

## Essay

# Re-energising Indo-US Defence Technology Cooperation

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Extensive scientific collaboration between Indian and American scientists go back to the 1950s. The US has also been the favourite destination for Indian students seeking advanced studies in Science and Technology (S&T) because of its advanced education infrastructure and the immense opportunities for talent. Apart from the large and influential Indian diaspora and the common democratic values, US recognises the high potential of the Indian economy and its S&T capabilities. It also values the strategic geographical location of India which makes it capable of dominating the Indian Ocean region, including the trade routes.

India's close ties with erstwhile Soviet Union and its successor Russia had been an impediment for the US to explore the country for export of advanced military technologies in the past. Another aspect is the independent and non-aligned views of India on world affairs that were not always convenient to the US. India treads a balanced path in maintaining defence and economic relations between the two military giants. The US always maintains a close military relationship with its NATO and other allies while providing them advanced military technologies, sometimes at dictated terms. Many wondered whether close defence relationship is ever possible between India and USA, especially after the US imposed technology denial sanctions against India in 1998. However, the US eased all the sanctions once it was clear that business of the US defence industry was getting affected and the transfer of critical technologies for the missile projects and the aerospace programmes went ahead unhindered. India always maintained a normal relationship with US despite the sanctions and this maturity helped in coming together of both the countries. The all-

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important General Electric (GE) engine for the Light Combat Aircraft was taken out of cold storage by the US as a good business case.

## Defence Cooperation

US and India have all the essential ingredients to come together to leverage their positions for the benefit of each other. In recent years, the defence cooperation between India and the US has seen an acceleration and re-energisation. The various information exchange agreements and some of the top-class defence systems supplied to India, especially for the Indian Airforce, are noteworthy. The cooperation between the forces to enable them to operate together is a significant development underling that the cooperation is no more optics but based on deepening trust.

The defence cooperation between the US and India is almost at all levels and covers virtually every possibility. Defence Diplomacy has emerged as a new tool to build relations and draw cooperation in other spheres as well. General engineering exports to the US has also seen a significant rise. Improvements in ease of doing business with India and raising the permissible level of FDI in defence industry, emerging Industry to Industry cooperation and a few joint ventures are indirect results of better defence cooperation at the Government-to- Government level. The trust building between the two countries, especially due to Defence Diplomacy, has brought in new confidence and assurance for industry to engage in long term business arrangements.

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The professional engagement of the Armed Forces with each other and joint exercises have also enhanced the positive environment for collaboration, including better trading and business ties as an indirect effect. The Indo-US engagement has gone deeper because of information exchange agreements. Secured communications and arrangements to that effect is a commitment from both the sides for long term defence cooperation.

## Defence Technology Cooperation

The Defence Technology & Trade Initiative (DTTI) has caught up speed even though the beginning was cautious from both sides. For India, technology is the priority, while for the US, trade comes first in the DTTI acronym. Nevertheless, serious topics like the Jet Engine Technology has not received as much traction as was expected. Technologies at the cutting edge would not be shared by any country as it is precious in maintaining a lead

and it cannot be given even to the closest allies. It is always the minus one version that gets exported, especially the sensors in the platforms. Technology development involves lots of sweat and dedicated research for years and it is hard to transfer such technology. The technology benchmarks keep changing and to keep pace with the state of the art is of utmost importance even if there are setbacks and delays. When India demonstrated its Anti-Satellite capabilities, it was the demonstration of the Technological Prowess of the country. It is not the military might alone that brings about international political influence but also the technological capability of the country.

The US has a multi-pronged approach to innovative technology development with generous funding by government agencies. The Research Labs, academia, and industry team work together in an effective manner with complete involvement of the armed forces. Multiple teams working on the same technology with slightly different approaches is a normal practice. The basic belief in US research ecosystem is that there can be failures in research and technology development efforts and every attempt adds to the experience of the scientific manpower and builds a strong organisational knowledge base. There are contingency plans in development and certain percentage of projects are expected to fail. This kind of approach allows researchers to take higher risks and hence technological breakthroughs happen. A conservative work approach is an inhibition to exploration of innovations in Technology Development.

### **Joint Technology Group**

Before the DTTI, the Joint Technology Group (JTG) established in 1995, was another forum of engagement between defence technologists of India and the US. A low-key engagement provided for exchange of ideas on scientific research with reciprocal visits from both sides. The JTG has engaged in research projects independently carried out by both sides leading to many scientific publications. The JTG under the Ministry of Defence wherein the Defence Research and Development Organisation (DRDO) leads from the Indian side and the Office of the Undersecretary, US Department of Defence, coordinates with Federal Defence Research Laboratories. The forum did not have much traction earlier but picked up pace when overall defence cooperation between the two countries picked up. JTG focusses on scientific problems instead of development of systems that would be contentious as there would be IPR issues. The scientists from both sides worked on some of the very intriguing scientific problems that would become the basis of advanced technologies later. Many proposals had to be put on the backburner due to lack of staffing that could be spared for the programme. Number of workshops in India and the US were held. In the workshops

held in India a huge delegation from the US participated. It was clear that the cooperation was not just a diplomatic exercise but a genuine engagement of the scientific community of both the nations to carry out advanced research. Seeing the progress of JTG, both the sides are presently considering elevation of JTG to a higher level so that more funding and staffing becomes possible.

### Industry Engagements

The USA, India business engagements are another level of engagement wherein the governments provide essential policy support so that the business houses in both the countries can engage in manufacturing of defence systems even though they may not

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be complete or critical systems yet. This will enhance the development of quality human resources, skill development in advanced manufacturing and provide experience in various aspects of technologies involved. The development of this ecosystem, especially in the private sector, would be a great boost to industry and expand defence technology collaboration in the coming years.

The re-energisation of defence cooperation between the US and India is a positive development with multiple benefits to both the countries. They,

- a. Significantly contribute to improving bilateral relationship;
- b. Enable capability building for joint military operations;
- c. Support the emergence of India as an influential nation in the Indo-Pacific region and as a counterbalance to the aggressive postures of China;
- d. Facilitate supply of advanced defence platforms to India;

Cooperation in advanced defence research between the US and India would provide Indian scientists and researchers a chance to deliberate and exchange ideas with US academia and researchers, hence help in development of futuristic indigenous technologies. Enhanced Industry to Industry cooperation would give a boost to the Indian defence industry ecosystem. The US industry and scientific community would also be significantly benefited.