

CENTRE FOR LAND WARFARE STUDIES

SEMINAR ON “CIVIL MILITARY INTEGRATION - THE WAY FORWARD”

26-27 December 2022
Ashoka Hall, Manekshaw Centre, Delhi Cantt

SEMINAR REPORT



**Group Photograph of Distinguished Speakers and CLAWS Faculty with
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General Manoj Pande, PVSM, AVSM, VSM, ADC, Chief of Army Staff
26 December 2022**

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CENTRE FOR LAND WARFARE STUDIES

Centre for Land Warfare Studies (CLAWS), New Delhi, is an autonomous think tank on strategic studies and land warfare. CLAWS is registered under the Societies Registration Act, 1860 and is a membership-based organisation. It is governed by a Board of Governors and an Executive Council. Chief of the Army Staff is the Patron of CLAWS. Vice Chief of the Army Staff is the Chairman of the Board of Governors and Director General Strategic Planning, Integrated Headquarters of Ministry of Defence (Army) is President of the Executive Council. The current Director General of CLAWS is Lieutenant General PS Rajeshwar, PVSM, AVSM, VSM (Retired).

Objectives

- To function as an independent Think-Tank.
- To promote study and research.
- To promote and further intellectual thinking.
- To undertake research projects.
- To organise webinars, seminars, lectures, workshops, conferences, courses and other such intellectual activities.
- To train and assist scholars to undertake strategic studies and research.

Mandate

The mandate of CLAWS encompasses research on national security challenges, including conventional military operations and sub-conventional warfare. CLAWS also focuses on conflicts in the region and security related developments in countries within India's strategic frontiers, particularly those in the South Asian region.

Vision

To establish CLAWS as a leading Think Tank in policy formulation on Land Warfare, National Security, Military Technology and Strategic Issues.

Collaborations

The CLAWS Outreach Committee engages with Think Tanks and universities worldwide. As a result, joint publications have commenced with Woodrow Wilson International Centre for Scholars, USA and Bangladesh Institute of Peace and Security Studies (BIPSS), Dhaka and an Annual Dialogue with Nepal Institute for International Cooperation and Engagement (NIICE), Kathmandu.

MoUs with regard to academic collaboration have been signed with US Army War College, NIICE, Indian Institute of Technology (Delhi), OP Jindal Global University (Sonapat, Haryana), Christ University (Bengaluru) and several other institutions.

To further enhance Professional Military Education (PME) of Army Officers, CLAWS has signed MoUs with Manipal Academy of Higher Education (MAHE) and Central University of Gujarat, to conduct PhD programme for Army Officers.

CLAWS Activities

CLAWS organises webinars, seminars and conferences, round-table discussions, workshops and guest lectures and undertakes research projects on national security issues, especially those pertaining to land warfare. CLAWS disseminates the results of its research to its members, armed forces, policy-makers, the strategic community and academia.

To encourage young scholars to express their views on strategic issues, CLAWS organises the Field Marshal Manekshaw Essay Competition (FMMEC) annually. CLAWS' activities and research can be viewed at its website www.claws.in.

ABBREVIATIONS USED IN THE REPORT

ADB	Army Design Bureau
AI	Artificial Intelligence
AMSB	Army Management Studies Board
ARTRAC	Army Training Command
AVSM	Ati Vishisht Seva Medal
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance
CAPS	Centre for Air Power Studies
CCS	Cabinet Committee on Security
CDS	Chief of Defence Staff
CENJOWS	Centre for Joint Warfare Studies
CGDA	Controller General of Defence Accounts
CLAWS	Centre for Land Warfare Studies
CMC	Central Military Commission
CMF	Civil Military Fusion
CMG	Civil Military Group
CNP	Comprehensive National Power
COAS	Chief of Army Staff
DA	Defence Attaché
DDP	Department of Defence Production
DESW	Department of Ex Servicemen Welfare
DGSP	Directorate General Strategic Planning
DIA	Defence Intelligence Agency
DGCA	Directorate General of Civil Aviation
DMA	Department of Military Affairs
DoD	Department of Defence
DPC	Defence Planning Committee
DPSU	Defence Public Service Undertaking
DRDO	Defence Research and Development Organisation
GDP	Gross Domestic Product
GoI	Government of India
GPS	Global Positioning System
GSQR	General Service Qualitative Requirements
HR	Human Resources
HRD	Human Resources Development
IA	Indian Army
IAF	Indian Air Force
IAS	Indian Administrative Service
IB	Intelligence Bureau
IDEX	Innovation for Defence Excellence
IFS	Indian Foreign Service
IISc	Indian Institute of Science
IMA	Indian Military Academy
IIT	Indian Institute of Technology
IN	Indian Navy
IoT	Internet of Things
ISRO	Indian Space Research Organisation
IT	Information Technology
J&K	Jammu and Kashmir
LBSNAA	Lal Bahadur Shastri National Academy of Administration
LTIPP	Long Term Integrated Perspective Plan
MCF	Military Civil Fusion

MEA	Ministry of External Affairs
MeITY	Ministry of Electronics and Information Technology
MHA	Ministry of Home Affairs
MoD	Ministry of Defence
MoRTH	Ministry of Road Transport and Highways
MSME	Micro Small and Medium Enterprises
MRO	Maintenance, Repair and Overhaul
NDA	National Defence Academy
NDC	National Defence College
NMF	National Maritime Foundation
NSA	National Security Advisor
NSAB	National Security Advisory Board
NSC	National Security Council
NSCS	National Security Council Secretariat
NTRO	National Technical Research Organisation
PLA	People's Liberation Army
PM	Prime Minister
PME	Professional Military Education
PSU	Public Service Undertaking
PVSM	Param Vishisht Seva Medal
QR	Qualitative Requirements
R&AW	Research and Analysis Wing
R&D	Research and Development
RMA	Revolution in Military Affairs
SFC	Strategic Forces Command
SM	Sena Medal
SSIFS	Sushma Swaraj Institute of Foreign Service
TDF	Technology Development Fund
UYSM	Uttam Yudh Seva Medal
VSM	Vishisht Seva Medal
YSM	Yudh Seva Medal

