

China's Naval A2AD Posture

**Are Regional EW Capabilities
Sufficient?**

Thomas Withington
(t_withington@hotmail.com)

Agenda

- People's Republic of China (PRC) Naval Anti-Access/Area Denial (A2AD) weapons.
- Regional EW Capabilities to Counter PRC Naval A2AD Weapons.
- Emerging Anti-Ship Missile ECMs.
- Conclusions

PRC Naval A2AD Weapons

- 1996 Taiwan Strait Crisis was a watershed moment for China's naval A2AD doctrine.
- Traditional Anti-Ship Missiles.
- Avant-garde anti-ship ballistic missiles and supersonic cruise missiles.

Anti-Ship Ballistic Missiles

DF-21D:

- Deployed from 2012.
- 1,080 nautical mile range.
- 300kg conventional warhead/200kt-300kt nuclear warhead.
- Up to 80 thought to be deployed.

DF-26

- Deployed from 2016
- 2,160 nautical mile range.
- 1,800kg conventional warhead/10kt nuclear warhead.

Anti-Ship Cruise Missiles

DF-100

- 540 to 1,600 nautical mile range.
- Thought to be capable of hypersonic speeds.



DF-21D Engagement Range



DF-100 Engagement Range



DF-26 Engagement Range



The Great Scud Hunt!

1991 – Operation Desert Storm

- US-led coalition experienced challenges in locating and destroying Iraq's Scud missiles.



