

S.No 37

REFERENCE COPY



सत्यमेव जयते

REFERENCE COPY  
Air Safety Directorate Library

भारत सरकार  
GOVERNMENT OF INDIA

नागर विमानन विभाग  
CIVIL AVIATION DEPARTMENT

दुर्घटना सार  
ACCIDENT SUMMARY

1987

विमान सुरक्षा निदेशालय  
नागर विमानन विभाग  
नागर विमानन मंत्रालय

AIR SAFETY DIRECTORATE  
CIVIL AVIATION DEPARTMENT  
MINISTRY OF CIVIL AVIATION

Air Safety Directorate Library





भारत सरकार  
GOVERNMENT OF INDIA

नागर विमानन विभाग  
CIVIL AVIATION DEPARTMENT

दुर्घटना सार  
ACCIDENT SUMMARY

1987

विमान सुरक्षा निदेशालय  
नागर विमानन विभाग  
नागर विमानन मंत्रालय

AIR SAFETY DIRECTORATE  
CIVIL AVIATION DEPARTMENT  
MINISTRY OF CIVIL AVIATION



## CIVIL AVIATION AIRCRAFT ACCIDENT SUMMARY FOR THE YEAR 1987

### 1. INTRODUCTION

The information contained in this publication is 38th in the series. 'Notifiable accidents', which took place in India during the year 1987 have been listed in a classified chronological order along with the summary and the causes of the accidents.

There have been 10 accidents during the year. All these accidents occurred to Indian registered aircraft. None of these accidents proved fatal.

All these accidents have been investigated by Inspector of Accidents.

Incidents such as precautionary landings, forced landing, aborted take-offs, airmisises, bird strikes etc. are not listed in this publication, although all these have been investigated.

The recommendations emanating from all such investigations of accidents and incidents are being implemented for enhancing the level of air safety. Statistical data of accidents and fatalities in respect of airlines operations including flying/gliding clubs and aerial operation is given in tables I to IX.

Note : All timings given in this publication are in Ist (Indian Standard Time).



## Accident

## 2 DEFINITIONS

An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, in which :—

- a) a person is fatally or seriously injured as a result of being in or upon the aircraft or by direct contact with the aircraft or any thing attached thereto; except when the injuries are from natural causes self inflicted or inflicted by other persons or when the injuries are to stow-aways hiding outside the area normally available to the passengers and crew; or
- b) the aircraft sustains damage or structural failure which adversely affects the structural strength, performance or flight characteristics of the aircraft and would normally require major repair or replacement of the affected component; except for engine failure or damage when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tyres, brakes, fairings, small dents or puncture holes in the aircraft skin, or
- c) the aircraft is missing or is completely inaccessible.

**NOTE :—**An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.

## Serious Injury

An injury which is sustained by a person in an accident and which :

- A) Requires hospitalisation for more than 48 hours, commencing within seven days from the date the injury was received ; or
- B) Results in a fracture of any bone (except simple fractures of fingers, toes, or nose); or
- C) Involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or
- D) Involves injury to any internal organ; or
- E) Involves second or third degree burns, or any burns affecting more than five percent of the body surface.

## Substantial Damage

Any damage which necessitates the replacement or extensive repair or any major component.



### 3. INVESTIGATION OF ACCIDENTS

(Aircraft Rules, 1937)

#### Rule 71 — Inspector's Investigation

The Director General may order the investigation of any accident involving an aircraft whether such accident is required to be notified under rule 68 or not and may by general or special order appoint any person (hereinafter referred to as an "Inspector of Accidents" for the purpose of carrying out such investigation.

#### Rule 74 — Committee of Inquiry

The Central Government may at its discretion appoint a committee of inquiry composed of two or more persons to hold an inquiry into an accident in which an aircraft is involved and such a committee shall have the same powers as an inspector of Accidents.

#### Rule 75 — Formal Investigation

Where it appears to the central Government that it is expedient to hold a formal investigation of an accident it may, whether or not an investigation or an inquiry has been made under rule 71 or 74, by order direct a formal investigation to be held.

The Central Government shall appoint a competent person (referred as Court) to hold the investigation and may appoint one or more persons possessing legal, aeronautical, engineering or other special knowledge to act as assessors to the court.

