What followed was again a reactive response that admittedly met the short-term needs but created long-term problems. A sudden large induction of manpower and equipment bring in side-effect problems; instead of infrastructure heralding the induction of manpower and equipment, the sequence is reversed, causing training of personnel to be shortened and that too with inadequate facilities; maintenance of equipment suffers due to inadequate servicing facilities, spares and insufficient manpower which is also short-trained; as a result false impressions are created, numbers-wise a healthy state of affairs is perceived, but in actuality the operational potential may not match the dry figures of strength projected. In the case of the Air Force, flight safety is insidiously compromised. Other imbalances also creep in, like holdings of armament stores not catering to the operational as well as training demands of units, staggering of maintenance time-tables becomes complex, if not nightmarish.

While many of these issues smoothen out with the passage of time, inductions without an appropriately planned stagger, pop their ugly head up decades later when they approach the end of their technical life or become technologically obsolescent. The correct methodology would be to commence phase-out/upgradation well before expiry of technical life and technological obsolescence. This would ensure that the earlier experience of sudden induction would not be repeated. For various factors, which again could arguably be understood, if not fully justified, this, more often than not, does not happen. The continuous long-term effect is that there are short peaks of robust health of a particular service, both in terms of equipment strength and technology on the one hand, and training and overall operational readiness of personnel on the other; but the transition periods of ageing equipment awaiting change-over create troughs-of-not-optimum-capability of a longer duration. As there is little synchronization of new equipment acquisition between the three services, the crests and troughs do not occur concurrently. Superimposed crests would be to our advantage, but three troughs together would make a vulnerable position.

Because of the reactive nature of India's defense planning and Pakistan's proclivity to India-needling, our short-term plans get distorted to give 'favoured' treatment to contain the 'western disturbances' and the north gets a Nelson's eye-view. It is a moot point whether the knee-jerk responses of yesteryears could have been avoided without management of short-term contingencies. But there could be little doubt that, had we had long-term perspective plans (and implemented them effectively!), we would have got better value for money spent and had better bargaining/coercive influencing powers in some of the recent sticky situations; Kargil and Operation Parakram are still very fresh in every military/strategic thinking mind.

The intention here is not to discuss the whys of what has happened in the past. The emphasis is on the need for long-term planning and its implementation with periodical reviews/upgradation without changing the basic focus of India's strategic (perspective) defense plan. This is not just vital, but a fundamental necessity for establishing long-term national security goals.

Essentials of Long-Term Defence Planning

The view that long-term defense planning is necessary and possible is not likely to be contested by serious scholars of national security. There would be discussion nevertheless on whether it should be focused on a time period base determining what is achievable in that span of time; or whether broad goals should be set for defense capabilities desired (i.e., what military aims should the military be capable of achieving) and then determine the time frame in which they could reasonably be achieved. This may typically be brushed off as a question of whether the hen or the egg comes first. There is, however, a subtle difference. Undoubtedly, the first option is the easier of the two, for it is, by far, more specifically definable. Coming to grips with enunciating what is desirable to be militarily achievable could prove frustrating, not only in the specificity of the issue, but also in outlining what strength and structure of the military would create the capability to achieve the specific military aim set; particularly so because of the dynamics of the situation as the other sides are not static in their capabilities. Whatever the difficulties, it is in fact the latter that is required to be achieved, unless we are as a nation resigned to accept a status quo on the present situation – this is a negative approach of the past and a determined change is vital, not only if India is to play a major role regionally and globally, but also if as a nation we want to keep what is our own.

