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CIVIL AVIATION AIRCRAFT ACCIDENT SUMMARY FOR THE YEAR 1993

1. INTRODUCTION

The information contained in the publication is 44th in the series. "Notifiable accidents", which took place in India during the year 1993 have been listed in a dassified chronological order along with the summary and the cause of the accidents.

There have been 14 accidents during the year including one accident to foreign registered aircraft. Three accidents have been investigated by Court of Inquiries and one accident by a Committee of Inquiry. Remaining accidents have been investigated by Inspectors of Accidents. Four accidents proved fatal resulting in death of 61 persons including four crew members.

Incidents such as precautionary landings, forced landings, aborted take off, airmisses, 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 operations is given in tables 1.

NOTE : All timings given in this publication are in IST (Indian Standard Time).

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2. DEFINITIONS

i) **Accident:**

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 the aircraft, or direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or direct exposure to jet blast, except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas 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 components, 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.

ii) **Serious Injury:**

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

a) Require hospitalisation for more 48 hours, commencing within seven days from the date the injury was received; or

b) Results in a fracture of any bone(accept 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 per sent of the body surface; or

f) Involves verified exposure to infectious substances or injurious radiation.

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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 be 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 accessors 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.

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4. TYPES OF FLYING

i) Airline Operation:

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

ii) Non-Scheduled Operations:

The operation 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.

iii) Flying Training:

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

iv) 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.

v) Private and Business:

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

AIRLINE OPERATION - 1

1. AIRCRAFT :

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	Type	:	TU-154
	Registration	:	85533
2.	DATE AND TIME	:	9th Jan, 1993; 04:08 Hrs
3.	LOCATION	:	Delhi
4.	TYPE OF OPERATION	:	Scheduled - Domestic
5.	PERSONS ON BOARD	:	Crew : 13; Passengers : 152

6. INJURY INDEX :

	Fatal	Serious	Minor/None
Crew	Nil	1	12
Pax	Nil	5	147
Others	Nil	Nil	-

7.	DAMAGE TO AIRCRAFT	:	Destroyed
8.	PILOT-IN-COMMAND	:	Licence : N/A
			Age : 46 Years
			Total Hrs : 10245

SUMMARY

On 9th January, 1993 TU-154 aircraft No. 85533 wet leased by Indian Airlines from Uzbekistan Airways was operating flight IC-840 from Hyderabad to Delhi. The aircraft was being flown by Uzbeki operating crew and there were 165 persons on board including the crew. The aircraft touched down slightly outside the right edge of the runway, collided with some fixed installations on the ground, got airborne once again and finally touched down on kutcha ground on the right side of the runway. At this stage the right wing and the tail of the aircraft broke away and it came to rest in an inverted position. During the process, the aircraft caught fire and was destroyed. Most occupants of the aircraft escaped unhurt. Six persons suffered either limb fracture or other serious injuries while 45 persons suffered injuries of a minor nature.

The probable cause of accident has been attributed to :

"(a) The failure of the Pilot-in-Command, Capt ARIPOV ERKIN, to divert to Ahmedabad when he was informed that the RVR on runway 28 was below the minima applicable to his flight.

(b) The switching on of landing lights, on the instruction of Capt MELNOV VLADIMIR, at a height of only about ten metres, resulting in the loss of all visual references due to the blinding effect of light reflections from fog.

(c) The failure of Capt ARIPOV ERKIN to carry out a missed approach when visual reference to the runway was lost."