The Court shall hold the investigation in open court in such manner and such conditions as the Court may think fit for ascertaining the causes and circumstances of the accident and for enabling it to make the report hereinafter mentioned :

Provided that where the Court is of opinion that holding the investigation is likely—

- a) to be prejudicial to the interests of any country ; or
- b) To jeopardise the personal safety of a person who is willing to make any statement or give evidence, the court may hold in camera , the whole or part of the investigation.



#### 4. TYPES OF FLYING

##### 2. Airline Operation

The operation include all scheduled, non-scheduled and non-revenue flying by Indian Airlines, Air India and Vayudoot.

##### 2. Non-scheduled Operations

The operations include all scheduled, non-scheduled ferry, non-revenue, charter and test flying by other operators holding non-scheduled operator permit and engaged primarily in such operations.

##### 3. Flying Training

Includes all flights for the purpose of initial issue of a flying licence, for conversion and practice flying for qualifying for renewal/endorsement of pilots licence and test and ferry flying by organisation engaged primarily in flying training.

##### 4. Aerial Work

Includes aerial survey, aerial, mustering on a commercial basis, aerial ambulance, aerial agricultural operations etc. and test and ferry flying by organisation engaged principally in aerial work-operations.

##### 5. Private and Business

Includes private, pleasure and business flying and practice flying where the flying is not directly connected with the purpose of obtaining a higher licence qualifications.



Av. 15013/9/87-A2

5

# AIRLINE OPERATION—1

1. Aircraft : Type : F-27  
Registration : VT-DMB
2. Date & time : 6th July, 1987: 0743 hrs.
3. Location : Cooch Behar (West Bengal)
4. Type of operation : Scheduled operation—domestic
5. Persons on board : Crew: 3; Passengers :21
6. Injury index :

	Fatal	Serious	Minor/None
Crew	Nil	Nil	3
Pax.	Nil	Nil	21
Others:	Nil	Nil	—
7. Damage to aircraft : Substantial
8. Pilot-in-Command : Licence : SCPL  
Age : 37 years  
Total hrs. : 4429

## Summary

Vayudoot F-27 aircraft VT-DMB was operating scheduled flight PF-707 from Calcutta to Cooch Behar on 6-7-1987. The aircraft had a total of 3 crew members and 21 passengers on board. The flight from Calcutta to Cooch Behar was uneventful. After reaching overhead Cooch Behar, heavy rain was encountered and the visibility deteriorated. The aircraft circled over the airfield 5 times before executing landing. While landing, the aircraft overhshot the runway and got bogged in the wet kutchra area. The nose wheel of the aircraft got bogged into the soft over run area and got broken. The aircraft sustained substantial damage.

No person on board sustained any injury and there was no fire.

The cause of the accident has been attributed to pilot effecting late touch down with higher speed under the prevailing heavy rains.

The decision to land in visibility below minima condition and existence of tall trees in the approach funnel were the contributory factors.

- Factors :
1. Personnel —Pilot—Aircraft handling
  2. Others —(i) Weather  
(ii) obstruction close to runway.

Dele b...



AV. 15013/10/87 - 115

②

6

# AIRLINE OPERATION—2

1. Aircraft	: Type : B-737			
	Registration : VT-EDS			
2. Date & time	: 1st November, 1987; 0641 hrs.			
3. Location	: Bangalore			
4. Type of Operation	: scheduled operation—domestic			
5. Persons on Board	: Crew: 6+1 (SNY); Passengers : 54			
6. Injury index	:	Fatal	Serious	Minor/None
	Crew :	Nil	Nil	6+1 (SNY)
	Pax. :	Nil	Nil	54
	Others :	Nil	Nil	—
7. Damage to aircraft	: Substantial			
8. Pilot-in-Command	: Licence] :	ALTP		
	Age :	39 years		
	Total hrs. :	8933		

## Summary

Airlines B 737 aircraft VT-EDS was operating a scheduled flight IC-513 on 1-11-1987. There were 7 crew members, including one supernumerary pilot, and 53 passengers on board. Take off from Madras was uneventful except the flight crew heard unusual sound from the nose landing gear area during gear retraction. All the three landing gears got retracted and locked in up position and the pilot continued the flight to Bangalore without any further abnormal observation.