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CLAWS SEMINAR ON
“CIVIL MILITARY INTEGRATION - THE WAY FORWARD”

INTRODUCTION

India's Armed Forces are an important component of its comprehensive national power, and play a vital role in handling national security challenges. Seamless civil-military integration is important for a holistic and cogent national response to the myriad security challenges that India faces, as also to enable crucial transformation projects reach fruition.

Study. Civil Military Integration in India has been discussed in various fora over the years. A new endeavour in this regard was initiated by HQ ARTRAC with an AMSB Study on “Civil Military Fusion in India: A Roadmap for the Indian Army”. The study was conducted by the Council for Strategic and Defence Research.

Seminar. To discuss the issues examined in the study and carry forward the intellectual examination on the subject, a Seminar on “Civil Military Integration : The Way Forward”, was organised by CLAWS at New Delhi on 26-27 December 2022.

Aim of the Seminar. To analyse the current state of civil-military relations and recommend measures for achieving greater synergy in functions and outcomes.

Discussion Themes. Eminent speakers were invited to present their views on various facets of Civil Military Integration. An eclectic mix of speakers from different fields were invited, so as to obtain considered views from functionaries of the GoI, civil services, military officials, academics, representatives from private defence industry and strategic analysts. The Seminar was conducted over two days, with two Sessions on each day. The discussions focussed on the following two crucial domains of civil-military relationship :-

- (a) Bureaucracy-Military Integration.
- (b) Industry-Military Integration.

Action Plan. An Action Plan has been included in the Seminar Report, which summarises the takeaways from the Seminar, and which can serve as a reference to enhance Civil Military Integration in the realm of national security.

EXECUTIVE SUMMARY

In the modern world, warfare is no longer limited to a nation's military capabilities, but is a national enterprise, necessitating enhanced capabilities of its leadership, industrial might, scientific knowhow and all elements of its comprehensive national power, including its military capabilities. Hence, India must adopt a whole of government approach to respond effectively to national security challenges, for which Civil Military Integration is essential.

To be truly sustainable, Civil Military Integration in the national security domain must be achieved at the conceptual level, i.e. integration of the political leadership with the senior military and bureaucratic leadership, as well as the functional level, to enable collaborative implementation of the national security strategy.

The scope of Civil Military Integration includes integration within the MoD and with other GoI Ministries, as well as with indigenous defence industry, and the academic and scientific communities. Hence, any serious endeavour towards Civil Military Integration must cover the entire spectrum of integration, for only then will it become sustainable. Important preconditions to facilitate Civil Military Integration are, firstly, genuine acceptance of its need by all concerned, and secondly, integration of the armed forces.

Cross domain posting of officers in the military and civil services is essential for better understanding and a wider perspective. This endeavour must extend beyond the military headquarters and the bureaucracy within the MoD, to include Defence PSUs, DRDO and related Ministries of GoI.

Organisation and functioning of the MoD requires a de novo appraisal, to make it more responsive to the dynamics of the modern geopolitical environment. The need for a specialised MoD cadre must be examined for a better understanding and closer expertise in matters of national security.

GoI has undertaken several initiatives for infrastructural development, to boost domestic manufacturing, and to improve the ease of doing business in India. The armed forces must align themselves to this national endeavour for national development and derive maximum benefits to enhance their strategic, logistics and operational capabilities.

The process of defence acquisition needs to be made more transparent and interactive. Consultations with all stakeholders are required for improvement and to reduce time taken between identifying an operational requirement and induction of military equipment.

Indigenous R&D for modern defence technologies requires a boost, which can be provided through a national effort that exploits India's inherent technological and scientific strengths, and coordinates the endeavours of private industry, DPSUs, DRDO and the scientific community. This necessitates meaningful partnerships and collaborations across the spectrum of public-private-academic fraternities.

Funding for research into defence R&D is an important need for which GoI must incentivise private financial institutions making long-term commitments. The Government must also examine innovative means of funding to this effort, which includes raising of capital through specialised bonds, such as infrastructural bonds.

Civil Military Fusion is a cultural and mental transformation and requires immense belief amongst concerned stakeholders for it to succeed. It is, however, the need of the hour, considering the immensity of the geopolitical challenges that it faces today.

CLAWS SEMINAR ON
“CIVIL MILITARY INTEGRATION - THE WAY FORWARD”

SUMMARY OF RECOMMENDATIONS

Aim. To achieve Civil Military Integration in the realm of national security.

Levels of Integration

- Conceptual
- Functional

Prerequisites for Integration

- Acceptance of need for Integration
- Tri-Service Integration

Scope of Integration

- Within MoD
- With Other Ministries & Agencies
- Industry Military Integration
- Academia Military Integration
- National Leadership Integration

National Leadership Integration

- Regular discussions on National Security
- National Interests and Objectives
- National Security Review

Measures for Bureaucracy Military Integration

- Permanent and Specialised MoD civilian administrative cadre.
- Involve senior civil services officers in strategic planning.
- JWG's for national security issues, e.g. Pakistan, Internal Security, Cyber Security.
- Integrate Departments of MoD - mix of military and civilian officers.
- Cross domain posting of officers in GoI, DRDO, DPSUs & Intelligence agencies.
- Cross domain training of civil services and military officers.
- Formal academic relationships with reputed educational institutions.
- Coordinate military requirements with GoI Ministries and Development Initiatives.

