Scientist Leaving DRDO – Why call Attrition ?

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The DRDO Directors' Conference held on February, 21, 2007 was effective in a sense that media started reminding about DRDO functioning more frequently. For example, the dissatisfaction expressed by the Parliament's standing committee on defence, the Minister A.K. Antony asking DRDO to answer for the huge delays in high profile projects, the concern expressed by Defence Services on DRDO projects and deliverables, the criticism of the individuals and an appreciation for the Government action in short listing private firms for granting the status of Rakshya Udyog Ratna. DRDO of course tried to read in between the lines, expressing – *"High attrition rate of young scientists ... The DRDO's representation to the Pay Commission . . .proposals to increase salaries of its scientists to arrest the exodus ? . . . and so on ".* Extracts from few such reporting are reproduced below for quick reference.

- Address at the DRDO Directors' Conference, dated 21/02/2007, by the President Dr. A.P.J. Abdul Kalam, The Hindu, dated 22/02/2007, "Set goal for self-reliance in defence systems": Kalam , by Special Correspondent. President A.P.J. Abdul Kalam and Defence Minister A.K. Antony on Wednesday asked defence scientists to bring about a change in their functioning to deliver on India's requirements of futuristic weapon platforms. "When an organization functions for over five decades. . . . .A change in the organizational culture is required based on present-day technology and infrastructure . . . . Advising that the DRDO be reorganized after every five years based on the dynamics of organizational missions. Mr. Antony . . . asked them to be prepared to answer for the huge delays in some of the high profile projects, . . .

- *Indian Express dated 14/06/2007* : DRDO Scientists are leaving to the greener avenues available in the Private Sector. More than 300 Scientists and Technical staff has left DRDO in the year 2006.

- *Tribune Chandigarh, dated 28/04.2007* : "During 2002-2006, . . . 1,007 scientists left . . . DRDO due to increased opportunities available in the private sector," DRDO is seeking a four-fold increase in salaries . . . from the Sixth Pay Commission.

- *Citizen Journalism, citizenxpress.com dated 15/06/2007 :* Because of better career prospects nearly 33% of people who join DRDO quit (attrition rate as BPO), nearly 20% use DRDO as stepping stone, nearly 18% are leaving due to lack of professional challenge and 8% leave DRDO looking for advancement and additional qualifications.

- *The Hindu, dated 23/12/2007 :* Defence Minister, Mr. Antony said "concerns had been expressed in various quarters over the functioning of the DRDO. The time has come to look inward and see whether the organization is tuning itself adequately to the changing times."

- *Hindustan Times, dated 17/06/2007, :* 1,007 DRDO scientists quit in five years.

  - DRDO criticized for huge time and cost overruns in its multifarious projects, saw 1,007 scientists quitting in the past five years, Parliament was informed Thursday.

  - Earlier this week, Antony had served notice on DRDO to quickly rectify the defects in the Arjun main battle tank (MBT) it has been developing since the 1970s or the

government would be compelled to wind up the project.

- Indian Army refused to induct the tank citing 14 major technical defects.
- A parliamentary panel, last month rapped the DRDO for failing to meet its import substitution targets by as much as 50 per cent, saying huge overruns in its big ticket projects warranted a "thorough review" of its functioning.
- Parliament's standing committee report on the DRDO : During the 10th Plan (2002-07), targeted 70% indigenization, only 30-35% could be achieved. Even after 48 years of its formation has not achieved its targeted mission of self reliance. "Urgent need for a thorough review" of its functioning and organizational structure "to increase its efficiency". Pointing delays in the MBT, LCA and its Kaveri engine, and Integrated guided missile development programme (IGMDP). Noting "No scientific audit at any point of time of DRDO and its projects", recommended that the organization's projects "must be audited by external and independent groups of experts approved by the government.

- *Bharat Rakshak, Consortium of Indian Defence Websites, dated 11/06/2007*, India's R&D in Defence DRDO, PSUs and Private Sector, *Times of India, 19/06/2007 :* Godrej has big plans for military hardware. The $1.7 billion Godrej Group plans to give a major push to its military equipment supply, creating private sector in manufacturing defence hardware. Already in nuclear and space technology and now plan to vigorously pursue in defence. Group Chairman Adi Godrej said. . . supplier of airframe sections for the Brahmos missile, supply of equipments for satellite launch, nuclear sector, and refineries. Government short listed 13 private firms for granting the status of Rakshya Udyog Ratna. The list was handed over to Defence Minister A K Antony by Probir Sengupta, the chairman of the government-appointed selection committee, on June 6.