Factors : Pilot - Operational Decision

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AIRLINE OPERATION - 2

1. AIRCRAFT :
   - Type : Boeing 737
   - Registration : VT-ECQ

2. DATE AND TIME : 26th April, 1993; 13:06 Hrs

3. LOCATION : Aurangabad

4. TYPE OF OPERATION : Scheduled - Domestic

5. PERSONS ON BOARD : Crew : 6; Passengers : 112

6. INJURY INDEX :

	Fatal	Serious	Minor/None
Crew	2	1	3
Pax	53	10	49
Others	Nil	Nil	-

7. DAMAGE TO AIRCRAFT : Destroyed

8. PILOT-IN-COMMAND :
   - Licence : ALTP
   - Age : 38 years
   - Total Hrs : 4963 Hrs.

SUMMARY

Indian Airlines Boeing 737 aircraft VT-ECQ was operating scheduled flight IC-491 from Delhi-Jaipur-Udaipur-Aurangabad-Bombay on 26.4.1993. The flight from Delhi to Aurangabad was uneventful. The aircraft took-off from Aurangabad with 118 persons on board. Aircraft lifted up almost at the end of runway and impacted heavily with a lorry carrying pressed cotton bales running from North to South on a highway at a distance of about 410 feet from the end of runway. The aircraft left main landing gear, left engine bottom cowling and thrust reverser impacted the left side of the truck at a height of nearly seven feet from the level of the road. Thereafter the aircraft hit the high tension electric wires nearly 3 kms North-East of the runway and hit the ground. In all 55 persons received fatal injuries. The aircraft was destroyed due to post impact fire.

The probable cause of accident has been attributed to :

"(i) Pilots' error in initiating late rotation and following wrong rotation technique, and

(ii) failure of the NAA to regulate the mobile traffic on the Beed road during the flight hours".

Factors :
1. Pilot - Aircraft Handling
2. Others - Other Personnel

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AIRLINE OPERATION - 3

1. AIRCRAFT :

Type	:	Airbus A-300
Registration	:	VT-EDV

2. DATE AND TIME : 15th Nov, 1993; 09:25 Hrs

3. LOCATION : Near Tirupati

4. TYPE OF OPERATION : Scheduled - Domestic

5. PERSONS ON BOARD : Crew : 12; Passengers : 250

6. INJURY INDEX :

	Fatal	Serious	Minor/None
Crew	Nil	Nil	12
Pax	Nil	Nil	250
Others	Nil	Nil	-

7. DAMAGE TO AIRCRAFT : None

8. PILOT-IN-COMMAND :

Licence	:	ALTP
Age	:	56 Years
Total Hrs	:	17344

SUMMARY

Indian Airlines Airbus A-300 aircraft VT-EDV was operating scheduled flight IC-440 (Madras-Hyderabad sector) on 15.11.1993. There were a total of 262 persons were on board the aircraft including 247+3 passengers and 12 crew members. The aircraft could not land at Hyderabad due to low visibility and carried out a missed approach. After the missed approach, the aircraft reported "Flap Problem" and was holding overhead at Hyderabad during which the flight crew enquired visibility at nearby Air Force airfields which was also low. The aircraft then diverted to Madras. Due to flaps problem, the crew had to maintain low speed and low altitude as a result of which it experienced fuel shortage and sought permission from Madras control for landing at Tirupati. However, the aircraft could not reach even Tirupati airport and executed forced landing in an open paddy field about 14 nautical miles from Tirupati airport. The aircraft dragged on the soft paddy field before coming to final stop. There was no fire. Passenger evacuation was carried out by means of escape slides. All the persons on board escaped unhurt except four who received minor injuries.

The probable cause of accident has been attributed to :

"(a) The ill-conceived decision of the aircraft's Commander to divert to Madras, without ensuring that adequate fuel was available for reaching there, when he was faced with a flap-jam and poor visibility at Hyderabad.

(b) The failure of the aircraft's Commander and his Flight Crew to monitor fuel consumption correctly, and the failure of the Commander to revise his decision accordingly, until it became impossible to reach any airfield.

(c) A forced landing due to the eventual shortage of fuel".

Factors : Pilot - Operation of Equipment

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FLYING TRAINING - 1

1.	AIRCRAFT :					
	Type		:	Swati		
	Registration		:	VT-STC		
2.	DATE AND TIME		:	3rd June, 1993; 18:45 Hrs		
3.	LOCATION		:	Hardwar		
4.	TYPE OF OPERATION		:	Test Flight		
5.	PERSONS ON BOARD		:	Crew : 1; Passengers : Nil		
6.	INJURY INDEX		:	Fatal	Serious	Minor/ None
		Crew		1	Nil	-
		Pax		Nil	Nil	-
		Others		Nil	Nil	-
7.	DAMAGE TO AIRCRAFT		:	Destroyed		
8.	PILOT-IN-COMMAND		:	Licence	:	CPL
				Age	:	61 Years
				Total Hrs	:	18295

SUMMARY

Swati aircraft VT-STC manufactured by M/s BHEL, Hardwar was engaged in a test flight on 3.6.1993. The pilot-in-command was the sole occupant on board. Soon after take-off, the pilot was seen performing a number of aerobatic manoeuvres (loops) over the nearby residential area of BHEL. While coming out of one of the loop, the starboard wing was seen breaking off and thereafter the aircraft crashed in an open field. The pilot-in-command received fatal injuries. The aircraft was completely destroyed. There was no fire.

