



# Prioritisation of AWACS for the IAF



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## Introduction

The Indian Air Force (IAF) currently possesses only a small number of critical warfighting assets, like the Airborne Warning and Control System (AWACS). In 2009, the IAF got three IL-76-based Phalcon AWACS aircraft, and in 2017,<sup>1</sup> it got two Embraer-145-based Airborne Early Warning and Control (AEW&C) aircraft. The IAF has been requesting more of these AEW&C systems as they have proven to make a significant difference in the overall capability enhancement of India's air defence.<sup>2</sup> The IAF's air defence has improved immensely as a whole, but there is still a lot to be done to get airborne command and control centres in adequate numbers. Although the IAF is a highly skilled and well-trained force, it lags behind China, its major adversary, in its capacity to use the war-fighting capabilities offered by the exponential rise of technology. The sensors and shooters of the three services, which mostly work alone, are less than ideal, to say the least<sup>3</sup> in the present technological battlespace arena. For several years, the IAF has been pushing for an AWACS platform, which unfortunately has not materialised. Undoubtedly, possessing an AWACS would greatly improve the IAF's ability to search and detect aerial objects, giving it a big advantage in any future war.

## Journey of AWACS

The current nomenclature of AWACS has come a long way in terms of its capability and has the ability to not only be the *enabler* but also the *orchestrator* of air operations. This asset was used as an "Airborne Early Warning" (AEW) aircraft in the decades of the 1950s and 1960s, such as during the Korean War. The limited control capability along with providing the Electronic Intelligence (ELINT) inputs enhanced its capability, and the term "Airborne Early Warning and Control" (AEW&C)

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came into being in the decade of the 1970s and 1980s, as displayed during Bekka Valley. However, with the impressive performance of E3 Sentry aircraft in the Gulf War and Iraqi Freedom, they demonstrated their capability to conduct the entire operation effectively and with much higher situational awareness. More numbers of Operator Work Stations (OWS) integrated with highly effective Electronic Support Measures (ESM) and Communication Support Measures (CSM) capability, providing a wholesome situational awareness for result-driven command and control capability, gave birth to the terminology of "Airborne Warning and Control System" (AWACS). In the ongoing Russo-Ukrainian conflict as well both Russia and NATO are employing a huge number of AWACS and AEW&C aircraft.<sup>4</sup>

### **AWACS with India**

India has historically lagged behind other nations in terms of procurement of military aviation. The IAF is the fourth largest air force in the world, but it lags behind the United States, Russia, and China in both size and technological inventory. The IAF hasn't had enough AEW&C and AWACS aircraft, which is one area where procurement has been sluggish. These aircraft are equipped with potent radar systems that can identify and track enemy aircraft from a large distance. They provide real-time communication and electronic intelligence inputs, making them indispensable not only for air defence but also for offensive air and ELINT/Signal Intelligence (SIGINT) operations.

In 2004, the IAF ordered three AWACS aircraft under a trilateral arrangement between Russia, Israel, and India.<sup>5</sup> The aircraft were delivered between 2009 and 2011.<sup>6</sup> These II-76 aircraft possesses integrated Israeli IAI EL/W-2090 "Phalcon" active electronically scanned array (AESA) radar, which offers 360-degree awareness,<sup>7</sup> Identification Friend or Foe (IFF), ESM/ELINT, and CSM/Communication Intelligence (COMINT). All sensor data is continuously cross-correlated through an innovative fusion method.

Despite expectations for increased and more powerful Command and Control airborne sensors and Intelligence, Surveillance, and Reconnaissance (ISR) capabilities, the previous decade has seen no large force additions and only minor increases in capability. Plans to add more Phalcon AWACS to the IAF have been proposed on multiple occasions, most recently in 2016<sup>8</sup> and 2020,<sup>9</sup> but have not yet been implemented, presumably due to their exorbitant costs.

