

PROCEEDINGS OF THE WEBINAR ON
“FORCE PROTECTION INDIA 2020”
10-13 OCT 2020

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1. The webinar was held on 10 Oct 2020 from 1030h to 1800h, jointly by the CENJOWS and the IMR. Four sessions chaired by senior military officers were held. Domain knowledge experts from the Army, Navy, IAF, DRDO, BSF and Industry participated in the respective sessions and made presentations. The webinar was attended by senior serving and retired officers from armed forces, R&D Organisations, Industry and Academia.

Session 1 – INAUGURAL SESSION

2. **Welcome Address.** Lt Gen Vinod Bhatia, PVSM, AVSM, SM (Retd), Director CENJOWS, welcomed all the dignitaries and audience to the webinar. He highlighted the importance and relevance of the webinar on Force Protection. After a brief introduction of the speakers, he outlined the webinar programme and requested the VCOAS to deliver the inaugural address.

3. **Inaugural Address.** Lt Gen SK Saini, PVSM, AVSM, YSM, VSM, ADC, VCOAS, delivered the Inaugural address. He detailed the key aspects of the Force Protection as; ensuring survivability with freedom of action, economy of cost, technological innovations, in spite of robustness and ruggedness of terrain and touched all other relevant aspects. To the industry captains he asked to keep in mind the cost of protection and innovativeness for development of protection equipment such as NVGs, helmets, Bullet Proof Jackets (BPJ), communication equipment and other such items. He advised that the weight of such protective gears should be reasonable in all terrains and during all weather conditions. He informed that enough funds have been sanctioned during the last three years for procurement of protection equipment. He advised that protection against IEDs is very important as it affects forces physically and psychologically. He stressed that the use of technologies such as robotics, Artificial Intelligence (AI) and Big Data Analytics (BDA) should be ensured. He pointed out that a niche area of special clothing and mountaineering equipment for Super High Altitude (SHA) with very low temperature is being addressed through import and for an Atma Nirbhar Bharat these items should be developed within the country. He informed that the use of low cost UAVs has increased manifold. Reminding about the ongoing pandemic and development of the PPE kits he impressed upon the industry representatives that there is a golden opportunity for them to participate in the development of protection equipment for the men and other assets for all terrains and expressed hope of constructive suggestions emerging during the webinar for a way forward for force protection of the armed forces.

4. **Keynote Address.** Lt Gen SK Upadhyay, PVSM, AVSM, SM, VSM, MGO, delivered the Keynote Address. He stated that both organisational as well as individual protection would be needed as was seen after the outbreak of the COVID-19 where first priority was force protection. Therefore PPE kits were provided for responding without getting grounded. The spiral of capability and counter capability will happen for force protection as well. At organisational level, from a modest level, force protection has already graduated to perimeter security. He informed the industry that the volume of force protection equipment needed by the defence forces

is bound to grow and the challenge is to produce these items in a timely manner with required volume. He advised users to work out requirements in an implementable manner even though desire is to have the best in the world. Adequate innovative measures would have to be adopted by the Services along with training as was done during 1965 Indo-Pak war where ageing Sherman tanks were able to successfully take on and defeat mighty Patton tanks. He concluded his talk by emphasising the need for Atma Nirbharta in the field of force protection equipment also. He expressed happiness that three to four BPJ manufacturers have established themselves in India. But SHA items are still being imported from the global supply chain. The need of the hour for the Industry is to be innovative. If the Industry is able to produce the right quality in a timely manner and at reasonable cost the Armed Forces and the CAPFs would be very happy.

5. **Special Address. Officiating DG Infantry, Maj Gen JS Sandhu, AVSM** delivered the Special Address. He explained the special significance of the force protection equipment as it affects the lives and morale of the soldiers. He pointed out that the body armour has improved tremendously and now equipment using ceramics have been developed. Ballistic protection would be needed by the soldier as violence has recently been witnessed on the LAC also. Employment of technologies is needed for protection and weight optimisation. He highlighted the importance of flexibility and advised that the equipment being offered should be modular in design and ergonomic by nature, low weight and offer night fighting capability. He informed that there are plenty of challenges in the future development of protective equipment and the Industry should aim for both indigenous as well as export markets by staying ahead in R&D in all types of equipment such as BPJ, Goggles, Elbow guards and Boots. Soldier health care technologies need also be incorporated. He shared the felt necessity for a troop carrying vehicle in Ladakh area for mobility in different terrain and updated the audience about the recently conducted NCNC trial in that area.

Session 2 - EMERGING PROTECTION TECHNOLOGIES

6. **This session was chaired by Maj Gen KV Jauhar, Addl DG Army Design Bureau, Army HQ.** In his opening remarks, he questioned whether we can continue with a business as usual approach or we have to be proactive in ensuring force protection. He then stressed the importance of innovative technologies for force protection equipment. He identified three areas for employment of technologies: namely; border and perimeter protection, aerial threats and soldier protection. He felt that even 'A' vehicles would need protection. He also pointed out that data protection was as important as all other important assets.

7. **Col KV Kuber, Director Defence and Aerospace, Ernest and Young** felt that force protection equipment needed regular upgradation and to counter lethal IEDs robots were needed to replace humans. He gave details of the government spending plans on force protection equipment and emphasised the necessity of data protection and cyber security of our networks. He also gave details of BPJ materials and identified areas along the border needing protection systems. He stressed the need for development of suitable technologies. He pointed out the relevance of employment of CIWS for countering the menace of UAVs. He identified many Indian

and foreign companies involved in the production of the force protection equipment. He concluded by laying stress on availability of raw materials for ensuring meaningful indigenous development of these items.

