FINANCING FORCE MODERNISATION

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Air Chief Marshal O.P. Mehra, Director, Centre for Air Power Studies, Air Commodore Jasjit Singh, AVM Kapil Kak, distinguished guests, seminar participants, ladies and gentlemen.

I am deeply honoured and happy to have this opportunity to share my thoughts on the critical theme of modernisation of our defence forces with such an accomplished array of defence practitioners and analysts.

Notwithstanding the crucial role of modern equipment and weapon platforms to the success of defence missions, it should be recognised that modernisation outlays are a derived sub-set of defence outlays after catering adequately for the maintenance needs of the defence forces. Our resolve to earmark a greater quantum of resources for modernisation is reflected in the fact that the modernisation maintenance mix has changed significantly from around 25:75 in 1998-99 to around 47:53 in the coming years (42:58 in Budgeted Estimates (BE) 2007-08). Given the resource restrictions, the modernisation thrust and process have to be per force carefully formulated and heavily prioritised in inter-Services and intra-Service terms and aspire to create in a cost and time efficient frame, the most potent contemporary mix of mutually reinforcing defence capabilities.

Before dwelling on the challenges and opportunities of this endeavour, let me briefly recount the historical perspective. Both on account of our small resource

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base and the problem of availability as well as prices in sourcing supplies from the West for several decades in post-independent India, the modernisation effort of the defence Services was largely confined to what the erstwhile Soviet Union could offer to us, albeit under extremely attractive credit terms. This largely set the pace for capability build-up in the decades up to the 1980s and we should never really overlook the strong Soviet contribution to our modernisation process in this era.

The essential thrust of our modernisation effort has to involve a distinct superiority over our immediate neighbour and a strong dissuasive capability for the rest. It also has to factor in reasonable strategic capability by way of handling out of area contingencies in sync with our current aspirations as a significant voice in the Asian region and the world. I must also hasten to add that acquisitions and upgrades of weapon platforms alone would not modernise us adequately and attention would simultaneously have to be devoted to the necessary dynamic reorientation of doctrines, strategy, tactics, operations and training as well.

The key determinants of the modernisation strategy would be the defence objectives set out by the nation, flowing ideally from the national security policy frame, likely nature and duration of potential warfare, force level comparisons with likely adversaries and the consequent capability mix necessary to ensure victory in war. All other considerations such as the potential limitations of the resource base and cost and time frames would need to have only a supplemental role.

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The evolution of an optimal mix of capabilities in a mutually reinforcing mesh is, however, a daunting challenge. It requires clarity in terms of sharply defined mission objectives, mandatory generation of choices based on current technologies for meeting the likely needs, determining the most important

capability elements for attaining our own country-specific capability basket and acquiring them in the requisite cost and time frames. This would be rendered even more complex when jointness considerations are brought into play for reasons of both enhanced operational efficiency and costs.

There is also the dilemma of retaining the contemporariness of technology for weapon systems when the calendar life for most is 30-40 years. Given the rapid march of defence technology, it becomes difficult to ensure that the bulk of the assets of a weapon type is based on mature and modern state-of-the-art technologies. But given the high maintenance cost of old systems, tough decisions to replace rather than sustain an old system are often called for. Then there is the need for enormous rigour in the matter of quantitative assessment of the requirement of different weapon systems in relation to our boundaries, operational philosophy, weapon capabilities and force level comparisons.

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To put the force modernisation issues in some perspective, some facts and statistics need to be recounted. The aggregate defence budget has grown from Rs. 16,347 crore in 1991-92 to Rs. 39,897 crore in 1998-99 and Rs. 96,000 crore in 2007-08. The total capital budget which funds the modernisation has in turn grown from Rs.193 crore in 1951-52 to Rs. 10,036 crore in 1998-99 and to Rs. 41,922 crore in 2007-08. Of this, modernisation alone accounted for Rs. 8,663 crore in 1998-99 and Rs. 32,827 crore (around 34 per cent of the defence budget) in 2007-08. The period 1999-2000 till 2007-08 witnessed an overall average growth of around 10.5 per cent per annum, with revenue expenditure showing an average yearly increase of approximately 7 per cent, while capital spending grew by an average of 19.7 per cent during the same period. As observed earlier, the revenue capital mix has improved significantly from 74:26 during the 9th Plan period to 58:42 in 2007-08 and is expected to be around 53:47 in the years ahead, which is perhaps the