Measures for Industry Military Integration

- Annual discussion to align indigenous defence industry to military requirements.
- Formally articulate military operational and technological requirements.
- Mobilise different sources of funding research in new defence technologies.
- Direct induction of technology domain specialists in armed forces.
- Establish Service specific Technology Research Centres
- Formal partnerships with scientific educational institutions.
- Formal structure for guiding R&D in defence technologies.
- Commission one time study groups for technology development.
- Specialised MoD and Services cadre for defence acquisitions.
- Consultative process to formulate QRs for military equipment.
- Improve the equipment acquisition process.

ACTION PLAN TO ENHANCE CIVIL MILITARY INTEGRATION

INTRODUCTION

1. The Action Plan is based on the discussions held during CLAWS Seminar on “Civil Military Integration : The Way Forward”, on 26-27 December 2022.
2. **Aim.** To achieve Civil Military Integration in the realm of national security.
3. **Levels of Integration.**
 - (a) Conceptual integration of the political leadership with the senior leadership of the civil services and the military.
 - (b) Functional integration at middle and lower levels of leadership in all domains.
4. **Layout.**
 - (a) Planning for Civil Military Integration.
 - (b) Measures to Achieve Leadership Integration at the National Level.
 - (c) Measures to Achieve Bureaucracy Military Integration.
 - (d) Measures to Achieve Industry Military Integration.

PLANNING FOR CIVIL MILITARY INTEGRATION

Scope of Integration

5. **Integration within the Ministry of Defence (MoD).** Integration of the Army, Air Force and Navy, the Departments of Defence (DoD), Military Affairs (DMA), Defence Production (DDP), Ex Servicemen Welfare (DESW), and the Defence Research and Development Organisation (DRDO).
6. **Integration of MoD With Other Ministries.** Integration of the armed forces and the MoD with the Ministries of Home Affairs, Finance, External Affairs, Commerce and Industry, Road Transport and Highways, Ports Shipping and Waterways, Communications, Science and Technology, Civil Aviation, Electronics and Information Technology, Environment Forest and Climate Change, Information and Broadcasting, Railways, Department of Space, Department of Atomic Energy, and any other ministry / department / agency of the GoI that may be involved in any facet of national security, such as NTRO, R&AW, IB and ISRO.
7. **Industry Military Integration.** Integration of the armed forces and MoD with indigenous defence industry, including public and private sectors and start-ups.
8. **Academia Military Integration.** Integration of the armed forces and the MoD with the academic and scientific community of the nation.
9. **Leadership Integration at the National Level.** Enhance trust between the political leadership, the military and the civil services.

Prerequisites for Integration

10. **Acceptance of Its Need.** Genuine and wholehearted acceptance of the necessity for Civil Military Integration by all stakeholders.
11. **Tri-Service Integration.** Integration amongst the armed forces will augment the endeavour for Civil Military Integration, through following means :-
 - (a) Evolve a common threat perception and security assessment.
 - (b) Integrated capability development planning.
 - (c) Evolve joint and integrated structures.
 - (d) Progress joint services doctrines, training, logistics and HR policies.

MEASURES TO ACHIEVE LEADERSHIP INTEGRATION AT NATIONAL LEVEL

12. **Intent.**
 - (a) Enhance the trust level amongst the national leadership - Political-Bureaucratic-Military - on national security issues.
 - (b) Develop institutional mechanisms and processes, which remain in place regardless of changes in the civil-military leadership or in political dispensations.
13. **Periodic Discussions on National Security.** The national leadership - political, bureaucratic and military, must develop a common understanding of national security through regular discussions, as given below :-
 - (a) **Quarterly Discussions.** Discussions on key national security issues, focused on military and internal security.
 - (b) **Annual Discussions.** Discussions with an enhanced scope, to include all components of national security - economic, space, information, cyber, energy, water and other domains.
14. **National Interests and Objectives.**
 - (a) **Determine National Interests.** Identify India's national interests, and specifically its core interests, which are non-violable and non-negotiable.
 - (b) **Identify National Objectives.** Determine national objectives or goals, that must be achieved in a specified time period, possibly over a decade.
15. **National Security Review.** The review must include the following :-
 - (a) **Challenges to National Security.** Identify challenges to India's national security, including military, geopolitical, economic, space, information, technology, cyber, industry, energy, social, water, and other relevant domains.
 - (b) **National Security Strategy.** Formulate a National Security Strategy as the guiding philosophy for attainment of national objectives. National Defence Strategy will evolve from the National Security Strategy.

MEASURES TO ACHIEVE BUREAUCRACY MILITARY INTEGRATION

Functional Measures

16. **Review of the Civil Services Cadre of the MoD.** Conduct a joint review of the civilian administrative service of the MoD, on following aspects:-

- (a) **Permanent Cadre.** Need for a permanent cadre of civilian administrative officers of the MoD, that specialises in defence and security related matters.
- (b) **Specialised Streams.** Policy, Acquisition and Military Infrastructure.

17. **Involve Senior Civil Services Officers in Strategic Planning.** Senior civil services officers - Secretaries and Additional Secretaries - from key Ministries of the GoI - MoD, MHA, MoF and MEA, must be involved in the strategic planning processes of the armed forces. The aim is to provide them with an insight into Military Capability Development Planning and other national security aspects.