The probable cause of accident has been attributed to :

"The accident was caused due to in-flight failure of starboard wing when the aircraft was engaged in aerobatics.

Inadequacy in the main spar web design and deficiencies in the manufacturing of main spar root end and metal fittings were the prime contributory factors for in-flight failure of the wing.

Since there was no 'g' meter fitted in the production aircraft, inadvertent overstressing during repeated aerobatic manoeuvres cannot be ruled out".

Factors : Aircraft - Inadequate Airframe Design

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FLYING TRAINING - 2

1.	AIRCRAFT :				
	Type	:	Pushpak		
	Registration	:	VT-DNN		
2.	DATE AND TIME	:	22nd Dec,1993; 11:35 Hrs		
3.	LOCATION	:	Karnal		
4.	TYPE OF OPERATION	:	Training		
5.	PERSONS ON BOARD	:	Crew : 2; Passengers : Nil		
6.	INJURY INDEX	:	Fatal	Serious	Minor/None
		Crew	Nil	Nil	2
		Pax	Nil	Nil	Nil
		Others	Nil	Nil	-
7.	DAMAGE TO AIRCRAFT	:	Substantial		
8.	PILOT-IN-COMMAND	:	Licence	:	CPL
			Age	:	24 years
			Total Hrs	:	438:45

SUMMARY

Pushpak aircraft VT-DNN was engaged in a local training flight at Karnal on 22.12.93. The aircraft was under the command of Asstt. Flying Instructor and the flight was intended to impart instrument flying training to a trainee pilot. After take-off, the instructor assessed the prevailing visibility as low and therefore decided to carryout a visual circuit before proceeding for instrument flying. The aircraft turned on to finals with reference to barely visible ground fixes. While on finals, the aircraft reportedly encountered a flock of birds and turned in a dive to avoid the birds. During the turn, the instructor suffered spatial disorientation and could not perceive that the aircraft was descending low. The aircraft subsequently hit a tree and two power lines before hitting the ground. The aircraft was substantially damaged. Both the occupants on board escaped unhurt.

The probable cause of accident has been attributed to :

"The accident occurred due to pilot disorientation caused by flying in low visibility conditions and uncertainty of ground references for visual navigation".

Factors : Pilot - Failed to follow procedures, regulations and instructions

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1.	AIRCRAFT :					
	Type		:	Rohini Glider		
	Registration		:	VT-GDB		
2.	DATE AND TIME		:	15th April, 1993; 18:45 Hrs		
3.	LOCATION		:	Ahmedabad		
4.	TYPE OF OPERATION		:	Training		
5.	PERSONS ON BOARD		:	Crew : 2; Passengers : Nil		
6.	INJURY INDEX		:	Fatal	Serious	Minor/None
		Crew		Nil	Nil	2
		Pax		Nil	Nil	Nil
		Others		Nil	Nil	-
7.	DAMAGE TO AIRCRAFT		:	Substantial		
8.	PILOT-IN-COMMAND		:	Licence	:	GPL
				Age	:	26 years
				Total Hrs	:	236:53

SUMMARY

Rohini glider RG-1 VT-GDB operated by Ahmedabad Gliding & Flying Club was engaged in a training flight at Ahmedabad airport on 15.4.1993. The glider had completed five launches uneventfully before the accident launch. During the sixth launch, the glider got airborne after the pilot lifted her off the ground without attaining sufficient ground speed. As a result, when the glider attained a height of about 50 feet above ground, it stalled and hit the ground in a nose down attitude and turned upside down. Both the glider instructor and the trainee, who were on board the aircraft, escaped unhurt. The glider sustained substantial damage.

The probable cause of accident has been attributed to :

"The accident occurred as a result of the glider being lifted off the ground prematurely during the launch as a result thereto, it stalled in a nosed down attitude".