- The Indian Express, dated 23/06/2007, "Just DRDO won't do", why India has MNCs in IT, pharma, telecom but not in defence research. by Milind Deora, 21/11/2006.
  - In 1958, the DARPA was set up by USA, Dept of Defense and same year India established the DRDO. While DARPA has been a huge success DRDO still hasn't been able to achieve its vision — everything that really matters in the Indian military is still imported.
  - A special CAG review in 2000 of found : almost 50 per cent of the DRDO's budget was spent on salaries; present ratio of scientists to other support personnel is 1:5 in DRDO compared to 1:0.7 in DARPA.
  - World-class scientists are acquired from private sector and universities. Supporting personnel are temporarily hired from other agencies so that DARPA doesn't have to support them on a permanent basis.
  - US defence budget is almost 25 times larger than that of India, but then DARPA's annual budget is only twice that of DRDO's, because DARPA is focused on high-end technologies, leaving other systems to industry. This has enabled it to stay lean.
  - For Arjun MBT and Akash missile, DRDO needs to follow better management practices to deliver indigenous technologies to the military. The production of juices and insect repellants are other instances where the DRDO urgently needs to rethink its focus.
  - DRDO labs should avoid any kind of overlap and duplication. The organization must draw up a list of future technologies based on certain criteria and go after them aggressively.
    - First, strategic technology that no country may sell to India — e.g., nuclear weapons, surveillance and communication satellites and long range cruise missiles.
    - Second, technologies which are heading towards a global monopoly like conventional submarines presently being sold at a very high price.

- Third, future technologies on drawing boards all over the world — like unmanned combat aerial vehicles (UCAVs), unmanned underwater vehicles (UUVs) and robot soldiers.

► If our other scientific and research organizations can make the world's most competitive satellite launch vehicles, we can surely do the same for defence technologies.

- intentBlog, http://www.intentblog.com/archives/2006/12/how_india_can_s.html, dated 14/12/2006, How India Can Stop Subsidizing Russia And Israel by Milind Deora, India can build strong indigenous capabilities while creating competitive benchmarks for DRDO through the active participation of the private sector. . . If India has built world-class multinationals in sectors such as information technology and pharmaceuticals, both of which are knowledge-driven industries, we could easily create a handful of defence multinationals in less than a decade. . . A small nation like Israel accounts for a 10th of world defence sales and approximately a 5th of its exports are defence-related. While India had an annual import bill of around $5 billion last year, we exported a paltry $47 million worth of arms. Pakistan, which lacks industrial base, exported nearly twice as much. . . . In addition to reforming the DRDO, the viability of select DPSUs, especially those not dealing with core areas like the production of missiles and warheads, should also be re-examined and certain products like food products should either be scrapped or outsourced to lower-cost vendors.

Expressing such dissatisfaction, criticism or concern about DRDO accomplishment is not new. After the Kargil war (1999) DRDO activities were subjected to some scrutiny and a few reforms were suggested, but Not much was done on those recommendations (The Indian Express, 23/06/2007). *Also, commenting on the DRDO in isolation, without looking at the higher defence management framework within which it is placed, would perhaps lead to incomplete or even flawed deductions.*

Assuming that what all is said is correct, then ***DRDO must be Looking for alternatives to its failures, which means DRDO is preparing to take few "hard decisions"***.

Some hard decisions I have in my mind which I would like to share are :

1. GET RID OF THE STUFF DRDO SHOULD GO WITHOUT.
2. All System Development projects and programs should be taken out of DRDO, because of very little R&D opportunity. The R&D element is just 10% while 90% is engineering design, fabrication, testing, integration, field trials, acceptance and management. Each of these are better done else where and not by R&D mind. The implementation responsibility would also lie on those who do these 90% work and finally on a Board. DRDO contribution, claim, responsibility, budget allocation, manpower, infrastructure, and management should relate to that 10% only.
3. Further, the Most Technology Demonstration projects should also be taken out of DRDO. The reason is same said above. The R&D elements in these TD projects are just 40% or less. Indian industries, particularly the private sectors, offer better compensation and therefore have better human resources They would better absorb this 40% R&D elements along with rest 60% actiity.
4. Lastly, a few Technology Demonstration projects where R&D elements are 40% or more and all the S&T projects where R&D elements are 100%, there **DRDO has it primary role that is : "Convert scientific know-how into usable technologies".** Here also DRDO need to evolve partner ship with the academic institutions, funded by

government or privately managed. All such projects are identified as (a) Basic Research that produces new knowledge in scientific or technology areas of interest to the military and (b) Applied Research that supports the exploratory development of new technologies for specific military applications or further development of existing technology for new military applications. The procedures followed by DARPA can be adopted to ensue transparence, equal opportunity, accountability, quality and most importantly revealing what followed next.

My best regards to friends in DRDO, a great organization that helped me to grow over a period of 30 years.