optimal level at which it would need to be stabilised. Coming more specifically to each Service, the army's capital allocations have improved steadily from around Rs. 2,100 crore in 1995-96 to around Rs. 6,900 crore in 2007-08. The navy's capital outlays have increased from Rs. 1,920 crore in 1995-96 to nearly Rs.10,000 crore in 2007-08. The air force is clearly the frontrunner in terms of capital budget allocation, with modernisation outlays receiving a massive boost from around Rs. 2,900 crore in 1995-96 to around Rs.15,900 crore in 2007-08.

The overall share of the three Services in the defence budget is 47.2 per cent for the army, 28.15 per cent for the air force, 18.26 per cent for the navy and 6.13 per cent for the Defence Research and Development Organisation (DRDO). However, the capital outlays for the three Services show an entirely different mix in view of the capital intensity of modernisation effect in the air force and navy, on the one hand, and large quantum of revenue spending in the army on account of maintenance needs of a 1.3 million strong standing army, on the other. Thus, the revenue-capital mix stands at 74:26 for the army, 38:62 for the Indian Air Force (IAF) and 40:60 for the navy in the 2007-08 defence budget.

The projected maintenance and modernisation needs of the defence Services over the next five years would, however, be adequately served with an average overall growth of around 12 per cent, implying a gross domestic product (GDP) share of around 2.3 per cent vis-à-vis 2.1 per cent at present and around an average of 16.2 per cent of Central Government Expenditure (CGE) vis-à-vis approximately 15.8 per cent at present.

CONTENT OF MODERNISATION

Modernisation in the current context spans all the four dimensions of land, sea, air and space. Preparedness for potential warfare also involves capabilities creation both in relation to symmetric and asymmetric scenarios covering the full range of conventional warfare based on current state-of-the-art technologies as well as capabilities for sustained success in low intensity conflicts, counter-insurgency/counter-terrorism, international

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peace-keeping, disaster relief, aid to civil power and, finally, out of area contingencies. This has called for comprehensive force level and capabilities comparison with potential rivals and then drawing up a modernisation roadmap based on existing equipment voids and capability gaps consistent with our strategic doctrine of an appropriate mix of offensive and deterrent power.

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Given the current state-of-the-art defence technologies and the experience of recent wars, the capability spectrum is truly staggering, making evolution of an appropriate capability matrix a huge doctrinal and strategic challenge. From space-based systems, anti-missile deterrence, strategic missiles, multi-role combat aircraft and strategic bombers with stealth features, directed energy weapons, air defence, cruise and ballistic missiles, nuclear, biological chemical (NBC) defence and strategic lift to communications, command, control, computers, information, intelligence surveillance, reconnaissance (C4I2SR), network-centric warfare, electronic warfare (EW), intelligence encompassing electronic intelligence, human intelligence, communication intelligence, imaging intelligence (ELINT/HUMINT/COMINT/IMINT), modern tanks, self-propelled 155 mm or heavier guns artillery, capabilities essential for a blue water navy, mine warfare, precision guided munitions (PGMs), precision navigation and guidance of platforms and weapons, unmanned aerial vehicles (UAVs) and unmanned combat air vehicles (UCAVs), potent helicopters, amphibious warfare capability is a vast canvas to relate to for planners and decision-makers alike.

In so far as the army is concerned the modernisation focus is on induction of adequate numbers of 155 mm towed and SP guns (the latter in their wheeled and tracked versions), additional T-90 tanks, additional Arjun tanks if the two regiments under induction prove equal to the army's expectations, full range of modern air defence (AD) capabilities, ultra-light howitzers for the artillery, night

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capabilities for all existing tanks, mine and anti-mine capabilities , UAVs, and army aviation in terms of helicopters, including the advanced light helicopter (ALH).

For the navy, the modernisation roadmap over the next 15 years would involve induction of aircraft carriers, submarines over and above the Scorpene under manufacture at MDL, additional follow-on destroyers/ frigates/ corvettes with stealth features, mine counter-measure vehicles, long range maritime patrol aircraft, additional landing platform decks, land attack cruise missiles, rotary UAVs, naval communication satellites and significant enhancement in maritime dimension awareness.