Regional ABM Capabilities

US Navy – ‘Ticonderoga’ class cruisers, ‘Arleigh Burke’ class destroyers

– Aegis CMS, Standard Missile-2/3

Japan Maritime Self Defence Force – ‘Kongo’ class and ‘Atago’ class destroyers

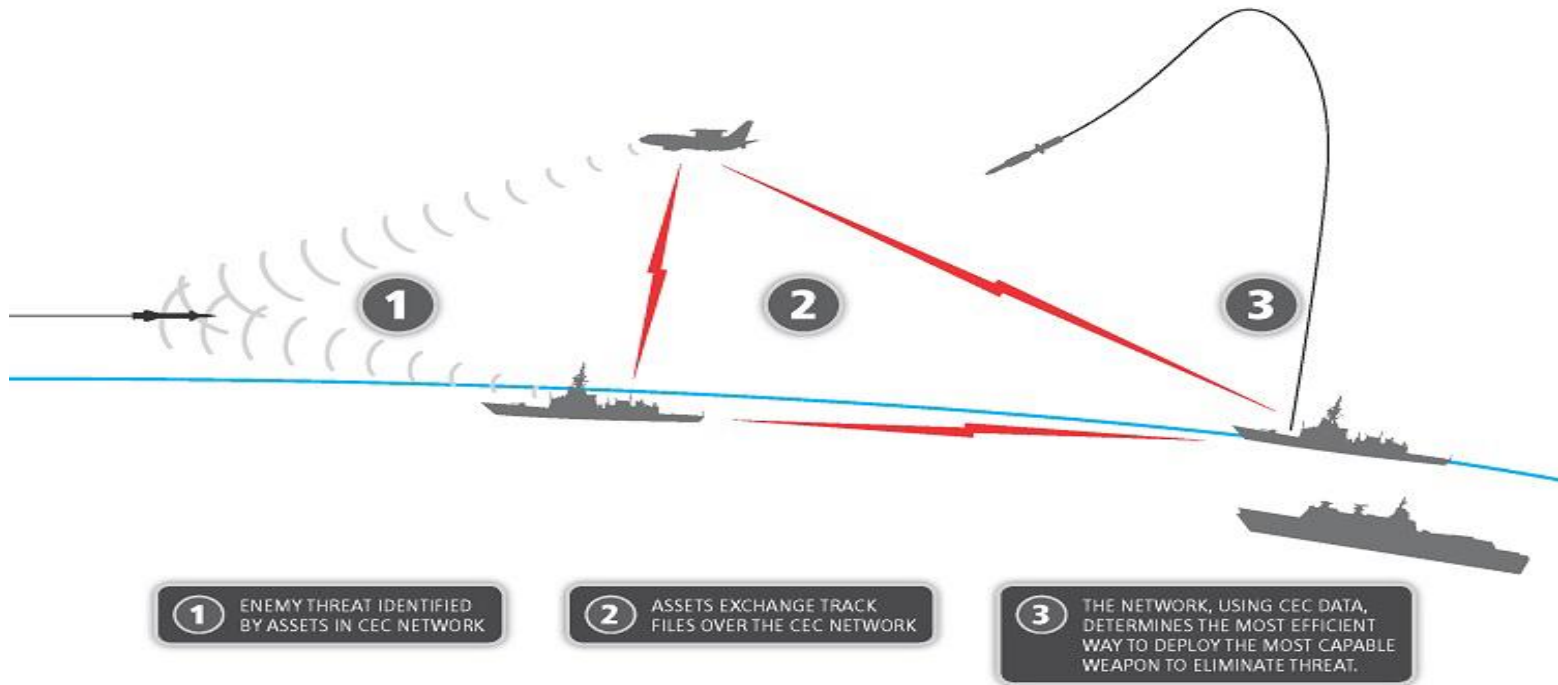
– Aegis CMS, Standard Missile-2/3

Royal Australian Navy – ‘Hobart’ class destroyers

– Aegis CMS, Standard Missile-2

Allied Efforts

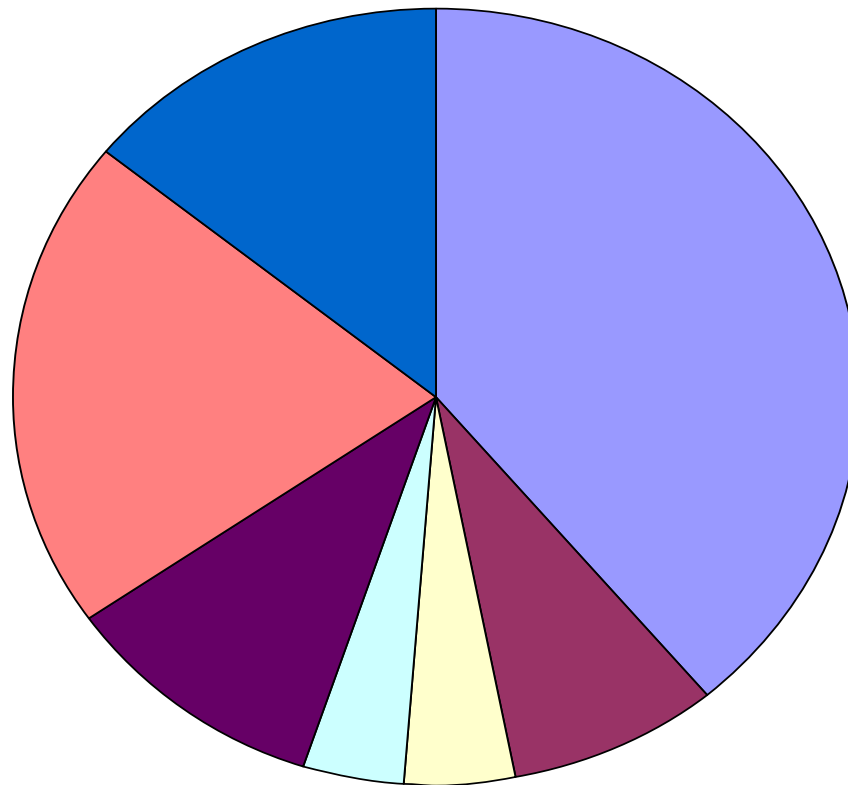
November 2019 – HMAS *Hobart* works with USS *Stockdale* to perform a live missile engagement using the CEC



