

ICAO

CIRCULAR

CIRCULAR 223-AN/133



1989

ACCIDENT/INCIDENT REPORTING (ADREP)

ANNUAL STATISTICS — 1986

*Approved by the Secretary General
and published under his authority*

**INTERNATIONAL
CIVIL AVIATION
ORGANIZATION
MONTREAL • CANADA**

Published in separate English, French and Spanish editions by the International Civil Aviation Organization. All correspondence, except orders and subscriptions, should be addressed to the Secretary General.

Orders for this publication should be sent to one of the following addresses, together with the appropriate remittance (by bank draft or post office money order) in U.S. dollars or the currency of the country in which the order is placed.

Document Sales Unit
International Civil Aviation Organization
1000 Sherbrooke Street West, Suite 400
Montreal, Quebec
Canada H3A 2R2

Egypt. ICAO Representative, Middle East Office, 16 Hassan Sabri,
Zamalek, Cairo.

France. Représentant de l'OACI, Bureau Europe, 3 bis, villa Émile-Bergerat,
92522 Neuilly-sur-Seine (Cedex).

India. Oxford Book and Stationery Co., Scindia House, New Delhi
or 17 Park Street, Calcutta.

Japan. Japan Civil Aviation Promotion Foundation, 15-12, 1-chome, Toranomon,
Minato-Ku, Tokyo.

Kenya. ICAO Representative, Eastern and Southern African Office, United Nations
Accommodation, P.O. Box 46294 Nairobi.

Mexico. Representante de la OACI, Oficina Norteamérica, Centroamérica y Caribe,
Apartado postal 5-377, C.P. 11590, México 5, D.F.

Peru. Representante de la OACI, Oficina Sudamérica, Apartado 4127, Lima 100.

Senegal. Représentant de l'OACI, Bureau Afrique occidentale et centrale,
Boîte postale 2356, Dakar.

Spain. Pilot's, Suministros Aeronáuticos, S.A., C/Ulises, 5-Oficina Núm. 2, 28043 Madrid.

Thailand. ICAO Representative, Asia and Pacific Office, P.O. Box 614, Bangkok.

United Kingdom. Civil Aviation Authority, Printing and Publications Services,
Greville House, 37 Gratton Road, Cheltenham, Glos., GL50 2BN.

Do you receive the ICAO BULLETIN?

The **ICAO Bulletin** contains a concise account of the activities of the Organization as well as articles of interest to the aeronautical world.

The **Bulletin** will also keep you up to date on the latest ICAO publications, their contents, amendments, supplements, corrigenda and prices.

Available in three separate editions: English, French and Spanish.
Annual subscription: U.S.\$20.00 (surface mail); U.S.\$25.00 (air mail).

TABLE OF CONTENTS

	Page
Introduction	(iii)
TABLE I - Accidents and Incidents by Type of Operation and Aircraft Mass (1986)	(v)
TABLE II - Accidents and Incidents to Aeroplanes by Type of Operation and Powerplant (1986)	(vi)
PART I ACCIDENTS TO AEROPLANES	
Airline Operations	I-1
General Aviation	I-4
PART II ACCIDENTS TO HELICOPTERS	
Airline Operations	II-1
General Aviation	II-3
PART III INCIDENTS	
Airline Operations	III-1
General Aviation	III-3

THIS PAGE INTENTIONALLY LEFT BLANK

INTRODUCTION

General

The information in this publication is based on 531 accident and 82 incident reports of the ICAO ADREP system for the year 1986 for aircraft of a maximum certificated take-off mass over 2 250 kg. The statistics were compiled in October 1989.

A new coding scheme for factors was introduced in 1988. Old data were recoded to the new format. Factors were recoded only for the years 1983 and following. Some precision may have been lost in the process.

The presentation format of these statistics differs from previous years. This was done to simplify production and presentation. Due to lack of recoded data, only three years could be used for comparison with 1986.

Purpose

The purpose of the ADREP statistics is to provide data that may be useful for general safety studies and accident prevention. For more specific needs the ADREP system provides information in response to specific ADREP requests.

Data Base

These statistics are based on 613 occurrences. Of these, 544 were Data Reports and 69 were Preliminary Reports. Preliminary reports do not contain factors and are therefore excluded from the compilation of statistics on factors.