The most richly resource endowed IAF envisions additional fighter aircraft of the Hindustan Aeronautics Limited (HAL) manufactured SU 30 MKI kind, several squadrons of medium combat aircraft, upgrade of the MiG-29 and M-2000 fleet, a collaborative effort for development of the fifth generation fighter aircraft, a similar joint venture for the medium transport aircraft to replace the ageing AN-32 transport aircraft, medium range surface-to-air missiles to replace the really old Pechora squadrons, additional airborne warning and control systems (AWACs) and aerostats, UAVs, survey and target towing aircraft, additional FRAs, additional AJTs, IJTs for stage 2 training , EW capabilities, a fully networked and integrated combat support system and fully augmenting the war-waging reserves in terms of the requirement of bombs, rockets, PGMs and missiles.

The modernisation process, in a conceptual sense, involves cutting down on mobilisation time-frames, enhancing the ability to conduct a swifter war, being able to engage the adversary in the full spectrum of warfare in an all weather/all terrain/day and night engagement, minimising one's own attrition of war-waging capabilities, creating surge capacities, in the defence economy and being able to rapidly destroy the enemy's potential and will to fight. Weapon systems

comprise the basic platform, various sensors and the armament delivery capability of the system. Considering the high cost of platforms and a life ranging from 20-40 years for most systems, modernisation has often concentrated on sensors and armament alone, with necessary refurbishment and life extension for the basic platform. But often this may not be a feasible proposition. In the context of platforms, modernisation entails significant changes in mobility, speed, autonomy, night fighting, manoeuvrability, transportability, self-protection, survivability, thrust to weight ratio, propulsion efficiencies, maintainability, stealth, electronic counter-measures/electronic counter-counter-measures (ECM/ECCM), reliability, deployability, upgradability and modularity features of the system. Modernisation of sensors has impacted full 3D coverage in terms of range, height and azimuth, all weather and all-terrain capabilities, ECM/ECCM features, higher accuracies and reliability and well networked data links, all in an effort to shorten the sensor-shooter loop. Armament modernisation has an obvious focus on the destructive quantum of firepower as well as sustained rate of fire, range, guidance and navigation, accuracy as reflected in first salvo effectiveness/circular error probability/hit probability, penetrability, and the like.

Based on the defence technology roadmap of each of the Services, comprehensive and systematic scanning of all available and under development technologies is needed for identifying our key technology gaps and making appropriate choices for acquisition of these capabilities in an urgent time-frame based either on joint design and development and production or in-country defence research and development (R&D) in the governmental and private sectors.

Indeed, in this context, it might be eminently desirable for us to broaden our collaboration basket even if it implies single source acquisitions whereby we could enter into a series of joint collaboration arrangements with all the leading weapons manufactures/design houses in the frontline weapon economies of the world in their different core strength areas. This would not only guard against the pitfalls of all

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eggs in a single basket but lead to mutually beneficial arrangements with a large number of highly capable R&D and production entities worldwide and hopefully help us imbibe their best design, development and manufacturing practices and efficiencies.

This process could also provide us with long-term strengths by way of tapping of the rich defence exports potential with all its attendant benefits. Another key element of the modernisation and empowerment process is undoubtedly self-sufficiency in the manufacture of the entire range of ammunition required to be used from different platforms and weapons. This inadequacy came to the fore during the Kargil War and it is critical that there is an adequate manufacturing capability and surge capacity in the country to meet our potential requirements rather than the heavy import dependence which persists in this critical area.

Maximising outlays for modernisation necessarily implies minimising outlays on maintenance. Consequently, operational and cost efficiencies would have to be constantly searched out in areas such as logistics, outsourcing of tasks that can be handled by the private sector, and ensuring a youthful profile for the armed forces which would also result in very substantial cost reductions. Modernisation also must impact on diverse areas such as married and other than married accommodation, upgrade of RMO facilities/ training infrastructure, modernisation of firing ranges and road connectivity in remote areas.