Of course, the issues of time-factor planning and military-aim factor planning are not a question of this or that, but a skilful (and hard-worked upon!) blending of the two. That done, the perspective plan ultimately has to be cover an accepted time period. What could possibly be the maximum length of this time period? Do all the military-aims-capabilities desired have to be co-terminus? Every country desirous of perspective planning would view and need to set its own time periods for the goals that it sets for itself. America's moon-quest was set in a period of less that a decade; the Martian mission perspective spans nearly three decades; the New York water-supply project stretches over more than half-a-century. Undoubtedly, USA's futuristic view is already taking shape for the entire 21st century with specific goals and projects being set into motion for achievement in varying time frames. In our own case, President Kalam had drawn a development map for India five years ago, envisaging India to be recognized in the community of developed nations by 2020. In the wake of the Arun Singh Task Force on Management of Defense, the IAF had, in September 2000, defined its own vision for 2020.

Perspective defense planning should not be in isolation. It must be within the ambit of the overall national long-term goals. A corollary would be that if a national perspective plan does not exist, then the validity of the defense plan would be incomplete and its implementation suspect.

A national vision needs to be set with a given time frame for a perspective defense plan; its general parameters not being altered, irrespective of a change in administration. Actual defense expenditure is naturally dependent on national economic growth. In light of the steady growth and stability shown over the last few years, we could expect fewer surprises in the rates of planned growth. We should, without much difficulty, be able to steer a consistent course of resources-based defense growth in the short-term (i.e. five-year plans) if we are determined on expending annual budgets fully, not letting any financial allocation lapse because of bureaucratic procedures/timidity hampering acquisitions. Bureaucratic timidity is caused by the processing agencies fearing demands for investigation, fault-finding by political parties/media/general public; such strong anxiety is not felt in respect of a delay in acquisitions, or failure to fully expend budgetary allocations. If public outcry is just as strong for budget

expenditure lapses, hopefully greater urgency will prevail in the acquisition processes. It would not be incorrect to state that lethargy shown in processing of acquisitions gives the impression that ab initio there is no intent to fully exhaust the finances offered in budgets. Strategic (perspective) planning of defense, as against response-based or resource-based planning, cannot take place effectively in such an environment.

Not only must long-term strategic defense plans mesh with the overall national long-term policy for development, but the perspective defense plan must spell clearly the growth plans for each service and what should be the inter se budgetary allocations. Inter se allocations cannot be merely on precedents hitherto followed, but based on projected threat assessments against effective techno-military capabilities possible for each service neutralizing these threats. This will always be one of the most difficult exercises in perspective defense planning. Each service will vie for a bigger piece of the budgetary pie by, on the one hand, projecting issues that sponsor its own growth and possibly highlighting threats that fall in its sphere of greatest influence and, on the other, over-playing its role/capability in meeting threats to national security. Even an integrated defense staff (with or without a CDS) will find it hard to settle this issue, unless government clearly defines threat perceptions for a given time-frame and issues guidelines on how it wishes to face those threats.

In the light of the above observations, how well would a 15 year time-frame serve for making a perspective defense plan? Given the lead-time required from setting up of an air staff requirement to development of a new aerial weapons platform, a 25 to 30 year roll-on period is considered more suitable for optimal futuristic planning for the IAF; life obsolescence cycles of major equipment generally fall in this time-frame. A 15 year plan would limit major acquisitions (aircraft and smart munitions) to those equipments, which are already defined and possibly approaching / already in prototype stage. Nevertheless, it would be a qualitative jump from the existing five-year planning spans and possibly more practical in our context.

India’s Security Concerns 2005-2020

Currently, there appears to be an abundance of India-Pakistan bonhomie manifesting itself in various ways, some decidedly strange and hitherto unimaginable. As a result, civil societies on both sides of the border have started harboring hope of solving all our long-standing problems amicably. The previous administration had even sent out feelers to the concept of hardening the line of control into an international border. Fortunately, the present administration is adopting a more hard-nosed approach and reminded the USA and Pakistan that POK is in fact very much a part of India and that we don’t have to be apologetic in wanting to seek it back.

