

GOVERNMENT OF INDIA
MINISTRY OF DEFENCE
DEPARTMENT OF MILITARY AFFAIRS
LOK SABHA
STARRED QUESTION NO. 359
TO BE ANSWERED ON 18th March, 2020

ACCIDENTS OF IAF AIRCRAFT

*359. SHRIMATI RITA BAHUGUNA JOSHI:
SHRI PRATAPRAO JADHAV:

Will the Minister of DEFENCE j{k k ea=h
be pleased to state:

- (a) the number of accidents of aircraft of the Indian Air Force took place during the last three years and the current year so far;
- (b) whether there is any increase in the number of such accidents and if so, the reasons therefor;
- (c) the compensation/assistance provided to the families of the deceased persons in such accidents; and
- (d) the measures taken/proposed to be taken by the Government for reduction of such accidents?

A N S W E R

MINISTER OF DEFENCE
j{k k ea=h

(SHRI RAJNATH SINGH)
¼Jh राजनाथ सिंह)

(a) to (d): A Statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (d) OF LOK SABHA STARRED QUESTION NO. 359 FOR ANSWER ON 18.03.2020 REGARDING 'ACCIDENTS OF IAF AIRCRAFT'.

- (a) The details of IAF aircraft crashed in last three financial years (2016-17 to 2018-19) and current financial year 2019-20 year wise is placed as **Annexure I**.
- (b) No, Sir. There is a reduction in number of aircraft accidents.
- (c) The Liberalised family pension and insurance as per existing rules is given to Next of Kin of the deceased person.
- (d) IAF has taken various steps to reduce such accidents. The details of Aerospace Safety measures taken are placed as **Annexure II**.

**ANNEXURE-I REFERRED TO IN REPLY TO PART (a) OF LOK SABHA
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**DETAILS OF AIRCRAFT ACCIDENTS IN FINANCIAL YEAR (2016-17 to 2018-19)
AND CURRENT FINANCIAL YEAR 2019-20 (UPTO 29 FEBRUARY, 2020)**

S No	Financial Year	Date of Occurrence	Aircraft Type	Aircraft No	Cause
FIGHTER					
1	2016-17	12 May 2016	MiG-21M	C-1601	TD
2	2016-17	13 June 2016	MiG-27-UPG	TU-657	TD
3	2016-17	10 Sep 2016	MiG-21 T-69	U-2140	HE(S) + HE(A)
4	2016-17	13 Sep 2016	Jaguar	JS-209	BS + HE(A)
5	2016-17	03 Oct 2016	Jaguar	JT-055	HE(A)
6	2016-17	15 Mar 2017	SU-30-MKI	SB-149	TD+ HE(A)
7	2017-18	23 May 2017	SU-30-MKI	SB-063	HE(A) + HE(SS)
8	2017-18	06 Jul 2017	MiG-23-UB	MS-3472	HE(A)
9	2018-19	05 Jun 2018	Jaguar	JS-219	TD
10	2018-19	18 Jul 2018	MiG-21 T-75	C-2242	HE(A)
11	2018-19	04 Sep 2018	MiG-27 UPG	TU-643	TD + HE (S)
12	2018-19	28 Jan 2019	Jaguar	JS-198	TD+ HE (HAL)
13	2018-19	12 Feb 2019	MiG-27 UPG	TU-633	TD
14	2018-19	08 Mar 2019	MiG-21- Bison	CU-2291	BS
15	2018-19	31 Mar 2019	MiG-21 UPG	TU-607	TD
16	2019-20	08 Aug 2019	SU-30 MKI	SB-062	UI(HE(A))
17	2019-20	25 Sep 2019	MiG-21 T-69	U-3286	UI(TD)
HELICOPTER					
1	2016-17	19 Oct 2016	Mi-17 V5	ZP-5127	HE(A)
2	2016-17	15 Mar 2017	Chetak	Z-1006	TD
3	2018-19	03 Apr 2018	Mi-17 V5	ZP-5132	HE(A)
4	2018-19	23 May 2018	Cheetah	ZB-3461	HE(A)
TRANSPORT					
1	2016-17	22 Jul 2016	An-32	K-2743	UR
2	2019-20	03 Jun 2019	An-32	KA-2752	HE(A)
TRAINER					
1	2016-17	04 Aug 2016	HAWK MK -132	A-3642	HE(O)
2	2017-18	28 Sep 2017	Kiran Mk-1A	U-798	HE(A)
3	2017-18	24 Nov 2017	Kiran Mk-1A	U-762	HE(A)
4	2017-18	20 Mar 2018	HAWK MK-132	A-3675	HE(A)
5	2018-19	28 Nov 2018	Kiran Mk-1A	U-831	HE(A)
6	2018-19	19 Feb 2019	HAWK MK-132	A-3671 & A-3679	HE(A)

