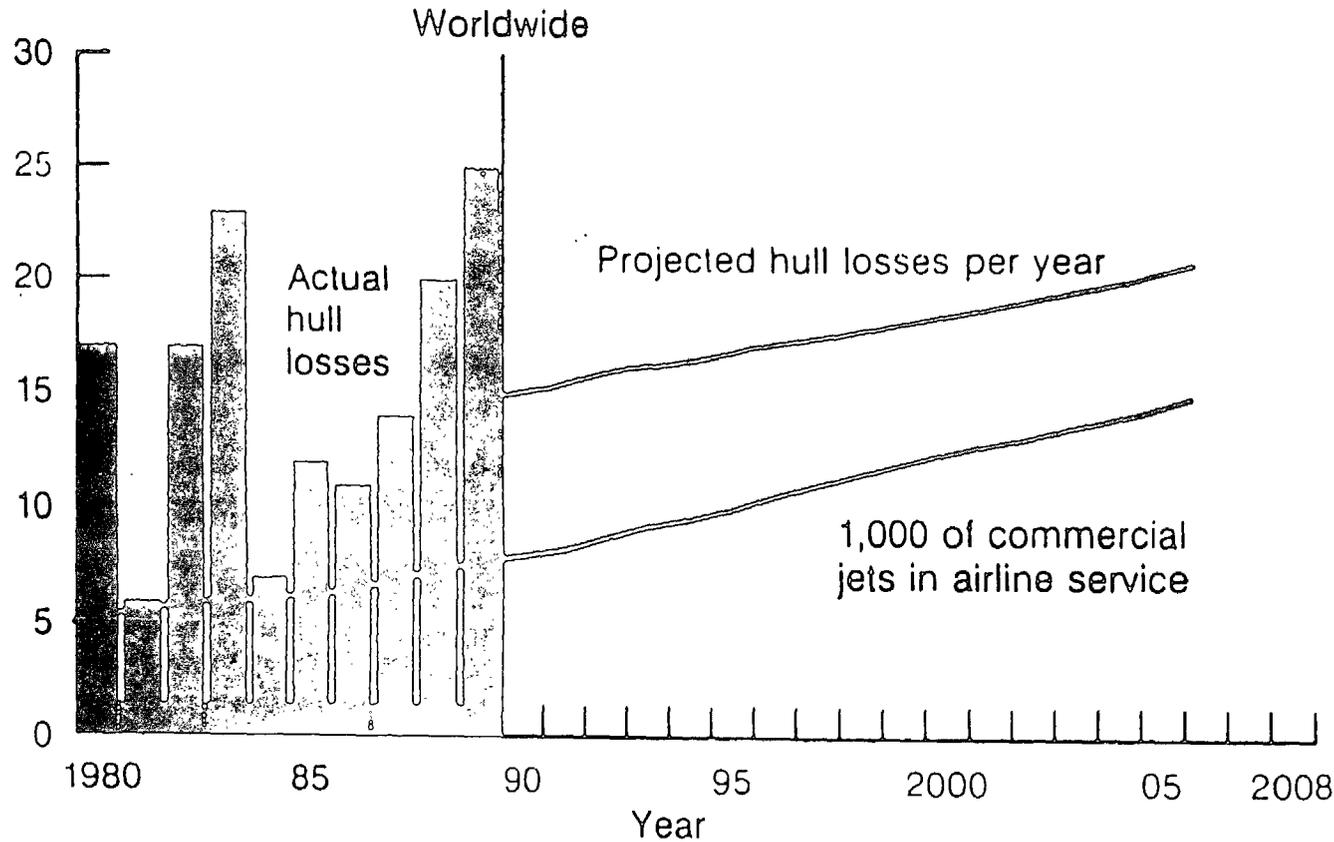
	USSR AND EASTERN EUROPE	AFRICA	SOUTH AMERICA	NORTH AMERICA	MIDDLE EAST	ASIA AUSTRALASIA	NORTH ATLANTIC	EUROPE	TOTAL
Scheduled	23	11	25	20	6	30	1	8	124
Non-scheduled	5	10	26	16	1	9	-	11	78
Regional	3	11	36	46	1	46	-	18	161
Total	31	32	87	82	8	85	1	37	363