Pakistan, on its part has partially succeeded in persuading large portions of civil societies on both sides of the border, and surprisingly some percentage of the uniformed communities also, into believing that with the nuclearisation of the subcontinent, the possibility of a conventional Indo-Pak conflict is a thing of the past. This is a canard, which is floated by Pakistan to enable it to continue its needling of India through proxy terrorism. Not only must India let it be known unequivocally that it reserves the right, if peaceful parleys bear inadequate success, to take any military action it deems fit to contain and eliminate terrorism in J&K; but also convey subtly at an appropriate time that it has not abandoned the option of a military solution to wrest back POK.

To be able to do that, India must create the necessary military capability. Pakistan can be easily deterred from using its nuclear card by categorically stating in our nuclear doctrine that Pakistan would not be able to contain India's response, while for India, the reverse would be possible.

Across India's north and northeastern frontiers, development of infrastructure in the Tibetan Autonomous Region has progressed very steadily. With road, rail and oil pipeline links to TAR completed and lateral road links in place at several points to the TAR's southern and western borders, China is in a position to induct and sustain thirty divisions in the region. This gives an overwhelmingly superior potential to China for a ground-based, Sino-Indian conflict. While the Border Roads Organization has been tasked to build frontier roads in the northeast, the peculiarity of terrain will always limit the Indian Army's freedom of lateral movement and the strength of forces that can be inducted will not be able to match the Chinese presence. While holding action appears barely tenable at present, the future portends an even lesser tenability. China is not displaying any impatience to resolve the border disagreements with us, confident that it could apply coercive pressure at a time of its choosing. Clearly, our potential for deterrence against China has to be strengthened within the next 10 to 15 years.

Given the tough terrain and Pakistan's strong defenses along the LOC, major doctrinal rethinking is required to give India the military capability that could substantially change the shape of the LOC to our advantage. Except for the odd pro-active offensive plan mooted, the general approach has been to accept loss of real estate in J&K, but gain it elsewhere in the Punjab plains or the Rajasthan desert, allowing us to bargain for swapping of ground lost/gained. Pakistan has long recognized this situation and is thus able to take a tough stand on J&K. India's air power, suitably augmented and developed can dramatically alter this stalemate situation.

Similarly, the PLA's massive potential in TAR can be deterred effectively from adventurism if India's air power is developed towards that end. Unlike the situation obtaining on the ground, the aerial picture can be well to India's advantage. Our existing doctrinal approach of dissuasion for China can and must be altered to that of deterrence, both on the nuclear and conventional fronts.

IAF 2020

The elaborate prelude, explaining the inescapable necessity of perspective planning to ensure a robust defense capability to meet the threats of the future, and the analysis of the capabilities required to meet those threats, was considered necessary to drive home the most fundamental point that India's force architecture has to undergo a substantive change by 2020.

The IAF, at its inception, had been tailored to play a purely supportive tactical role to the army. The strategic element of air power operating from India during WW II was made entirely of USAF and RAF squadrons. The 'tactical legacy' of IAF stayed for a considerable period and it has been an uphill task to convince decision-makers that the Indian Air Force has a strategic role to play. But after acceptance of the Air Force's strategic role, some quarters continue to believe that this role is subordinate to the army's strategic vision. The Air Force has endeavored hard to project the need for joint planning that ab initio takes into account the capabilities of air

power and albeit grudgingly, this acceptance has finally come about.

Given the sweeping impact of today's technology (RMA), air power has unquestionably taken a position of dominance in changing the very nature of warfare. Detractors of air power may argue that the American model is not applicable in our context. True, but only partially. It would be a 'Himalayan' folly not to take note of the writing on the wall. To draw fuller value of this newly emerged air power phenomenon, the Air Force's share of the defense budget has to be progressively increased. A look at the defense spending of UK and USA would be useful at this stage. After taking away approximately 55 per cent of the pie for joint requirements of pay etc, the UK gives 20 per cent to the RAF for acquisitions, whereas the Navy and the Army are awarded 10 per cent and 8 per cent respectively. US Navy, Air Force, Army shares are 31 per cent, 29 per cent and 25 per cent respectively. It would be argued that the Indian Army's commitments cannot be compared with any other army. Again true, but up to a point. Without prejudices and traditional biases, we have to recast our entire thinking of the past. We have to re-assess how much force levels the Army can afford to shed without affecting the strength of our land-power through RMA technology and equipment. Similarly, the Navy's tasks and responsibilities have to be seen against the backdrop of the scene obtaining in the north. It makes little sense to chase ephemeral shadows when there are long-standing real demons elsewhere.