Factors : Pilot - Aircraft Handling

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AERIAL WORK - 1

1.	AIRCRAFT :				
	Type	:	Bell 47G-5 Helicopter		
	Registration	:	VT-EAA		
2.	DATE AND TIME	:	22nd May, 1993; 11:30 Hrs		
3.	LOCATION	:	Three miles North-East of Palapilly helipad in Kerala.		
4.	TYPE OF OPERATION	:	Private		
5.	PERSONS ON BOARD	:	Crew : 1; Passengers : Nil		
6.	INJURY INDEX	:	Fatal	Serious	Minor/None
		Crew	Nil	Nil	1
		Pax	Nil	Nil	-
		Others	Nil	Nil	-
7.	DAMAGE TO AIRCRAFT	:	Substantial		
8.	PILOT-IN-COMMAND	:	Licence	:	CPL(H)
			Age	:	52 Years
			Total Hrs	:	4093: 00

SUMMARY

Bell helicopter belonging to M/s UB Air was engaged in an aerial spray operation over rubber plantation of Mooply Estate near Palapilly village on 22.5.1993. First 12 sorties were uneventful. During the 13th sortie, the helicopter contacted the tree top with its LH side spray boom extension pipe. The pilot abandoned the spraying operation and executed the forced landing. While proceeding for forced landing, RH side of the landing gear skid pulled the telephone wires and the helicopter dropped heavily on its skid thereby sustaining substantial damage. The pilot escaped with minor injuries. There was no fire.

The probable cause of accident has been attributed to :

"The accident occurred due to collision of helicopter's main rotor blades with the tree while effecting forced landing in rubber plantation area. Pilot's decision to force land the helicopter was probably due to the apprehension about the serviceability of the helicopter after the spray boom had hit the trees".

Factors : Pilot - Failed to follow procedures, regulations and instructions

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1.	AIRCRAFT :				
	Type	:	Cessna Sky Wagon		
	Registration	:	VT-EHU		
2.	DATE AND TIME	:	3rd Feb 1993, 12:17 Hrs		
3.	LOCATION	:	Guwahati Airport		
4.	TYPE OF OPERATION	:	Private		
5.	PERSONS ON BOARD	:	Crew : 1; Passengers : Nil		
6.	INJURY INDEX	:	Fatal	Serious	Minor/None
		Crew	Nil	Nil	1
		Pax	Nil	Nil	-
		Others	Nil	Nil	-
7.	DAMAGE TO AIRCRAFT	:	Substantial		
8.	PILOT-IN-COMMAND	:	Licence	:	CPL
			Age	:	41 Years
			Total Hrs	:	1742:45

SUMMARY

Cessna A-185F aircraft VT-EHU belonging to M/s George Williamson, Assam was engaged in a flight from Pratapgarh to Guwahati on 3.2.1993. The aircraft made normal approach for Guwahati airport. However, after touchdown the aircraft bounced twice and swung to the right side of the runway centre line. While crossing the edge of the runway, its port undercarriage hit the concrete surface of electrical junction box and fell into a ditch thereby sustaining substantial damage. The pilot, who was sole occupant on board, escaped unhurt. There was no fire.

The probable cause of accident has been attributed to :

"The aircraft swung during landing as a result of improper handling by the pilot. Presence of ditches in the side strip was the contributory factor to the accident".

Factors : Pilot - Aircraft Handling

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1.	AIRCRAFT :					
	Type		:	Super King Air B-300		
	Registration		:	VT-EQM		
2.	DATE AND TIME		:	15th July 1993; 11:55 Hrs		
3.	LOCATION		:	11 NM East of Bombay Airport		
4.	TYPE OF OPERATION		:	Private		
5.	PERSONS ON BOARD		:	Crew : 1; Passengers : 3		
6.	INJURY INDEX		:	Fatal	Serious	Minor/None
		Crew		1	Nil	-
		Pax		3	Nil	-
		Others		Nil	Nil	-
7.	DAMAGE TO AIRCRAFT		:	Destroyed		
8.	PILOT-IN-COMMAND		:	Licence	:	SCPL
				Age	:	35 Years
				Total Hrs	:	1505:00

SUMMARY

Super King Air B-300 aircraft VT-EQM, belonging to National Remote Sensing Agency, Hyderabad was operating a ferry flight on 15.7.1993 from Ahemdabad to Bombay. There were four persons on board the aircraft including pilot-in-command. During approach to land at Bombay, contact with ATC was lost after the aircraft had reported its flight level 4000 ft. The aircraft was found crashed on top of the hills at Taloja village located about 11 NM East of Bombay airports. All the four persons on board received fatal injuries. The aircraft was completely destroyed.