Joint exercises with major defence forces of the world is also a very vital element of the modernisation process in as much as it provides intimate exposure to different battle doctrines/tactics/operations and weapon capabilities.

Capability development plans and effects-based planning find reflection in the 15-Year Perspective Plans and 5-Year Plans of the Services in terms of specific programmes and individual schemes. In the event, adequate due diligence by way of generation of options and making rational and cost-efficient choices has not occurred, the plan projections would suffer from an innate deficiency.

An intense modernisation thrust also demands that there is a certain sanctity to the programmes and schemes embedded in the plan documents and only a radical change in doctrine or technology or capabilities of potential adversaries should dictate a change in the plan projections. Constantly changing perceptions can seriously impede the pace and momentum of the modernisation thrust, as past experience has shown.

Let us look at some of the other key elements of modernisation. Since qualitative requirements (QRs) determine both competitiveness and costs, it is essential that these are set out against the backdrop of life cycle costs and future sustainability. In terms of time outlays, technical evaluation of the offered systems is the defining activity in the entire acquisition process. While it would be folly to overlook our truly complex operational environment in terms of climatic conditions, temperatures and terrain which might require India specific ruggedisation warranting protracted evaluation for operational sustenance and maintainability, innovative solutions are required to compress this time-frame even while enhancing the transparency, reliability and comprehensiveness of this process.

Defence acquisitions are cast in an extremely elaborate and comprehensive procedural frame in as much as the DPP 2006 defines the ground rules of this process with clarity and full transparency. Yet the procedures would continue to be modified in consonance with ground realities and in line with the avowed objective of securing all the acquisition efficiencies that can be targeted in the light of the best practices prevalent elsewhere and our own dynamic experience. Effective remedies, however, need to be found for delays and complacency in decision-making which does incalculable harm to the modernisation growth momentum. Similarly, there could be no let up in the constant targeting of acquisition efficiencies from the point of view of providing a level

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playing field and a sustained focus on pre/post contract project implementation.

Offsets hold the strongest potential for bringing about a sea-change in the indigenous defence capabilities landscape. Even on the basis of a 30 per cent offset obligation on defence acquisitions, around $10 billion is the estimated direct offset inflow into the Indian defence sector over the coming five years. This would potentially go into joint collaboration and development, joint venture defence production, repair, maintenance, OH and training and other infrastructure, defence exports and the like. Carefully channelled offsets would not only supplement the defence resource gap but also help bring about a radical transformation in the R & D and production culture and capabilities of the Indian defence sector.

Greater public-private synergies in the country would also serve this purpose in a very significant way. Larger association of Indian private sector entities in areas of supply chain management and other tasks which are conducive to outsourcing is also expected to be mutually beneficial for ensuring higher reliability, operational efficiency and readiness levels.

It is also expected that performance based logistics (PBL) where the responsibility for an assured level of serviceability of complex weapon platforms is cast on the OEM, would also translate into greater operational efficiency as well as empowerment of the Indian defence industrial base.

Indeed, without the vibrant and full scale association of Indian private sector entities in the defence empowerment effort in terms of R&D, production and infrastructure creation, we would never be able to attain the operational efficiency, optimal serviceability levels and cost-effectiveness in defence operations crucial for long range sustainability and an affordable defence.

Given our rapidly expanding economic base and the role we would be expected to play in the comity of nations, time-bound empowerment of our defence forces is an urgent national task. In my assessment, we would need to step up significantly the outlays on modernisation in order that we attain a capability level consistent with our aspirations over the next 15-20 years which could be relatively peaceful and whereafter a modest incremental effort might suffice. But the next two decades are critical from the point of view of reaching a mandatory minimum level of military strength and capability to preserve and sustain our likely destiny at that point of time. While long-term fund commitments even on a tentative basis are essential for any form of long range planning, pragmatic and innovative funding solutions would be possible as long as intense efforts continue apace to target empowerment of the defence production and infrastructure base, provide a fillip to the defence R&D, bring about fuller integration of the vibrant Indian private sector for defence needs, seize the offsets opportunities, ensure optimal acquisition efficiencies and make a success of the complex defence project management challenges. It goes without saying that the augmentation of our strategic capabilities in terms of weapons and delivery systems would continue to be a critical component of our deterrent power.

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