

INDIAN SPACE RESEARCH ORGANISATION

HEADQUARTERS

MEMORANDUM

/CONFIDENTIAL/

FOR CHAIRMAN'S USE ONLY

For : Chairman, ISRO

File / Ref :

From : YS Rajan

Date : 8 Nov. 1979

Subject : Future of the Indian Space Programme and some commercial/
industrial orientation for it.

The direction of the Indian Space Programme has been worrying me for some time. I had sent various notes on the subject to Chairman earlier. About a couple of years ago I had sent a comprehensive note describing a general scenario wherein possible civilian and military requirements of the country for the next 15 years or so were woven in some thematic form. If one were to think purely in a technological (or a technocratic) sense of the development of the Indian society (i.e. enmeshing of civilian & military needs) will indeed be the direction in which it will move. While we all should wish and strive that much of utilisation of space should be maximally for communication, remote sensing, navigation and other such peaceful applications, it is impossible to rule out defence involvement as long as nations exist in the world. So the brunt of my earlier note referred to above was that we should recognise this reality and work in advance so that internal strength was generated in a planned manner.

Unfortunately on many fronts, due to variety of historical, socio-political and administrative reasons we are not moving the way we should. Even if we were to de-couple the military question, for a while, from the long-term aspects of the space programme without an aggressive and firm commitment at the political, social and administrative levels for space programmes and high technology areas represented by space, it is impossible to sustain a proper development of the technology and therefore its applications. This is the key issue which worries me the most, since at policy making level and also at administrative-executive levels we, on the whole, appear to be overly muddled. Though a few profiles have been drawn about the space programme, it appears to me that the faith in executing such a profile at the higher levels of management does not seem to exist. Though nobody would admit openly I see an under-current of cynicism in most of the actions done in ISRO/DOS especially on the programmes. This is probably because the general socio-political scene seems muddled and the future of science and technology seems to be in much more confusion (especially because S&T had never been geared by the political force towards national development).

One way to react to the situation is to just stay loose and allow things to drift hoping that at some day people will realise the importance of Space and gear the programmes. This approach perhaps might have been alright when human beings are not involved in the development of technology. The 'Start-Stop' approach might look nice on paper, but defacto the persons who are in the process of creating a change in the technological scene would themselves get older and perhaps lose faith after a series of "Drift-Push, "Start-Stop" commands with vague guidelines and goals.

How to keep these small technology islands alive, is one question which constantly bothers me. One way could be an ostrich like attitude saying that there is no problem and push ahead with a hope (or deception!) that we have big programmes and we have big future. May be it is so but the current mode does not seem to indicate it. It appears to me that for another 4-5 years the situation may continue to be uncertain. I have been exercising my mind to see how best these islands of technological confidence could be maintained in the country. Again, to repeat, I am a firm believer that high technology activities especially in areas like Space, Electronics and Nuclear fields are a must for any society, more so for the developing ones and especially to a country of the size that of India. Whatever be the moral postures of individual leaders or nations, the harsh reality of development and resultant geopolitical tensions will continue for a few more decades if not centuries, and it is imperative for a developing country like India to have internal strength by developing these technologies and trying to utilise them.

It is with this in view I feel that it is time we develop a channel of commercial/industrial attitude through which at least some of the technological sub-systems developed for space activities by ISRO/DOS and associated agencies should channel their products (software and hardware) into world technological scene. This means that besides giving stress on major ISRO projects like IRS, PSLV etc we should be ready to give equal stress on building a few sub-systems or boxes and even often consultancy services for delivering (commercially) to international space programmes. Such delivery of subsystems etc should be given an equal priority and not considered as diversion of efforts. Such an approach would almost be like that of Italy, France or for that matter, German Democratic Republic (which makes the camera system and delivers it to USSR). Perhaps this would mean our acceptance of a possible "second-level" position in space judged in terms of concrete programmes but this would also mean that some islands of confidence could exist within India without a single point collapse; for

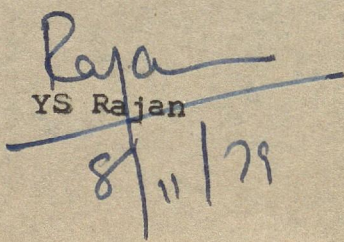
example if some ISRO-delivered sub-systems get into an Intelsat satellite or some ISRO/Indian made ground system is used by another country, then at least those Indian/ISRO groups which have delivered such products to working space systems elsewhere in the world will develop enough confidence in themselves thus keeping their morale alive for some more time when one can hope that the country really wakes up and asks the space engineers/scientists to shoulder the tasks for the country. If one were to use tactical terminology this would mean dispersion of talents to avoid a single point collapse.

Can this be done? My feeling is 'YES' if we give a high management priority to a few areas. Such areas of strength can definitely be identified for design, consultancy and in some areas for hardware delivery to Europe, USSR and USA and perhaps even to some developing countries. If a decision on such an approach were taken now, then within about 2-3 years of concentrated effort by a few talented individuals, ISRO/India would be able to deliver goods in those selected areas. The main aim is not just the profit by providing a few sub-systems and services, but more importantly for the development and sustenance of technological discipline and to keep the islands of expertise alive till such time our own programmes demand these with definitive goals and guidelines. If in this process Indian private industries would be helpful I think we should not hesitate in pulling them in. For example some reputed Indian industries can take up the role of marketing the products resulting from such efforts and perhaps even manufacture some of the hardware or organise a joint consultancy service. I think it can be done and we should try.

My ideas above could also be interpreted as a counsel of despair or pessimism. However I feel in the present juncture of uncertainty (which I think will continue for a while for variety of reasons including our own inability to manage big projects), it will be necessary for us to open a new channel which will keep the nucleus of Indian space technology alive.

Chairman may consider actions on this matter.

Regards


YS Rajan

8/11/79