During landing when the aircraft was at short finals, the commander informed Air Traffic Control that nose landing gear position indicator light was red. Gear was recycled but had no effect. Observation through the nose gear viewer confirmed that gear was not in down locked position. There after, a low pass at about 300 feet was carried out in front of the control tower and Air Traffic confirmed that all the three gears appeared to be down and in position. The aircraft made a normal touch down on main gears and the flight crew tried to keep the nose up as far as possible during landing roll. The nose structure came in contact with the runway at about 4000 feet from the beginning of the runway and the aircraft stopped after covering about another 1300 feet. The aircraft nose section suffered substantial damage.

All occupants escaped unhurt. There was no fire.

The cause of accident has been attributed to non-locking of the nose landing gear in down position which was most probably due to downwards shifting of the nose landing gear actuator attachment point subsequent to failure of vertical leg of its attachment fitting under fatigue and 'T' section longitudinal beam under stress corrosion cracking.

Factors : Aircraft—Landing gear.



## NON-SCHEDULED OPERATION

1. Aircraft : Type : DC-3  
Registration : VT-DFM

2. Date and time : 13th April, 1987; 0850 hrs.

3. Location : Jaisalmer (Rajasthan)

4. Type of operation : Non-scheduled operation

5. Persons on board : Crew : 5, Passengers: 28

6. Injury index :

	Fatal	Serious	Minor/None
Crew :	Nil	Nil	5
Pax. :	Nil	Nil	28
Others :	Nil	Nil	—

7. Damage to aircraft : Destroyed

8. Pilot-in-Command :

Licence :	ALTP
Age :	50 years
Total Hrs. :	12,500

## Summary

DC-3 aircraft, VT-DFM, operated by M/s Air Works India was engaged in a charter flight for Oil and Natural Gas Commission from Jaisalmer to Baroda on 13-4-1987. There were 33 persons on board including 5 crew members. During take off from Jaisalmer airfield, the commander experienced yaw to the left which could not be corrected by him. When the aircraft was about to leave the paved surface, the commander prematurely attempted lift off. The aircraft momentarily became airborne and unable to sustain flight due to low flying speed impacted the kutchha side strip on the left side of the runway. The aircraft got destroyed due to impact force and post impact fire.

During the process of evacuation nineteen passengers and four crew members received minor injuries.

The cause of accident has been attributed to commander attempting take off after experiencing uncommanded and uncontrollable yaw to the left during take off roll and executed pre-mature lift off to avoid aircraft rolling on to kutchha surface resulting in the aircraft to crash on to the ground.

Loss of directional control was probably due to deflation of left wheel which was a contributory factor to the accident.

Factors : Personnel—Pilot—Aircraft handling.

1. IDENTIFICATION—(1) : 13013/7/87

2. STATUS—(2) : 13013/7/87



Av. 15013/11/87-As

8

(4)

FLYING TRAINING/GLIDING

1. Aircraft	: Type : Rohini Glider			
	: Registration : VT-GDM			
2. Date & time	: 11th January, 87: 1430 hrs.			
3. Location	: Jalandhar			
4. Type of operation	: Test flight			
5. Persons on Board	: Crew: 1; Passengers: 1			
6. Injury index	:	Fatal	Serious	Minor/None
	Crew :	Nil	Nil	1
	Pax. :	Nil	Nil	1
	Others :	Nil	Nil	—
7. Damage to aircraft	: Substantial			
8. Pilot-in-Command	: Licence : GPL			
	Age : 40 years			
	Total launches : 12958			

Summary

Rohini Glider VT-GDM, operated by Northern India Flying Club, Jalandhar was engaged in a test flight at Jalandhar on 11-1-1987. An employee of the club was also carried on board to substitute for ballast required to make up the minimum load for operating Glider for test flight. The pilot took-off in a tail wind condition and released the cable at a low height of about 100-130 feet above ground level. The pilot thereafter executed a right hand procedure turn to land from the opposite direction and during the inbound portion of the turn the glider struck the ground in left bank attitude and sustained substantial damage.

Both the occupants escaped unhurt. There was no fire.

