The year-wise allocation of funds for the CPSUs is decided on the basis of expected scope of work, likely sources of financing such works and future planning for new projects. The plan outlays are thus indicative. The actual expenditure depends upon the physical progress of the on-going works, approval of new schemes, ability of the CPSUs to raise the requisite funding, availability of funds in the capital market etc. The progress of fund utilisation is being monitored on a regular basis to avoid any slippages in the physical targets.

(e) The capacity addition for power was 1691.40 MW as against the target of 2868.50 MW during the year 1996-97 out of this, the target for the Central Sector was 817.50 MW and the achievement thereof was 703.50 MW.

### Satellite Programme

*11. SHRI ANANTH GANGARAM GEETE :
SHRI B.L SHANKAR :

Will the PRIME MINISTER be pleased to state:

(a) the chronological sequence of various INSAT Stellites launched by the Indian Space and Research Organisation (ISRO) as on October 31, 1997;

(b) the success rate in respect of each of these satellites;

(c) operational failures, if any, in those INSAT satellites and the reasons therefor;

(d) the total financial outlay involved;

(e) whether the technological and other benefits from these INSAT launched have been quantified;

(f) if so, the details thereof; and

(g) the details of new generation satellite programmes presently in process with the Indian Space Research Organisation (ISRO)?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH) :

(a)  INSAT-1A    —    launched on 10.04.1982

     INSAT-IB    —    launched on 30.08.1983

     INSAT-1C    —    launched on 22.07.1988

|  |  |  |  |
|---|---|---|---|
| | INSAT-1D | — | launched on 12.06.1990 |
| | INSAT-2A | — | launched on 10.07.1992 |
| | INSAT-2B | — | launched on 23.07.1993 |
| | INSAT-2C | — | launched on 07.12.1995 |
| | INSAT-2D | — | launched on 04.06.1997 |
| (b) | INSAT-1A | — | Failed in September, 1982. |
| | INSAT-1B | — | Worked successfully for more than 7 years exceeding its design life. |
| | INSAT-1C | — | Suffered a loss of about 50 per cent of its capacity with 10 days of its launch. It worked for about 16 months with the remaining capacity and was declared a Total Loss after that period. |
| | INSAT-1D | — | Currently operational and exceeded its design life. |
| | INSAT-2A | — | Operated successfully for more than 5.5 years and is now in an inclined orbit mode of operations. |
| | INSAT-2B | — | Presently providing services since its launch. |
| | INSAT-2C | — | Presently providing services since its launch. |
| | INSAT-2D | — | Failed in orbit on October 5, 1997. |

(c) INSAT-1A failed due to a complex interplay of minor anomalies leading to a loss of the propellants. INSAT-1C developed a short in one of the power bus in its sequential shunt unit and operated with half the power for about 1.5 years. Due to the loss of redundancies in the bus system and also due to the difficulties in the management of the thermal regime, the satellite lost its attitude and could not be recovered. INSAT-2D developed a massive short-circuit in one of the power bus which led to the jamming of the solar array, complex thermal problems and depletion of the propellant.

(d) The total financial outlay involved is as follows:

(Rs. in Crores)

| | Spacecraft cost | Launch Cost & insurance (Actuals) |
|---|---|---|
| INSAT-1A & 1B | 55.29 | 30.41 |
| INSAT-1C | 80.28 | 46.29 |
| INSAT-1D | 79.58 | 61.55 |
| INSAT-2A,2B | 329.94 | 198.30 |
| INSAT-2C,2D & 2E | 480.70 | 785.10 |

(e) and (f) INSAT has established itself as one of the basic communication and meteorological infrastructure of the country. INSAT system consists of more than 280 ground earth stations, 800 TV transmitters, and over 190 AIR transmitters all of which are networked through the INSAT space craft. INSAT has helped in now providing connectivity to remote and inaccessible areas and offshore areas. There are also more than 5000 private V-SATs including the National Stock Exchange which operate through INSAT. INSAT satellites provide daily Very High Resolution Radio Meter (VHRR) imagery and meteorological data from remote platforms for weather forecasting, disaster warning and disaster management. The Disaster Warning System which is a unique service through INSAT has become very useful and has saved several thousands of lives over the years. The data networks such as National Informatics Network (NICNET) provides invaluable benefits to all levels of administration including the judiciary. Rapid expansion of the TV network apart from providing the entertainment, definitely has brought informational revolution to every nook and corner of the country. The educational value of the INSAT system has been amply proven by the use of INSAT by University Grants Commission (UGC), Indira Gandhi National Open University (IGNOU), the Training and Developmental Communications Network, Jhabua Developmental Communications Project etc. The present accounting system followed for the INSAT programme does not permit an accurate estimate of the financial returns from the system as there are no funds transfer from the User agencies. however, it can be confidently stated that the system has started paying for itself. Based on a conservative estimate, the annual revenue of the INSAT system is around Rs. 350.00 Crores presently.

(g) INSAT-2E the next satellite in the INSAT series, is scheduled for launch in June/July of 1998. The third generation satellites (INSAT-3 series) has been approved by the Government. The INSAT-3 series will consist of five satellites to be launched between 1999 and 2002 AD. INSAT-3 satellites will replace the statellites of INSAT-2 series which are near the end of their life and also will augment the overall communications capacity. There will be qualitative improvement in the meteorological imaging services also.

*[Translation]*

### Development of Hindi Computer

*12. SHRI VIRENDRA KUMAR SINGH : Will the PRIME MINISTER be pleased to state :

(a) whether the Government propose to develop computer in Hindi;

(b) if so, the details thereof;

(c) whether the Government have a scheme to spread computer literacy in the villages;

(d) whether difficulty is being experienced due to Hindi letters in the alphabets not being arranged sequentially on the key board;

(e) if so, the steps being taken to remedy the situation;

(f) whether the Government propose to make computer education compulsory in all the schools and colleges; and

(g) if so, the details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH) : (a) and (b) The Department of Electronics has been promoting the development of technology for enabling work on computers in Hindi and other Indian languages, both in Government and private sector. The following are the main achievements:—

> Indigenous development of Graphics Based Intelligence Script Technology (GIST) by the Centre for Development of advance Computing (C-DAC), Pune, an autonomous Society under the Department of Electronics. In addition, a number of organisations in public/private sector are also engaged in development and marketing of Hindi application softwares. These efforts have made it possible to enable use of Hindi and other Indian Languages on Personal Computers. Efforts have also been made by a number of other organisations to localise system and application softwares to promote use of computers in Hindi and other Indian languages.

(c) While there is no such specific scheme, project proposals involving demonstration of computer