Recasting of budgetary allocations by itself will not fully provide us the defense that our growing economic strength and regional/global role will demand. The overall defense spending has to be progressively hiked from the present 2.4 per cent of GDP to around 3.5, certainly well before 2020.

The present authorized strength of the IAF is 39½ combat squadrons. The first task was to ensure that this force level is not allowed to decrease, whereas this already appears to be happening. The MiG-21 aircraft strength has started reducing as the older versions complete their technical life. The only new inductions in the pipeline are the SU-30s and a few Jaguars. Soon the MiG-23 will commence to be phased out. The LCA is not likely to see squadron service for at least another 5-7 years; the rate of induction thereafter is unlikely to match the phase-out rate of the IAF. This clearly indicates that the replacement of the MiG-21 by the LCA will have to be augmented by another aircraft in the same weight category. It is not clear what plans are afoot, but there is no indication that the MoD will move at the speed required in the existing situation.

The IAF has already put in a demand for 150 additional Mirage 2000 class aircraft. The progress on this acquisition does not appear to exhibit any sense of urgency. It is against the principle of new acquisitions that an aircraft type is specified. Thus requests for proposals must be made to as many vendors as possible that offer aircraft that meet air staff specifications. The Mirage 2000 has proved its operational capability and its technical reliability. The fourth-line maintenance infrastructure created for the airframe, engine and components is extensive. It would be a great advantage to the IAF if the latest updated version of this aircraft were to be offered by the manufacturers at a price that is comparable to offers by other vendors. In any case, the financial wizards must take into account the cost and time-frames for establishing similar infrastructure for a totally new aircraft. Dassault has also to show greater flexibility in its

pricing when and if it responds to MoD's RFP.

It is advisable that ancillary equipment and armaments are considered concurrently. Should it not be so, the bargaining strength of the buyer inevitably weakens and the finalization of pricing takes abnormally long.

Sukhoi-30 production ex HAL needs to be undertaken with a sense of urgency. It is hoped that the fourth line maintenance facilities are already in the process of being established.

Even though the strength of IAF combat squadrons will temporary fall below the authorized level, the IAF needs to project its demand for the future in light of the increasingly dominant role it would have to play. While technology and weapon-load carrying capacity of the present/future front-line force will offset to some extent the actual number of aircraft required, given the multiplicity of roles and the vast extent of frontiers to be covered, a strength of 50-55 combat squadrons is considered necessary by 2020. Unless there is a drastic change in our processing methodology this is indeed a challenging goal for the next 15 years.

The role-wise break-up of the 55 squadrons could be as tabulated below:

SLNo.	**Role of Squadrons**	**Type of Aircraft**	**Number of Squadrons**
(a)	Multi-role	SU-30/Mirage 2000	35
(b)	Strike	Su-30/Mirage 2000/Jaguar	15
(c)	Air Defence	Mirage 2000/LCA/Unidentified replacement for MiG-21	5

(d)

Recce	5

(e) Electronic Warfare 5

For optimum effectiveness of smart weapons, accurate, well analyzed intelligence on designated targets is essential prior to the launch of each mission. The post-mission damage assessment of targets is equally important. While UAVs would take on this task for near targets, the deeper ones would need fighter reconnaissance. Similarly, for protection against hostile AD, EW escorting would have to become a standard practice. The existing serviceability states being achieved are below par. To enhance operational preparedness, serviceability requirements of the future would require an 80 per cent on-line fleet. Maintenance infrastructure and logistic flows for spares need to ensure this high rate of availability of aircraft.