The cause of the accident has been attributed to pilot's inability to judge glider's height in a turn and bring the glider in landing attitude in time for a normal landing.

Decision to take-off in tail-wind conditions, abandon the launch at insufficient height and execute procedure turn to land from opposite direction were the contributory factors of the occurrence.

Factors: (1) Personnel—Pilot—Misjudged altitude

(2) Personnel—Pilot—Operational decision,

Draw



Av. 15012 / 6/87 - AS

9

(5)

# FLYING TRAINING—2

1. Aircraft	: Type : Pushpak			
	: Registration: VT-DQB			
2. Date & time	: 24th March, 1987; 1053 hrs.			
3. Location	: Nagpur			
4. Type of operation	: Training flight			
5. Persons on board	: Crew : 1;	Passengers : 1		
6. Injury index	:			
	Crew :	Fatal	Serious	Minor/None
	Pax. :	Nil	1	Nil
	Others :	Nil	1	Nil
		Nil	Nil	—
7. Damage to aircraft	: Substantial			
8. Pilot-in-Command	: Licence : PPL			
	: Age : 25½ years			
	: Total hrs : 193.15			

## Summary

Pushpak Aircraft VT-DQB, operated by Nagpur Flying Club, was engaged in a training flight at Nagpur on 24-3-87. The aircraft was under the command of a trainee pilot and there was also one passenger on board. After a successful training sortie, while landing, the aircraft contacted the runway on its right main landing gear and tail wheel and bounced twice. The pilot opened engine power to go-around but the aircraft could not be controlled by the pilot and it swung to the right side of the runway. The aircraft continued rolling forward and impacted the side of a nullah and sustained substantial damage.

Both occupants on board sustained serious injuries.

There was no fire.

The cause of the accident has been attributed to inability of the pilot to maintain directional control of the aircraft while attempting a go-around, subsequent to bounced landing as a result of his improper landing technique.

Factors: Personnel—Pilot—Aircraft handling.

5/6/88



Av. 150/3/3/87 - A3

10

## AERIAL WORK—1

(12)

1. Aircraft : Type: Hiller helicopter  
Registration : VT-EKA

2. Date & time : 4th March, 1987; 1240 hrs.

3. Location : Narrakal (Near Cochin)

4. Type of operation : Aerial application

5. Persons on board : Crew: 1; Passengers : 2

6. Injury index :

	Fatal	Serious	Minor/None
Crew :	Nil	1	Nil
Pax. :	Nil	2	Nil
Others :	Nil	Nil	

7. Damage to aircraft : Substantial

8. Pilot-in-Command : Licence : CHPL  
Age : 43 years approx.  
Total hrs : 5000 approx.

## Summary:

Hiller helicopter VT-EKA, operated by Directorate of Agricultural Aviation, was engaged in a crop spraying operation on 4-3-1987. After completion of spraying mission, the helicopter was to be ferry flown from Cheemoni to Cochin. As the flight was for longer duration, the auxiliary fuel tanks were installed, one on each side of the helicopter. The helicopter took off from Cheemoni with three persons on board including two passengers. When the helicopter was about 15 miles from Cochin, the engine started back firing accompanied with surging of RPM and finally the engine stopped. In the process, the helicopter came down to 500 ft AGL, while auto-rotating, the pilot tried to locate a suitable place for a forced landing. During descent, the helicopter hit a coconut tree and landed on a tiled roof of a near by house. It finally came to rest in the court-yard in front of the house resulting in its substantial damage.

All the three persons on board received serious injuries. There was no fire. The cause of accident has been attributed to the helicopter impacting on top of a tiled roof house after the engine cut off due to fuel starvation at low height on account of pilot's failure to transfer fuel from auxiliary tanks to the main tanks.

Factor: Personnel : Pilot—Mismanagement of fuel.