18. **Constitute Joint Working Groups (JWG).** Constitute JWGs on the lines of China Study Group, to examine the following aspects of national security :-

- (a) **Pakistan.** To include the NSA, CDS, Service Chiefs, Secretaries of Defence, External Affairs, Home, and heads of R&AW, NTRO, DIA and IB.
- (b) Internal Security.
- (c) Maritime Borders and Indian Ocean Management.
- (d) Cyber and Information Security.
- (e) Space Security.

Share Human Resources

19. Cross domain posting of officers within the GoI will facilitate better understanding of capabilities, requirements, processes and procedures of other organisations.

20. **Inter Service Integration.** Post officers from all three Services to different branches of Headquarters Commands and Service Headquarters of the other two Services.

21. **Integrate Departments within MoD.** Post military and civilian officers in the DMA, the DoD, the DDP and the DESW, so that all Departments in the MoD have a mix of military and civilian officers.

22. **Military-DRDO Integration.**

- (a) **Military to DRDO.** Post military officers to all Laboratories and Establishments of DRDO, as per related equipment/field of research. The military officers will constantly interact with the DRDO as regards Service requirements, and also keep Service Headquarters informed of progress on respective projects.
- (b) **DRDO to Military.** Scientists from DRDO can be attached for three months to Equipment/Procurement Branches of Headquarters Commands and Service Headquarters of the three Services.

23. **Military-Defence PSUs Integration.**

(a) **Military to DPSUs.** Post military officers to all 16 DPSUs, as per related equipment manufactured. The military officers will constantly interact with the DPSUs as regards Service requirements, and also keep Service Headquarters informed of progress on respective projects.

(b) **DPSUs to Military.** Officers from DPSUs can be attached for three months to Equipment/Procurement/Maintenance Branches of Headquarters Commands and Service Headquarters.

24. **Cross Ministry Integration.**

(a) **Military to Ministries.** Post military officers to different Ministries - MHA, MEA, MoRTH, MeITY, Ports Shipping and Waterways, Communications, Science and Technology, Civil Aviation, Railways, Department of Space, ISRO, etc.

(b) **Ministries to Military.** Post civil services officers from different Ministries to Headquarters Commands and Service Headquarters, as per relevance.

Cross Domain Training

25. Conduct cross domain training amongst civil services and military officials to enhance understanding of other organisations, responsibilities and challenges.

26. **Basic Orientation Training.**

(a) **For Military Officers.** Military officers must undergo a 1-week Orientation Capsule on National Security and aspects related to the conduct of foreign affairs of the nation. These capsules must be conducted during Defence Services Staff Course/Defence Services Technical Staff Course, Senior Command and Higher Command courses and equivalent courses.

(b) **For Civil Services Officers.** All civil services officers must undergo a 2-week Military Orientation Capsule, to include organisation, responsibilities, equipment and functioning of the armed forces, during the Foundation Course training conducted at LBSNAA, followed by a familiarisation visit to forward areas/combat units of all three Services.

(c) CORE program for military officers approved for three-star ranks should incorporate refresher capsules at LBSNAA and SSIFS.

27. **Orientation Training for Military Officers Posted to Service Headquarters.** All military officers posted to Service HQs in New Delhi must undergo a 1-week capsule on organisation, functioning and procedural aspects of the civil services.

28. **Orientation Training for Middle Level Civil Services Officers.** The military must periodically conduct a 1-week Orientation Capsule for middle level civil services officers (Director and Joint Secretary), to include organisation, equipment and operational requirements of the armed forces. This training is meant for civil services officers posted in MoD, MEA, MHA, and other Ministries which have interactions with the armed forces, like MoRTH, MoEIT, Communications, Science and Technology, Civil Aviation, Railways, Department of Space, and any other Ministry or Department of the GoI that may be involved in any facet of national security.

29. **Agreements with Academic Institutions for Strategic Studies.** Premier training establishments of the armed forces - DSSC, DSTSC, CDM, Army/Navy/Air Force War Colleges and National Defence College, and the Services think-tanks – CLAWS, CAPS, NMF and CENJOWS, must establish formal academic relationships with reputed educational institutions like Jawahar Lal Nehru University, Delhi University, Ashoka University, Jindal University, Amity University etc, with an aim to develop a national strategic environment. These agreements must include exchange of faculty and students and joint conduct of research on national security issues.

Integrate with Development Programs and Government Initiatives

30. Gol has launched a large number of initiatives for infrastructural and economic development. The armed forces must integrate their operational requirements to benefit from these infrastructural development schemes.

31. **Establish a Tri-Service Armed Forces Coordination Cell.** Headquarters Integrated Defence Staff must establish an Armed Forces Coordination Cell for National Development - to derive maximum benefits from national infrastructural projects and Government developmental Initiatives. This Cell will coordinate, as a single point agency on behalf of the armed forces, with concerned Ministries, military requirements that can be incorporated into national infrastructural projects and developmental Initiatives.

32. **Coordination with Ministries.** The armed forces must project their operational requirements in a manner in the right timeframe, so that they can be incorporated into the planned infrastructural development by following Ministries:-

(a) **MoRTH.** Project requirement of roads, bridges and tunnels in proximity of border areas, and for feeders to such roads, as required for inter/intra theatre strategic and tactical movement of forces.

(b) **Railways.** Project requirement of railway lines for initial mobilisation of forces, their subsequent strategic movement, and logistics build-up and sustenance.

(c) **Civil Aviation.** Coordinate the construction and development of dual-use airports, especially in border areas. The armed forces must examine the feasibility of integrating selected civil military airports to strengthen airspace management and combat support capabilities.

(d) **Electricity.** Project requirement of electricity supply to military garrisons during peace and war, and for Headquarters, communication centres and logistics centres, etc, during war.