**ANNEXURE-II REFERRED TO IN REPLY TO PART (d) OF LOK SABHA
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STEPS TAKEN TO AVOID/REDUCE THE RECURRENCE OF ACCIDENTS

1. Implementation of **Expert Committee on Aircraft Accidents (EXCOM)** Recommendations. An expert committee was constituted by MoD in December, 2004 to identify the root cause of aircraft accidents and to prepare a comprehensive action plan so as to reduce the losses to a minimum. The committee finalized its report in May, 2005 and the recommendations of EXCOM have been implemented by IAF.

2. The areas where significant improvements have been made are described below:-

a) **Invigoration of Aerospace Safety Organizations.** The Aerospace Safety Organization has been revamped and executive independence of the Aerospace Safety branch has been ensured at all levels by placing the functionaries directly under the Commanders. The safety functionaries in a station are specifically chosen and posted to ensure effectiveness of accident prevention strategy. A pool of officers with specialist training on accident investigation is being maintained at Air HQ and all Cat-I accidents are investigated by them.

b) **Database of Accidents & Incidents.** A database of all accidents and incidents in IAF has been created and maintained in Directorate of Aerospace Safety that can be accessed by safety functionaries of all Air Force Stations, Command HQs and Air HQ. This helps in real time monitoring and reporting of incidents and accidents. Accident Prevention Strategy at each base is being worked out by studying the trend of accidents/incidents specific to the fleet and place.

c) **Revised Training Methodology.** The training methodology of aircrew and technicians has been reviewed. Stage-wise training of pilots has been implemented for enhancing the quality of training. New Basic Trainer (Pilatus) and Advanced Jet Trainer (Hawk-132) have been inducted for enhancing the quality of training. Emphasis has been laid on effective training of technicians in TETTRA (Technical Type Training) Schools to enhance their skill and knowledge.

d) **Simulators.** Simulators have been inducted to impart training of aircrew in realistic environment without increasing the risk involved in actual flying. Simulators are mandatorily procured for all new aircraft inductions. HPHC (High Performance Human Centrifuge) and DISO (Disorientation) Simulators have been procured for the conduct of OPTRAM (Operational Training in Aerospace Medicine) courses for all operational aircrew and flight cadets. Such training has resulted in a marked reduction in the incidents/accidents of disorientation and 'G-Loc' (G Induced Loss of Consciousness) in aircrew.

e) **Air Force System on Error Management (AFSEM) & Other Measures.** AFSEM is an online tool which helps IAF in recognizing errors with potential to cause accidents and institute timely remedial measures. Concepts like Operational Risk Management (ORM) and Crew Resource Management (CRM) are being followed to integrate safety aspects into operations. Accident Probability Factor (APF) calculator, a software based tool, is utilized to identify risks and hazards specific to the aircraft fleets and operational environment at IAF bases with a view to formulate effective accident prevention programme.

