

etc. of these institutions, Department of Electronics held a Workshop where different aspects relating to the setting up of the institutes were discussed. All the recommendations are being further examined.

The matter has been discussed with Government of Orissa who have shown interest in the programme and the willing to participate in the programme and provide the necessary facilities.

NAL-Designed Facility to read Black Box Data in Aircraft

*100. SHRID.M. PUTTE GOWDA: Will the PRIME MINISTER be pleased to state:

(a) whether the scientists at the National Aeronautical laboratory, Bangalore have designed a new facility to read the black box data in aircraft, a vital source of information in the event of an air crash; and

(b) if so, the salient features of this new facility?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE IN DEPARTMENT OF EDUCATION IN THE MINISTRY OF HUMAN RESOURCE DEVELOPMENT (PROF. M.G.K. MENON): (a) Yes, Sir.

(b) The black-box (DFDR) read out facility that NAL has developed conforms to ARINC-573 standards and caters for Boeing 747 and Airbus 300 operated by Air India. The data is recorded in Harvard bi-phase code at a bit rate of 768 bits per second constituting a subframe. Each subframe has different aircraft parameters represented digitally by a 12 bit word. The interface unit enables data in the DFDR to be regenerated through a PDP-11/44 computer at Air India.

Snags in INSAT-1D

898. SHRI KAMAL NATH: Will the PRIME MINISTER be pleased to state:

(a) whether a team of Indian Scientists has since made a final and complete inspection of the INSAT-1D;

(b) if so, the snags which had occurred and the cost incurred on its repair; and

(c) the time by which INSAT-1D is likely to be launched?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE IN DEPARTMENT OF EDUCATION IN THE MINISTRY OF HUMAN RESOURCE DEVELOPMENT (PROF. M.G.K. MENON): (a) A detailed review and inspection of INSAT-1D Space craft was carried out by a team of Indian Scientists in January, 1990, based on which the corrective actions required and the test matrix for ensuring reliable operation of the satellite were finalised. The final review is scheduled for April, 1990 before the satellite is transported to the launch site from the Spacecraft contractor's facility.

(b) INSAT-1D suffered an accident on 19th June, 1989 at the launch site while being mated to the Delta 4925 launch vehicle. A part of the crane hook fell on the satellite and due to this the C-band reflector was damaged. The panel on the East side of the spacecraft was also damaged. There were a few other minor damages. The C-band reflector and the East panel have been replaced. Other damaged parts have all been repaired or refurbished. The entire spacecraft has been fully tested again and some more tests are continuing. The cost of repair, as per the contract, is borne by the spacecraft contractor.

(c) INSAT-1D is scheduled to be launched in June, 1990.