The probable cause of accident has been attributed to :

"The commander of the aircraft having meager flying experience on type and limited instrument flying hours encountering instrument meteorological conditions descended below the ATC cleared height of 3700 feet without intercepting the glide slope.

The radar controller by not effectively monitoring the aircraft position after he had advised it to intercept the localizer contributed to the cause of the accident".

Factors : 1. Pilot - Failed to follow procedures, regulations and instructions
2. Others - ATS Personnel

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1.	AIRCRAFT :					
	Type		:	Dauphin 365N		
	Registration		:	VT-ENY		
2.	DATE AND TIME		:	14th Aug., 1993; 12:30 Hrs		
3.	LOCATION		:	At Nabidang hills in Distt. Pithoragarh.		
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	:	CPL(H)
				Age	:	44 Years
				Total Hrs	:	5970

SUMMARY

Dauphin 365N helicopter VT-ENY belonging to Directorate of State Civil Aviation, UP was engaged in a Reece flight from Pithoragarh to Khet helipad on 14.8.1993. In all there were four persons on board the helicopter including pilot-in-command. After 20-25 minutes of flying, the pilot felt severe vibrations and the helicopter simultaneously started loosing height. The pilot lowered the undercarriage and selected a flat ground to execute force landing. The helicopter, however, landed on boulders as a result of which it toppled to one side and sustained substantial damage. All the persons on board escaped unhurt. There was no fire.

The probable cause of accident has been attributed to:
"Sudden occurrence of tracking defect which has resulted in severe vibration of the helicopter. It is further attributed to the failure of bushes on the sleeve attachment beams and start arm ends of main rotor head assembly".

Factors: Aircraft - Rotor Assembly

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1. AIRCRAFT :
   Type : Allouette (Chetak) Helicopter
   Registration : VT-EHM

2. DATE AND TIME : 29th Aug.,1993; 08:30 Hrs

3. LOCATION : Patta Ghat

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 : CPL(H)
   Age : 46 Years
   Total Hrs : 5446

SUMMARY

Chetak helicopter VT-EHM belonging to M/s Delhi Gulf Airways was engaged in a charter flight on 29.8.1993 to airlift an injured Dutch woman trekker from Kuluto Patta Ghat in Kulu District. While landing on the small level stretch in the steep mountainous slope, the right main wheel of the helicopter landed on the steep slope resulting in the helicopter toppling to the right down the slope. As the Helicopter slid down the slope, its main rotor head struck a large stone embedded in the slope. The helicopter came to rest against the stone. The helicopter was substantially damaged. Both the occupants on board the helicopter escaped unhurt. There was no fire.

The probable cause of accident has been attributed to :

"The accident occurred as a result of helicopter toppling over after landing on a small stretch of level ground in mountain slopes. Failure of pilot to ensure that all the wheels were firmly on level ground before lowering the collective pitch for landing was the prime factor".

Factors: Pilot - Failed to follow procedures, regulations and instructions

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1.	AIRCRAFT :					
	Type		:	Cessna Caravan		
	Registration		:	VT-AAN		
2.	DATE AND TIME		:	6th Sept 1993; 11:32 Hrs		
3.	LOCATION		:	Three miles from Port Blair		
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		1	Nil	2
		Others		Nil	Nil	-
7.	DAMAGE TO AIRCRAFT		:	Substantial		
8.	PILOT-IN-COMMAND		:	Licence	:	ALTP
				Age	:	50 Years
				Total Hrs	:	6300

SUMMARY

Cessna 208 Caravan aircraft VT-AAN operated by Andaman and Nicobar Administration was engaged in a flight from Port Blair-Dugong Creek-Hut Bay-Port Blair on 6.9.1993. There were four persons on board the aircraft including pilot-in-command. The flight from Dugong Creek to Hut Bay was uneventful. The aircraft took-off from Hut Bay for Port Blair where it was intended to land on sea adjacent to Viper Island. Soon after touchdown on seawater, the aircraft flipped over its nose and sank thereafter. Three persons including the pilot evacuated the aircraft. However, one person died due to drowning, as he remained strapped in his seat. The aircraft sustained substantial damage. There was no fire.

