



Centre for Air Power Studies (CAPS)

Forum for National Security Studies (FNSS)

TOWED AIRBORNE LIFT OF NAVAL SYSTEMS (TALONS)

APPLYING SIMPLE AND COST EFFECTIVE TECHNOLOGY FOR CAPABILITY ENHANCEMENT

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The US DARPA has successfully tested a new technique to extend the range of ISR and communication sensors on board US Navy vessels. The new concept is known as Towed Airborne Lift of Naval Systems (TALONS) where ISR and communication equipment is towed behind a vessel using a fully automated parafoil system attached to the vessel's mast. The altitude of the TALONS could be varied between 500 and 1500 feet and could carry a payload of 150 pounds (68 kg).¹ This is a perfect example of a highly innovative application of simple and existing technology to enhance high end platforms capability several fold. In addition, this technique is highly cost effective. TALONS could increase the range of a naval vessel's communication systems which will pay rich dividends for naval operations in terms of enhancing situational awareness and improve early warning of incoming threats.

The system can be hand deployed from large naval vessels and small boats and is also tuned for automatic launch and recovery and autopilot during operation.² The system will be highly efficient for naval task forces and enable long range communication overcoming the line-of sight problem to a good extent. At present, US Carrier Battle Groups (CBGs) use maritime patrol aircraft and helicopters for long range maritime ISR operations. The deployment of TALONS would permit extending the operational reach of these platforms. The surface combatants of a naval task force too can operate at longer distance and exchange ISR data enabling better early warning of approaching low flying hostile threats like aircrafts and low RCS targets like cruise missiles.

At present, low RCS supersonic anti-ship cruise missile is a greater threat for US CBGs. The Chinese and Iranians are employing anti-access

and area denial strategy in which anti-ship cruise missiles form an important component. Chinese ASCMs, which are being exported to Iran as well, are based on Russian cruise missile technology. Some of these ASCMs, particularly those based on the SS-N-27 variants, switch to supersonic speeds (with the help of a rocket motor) as they approach the terminal phase. Combined with this they could also perform terminal manoeuvres to defeat defences.³ As a result, the early warning distance is highly restricted to as low as 20 km from the first line of defence, which puts severe limitation on the reaction time for the defence systems. TALONS carrying ISR and communication sensors could extend the range of detection and share the target data with other surface combatants operating at longer distance providing more reaction time which effects better defence against these types of threats.

The TALONS might also be useful in keeping the intra- CBG/fleet communication channels open when satellite communications are down due to enemy action. It is to be noted that China is developing both passive and active systems to attack hostile satellites that might aid military operations against it.

For Indian Navy

This technique may be adopted by the Indian Navy as well, to enhance task force/battle group level situational awareness. The technology is quite simple and hence can be developed and deployed within a short time.

Finance wise also it would be extremely cost effective; hence the Navy doesn't have to wait for the ministries to deliberate and sanction it. The navy can itself straight away sanction the project and could also develop it 'in-house'. Doing so would pay rich dividends for navy's operational capability. The important lesson for the Indian armed force is that, it is possible to apply simple technology concepts to greatly multiply own forces capability. Setting up a team within each service to dwell on such innovative and low cost concept development would bring great benefits in multiplying existing capability.

(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])

Notes

¹ "DARPA's Towed Airborne Lift of Naval Systems (TALONS) Concept Tested at Sea", <http://www.defencenews.in/defence-news-internal.aspx?id=Xmj3JE2kM9E=>, 29 September 2015.

² Ibid.

³ "Navy Lacks Plan to Defend Against 'Sizzler' Missile", <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a5LkaU0wj714&refer=home>, 23 March 2007.