(e) **Communications.** Project communications requirements of the armed forces during peace and war, to enable networks of Optic Fibre Cable, landlines and wireless communication networks to be planned accordingly.

(f) **Space.** Project requirements of military reconnaissance and surveillance, communications and navigation during peace and war, to ensure that India's massive and advanced Space program incorporates these strategic requirements in future satellite design and specifications, with the desired inbuilt encryptions.

(g) **Ports and Shipping.** Project infrastructural requirements of the Navy, to enable their incorporation in the development of civilian ports and waterways.

(h) **Ministry of Power**. Coordinate the use of tunnels in border areas where Hydroelectric projects have been constructed and project such requirements where Hydroelectric projects are planned/under construction. Tunnels so projected must have military utility during war, especially for logistics/stocking purposes.

33. **Integration into Government Initiatives**. In addition to coordination with Ministries as mentioned above, the Armed Forces Coordination Cell for National Development must integrate with GoI Initiatives, for operational and logistics benefits, which include the Gati Shakti National Masterplan for Multimodal Connectivity, National Logistics Policy and Vibrant Villages Program.

MEASURES TO ACHIEVE INDUSTRY MILITARY INTEGRATION

Boost R&D in Defence Technologies

34. **Annual Discussion for Mutual Understanding**. To align indigenous defence industry with future technological and strategic requirements of the Indian armed forces, organise a formal, annual interaction, to apprise the industry of the strategic direction of capability development of India's armed forces. Jointly examine adversaries' capabilities and identify technologies and means to defeat them, as given below:-

- (a) Identify key disruptive technologies which cater to India's unique security requirements, instead of diluting efforts in multitudinous technologies.
- (b) These technologies must build upon innate indigenous capabilities.
- (c) These technologies must result in tangible operational benefits to India's armed forces in a practically acceptable timeframe.

35. **Articulate Military Requirements Clearly**. Clearly articulate military technology requirements through:-

- (a) **Technology Perspective and Capability Roadmap**. This vision document must spell out capabilities and technologies required to be developed, specific to the national security requirements of the nation. To ensure that it is rooted in practical and achievable parameters, the domestic scientific and academic community must form part of the evolution of this document. This roadmap must be published with a decade's perspective and be updated every five years, for it to remain current and relevant.
- (b) **Compendium of Problem Statements**. Technology Perspective and Capability Roadmap must be accompanied by a Compendium of Problem Statements, elaborating on specific weapon systems and platforms required by each military service, and spelling out essential QRs. These problems, once formally stated, will enable private defence industry, including start-ups, to evolve concrete design proposals and facilitate identification of research areas for the future. This process must be participative between the military, DRDO, scientific institutions and private industry.

36. **Mobilise Different Sources of Funding Research in New Technologies**. Research in new defence technologies requires sustained funding over several years. Examine various means to mobilise sources of funding, as given below:-

(a) **Technology Development Fund (TDF).** Several projects have already been funded through TDF, under the aegis of DRDO. It is recommended that for better alignment of research projects with end user operational requirements, future collaboration be made the responsibility of the Services under the aegis of the DMA. DRDO must continue to provide technical and scientific inputs/assistance as required. However, selection of research projects and future direction of their efforts must be completely aligned to specific end user needs.

(b) **Private Funding with Government Incentives.** Govt must invite participation from private industry and venture capitalists with a long-term perspective, to avoid over-dependence on government patronage. Private indigenous investments must be incentivised by governmental measures like tax holidays, provision of infrastructural support for research and testing, sharing of governmental expertise and experience, etc.

(c) **Collaboration with Other Ministries.** MoD should collaborate with other Ministries, which would also accrue benefits from defence technologies research projects, such as Ministry of Science and Technology, Department of Space, HRD Ministry, Communications Ministry, MeITY, etc. Financing for various research projects can be sourced from funds available to these Ministries as well.

(d) **Defence Bonds.** Govt periodically issues Infrastructure Bonds to finance developmental projects. Similarly, the feasibility of Defence Bonds can be examined, to finance defence research projects. Backed by sovereign guarantees, for a period ranging from 5, 10, 15 and 20 years, Defence Bonds may invite participation from institutional and private investors across the country and enable capital availability for research to the defence industry.

37. **Direct Induction of Domain Specialists in Armed Forces.** Enable direct induction of domain specialists into the armed forces through a Technology Expert Induction Scheme. The aim is to enhance Services expertise in new and emerging technologies. Selection criteria must be based on technological job requirements and not on criteria for induction of regular soldiers, as given below:-

(a) **Identify Technology Streams.** Each Service identifies specific fields of technology, where inhouse domain expertise is essential. There are both Service specific requirements and common usage technologies, as given below:-

(i) **Defence Technologies (Across Services).** AI, Quantum Computing, Big Data Analysis, Cyber warfare, Drone warfare, Communication, Navigation, Electronic Warfare, Network Centric Warfare, Smart Weapon Delivery systems, etc.

(ii) **Technologies for the Army.** Robotic Surveillance, Autonomous Battlefield Management systems, Smart Anti-Tank Missiles, etc.

(iii) **Technologies for the Air Force.** Aero-engines, Avionics, enhanced Beyond Visual Range capability, Airborne Early Warning systems, etc.

(iv) **Technologies for the Navy.** Propulsion systems, Maritime Domain Awareness systems, Electronic Warfare suites for Naval vessels, Anti-Submarine systems,

(b) **Induct Experts.** Induct domain specialists under the customised Technology Expert Induction Scheme. To start with, 8-10 experts can be inducted for

each Service, and 15-20 experts for technologies of joint or common interest. Post induction, these persons must undergo orientation training, to ensure that they acquire complete understanding of the Services perspective, and their operational and technological requirements.