Note : - Source: Flight International
 - Excluding acts of sabotage, hijacking or military action

27/24

Hull Loss Accident Statistical Projection*

Based on Continuation of Accident Rate Over Past 10 Years and Expected Fleet Growth



Source: BOEING

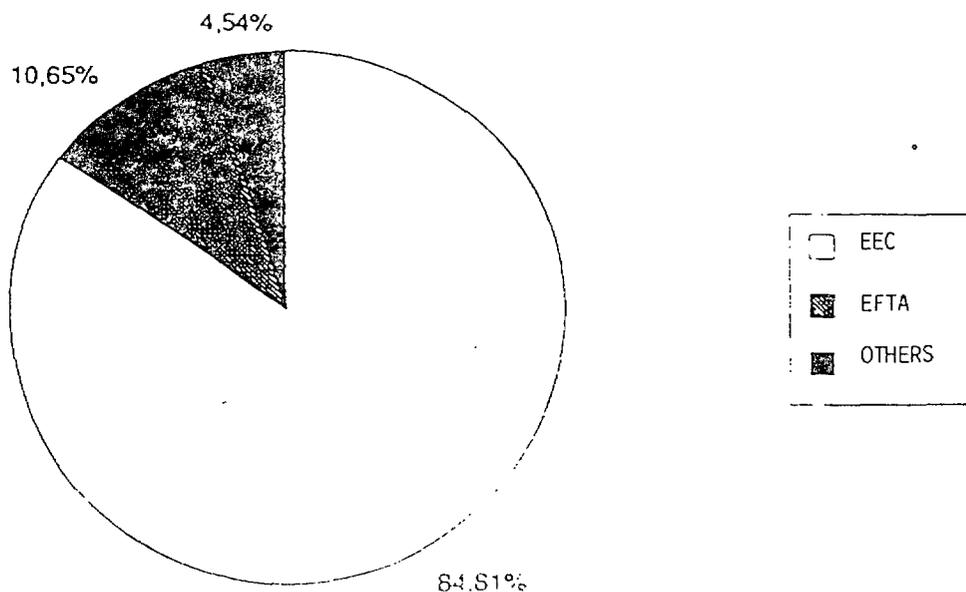
AL1659 23 HR5G

MEMBER COUNTRIES OF THE ECAC

SCHEDULED AIR TRANSPORT UNDERTAKINGS
TRAFFIC BY COUNTRY, 1988 (in million tonne-kilometres travelled)

MEMBER COUNTRIES	SCHEDULED TRAVEL	Non-scheduled TRAVEL	TOTAL
UNITED KINGDOM	11064	2937,4	14001,4
FRANCE	8032	39,5	8071,5
GERMANY (RFA)	6908	24,9	6932,9
NETHERLANDS	4196	218,7	4414,7
ITALY	2782	72,2	2854,2
SPAIN	2624	47,1	2671,1
SWITZERLAND	2276	15,2	2291,2
BELGIUM	1265	1,8	1266,8
SWEDEN	893	5,5	898,5
YUGOSLAVIA	670	189,9	859,9
FINLAND	466	383,9	849,9
GREECE	793	28,1	821,1
NORWAY	649	138	787
PORTUGAL	664	0,7	664,7
DENMARK	487	103,6	590,6
IRELAND	418	67,2	485,2
TURKEY	383	71	454
POLAND	250	97,9	347,9
AUSTRIA	214	66,7	280,7
ICELAND	249	17,9	266,9
HUNGARY	221	17,3	238,3
HUNGARY	175	21,4	196,4
CYPRUS	66	126	192
MALTA			
LUXEMBOURG	14	-	14
MONACCO	-	-	-
TOTAL EEC	39247	3541,2	42788,2
TOTAL ECAC	45759	4691,9	50450,9