Delivered

15/03/1987

(1)

15/03/87



AV. 15213/8/87-A5

11

13

# AERIALWORK-2

1. Aircraft : Type: Bell 47 G5 Helicopter  
Registration : VT-DZR
2. Date & time : 5th June, 1987; 0857 hrs.
3. Location : Near Village Kalikavu (Kerala)
4. Type of operation : Aerial application
5. Persons on board : Crew : 1, Passengers : Nil
6. Injury index

	Fatal	Serious	Minor/None
Crew :	Nil	Nil	1
Pax. :	Nil	Nil	Nil
Others :	Nil	Nil	—

7. Damage to aircraft : Substantial
8. Pilot-in-Command : Licence: CHPL  
Age 57 years approx.  
Total hrs : 7509.

## Summary

Bell 47 G-5 Helicopter VT-DZR operated by M/s P. L. Finance and Investment Ltd. Madras, was engaged in aerial spray operation over rubber plantation near village Kalikavu (Kerala) on 5-6-1987. The pilot carried out 6 sorties uneventfully. During the 7th sortie, the pilot experienced engine malfunction during the 3rd spray run. The pilot abandoned the spray operation and proceeded straight towards a group of small paddy fields located down hill about 2 to 3 kms. away from the area under spray. When the helicopter was about half a kilometre away from the paddy field, the engine ceased and the pilot was forced to land. During forced landing, the pilot pulled the cyclic control fast to arrest the forward speed of the helicopter thereby causing the tail rotor guard to hit the ground and the main rotor blade tips came in contact with the tail boom assembly resulting in substantial damage to the helicopter.

The pilot escaped unhurt. There was no fire.

The cause of the accident has been attributed to fast pulling of cyclic control while force landing in an unprepared area consequent to engine failure in flight resulting in substantial damage to the helicopter.

Failure of the engine during the flight was due to loss of lubricating oil due external leakage from a non-standard gasket installed between engine oil pump and the check valve.

- Factor: (i) Personnel—Pilot—Aircraft handling  
(ii) Personnel—Improper maintenance (Maintenance personnel).

Stella (1)  
(2)  
(3)



AV 15013/2/87-As

12

PRIVATE-1

(14)

1. Aircraft : Type : Navion  
Registration : VT-DFA
2. Date & Time : 14th February, 1987; 1245 hrs
3. Location : Village Guddah (Rajasthan)
4. Type of operation : Private
5. Persons on Board : Crew : 1; Passengers : 3
6. Injury index :
 

	Fatal	Serious	Minor/None
Crew	Nil	Nil	1
Pax.	Nil	Nil	3
Others	Nil	Nil	—
7. Damage to aircraft : Substantial
8. Pilot-in-Command :
 

Licence	: ALTP
Age	: 43 years
Total Hrs.	: 7899

Summary

Navion aircraft VT-DFA, operated by Industrial Cables (India) Ltd., New Delhi, was engaged in a private flight from Lal chand Nagar (Jhird) to Jaipur on 14-2-1987. There were four persons on board including the pilot. During the flight the pilot experienced engine sputtering with drop in r.p.m. He adjusted the engine controls and transferred fuel from the auxiliary tank. The engine continued coughing and finally shut down in flight. The pilot forced landed the aircraft on the dry Sahas di river bed which was on his track to Jaipur. After contacting the dry sandy surface, the aircraft rolled forward on its wheels for about 200 feet whence after, the nose wheel entered into a ditch and broke at its axle attachment. The aircraft finally came to rest in a nose down attitude and suffered substantial damage.

All the occupants on board escaped unhurt. There was no fire.

The cause of accident has been attributed to forced landing of the aircraft due in flight engine stoppage, after fuel transfer from auxiliary tank, when water contaminated fuel from the auxiliary tank entered into the fuel system.

Water contamination of auxiliary tank fuel remained undetected due maintenance personnel of M/s Saraya Aviation, and also the pilot not carrying out appropriate checks on fuel during inspections prior to the flight.

- Factors:
- (i) Other—Water in fuel.
  - (ii) Personnel—Maintenance Personnel (Improper maintenance)
  - (iii) Personnel—Pilot—Inadequate pre-flight preparation.

Deliber



AV 15013 / 4/87 - AS

13

PRIVATE-2

(15)

1. Aircraft : Type: King Air C-90  
Registration: VT-EGR
2. Date and time : 20th March, 1987; 1015 hrs.
3. Location : Nasik Road Airfield
4. Type of operation : Private
5. Persons on board : Crew: 2, Passengers : 4
6. Injury index :
 

	Fatal	Serious	Minor/None
Crew :	Nil	Nil	2
Pax. :	Nil	Nil	4
Others :	Nil	Nil	—
7. Damage to aircraft : Substantial
8. Pilot-in-Command : Licence : ALTP  
Age : 48 years approx.  
Total Hrs. : 5340 hrs.