(c) **Tasking.** Technology domain specialists will become the Services representatives for collaboration with the scientific community and the industry, and provide user perspective while developing niche technologies. They will be involved in the development, testing, manufacture and induction stages of respective technologies.

38. **Establish Service Specific Technology Research Centres.** Each Service must establish 2-3 Research Centres at IISc or IITs, for focussed research into a specific emerging or future technology. These centres must be funded by GoI, through the Services, and must encourage focussed research entirely into emerging and disruptive defence technologies.

39. **Partnerships with Scientific Institutions.** The Services must enter into formal, long-term partnership agreements with selected scientific institutions like the IISc and the IITs, for scientific and academic research into certain niche technologies. Sponsor research by selected candidates for their Doctorates and Post-Graduation at universities/scientific institutions in specified streams, with a likelihood of their future absorption into the armed forces or DRDO.

Create a Formal Structure for Guiding R&D in Defence Technologies

40. **Recommended Structure.** Having articulated Services requirements for future defence technologies, a formal structure is essential to ensure results on ground. It is recommended to create a three tiered mechanism for identification, examination and selection of new technologies and weapon systems for the armed forces, as given below :-

- (a) An apex body that approves technologies for development and funding.
- (b) A functional body for monitoring progress of approved projects.
- (c) An independent advisory body for objective examination of proposals.
- (d) One-time inter-agency collaborative study to initiate the process.

41. **Apex Body - Defence Technology Policy Group.** Create an apex body for identification, development and induction of new technologies in India's armed forces. This process must be in conformity with the formalised Integrated Military Capability Development Plan and linked to the National Security and Defence Strategies. Modalities are given below :-

- (a) **Tasks.**
 - (i) **Formalise Services Technology Requirements.** Examine current and future technologies, and identify the type of technologies, weapon systems and platforms that must be developed for utilisation by the armed forces over the next decade. Release them as the Military Technology Perspective and Capability Roadmap and the Military Compendium of Problem Statements.

(ii) **Coordinate and Direct National R&D Efforts.** Distribute responsibilities for R&D between DRDO establishments, private industry, start-ups, scientific and educational institutions, as part of a national, coordinated Defence Technology R&D effort.

(iii) **Funding.** Allocate sources of funding and other resources to each project, as per suitability, potential and end usage.

(b) **Functioning.**

(i) Headed by Chairman DRDO and to include Vice Chiefs of the three Services, Additional Secretaries in the DoD, CISC and the DDP.

(ii) Meet twice a year to review progress made on all given projects in the past year, issue directions for course amendments, and examine any new technologies/proposals by the armed forces or research agencies.

42. **Monitoring Body.** Create a Defence Technology Monitoring Group to support the Defence Technology Policy Group, as given below:-

(a) **Tasks.**

(i) Monitor progress by executing agencies, on all technologies and systems defined by the Guidance Group.

(ii) Provide user inputs and requisite assistance to executing agencies.

(iii) Provide necessary inputs for annual review by the Policy Group.

(b) **Functioning.** To be headed by a three star officer from the HQ IDS and include concerned two star officers from the three Services, along with Joint Secretaries from the DoD, DDP, and DRDO. This body must meet on a quarterly basis.

43. **Service Specific Advisory Groups.** Establish an independent, Service specific Industry Technology Interface for private industry to interact with and discuss concepts, products/technologies for future induction into the armed forces. This forum must possess the technical expertise and strategic understanding to examine proposals from private industry objectively, in conformity with the 10-year Integrated Military Capability Development Plan. The intent is to task the think-tanks affiliated with the armed forces, and capitalise on their panels of veteran and serving officers, as given below:-

(a) Industry Technology Interface of the Army at CLAWS, the Air Force at CAPS, the Navy at NMF and for Joint Warfare technologies at CENJOWS.

(b) Each Service specific Industry Technology Interface, to meet once a month, and examine new proposals from indigenous private industry or any new, emerging or disruptive technology identified by its members, which holds promise in the Indian context. After examination, new proposals considered suitable be forwarded for approval by the apex body - Defence Technology Policy Group.

(c) The Service specific Industry Technology Interface forums will enable unprejudiced examination, with no official commitments, and facilitate frank exchange of views from all sides in an informal forum, yet one with adequate technical and operational expertise to allow objective analysis.

44. **One Time Study Groups for Technology Development.** To commence the process of collaborative analysis, it is recommended, as a one-time measure, to institute Study Groups, as given below :-

(a) **Mandate.** Conduct a holistic examination of current and emerging future warfare technologies, and identify technologies for developing India's military capabilities, which meet criteria given below :-

- (i) Relevant for the Indian armed forces.
- (ii) Can be developed by indigenous scientific expertise.
- (iii) Manufacture of products possible at scale, in a cost efficient manner, by indigenous defence industry.
- (iv) Incorporate relevant practices for the Indian context by studying the US Army Futures Command and the Chinese Military Civil Fusion process.

(b) **Composition.** One Study Group for each Service, under the aegis of CLAWS, CAPS and NMF respectively. Members of each Study Group must have 2-3 representatives each from the following fields:-

- (i) Serving officers (Colonels or equivalent).
- (ii) Veteran officers.
- (iii) DRDO Scientists.
- (iv) Private industry representatives.
- (v) Academics from IITs/IISc, other reputed professional institutions.

(c) **Timeframe.** Study Groups be asked to submit reports within six months, by which time the recommended the Defence Technology Policy Group, the Defence Technology Monitoring Group and the Industry Technology Interface can be constituted, to follow up on the recommendations.

