

Prof S Dhawan

S.1

Y S Rajan

28 Apr 1976

Growth of analytical talents within ISRO.

- 1.0 I have been thinking on this topic for a long time - almost as early as 1964. The way in which ISRO has to operate to deliver goods in time, has always tended to foster administrators, managers or pushy "fixers" even in the Space Sciences! These persons, no doubt, have their role to play in establishing Science & Technology in the country. But a viable system which can stand the test of time and a system that can become self-generating, can never come out of such swash-buckling individuals. One needs thinkers - persons for whom scientific thinking has become a way of life.
- 2.0 In spite of the enormous indigenisation that has taken place in Space Research in India, it can still not become self-generating, because our basic thinking and inspiration is drawn from the outside world - from NASA, ESA etc. Not that I want us to close our eyes to outside developments. I wish to stress the fact that our science - our analytical framework - for Space Research in India is essentially a transplanted limb into the Indian society. Persons like Tsiolovsky and other scientists (both experimental and theoretical) are the ones who produced an original designer like Koryolev. Today we find the mark of originality in all the Soviet designs. The enormous experimental and theoretical base of the USA need not be stressed again. I need not point out to you similar developments in the field of Aeronautics.
- 3.0 Considering the above factors, what is ISRO doing to produce such a solid base of scientists? The fact that we are better than DRDO or HAL should hardly be a consolation for us. This problem pricked me very severely on 25th April when we had the Program Board meeting for Sponsored Research.
- 4.0 Besides posing problems to you, I always feel, I should offer solutions. (I also believe they are reasonably good ones!) The way the ISRO management - Chairman, ISRO, his headquarters, the Directors and the Project Directors - is constantly fire fighting, none of the ISRO Centres/Projects can manage the

delicate job of handling creative scientists; the mainstream of ISRO is too turbulent for calm thinking. PRL could have filled up this role; but it has become an intellectual carcass. Hence it is high time, Chairman considers setting an 'ISRO Institute of Fundamental & Analytical Research' headed by a high calibre scientist. Prof R Narasimha or Dr Ramaseshan could be the Director of such a Centre.

4.1 Director of this Institute should have lot of autonomy in personnel management. He should have equal, perhaps, higher ranking than the Centre Directors but should not be a member of ISRO Council and the rest which can kill his time. But a management system should be worked out to send important Project Proposals to the Space Commission through this Institute. May be he could be made a Member, Space Commission to give him clout and status. This Institute should have about 50 to 100 high calibre scientists (visiting scientists etc.)

4.3 A simple mandate for this Institute should be to produce high quality advanced research in Astronautics, Avionics and the Space Sciences. When it is fully grown it will not cost ISRO more than Rs 2 to 3 crores per annum.

5.0 If Chairman feels that this is a worthwhile and workable idea he should start activities on generating this Institute as soon as possible because it will take at least two years to settle down; Chairman, should personally give shape to this, if he is convinced of this idea.

Regards.