

PATHFINDER

AIR POWER DEVELOPMENT CENTRE BULLETIN



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FACETS OF AIR POWER GENERATING AND SUSTAINING AIR POWER

Each element of national power must have a source from which it is derived and generated to a desired level. This is true of national military power, and within it air power, that also requires a founding source for it to be generated. The sources from which air power is generated can be divided into two categories—one, the national infrastructure necessary to develop air power and two, the elements resident in an air force, which are critical to generating air power of the required quality. Intimately connected to the capacity to generate air power is the capability to sustain it at a desired level and for the time required. Generation and sustainment are two sides of the same coin and one without the other will not serve the purpose for which air forces are created—underpinning national security.

There are two primary factors within the national infrastructure needed to generate air power. The first factor is the availability of state-of-the-art technology and the ability and will of a nation to use it optimally. Air power is founded on technology and it continues to be a technology-based and enabled capability. Therefore, it is necessary for any nation aspiring to generate air power—through maintaining a standing air force of sufficient calibre—to have a critical minimum technology base. The robustness of this technology base is dependent on four major factors: the national educational system and its bias, the state of development and relative sophistication of the overall national industrial base, the competence of the aviation industry component within that base, and an intangible factor of the national mindset regarding technology and aviation. Even minor shortfalls in any of these factors will have significant impact on the nation's capacity to generate air power.



The second national factor is the challenge of adequate resource allocation. Aviation is inherently a resource-intensive capability, within which air power—the ability to project force at will through the medium of air—is at the higher end of the resource requirement spectrum. Resources expended in generating air power do not provide a clear return that is visible to the general population, unlike resources used to build hospitals

or schools. The dividends of air power are in terms of continued stability and security of a nation and the freedom from interruptions to trade and commerce, and in extremis, freedom from direct attack. This situation always produces a tension in the resource allocation between domestic priorities and defence requirements. To ensure adequate protection of a nation, the government must be willing to allocate the necessary resources to generating air power, even during long periods of comparative peace. This is crucial because the lead-time required to acquire and generate air power is by far the longest of all military power projection capabilities.

The generation of air power and creating a demonstrable air power projection capability, is the function of the air force. In an overarching manner, even civil aviation capabilities feed into the national air power calculus, but air power, as envisaged in a military context, is primarily resident in a nation's air force. Generating air power is the fundamental task of air forces and the process is complex and involved. There are two distinct aspects to generating air power—a vigorous capability development process which will decide the acquisition of necessary equipment and an adequate training infrastructure to create sufficient numbers of qualified personnel. The capability development process takes into account a

nation's security stance, grand strategy, national policy on security as well as the military strategy and is the link between national security objectives and the air force. Based on the identified capabilities necessary to ensure that national security objectives are achieved, equipment that can generate the capabilities of the necessary quality is acquired. This is only one part of the equation. The methods of acquiring equipment are many and could vary from indigenous manufacture to outright purchase from foreign sources. There is also an indirect, but critical, connection between the acquisition process and the issues discussed within the national infrastructure that will influence the entire process.

The second part of the equation is the training capability of an air force. Irrespective of the technological sophistication of its equipment, at the base level it is the people who employ them that distinguish an air force as one of excellence and competence. Adequacy of training is dependent on the ability of the air force to attract people with the requisite education and aptitude, the competence of the training process by itself, the capability to train the required numbers, and the capacity of the force to retain well-trained personnel for sufficiently long periods to make the training investment cost-effective. The right people employing the right equipment to implement the right concepts of operations that support a strategy that is fully aligned with national security objectives is the acme of professionalism in the generation of air power.

Sustaining the desired level and quality of air power is the other prime responsibility of the air force. This capability however comes at a high cost both in resources and in personnel requirements. The framework necessary to sustain air power is both elaborate and expensive and consists of air bases, the infrastructure within the bases to generate air power, technical services that maintain sophisticated equipment, qualified personnel and on-going training capability. Since maintaining this framework is resource-intensive air forces, especially smaller forces, normally plan for eventualities in terms of the minimum time that they would be required to sustain the application of air power. This period is calculated as a function of the national security planning and based on the strategic guidance provided by the government from time to time. An intangible factor in sustaining air power is the national will and commitment to allocate the resources necessary to do so.

For smaller air forces sustaining the focused application of air power will always be a challenge. The challenge is exacerbated when there is a requirement to employ air power in different theatres simultaneously. This challenge of concurrency could become unsustainable for forces with limited numerical capacity and those facing resource constraints for any reason. The corollary is that sustaining air operations for the duration necessary is vital to the success of any campaign and therefore terminating or reducing air operations to a more manageable level during the campaign is not a viable option. Therefore, sustaining air power application is a vexed issue for air forces and merits careful consideration at the highest levels of national security planning.

Generating and sustaining air power is the primary function of an air force. However, its capacity to do so is critically dependent on a number of factors over which the air force has little or no control. It is necessary for the government to ensure the availability of necessary resources for an air force to deliver its commitments within the national security imperatives.

- *Generating air power is a function of the national government and air force in equal measure*
- *A robust national technology and industrial base is a prerequisite to generate air power of calibre*
- *Sustaining the application of air power must be carefully factored in the planning stage of a campaign itself*

A nation may have every other element of air power and still lag behind if its government has no real urge to insure its future development. The attitude and actions of government will fully determine the size of our military air establishment, and greatly affect the efficiency of our civil air establishment, our aeronautical industry and facilities—hence our air power in being.

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