**Summary**

King Air C-90 aircraft, VT-EGR, operated by Government of Maharashtra was engaged in a private flight on 20-3-1987. The aircraft took off from Bombay airport for Nasik Road airfield with six persons on board including two crew members. The flight from Bombay to overhead Nasik Road airfield was uneventful. During landing, the aircraft overshot the runway and came to rest in kutchra approx. 500 feet beyond the runway end, resulting in substantial damage to the aircraft.

All persons on board escaped unhurt. There was no fire.

The cause of accident has been attributed to total disregard of the laid down procedures by the pilot who had maintained excessive approach speed, used approach flaps instead of landing flaps and had touched down late on runway which was further aggravated by improper use of brakes and propeller reversing system.

**Factors :** Personnel Pilot—Failed to follow approved procedures, directives, instructions etc.

*delo*



Av. 15013/5/87-A2

14

## PRIVATE-3

(16)

1. Aircraft : Type : AS 350-B Helicopter  
Registration : VT-EHJ

2. Date & time : 21st March, 1987 ; 0940 hrs.

3. Location : Guruvayur (Near Cochin)]

4. Type of operation : Private]

5. Persons on board : Crew: 1, Passengers : 1]

6. Injury index :

	Fatal	Serious	Minor/None
Crew	Nil	Nil	1
Pax.	Nil	Nil	1
Others	Nil	Nil	—

7. Damage to aircraft : Substantial

8. Pilot-in-Command : Licence : CHPL  
Age : 44 years approx.  
Total Hrs. : 5713 approx.

## Summary:

As 350-B Ecureuil helicopter VT-EHJ, operated by Delhi Gulf Airways Services (P) Ltd. was engaged in an Election campaign and was on a positioning flight from Cochin to Guruvayur on 21-3-1987. There were two persons on board including the pilot. The flight from Cochin to Guruvayur temple was uneventful. After spotting Guruvayur temple, the pilot carried out 3 to 4 left hand circuits in order to locate the helipad. The pilot failed to locate the helipad, and preferred to land on an open area about one k.m. from the temple with the intention of enquiring about the exact location of the helipad. During the process of landing, when the helicopter was about 20 feet above ground level, dust from the ground generated by the helicopter blades engulfed the helicopter. The pilot lost vision of his surroundings and while remaining blinded in dust, flew the helicopter forward and collided with a tree on its path resulting in substantial damage.

Both the occupants on board escaped with minor injuries. There was no fire.

The cause of accident has been attributed to pilot selecting forward motion while remaining blinded in dust raised by the helicopter main rotor at a height much below the surrounding obstructions resulting in collision with a tree.

The pilot's failure to locate the proper helipad and to adopt correct technique to land at an unprepared ground are the contributory factors.

Factors: Personnel—Pilot—Aircraft handling.

SLC-11



TABLE I

CLASSIFICATION OF ACCIDENTS (POWERED AIRCRAFT) BY NATURE OF THE FLIGHT FOR THE YEAR 1987

Nature of flight	No. of accidents	No. of fatal accidents	Crew		Passengers		Others		Aircraft Damage		
			Kil- led	Seri- ously inj- ured	Kil- led	Seri- ously inj- ured	Kil- led	Seri- ously inj- ured	Des- troy ed	Sub- stan- tial	Mi- nor/ Nil
1	2	3	4	5	6	7	8	9	10	11	12
Airlines Operations	2	—	—	—	—	—	—	—	—	2	—
Non-Scheduled Operation	1	—	—	—	—	—	—	—	1	—	—
Flying Training	1	—	—	1	—	1	—	—	—	1	—
Aerial work	2	—	—	1	—	2	—	—	—	2	—
Private and Business	3	—	—	—	—	—	—	—	—	3	—
Total	9	—	—	2	—	3	—	—	1	8	—