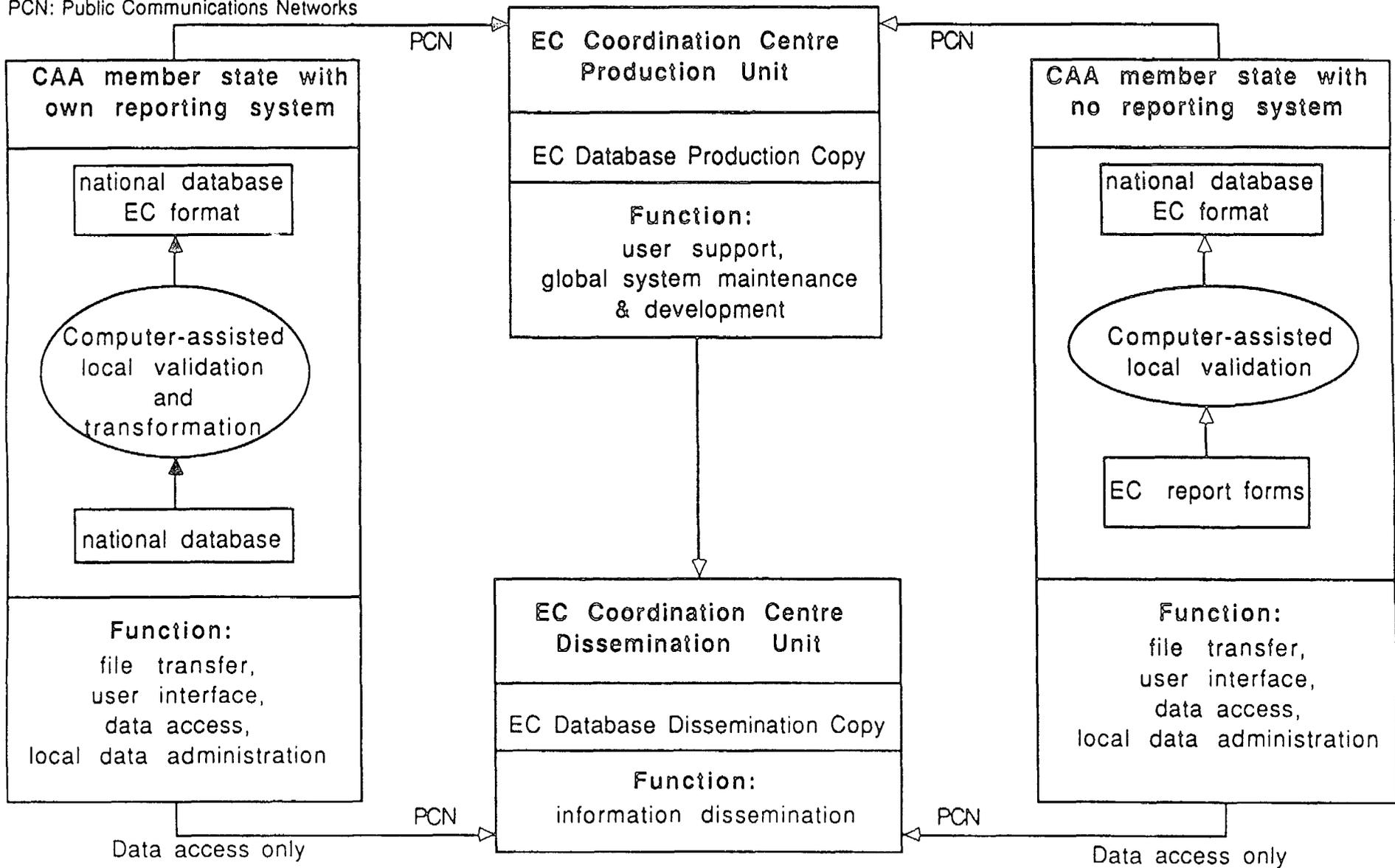
Source: ICAO doc.9180/14



European Mandatory Incident Reporting System

October 90
Information Systems Sector
JRC Ispra

PCN: Public Communications Networks



27.