Limitations

When considering the information presented, the reader must be aware of the following limitations and conventions:

- a) The ADREP manual contains coding instructions; nonetheless, there may be some unintentional bias on the part of the person coding the information.
- b) Some occurrences are reported to ICAO on computer tapes and processed through a conversion programme before they are entered in the ADREP data bank. Since some of the data on these tapes are not compatible with the ADREP coding system, precision is not attainable in all cases.
- c) Accidents reported to ICAO before 1988 were classified in a format that differs from the one used now. These data were recoded to the extent possible.

Notes on the Statistical Tables

- a) Each accident/incident may be described by up to five events. For each event, a type of event, a corresponding phase of operation and up to 10 descriptive factors can be coded.
- b) In the lists presenting comparisons, only data representing significant differences are presented. "Significant" here means that the difference exceeds the average difference in a given list by more than one standard deviation. Accordingly, lists in which none of the groups of factors show a significant difference are omitted.

Format

There are three parts:

- Part I Accidents to Aeroplanes;
- Part II Accidents to Helicopters; and
- Part III Incidents.

Each part is divided into separate sections for "Airline Operations" and "General Aviation".

The format within each section is the same, showing the following:

- Phases of operation for that section;
- Types of events for that section;
- A comparison of the year 1986 with the preceding three years by:
 - phase of operation,
 - type of event,
 - personnel factors,
 - airframe factors,
 - powerplant factors,
 - aircraft systems factors,
 - helicopter components factors (when applicable),
 - aerodrome factors, and
 - weather factors.

TABLE I - ACCIDENTS AND INCIDENTS BY TYPE OF OPERATION AND AIRCRAFT MASS (1986)

I. ACCIDENTS TO AEROPLANES

	Number of Reports		Number of Occurrences			Number of Fatalities				Number of Aircraft Destroyed
	PR (1)	DR (2)	Fatal	Non-Fatal	Total	Crew	Pax	Other	Total	
Scheduled Airline Operations										
Aeroplanes over 27 000 kg	15	39	9	45	54	24	420	15	459	6
Aeroplanes between 2 250 and 27 000 kg	5	33	10	28	38	13	84	0	97	11
Non-scheduled Airline Operations										
Aeroplanes over 27 000 kg	1	5	1	5	6	3	0	0	3	2
Aeroplanes between 2 250 and 27 000 kg	18	84	25	77	102	29	92	1	122	34
Other Airline Operations										
Aeroplanes over 27 000 kg	0	1	0	1	1	0	0	0	0	0
Aeroplanes between 2 250 and 27 000 kg	7	21	8	20	28	13	0	0	13	10
Airline Operations (Total by mass)										
Aeroplanes over 27 000 kg	16	45	10	51	61	27	420	15	462	8
Aeroplanes between 2 250 and 27 000 kg	30	138	43	125	168	55	176	1	232	55
General Aviation										
Aeroplanes over 5 700 kg	2	19	11	10	21	25	34	0	59	11
Aeroplanes between 2 250 and 5 700 kg	17	219	70	166	236	81	108	1	190	87
II. ACCIDENTS TO HELICOPTERS										
Airline Operations	0	9	4	5	9	4	45	3	52	4
General Aviation	4	32	7	29	36	8	8	0	16	11
III. INCIDENTS										
Airline Operations	0	73	0	73	73	0	0	0	0	1
General Aviation	0	9	0	9	9	0	0	0	0	0

(1) Preliminary Report

(2) Accident/Incident Data Report

TABLE II - ACCIDENTS AND INCIDENTS TO AEROPLANES BY TYPE OF OPERATION AND POWERPLANT (1986)

	Number of Reports		Number of Occurrences			Number of Fatalities				Number of Aircraft Destroyed
	PR (1)	DR (2)	Fatal	Non-Fatal	Total	Crew	Pax	Other	Total	
Scheduled Airline Operations										
Jet	15	83	8	90	98	24	420	15	459	6
Turbo-Prop	4	31	6	29	35	8	55	0	63	8
Piston	1	16	5	12	17	5	29	0	34	3
Non-Scheduled Airline Operations										
Jet	1	13	0	14	14	0	0	0	0	2
Turbo-Prop	2	16	8	10	18	15	75	0	90	8
Piston	16	71	18	69	87	17	17	1	35	27
Other Airline Operations										
Jet	0	1	0	1	1	0	0	0	0	0
Turbo-Prop	3	2	2	3	5	6	0	0	6	1
Piston	4	23	6	21	27	7	0	0	7	9
General Aviation										
Jet	1	20	7	14	21	21	33	0	54	8
Turbo-Prop	3	46	18	31	49	22	22	0	44	21
Piston	15	180	56	139	195	63	87	1	151	69

(1) Preliminary Report

(2) Accident/Incident Data Report