Measures to Enhance Integration in the Acquisition Process

45. **Create a Specialised Cadre for Defence Acquisitions.** Create a Tri-Service cadre, specifically for the acquisition and induction of defence equipment and technologies. This specialised cadre must be created from within existing human resources in the MoD, and will be responsible for all induction and post induction activities of equipment and technologies in the armed forces. This cadre can be sub divided into various streams - Negotiation and Contracts, Trials, Induction and Quality Assurance, Transfer of Technology, Maintenance and Post Induction Services, Legal Services, Finance Section, etc.

46. **Institute a Consultative Process to Formulate QRs for Military Equipments.** Institute a process of formal discussions between representatives of the military, DRDO, Quality Assurance and private defence industry, to formulate QRs for military equipment. These discussions are aimed at removing unrealistic expectations, unproductive efforts, long delays and financial losses.

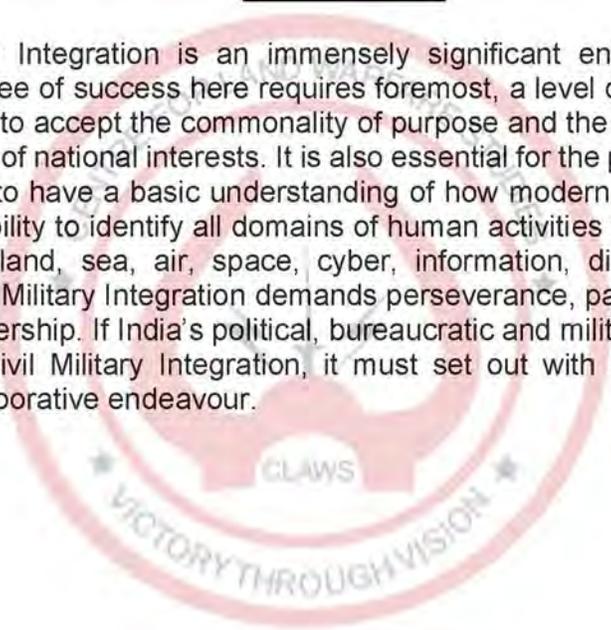
47. **Improve the Acquisition Process.** Constitute a Study Group, comprising representatives from the Services, DDP, Finance Division DoD, DRDO, DPSUs and private

defence industry, to improve the equipment acquisition process. The Study Group must prepare a report in six months, with recommendations to improve :-

- (a) Efficient and unified decision-making.
- (b) Reducing multiple approving authorities.
- (c) Faster trials and testing process.
- (d) Flexibility to allow inevitable lack of success in certain projects.
- (e) Reduce timeframe from initiation of case to acceptance from three to two years.
- (f) Facilitate exports of military equipment to friendly foreign nations.

CONCLUSION

48. Civil Military Integration is an immensely significant endeavour for any nation. Achieving any degree of success here requires foremost, a level of maturity of the civil and military leadership, to accept the commonality of purpose and the need for cohesive efforts towards pursuance of national interests. It is also essential for the political, bureaucratic and military leadership to have a basic understanding of how modern war is likely to be fought and possess the ability to identify all domains of human activities that may be involved in a national conflict - land, sea, air, space, cyber, information, diplomacy, water, energy, economy, etc. Civil Military Integration demands perseverance, patience and determination of the national leadership. If India's political, bureaucratic and military leadership decides to achieve tangible Civil Military Integration, it must set out with utmost earnestness in a collective and collaborative endeavour.



CLAWS SEMINAR ON
“CIVIL MILITARY INTEGRATION - THE WAY FORWARD”

CONCEPT NOTE

Ever since India gained Independence in 1947, the Indian armed forces have been a significant element of its comprehensive national power. As a sign of a stable and robust democracy, the Government of India has retained civilian authority over its military from the outset. India is one of the few, large post-colonial states to successfully maintain complete and unquestioned democratic control over its armed forces. Over time, a need was felt for greater autonomy of the armed forces in their professional domains. Consequently, in December 2019, the Government of India created the Department of Military Affairs within the Ministry of Defence, headed by the Chief of Defence Staff, to facilitate optimal utilisation of resources and promote jointness among the three Services.

The future of warfare will require close integration of a nation's civilian and military capabilities. Since India is gradually attaining the status of a power of global consequence, it has to necessarily undergo a focused Civil-Military Integration process. This process of integration is complex and multi-layered, demanding a customised approach, specific to India's culture, ethos, society, business and politics.

The Government of India is fully cognisant of the necessity of Civil Military Integration. Hon'ble Prime Minister of India has called for a 'holistic approach, focused on breaking down of civil-military silos'. Hon'ble Raksha Mantri has also called for greater jointness of civil administration and armed forces, to further strengthen national security and to deal with future challenges. To realistically achieve this integration, the existing politico-bureaucratic-military-defence industry model requires a holistic and objective reappraisal.

The first facet of Civil-Military Integration in India needs to be focused on enhancing Bureaucracy-Military integration at policy and functional levels. Such integration needs to manifest in the conceptualisation, formulation and execution of the nation's security strategy and foreign policy, in a manner intended to further India's national interests.

Another critical aspect that demands a holistic vision and approach is integration of India's defence industry, both private and public sectors, and its armed forces. India must necessarily become self-reliant in its military requirements at the earliest. This requires synchronisation of the commercial interests of the indigenous defence industry with the operational requirements of the armed forces. To achieve this fine balance, there must be collaborative engagement of the Indian military with the Indian defence industry, as well as with its scientific community.