TABLE—2

ACCIDENT STATISTICS AND FATALITY RATE OF AIR INDIA FOR THE YEAR 1987

Type of Operation	Scheduled International
Hours flown (No.)	71208
Passengers carried (No.)	2035492
Kilometers flown (in thousands)	48350
Passenger kilometers flown (in thousands)	8664790
Total No. of accidents	—
No. of fatal accidents	—
Crew fatalities	—
Passengers' fatalities	—
Fatality rate per 100 million passenger Kms. (Crew)	—
Fatality rate per 100 million passengers Kms. (passengers)	—
Accident rate per 100 million Kms. flown	—
Accident rate per 100 million Pax. Kms. flown	—
Fatal accident per 100 million Pax. Kms. flown	—
Accident rate per 100,000 hrs. flown	—
Fatal Accident per 100,000 hrs. flown	—



TABLE—3

ACCIDENTS STATISTICS AND FATALITY RATE OF INDIAN AIRLINES FOR THE YEAR 1987

Type of operation	Scheduled
Hours flown (No.)	134708
Passengers carried (No.)	10296751
Kilometers flown (in thousands)	70657
Passenger kilometers flown (in thousands)	8487546
Total No. of accidents	1
Number of fatal accidents	Nil
Crew fatalities	Nil
Passenger fatalities	Nil
Fatality rate/100 million Pax. Kms. (crew)	Nil
Fatality rate/100 million Pax. Kms. (Pax.)	Nil
Accident rate/100 million Kms. flown	1.415
Accident rate/100 million Pax. Kms. flown	0.012
Fatal accidents/100 million Kms. flown	Nil
Accident rate/100,000 hrs. flown	0.74
Fatal accident/100,000 hrs. flown	Nil

TABLE—4

COMBINED ACCIDENT STATISTICS AND FATALITY RATE OF AIR INDIA AND INDIAN AIRLINES FOR THE YEAR 1987

Type of operation	Schedule Domestic and International
Hours flown (No.)	205916
Passengers carried (No.)	12332243
Kilometers flown (in thousands)	119007
Passenger kilometers flown (in thousands)	17152336
Total number of accidents	1
No. of fatal accidents	Nil
Crew fatalities	Nil
Passenger fatalities	Nil
Fatality rate per 100 million Pax. kms. (crew)	Nil
Fatality rate per 100 million pax. kms. (Pax.)	Nil
Accident rate per 100 million Kms. flown	0.84
Accident rate per 100 million pax. kms flown	0.006
Fatal Accidents per 100 million kms. flown	Nil
Accident rate per 100,000 hrs. flown	0.486
Fatal accident per 100,000 hrs. flown	Nil



**AIRCRAFT ACCIDENTS OF FLYING CLUBS/INSTITUTES (EXCLUDING GLIDING CLUBS),  
AGRO OPERATORS AND PRIVATE AND BUSINESS FOR THE YEAR 1987**

TABLE—6

GLIDER ACCIDENTS OF GLIDING CLUBS FOR THE YEAR 1987

TABLE—7

Class of licence held													Total accidents	Fatal
SPL	.	.	.	.	.	.	.	.	.	.	.	.	—	—
PPL	.	.	.	.	.	.	.	.	.	.	.	.	1	—
CPL	.	.	.	.	.	.	.	.	.	.	.	.	—	—
SCPL	.	.	.	.	.	.	.	.	.	.	.	.	1	—
ALTP	.	.	.	.	.	.	.	.	.	.	.	.	4	—
CHPL	.	.	.	.	.	.	.	.	.	.	.	.	3	—
Total													9	—



TABLE—8  
 AIRCRAFT ACCIDENTS BY PHASE OF OPERATION

Phase of operation	Total Involvement	% of Total
Static . . . . .	—	—
Taxi . . . . .	—	—
Take-off . . . . .	1	10
Inflight . . . . .	—	—
Landing . . . . .	9	90

TABLE—9  
 TOTAL ACCIDENT RATE BY KIND OF FLYING

Kind of Flying (Powered aircraft)	Rate per 100,000 aircraft hour flown
1. Airlines Operations	
(a) Indian Airlines . . . . .	0.74
(b) Air India . . . . .	—
2. Flying Clubs (excludes Vayudoot operation)/Institutes . . . . .	2.89
3. Aerial work . . . . .	80.32
4. Private and Business . . . . .	27.58