Capabilities on the home front seem to be constrained, and development has been sluggish. A domestic success story, the Defence Research and Development Organisation (DRDO)-Embraer

"Netra" AEW&C, was authorised for delivery in 2011. The project's first aircraft was delivered six years late,<sup>10</sup> with lowered capabilities, and there were a number of procedural errors that the Comptroller and Auditor General of India found.<sup>11</sup>

By the end of 2020, it was unclear whether any new Phalcon AWACS would be deployed; the indigenous AEW &C was deemed insufficient to support the future acquisition and the ambitious DRDO project to build an AWACS-equivalent on the Airbus A330 was considered too expensive and risky. The majority of Netra's systems, including the 240-degree AESA radar, were to be reused as part of a hybrid AEW project approved as a compromise by the government. By integrating these systems with additional Air India A320-family planes, less time would be needed for development while also addressing the main drawbacks of the Embraer platform, namely its limited range and endurance. According to the original plans, six of the larger A321 planes were to act as the host aircraft. Air India, however, turned down the opportunity to market this successful A321 in July 2021. Subsequently A319 was delivered to the DRDO in Bengaluru indicating it to be the final aircraft chosen for the AEW&C Project.

### Requirement for AWACS

With two nuclear-armed neighbours and a continental size, India needs to upgrade its arsenal, especially for the IAF, as dictated by the current circumstances. It is also true that if there is a military standoff today, it will have to be led by the air power of the country. In this situation, focusing solely on fighter planes and their capabilities would not be enough to achieve the IAF's objectives. Today's warfare cannot be imagined without the network-enabled and network-centric capability in all four domains of land, air, sea, and space under the cyber umbrella. India will mostly have to rely on AWACS and other types of air force aircraft for such a scenario.

The current strength of such assets is grossly insufficient and may create gaps throughout the conflict. Given the size of its continent and owing to the massive 15,106.7 km of land border and 7,516.6 km of coastline,<sup>12</sup> India will need at least 18 AWACS aircraft. India will have to consider the use of AWACS aircraft not only over sovereign airspace but also in the Indo-Pacific Ocean, making it highly effective when integrated with the Maritime Domain Awareness (MDA) of the Indian Navy. The figure of 18 would be the least India can expect to keep the AWACS aircraft available in the skies on a round the clock basis. Not having such an inventory on the premise of Cost effectiveness, and research and development requirements may require a fresh look. It is imperative that the

requirement for national security and the benefits accrued out of it versus the expense to the exchequer are to be reconsidered by the decision-makers.

### **Atmanirbharta Vs Atmaraksha**

A national push for self-reliance has been launched by the present government, which was long overdue and should have been realised much sooner. Such ideas and skills will unquestionably keep India in the driver's seat on the international stage. In his keynote lecture for the 37<sup>th</sup> Air Chief Marshal PC Lal Memorial Lecture, Defence Minister Rajnath Singh stressed the importance of achieving "*Aatmanirbharta* in the field of defence, arguing that independence is crucial for both enhancing domestic capability and preserving national sovereignty." He also stated that, "We have learnt from recent battles that India cannot rely on imports for its security. Recent conflicts, particularly the one in Ukraine, have taught us that national interests can affect not only defence supply but also business contracts."<sup>13</sup> However, it would be wise to keep "*Atmanirbharta*" and "*Atmaraksha*" in a judicious balance. Analysing past performance and trends, there is no doubt that some production lines, particularly those related to aviation, will see things not being delivered to the user even after ten years. Consequently, can we sustain the lower numbers of combat orchestrators such as AWACS? This demands an honest assessment.

### **Conclusion**

It needs to be appreciated and realised that AWACS provides a decisive edge to any air operation, both strategically and operationally. It delivers the quantum leap in detection and command and control capabilities that is currently the most critical requirement. Thus, the effectiveness of executing high intensity air operations, the ability to make decisions, electronic transparency, etc. improves exponentially, resulting in the success of air operations. There have been many occasions when a system was put into service after it had already lived its life due to the vicious cycle of research and development and lack of funds. What is the point in not having a system when it is required and ending up having one once it becomes obsolete?

*(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])*

**Keywords:** AWACS, Continental Size, Inadequate numbers, ELINT, SIGINT

## Notes:

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