The probable cause of accident has been attributed to :

"The pilot failed to ensure that the landing gears are fully retracted before landing on water thereby causing the aircraft to flip on to its back as a result of abnormally high hydrodynamic drag generated on landing with landing gears remaining extended.

Non-availability of the revised pilot's check-list, appropriate to the aircraft configuration and the practice adopted during conversion training of the pilot were the contributory factors".

Factors: Pilot - Failed to follow procedures, regulations and instructions

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1.	AIRCRAFT :					
	Type		:	Queen Air		
	Registration		:	VT-DYR		
2.	DATE AND TIME		:	18th Sept.,1993; 13:55 Hrs		
3.	LOCATION		:	Pune		
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	:	ALTP
				Age	:	N/A
				Total Hrs	:	6592

SUMMARY

Queen Air aircraft VT-DYR belonging to M/s Kalyani Steels Ltd., Pune was engaged in a local flight at Pune on 18.9.1993. After take-off when the landing gears were retracted, the 3 red lights for 'up and locked' did not come ON. The recycling of the undercarriage by the pilot did not activate neither the 'down and locked' nor the 'up and locked' indication. The lowering of undercarriage was then attempted by operating emergency handle, which also became stiff. The pilot thereafter executed landing. During the landing roll, the undercarriage folded up and aircraft dragged on its belly thereby sustaining substantial damage. All the persons on board escaped unhurt. There was no fire.

The probable cause of accident has been attributed to :

"The pilot landed without ascertaining the actual status of the aircraft landing gears subsequent to his experiencing in-flight landing gear problem on retraction after take-off.

Pre-existing deficiency of out of rig and excessive play in the nose wheel centering universal mechanism resulted in the nose landing gear centering bracket bolt assembly to get jammed in the guide fitting during its retraction travel".

Factors : Aircraft - Improper Maintenance

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1.	AIRCRAFT :					
	Type		:	King Air C-90		
	Registration		:	VT-EFF		
2.	DATE AND TIME		:	19th Sept.,1993; 18:39 Hrs		
3.	LOCATION		:	Pune		
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	:	N/A
				Total Hrs	:	10671

SUMMARY

King Air C-90 aircraft VT-EFF belonging to M/s Bajaj Auto Ltd., Pune was engaged in a private flight on 19.9.1993 from Pune to Bombay with four passengers and two crew members on board. After take-off from Pune, when the landing gears were selected for retraction, the red unsafe light on the gear handle remained ON. The pilot carried out recycling of landing gear lever. After getting information from the ground that the undercarriage was not down and locked, the emergency extension procedure for lowering was attempted, which was also not successful. Pilot, thereafter, declared full emergency and executed landing at Pune. After initial contact with the runway surface, its main wheels folded up and the aircraft dragged on its rear belly thereby sustaining substantial damage. All the persons on board escaped unhurt. There was no fire.

The probable cause of accident has been attributed to:

"The landing gear system remained jammed away from the full extend position during the retraction after take-off, and subsequently the gears collapsed on the landing roll when the aircraft made an emergency landing.

The jamming was as a result of a two-way bind developing inside the nose gear actuator due corrosion induced resistance to relative motion of the actuator nut assembly in its screw housing".

Factors: Aircraft - Improper Maintenance

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Table 1

CLASSIFICATION OF ACCIDENTS (POWERED AIRCRAFT) BY NATURE OF FLIGHT

NATURE OF FLIGHT	NO. OF ACCIDENTS	NO. OF FATAL ACCIDENT	CREW		PASSENGERS		OTHERS		AIRCRAFT DAMAGE		
			Killed	Seriously	Killed	Seriously	Killed	Seriously	Destroyed	Substantial	Minor/Nil
Airline Operation	3	1	2	1	53	10	-	-	2	-	1
Non-Scheduled Operation	-	-	-	-	-	-	-	-	-	-	-
Flying Training	2	1	1	-	-	-	-	-	1	1	-
Aerial Work	1	-	-	-	-	-	-	-	-	1	-
Private & Business	7	2	1	-	4	-	-	-	1	6	-