8. **Air Cmde Ram Kishore, Provost Marshal, IAF, Air HQ** spoke about "Protection of Air Force Assets". He stated the necessity of IAF base protection, as very high value assets are housed inside. He advised a right mix of physical and technological solutions for ensuring security and protection. He explained the employment of various security measures adopted by the IAF for the protection of the bases. He laid emphasis on training and weapon handling for effective protection and emphasised that a well oiled command and control set up is necessary for ensuring protection of all IAF assets stationed in a base.

9. **Mr MK Sharma, ADG Logistics, BSF**, talked about "Making the Border Fencing Fool Proof and Secure". He explained border fencing in detail as an important element in the border management system. In addition to fence obstacles he elaborated 'above the fence' and 'below the fence' measures also. He explained measures that are adopted for plugging the gaps in the fencing, especially in the water body regions.

Session 3 - PERSONNEL PROTECTION

10. **Maj Gen (Dr) GD Bakshi, SM, VSM (Retd), former GOC Romeo Force** chaired the Session 3 and gave detailed introductory remarks. He opined that China's doctrinal writings suggesting use of biological organisms have been in circulation for the last ten years or so. Four papers on genetically engineered organisms by Chinese authors suggest an in depth work in this direction. China patented Remdesivir, a COVID-19 drug well before the outbreak of the pandemic. China's major cities like Beijing and Shanghai have not been affected by the pandemic. China's airports remained open after the outbreak. China also resorted to aggression against most of her neighbours to exploit their weaknesses arising out of pandemic. All these events suggest that China has used COVID-19 as a bio weapon.

11. **Brig PS Chadha, VSM, Brig CBRN, Perspective Planning Directorate, Army HQ**, described "Protection against CBRN Threats". He explained that there is a high share of indigenous force protection equipment in our country as 43 items pertaining to the CBRN protection are already on the negative import list. He informed that DG Life Sciences in the DRDO deals with all such items. He also explained the areas where industry can be of help in development of CBRN protection equipment for Indian Defence Forces.

12. **Col Amitoz Singh, Col Inf-8 Directorate, Army HQ**, spoke about the "Ballistic Protection of the Infantry Man". He highlighted the importance of survivability, self protection, mobility and situational awareness. He gave the status of procurement of self protection items such as helmets, ballistic goggles for the face, BPJ, tactical gloves, NBC clothing, boots, ballistic shield, elbow and knee guards and health monitoring system. He informed that two studies "Acceptable Trauma Levels – Human body Type (Indian Origin)" and "Energy transfer on Bullet Impact – Head and Remaining Body Parts" are proposed to be undertaken from self

protection point of view. He said that expectations from Industry were that they respond to the RFIs, exploit OFB and DRDO facilities for testing and refinements, share inputs regarding latest policy relaxation in import and export embargo of technologies and also maximize participation in R&D process.

13. **Col Nirbhay Gautam from Mech Forces Directorate, Army HQ** talked about the "Protection Factor in Armoured Fighting Vehicles in the Indian Context". He began by describing the threat spectrum of the AFVs and then went on describing the passive and active protection systems including soft and hard kill systems. He explained systems such as Arena – E and Trophy in detail.

Session 4 - COUNTERING IEDs AND UAVs

14. **Last Session was chaired by Lt Gen Vinod Bhatia, PVSM, AVSM, SM (Retd), Director CENJOWS.** He highlighted the relevance of threats emerging from the IEDs and UAVs and importance of development and employment of the Counter UAV systems during the evolving warfare scenario.

15. **Col Prashant Bist from CME Pune** described the "Concepts and Applications of Counter- IED Strategy". He explained the security environment in the Northern Region, Eastern Region and LWE affected States of India. He then went on to explain the existing counter IED setup along with its shortcomings and also Indian Army counter IED Policy. He then outlined proposed concepts of national counter IED strategy, applications of counter IED strategy in tactical level operations and concluded the talk by suggesting a way forward along with recommendations for capacity building.

16. **Col S Rajeev from Army Air Defence Directorate, Army HQ** spoke about "Countering UAV's Threats". He first described the threats posed by the UAVs in conventional and sub-conventional domains and explained capabilities of Turkey and China and their involvement in struggles in other countries. He also described interplay of various aspects of UAVs through well collated graphics in which operators, manufacturers, flight controls, number of aircraft, command and control and cyber protection issues were covered. He concluded his talk by suggesting the employment of AI and Big Data Analytics tools, adopting a multi layered approach and giving a calibrated response for countering UAV threats. He also suggested application of agile modular, scalable systems with open plug and play architecture and also use of add-on packages to existing robust air defence platforms.

17. **Mr Manvender Singh, Scientist G, IRDE (DRDO)** gave a presentation on "Border Surveillance Systems". He first explained the EM spectrum and then gave a summary of the developed surveillance systems. During the talk he further explained border surveillance infrastructure, technologies and challenges, image video processing, remotely operated systems and future trends in force protection technologies.

18. **Col Ashvin Pundir, Ordnance Service Directorate, Army HQ,** spoke about "Protection of Ordnance Installations". He explained the role and function of the OS Directorate at Army HQ. Vulnerabilities and threat assessment to various Ordnance installations was outlined and an approach to their security was explained. He gave

details of the pre modernisation security set up and then first phase of modernisation. Finally he identified domains for proposed security modernisation of important installations.

19. **Maj Gen Ravi Arora, CEO IMR and Distinguished Fellow CENJOWS,** briefly summarized the day's proceedings and also touched upon the force protection areas not included in the webinar. He thanked all for participation in the webinar in some way or the other and hoped to conduct this event next year with renewed vigor.