New Warships

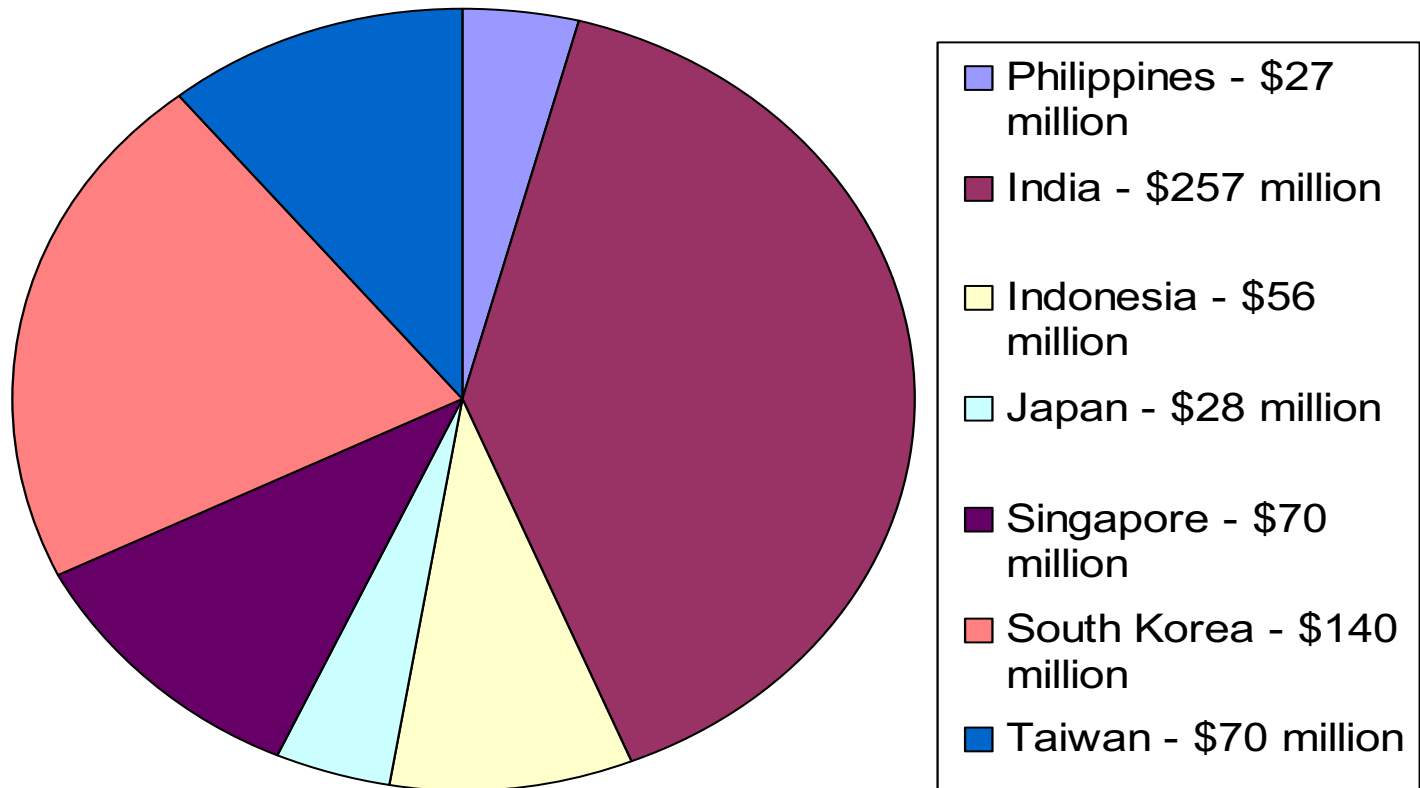
- Opportunities for equipping new warships with state-of-the-art EW systems.
- Up to 49 new destroyers, frigates and corvettes expected to be acquired between 2020 and 2037 according to *Defence Insight*

Expected Demand for New Corvettes, Destroyers and Frigates in the Asia-Pacific 2020-2037



- India (18 Corvettes, 1 Destroyer)
- Indonesia (4 Frigates)
- Japan (2 Destroyers)
- Philippines (2 Corvettes)
- Singapore (5 Frigates)
- South Korea (2 Destroyers, 8 Frigates)
- Taiwan (2 Destroyers, 5 Frigates)

Value of Expected Demand for Naval EW Systems to equip New Corvettes, Destroyers and Frigates in the Asia-Pacific 2020-2037



NOMAD

- USV-based AShM Jammer
- 40 knot top speed, 24 hours' endurance at 20 knots
- Could enter service from circa 2025



NEMO Trials



US Navy Efforts

- Active Mission Payload
 - Equipping MH-60 helos with counter-AShM ECM.
- AN/SLQ-32 SEWIP upgrade
 - Block-2 adds new ES antenna and receiver to AN/SLQ-32 architecture.
 - Block-3 adds new integrated electronic attack functions.
- Nulka upgrade
 - Possible expansion of jamming provision into Ka-band.

Cognitive EW

- Artificial Intelligence (AI) and Machine Learning (ML) could hold promise vis-à-vis advanced AShM threats.
- EW systems employing AI/ML could provide the necessary capabilities to help defeat missiles such as the DF-100.
- Machines could navigate the OODA Loop quicker than humans during AShM engagements.

Conclusions

- China's anti-ship missiles pose a clear threat.
- Waveforms only part of the answer, regular training and exercises are imperative.
- Loss of a US Navy carrier could have serious consequences for US and allied airpower during a crisis.
- 'CNN Effect' is now the 'Twitter Effect': Loss of a warship likely to have a major impact on the polity at home.
- The time to act is now, because by the time a crisis erupts it is too late.