The AWACS and Air-to-Air refuellers are power force multipliers, which are being acquired by the IAF. Two units of each of these force multipliers would be required to be operational by 2020.

UAVs for reconnaissance and communication links are already in service. Their strength requirement should be determined on the basis of experience being accrued in their operation. Unmanned combat aerial vehicles are unlikely to be inducted into service by 2020. But the IAF may keep its options open based on the pace of development of such vehicles.

The IAF would require a heavy transport aircraft force of three to four squadrons, backed by a work-horse force of 10 medium tactical transport aircraft. Four units of light communications aircraft would be necessary to ensure quick transportation of commanders and staff. The new medium and light transport aircraft should be planned to be of indigenous design and manufacture.

The attack helicopter strength would have to be at least doubled in the next 15 years. One heavy helicopter unit, with a strength of 8 should suffice. Medium and light helicopter forces would need to be in the region of 20-25 units of each type.

Air defense missile units required for protection of the IAF's own ground establishments and of industrial/strategic VA/VRs would be in the region of 70-80 squadrons.

By 2020, the IAF must ensure that with its own radars and those of all other agencies integrated with it, it has complete radar cover over Indian air space at high and medium levels. The low-level radar coverage should create a gapless belt of at least 80 km depth along the IB and some parts of the LC/LAC. There would have to be a seamless information/command/control connectivity with the ability of complete centralization of information and control, if necessary.

While the IAF will continue with these three letters even in 2020, it is anticipated that in the next five years it would also take on the mantle of a space force, and the 'A' would represent Aerospace instead of just Air. Space is the emerging battlefield; the RMA is making its greatest impact in this 'arena'. Together with development of IT, in both its acquisition and denial forms, space will have a determining influence on the battlefields of land, sea, air and space. The

military linkup with the Indian Space Research Organization has to be accelerated and an MOU formulated for joint ventures. The Indian Aerospace Force's first new command logically has to be the Aerospace Command.

The IAF has benefited enormously by its interactions with other air forces, both at home and abroad. Such interactions must widen their scope, both in the content of the exercises as well in the number of joint participants engaged. Needless to say that the IAF has to be cautious on operational and technical security aspects.

The United States of America is ostensibly displaying great inclination towards a joint partnership with India. In some quarters there have been euphoric reactions to offers of sale of American equipment to India. India needs to be most circumspect on this issue (reactions from the present government are to that affect) and move with utmost caution. It is a stated policy of the US to use denial methods to implement its policy. American combat equipment could well be immobilized effectively by denial of spares/technical support when most crucially needed. We would do well to steer clear of US equipment.

In the context of RMA, there is no denying the fact that India needs access to frontier technologies. Again, due to various denial regimes exercised by Uncle Sam we would be hard put to get them from American industrial houses/defense forces. Our current partnership with Israel could continue with reasonable confidence, for Israel has shown its willingness and capability to steer its own course. Russia has always been a steady friend, if somewhat less reliable in giving spares/technical support due to its own internal problems. But this partnership must only be strengthened. France is another country that has the R&D base for keeping up with the best; it is also fiercely independent and the least susceptible to American pressures. A French partnership augers well for the future.

Summary

Great changes are taking place on the global political scene. However, India's problems with Pakistan and China have remained the same in substance. If we are seeking a more favorable negotiating atmosphere with both our adversaries, our military posturing has to be stronger and more credible. It is a considered opinion that the Indian Air/Aerospace Force has the potential to make the maximum impact on the military posturing we adopt in the future.

For the IAF to play this dominant role in the future, the force level projected needs to be achieved within the next 15 to 20 years. This is possible only if defense budgeting is along the lines proposed with a perspective plan till 2020 in place.

Space beckons the Indian military. The Indian Aerospace Force must be in the vanguard to expand India's horizon beyond the atmosphere.

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