Carrier Borne AEW&C
TBM-3W Cadillac I

TBM-3W2 Sub “Killer”

TBM-3S2 “Hunter” with APS-20 Radar
Maritime Security

Strengthen itself continuously as a formidable, multi-dimensional and networked force that maintains high readiness at all times to protect India’s maritime interests, safeguard her seaward frontiers and defeat all maritime threats in our areas of interest.
Safeguarding Maritime Interests
Freedom of Manoeuvre
Impact of AEW on the Engagement Chain

WITHOUT AEW

WITH AEW

PARTIAL AEW

### Reductions in Time

Long Range AEW Radar
- IFF
- ESM
- AIS
- Offboard Sensors
- NCW
- Data Links
- Decision Aids
Interoperability
...is the key to effective airborne early warning

**Without AEW**

**With AEW**

*Integrated Network Connectivity Adaptable to User Requirements*
AEW Command and Control Connectivity
Role of AEW&C in the Spectrum of Conflict

**CORE AEW&C Functions**
- Detection & Surveillance
- Tracking
- Communication
- Network Connectivity
- Robustness
- Multi-sensor Integration

**PEACETIME OPERATIONS**
- Civil
- Operations Other Than War

**HIGHTENED TENSIONS**
- AEW&C Maritime TAMD

**LIMITED CONVENTIONAL WAR**
- Limited Conventional Conflict

**MAJOR WAR**

**AEW&C Contribution**
- Border Surveillance
- Maritime Surveillance
- Piracy
- Smuggling / Arms Control
- Air Traffic Control
- Search & Rescue

- Sanctions Enforcement
- Sea Lane Control
- Show of Force
- Limited Objective Air Strikes
- Counter Insurgency

- Strike & Intercept Control
- Theater Air Missile Defense
- Maritime Domain Interdiction
- Detection & Tracking of All Sea Surface Targets

**Mission Areas**

**Airborne Early Warning Battle Management Command & Control**
AEW&C is a Critical Force Multiplier

Airborne early warning provides commanders with a comprehensive operational picture to make strategic decisions.
Projecting Combat Power Across the Littoral

- **Airfield**
  - 2011: Vikramaditya / MiG-29 / Ka-31
  - 2015: IAC-1 / MiG-29 / Ka-31
  - 2020: IAC2 / CATOBAR Fighter / Ka-31 / Carrier AEW&C
  - 2025: Vikrant / MiG-29 / Ka-31 / Shore AEW&C

- **Area of Interest**
  - **Fighter Threat**
  - **Missile Threat**
What Does the Future Hold for the Indian Navy?
Typical Air Wing Composition

• Strike Aircraft (1-3 Squadrons)
  – LCA Mk II
  – F/A-18E/F Super Hornet
  – Rafale
  – Sea Gripen

• Surveillance Aircraft (4-5 Aircraft)
  – E-2D Advanced Hawkeye
  – Ka-31

• Electronic Attack Aircraft (5 Aircraft)
  – EA-18G Growler

• Logistics Aircraft (2-3 Aircraft)
  – C-2A Greyhound

• Rotary Wing Aircraft (4-8 Aircraft)
  – S70 Seahawk Multi Mission aircraft
Strike Aircraft

- LCA Mk II
- Rafale
- Sea Gripen
- F/A-18E
Surveillance Aircraft

E-2D Advanced Hawkeye

Ka-31
Support Aircraft and Missions

- **C-2A Greyhound**: Long Range Logistics
- **EA-18G Growler**: Electronic Attack
- **S-70**: Multi Role Rotary Wing Aircraft
- **F/A-18 Tanking E-2**: Inflight Refueling
X-47B Unmanned Combat Air System Demonstrator
The View of AEW……

An Optimum Solution Should be Both
THANK YOU
APY-9 Radar Overview

- Provides all-weather coverage and multimode airborne early warning (AEW) capability with significantly increased sensitivity, flexibility, and overall performance.
- Selection of UHF makes the radar less vulnerable to incorporation of radar cross section reduction technology into targets now and in the future.
- Space/time adaptive processing (STAP) provides superior clutter and interference cancellation to detect air, surface, and sea targets in hostile environments.
- Automatically adapts to clutter and interference in land, littoral, and sea environments.
- The radar simultaneously detects air and surface targets in each of three scanning modes:
  - Mechanical Scan
  - Mechanical & Electronic Scan
  - Electronic Scan

Maximum Detection Capability Combining Rotodome and Electronically Steered Array
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