3. Court of Inquiry. Every aircraft accident in the IAF is followed by an investigation by a Court of Inquiry and institution of remedial measures based on the recommendations. The accident/incident reporting procedure has been further streamlined. Enhanced interactions with DI (Defect Investigation) agencies like NAL (National Aerospace Laboratory), DMRL (Defence Metallurgical Research Laboratory) and HAL have resulted in qualitative improvement in defect investigation of aircraft components involved in accidents.

4. Visits by Senior Functionaries. Regular visits to various flying stations in each command are equally undertaken by senior Aerospace Safety functionaries of IAF to promote safety awareness amongst operators and support service providers at the field level as well as to obtain grass root level inputs that need to be addressed to strengthen aerospace safety environment.

5. Operating Environment. Improvements in operating infrastructure have been catered for in new inductions as well as upgradation of facilities of existing fleet.

6. Human Factors Analysis and Classification System (HFACS). HFACS has been introduced during accident investigation to identify root cause of human error and use it in prevention of similar accidents.

7. Aviation Psychology. Aviation Psychology Module is being conducted as part of Aerospace Safety Courses at the Institute of Aerospace Safety for aircrew as one of the means to curb 'Human Error' accidents.

8. Bird Hazard Management Measures. Bird Hazard Management Measures have been revamped to suit the local conditions. In all incidents of bird strikes, the bird remnants are sent to Defence Institute of Physiology and Allied Sciences (DIPAS) for identifying the species and thus helping in taking species specific preventive measures to avoid further incidents. The other measures instituted are studies undertaken by the Ornithology cell and close monitoring of bird activities. A case for procurement of Avian radars (Bird Detection and Monitoring radars) has been taken up to strengthen bird hazard control measures. IAF has inducted Microlite aircraft for survey of birds and to enhance bird

hazard management measures. IAF has initiated long term insect study of airfield to control bird activity. Constant liaison is being maintained with civil counterparts to share best practices.

9. Enhancement of Aerospace Safety Awareness. Impetus has been given to enhancement of awareness on human factors and error-prone situations amongst aircrew through dissemination of information on past accidents, voluntary error reporting by personnel and improving the standard and content of the aerospace safety magazine. Command Aerospace Safety Inspection Officers' Conferences/Workshops are conducted regularly that provide a forum for exchange of ideas on accident/incident prevention. Representatives from sister services, OEM and National Laboratories are also invited in these conferences to discuss aerospace safety issues.

10. Aerospace Safety Courses. Institute of Aerospace Safety conducts dedicated classes on aerospace safety to inculcate safety culture and to strengthen the Aerospace Safety Organization in terms of prevention strategies and investigations. Further, the intake for aerospace safety courses has been increased to spread more awareness about aerospace safety.

11. Analytical Studies/ Quality Audits. Analytical studies are carried out to identify critical vulnerabilities of aircraft and equipment. Regular theme based studies and joint quality audits of aircraft fleets are being carried out to identify vulnerable areas and institute effective remedial measures. Quality audits of aircraft production/overhaul at HAL divisions/BRDs (Base Repair Depot) are conducted, as and when necessary.

12. Sharing of Aerospace Safety Information. Sharing of Aerospace Safety Information between IAF/Army/IN/Coast Guard/HAL/CEMILAC/DGAQA has been introduced for better/faster trend analysis of failures and speedy implementation of remedial measures.

13. MoU with Foreign Countries. Memorandum of Understanding (MoU) has been signed for sharing of aerospace safety information with friendly foreign countries. Indian Aerospace Safety team visits other countries to enhance our understanding of Aerospace Safety measures. Similarly, Aerospace Safety teams from other countries visit Indian for interaction and sharing the information on Aerospace Safety on common operating fleets.

14. Interaction Visits/FOD Audits. The Aerospace Safety Branch carries out interaction visits to various flying bases to assist the station in identifying hazards and resolving the issues. IAF regularly carries out FOD audits of its bases to reduce cases of FOD damage.