Civil Military Integration requires a 'whole of nation' approach, along with perseverance, patience and determination to last the distance. More importantly, it requires the honest and unwavering intent of the political-bureaucratic-military-industry leadership to change for the better, despite the inevitable impediments en route. The CLAWS Seminar is intended to delve into the important components of Civil-Military Integration in the current security and geopolitical environment that India faces, and endeavour to identify practical measures to achieve such integration.

PROGRAM

Time	Activity	Speaker
26 DECEMBER 2022 – BUREAUCRACY-MILITARY INTEGRATION		
0930-1045	Opening Session	
0930-0940	Welcome Address	Lieutenant General Rashim Bali, AVSM, SM, VSM, Director General, Strategic Planning Directorate, Integrated HQs of MoD (Army)
0940-0950	Inaugural Address	General Anil Chauhan, PVSM, UYSM, AVSM, SM, VSM, Chief of Defence Staff
0950-1000	Keynote Address	General Manoj Pande, PVSM, AVSM, VSM, ADC, Chief of Army Staff
1000-1015	Recommendations of the Study Report on <i>Civil Military Fusion in India : A Roadmap for the Indian Army</i>	Lieutenant General Deependra Singh Hooda, PVSM, UYSM, AVSM, VSM & Bar (Retired)
1050-1240	Session 1 : Bureaucracy-Military Integration – Opportunities	
1050-1110	<u>Chair & Speaker 1</u> Enhancing Trust and Understanding Between the Political Leadership, the Bureaucracy and the Military	Shri Ajay Kumar, IAS (Retired)
1110-1130	<u>Speaker 2</u> Role of the Department of Military Affairs in Enhancing Bureaucracy-Military Integration	Lieutenant General Anil Puri, AVSM, SM, VSM, Additional Secretary, Department of Military Affairs, MoD
1130-1150	<u>Speaker 3</u> Conceptual and Work Culture Integration of the Civil Services and the Armed Forces	Dr Manoj Joshi, Distinguished Fellow, Observer Research Foundation
1150-1210	<u>Speaker 4</u> Civil Military Groups for Strategic Decision Making on Security Issues	Associate Professor Anit Mukherjee, Nanyang Technological University, Singapore
1210-1240	Questions-Answers and Session Summing Up	
1245-1415	Session 2 : Bureaucracy-Military Integration – Challenges	
1245-1305	<u>Chair & Speaker 1</u> Integration of Military Leadership in the Planning Process for Formulation of India's Foreign Policy	Dr Arvind Gupta, Director, Vivekananda International Foundation
1305-1325	<u>Speaker 2</u> Integration of Military Leadership in the Planning Process for Formulation of India's National Security Strategy	Lieutenant General Raj Shukla, PVSM, YSM, SM (Retired), Member Union Public Service Commission
1325-1345	<u>Speaker 3</u> Civil-Military Synthesis for Holistic Military Capability Development	Lieutenant General Vinod Khandare, PVSM, AVSM, SM (Retired), Principal Adviser, MoD
1345-1415	Questions-Answers and Session Summing Up	

27 DECEMBER 2022 – INDUSTRY-MILITARY INTEGRATION		
0930-1100	Session 3 : Conceptualising Industry-Military Integration	
0930-0950	Chair & Speaker 1 Enhancing Synergy between the Armed Forces and the Defence Industry	Air Marshal Anil Chopra, PVSM, AVSM, VM, VSM (Retired), Director General, Centre for Air Power Studies
0950-1010	Speaker 2 Lessons from US Army Futures Command and China's Military Civil Fusion for India's Industry Military Integration	Lieutenant General PR Shankar, PVSM, AVSM, VSM (Retired)
1010-1030	Speaker 3 Incentivising Defence Industry for Developing Innovations for the Military	Shri Rajinder Singh Bhatia, President, Bharat Forge Defence and Aerospace
1030-1100	Questions-Answers and Session Summing Up	
1130-1310	Session 4 : Functionalising Industry-Military Integration	
1130-1140	Outreach by the Armed Forces for Collaborative Engagement with Indian Defence Industry and Scientific Community	Chair & Speaker 1 Air Vice Marshal George Thomas, AVSM, VSM, Assistant Chief of Air Staff (Plans), Integrated HQs of MoD (Air Force)
1140-1150		Speaker 2 Rear Admiral K Srinivas, Assistant Chief of Material (Modernisation), Integrated HQs of MoD (Navy)
1150-1200		Speaker 3 Major General Charnjit Singh Mann, VSM, Additional Director General, Army Design Bureau, Integrated HQs of MoD (Army)
1200-1220	Speaker 4 Developing A Competitive Environment for India's Defence PSUs	Dr Bhartendu Kumar Singh, IDAS Joint Controller General of Defence Accounts
1220-1240	Speaker 5 Developing Industries of Strategic Importance and Dual-Use Technologies for Scaled Up Military Use	Rear Admiral Pritam Lal (Retired) Principal Advisor, Confederation of Indian Industry (CII) and Society of Indian Defence Manufacturers (SIDM)
1240-1310	Questions-Answers and Session Summing Up	
1315-1325	Closing Address	Lieutenant General MV Suchindra Kumar, AVSM, YSM**, VSM Deputy Chief of Army Staff (Strategy), Integrated HQs of MoD (Army)
1325-1335	Vote of Thanks	Major General Abhinaya Rai, Additional Director General, Strategic Planning Directorate, Integrated HQs of MoD (Army)

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SEMINAR REPORT



**Group Photograph of Distinguished Speakers and CLAWS Faculty with
Lieutenant General MV Suchindra Kumar, AVSM, YSM**, VSM,
Deputy Chief of Army Staff (Strategy), Integrated HQs of MoD (Army)
27 December 2022**