Maritime Satellite Communication System Now Reaches 95% of Global Trade Routes

OE Watch Commentary: A Chinese maritime satellite communications platform is nearing completion. In January 2020, MarineTel [海星通] achieved coverage of the South Indian Ocean and major fishing areas, achieving coverage of 95% of global routes in five years. In just five years, MarineTel has been able to provide autonomous and controllable satellite broadband communication services for 95% of global ocean routes. The platform is used by over 6,000 ships and oil platforms, including 4,000 fishing vessels. Launched in 2015, the system is based on a partnership between China Aerospace Science and Technology Corporation, Shenzhen and Sino Satellite Communications Corporations.

The system uses Very Small Aperture Terminals (VSAT) aboard the ships to communicate with a constellation of communications satellites in geosynchronous orbit. The system is also supported by a network of ground stations in North America, Europe, and Sri Lanka, as well as stations within China in Kashgar in Xinjiang, Beijing and Hong Kong.

The satellite communication system can be used by fishing ships such as these, based in Sanya, Hainan.
Source: Jorge Cortell Dsc (226974477) via Wikimedia, https://commons.wikimedia.org/wiki/File:Dsc_(226974477).jpeg, CC BY 3.0

The article also highlights the role the system plays in helping fishermen get their catch to market but also increasing trust for consumers, who can better see when and where the fish were caught. This is particularly important as more customers become aware of the dangers of illegal and mislabeled fish, which has become a global problem.

The system also acts as an emergency link to coordinating agencies like the China Maritime Search and Rescue Center [中国海上搜救中心]. The full article included an example of Chinese fishermen far out to sea in the South China Sea that after encountering a severe storm and almost foundering was able to make emergency contact through the system and be rescued by a commercial vessel in the area.

Chinese companies are already experimenting with "smart" or "intelligent" ships which feature improved automation. According to its producers, the MarineTel system will "lay a foundation" for unmanned ships. In November of 2018, a Chinese company tested the world's first "intelligent" cargo ship, Pacific Vision [明远]. The 362-meter long Very Large Ore Carrier (VLOC) harness sensors and satellite navigation systems to improve safety through continuous monitoring. (See: "China Launches First 'Intelligent' Cargo Ship," *OE Watch*, March 2019). This system relies on satellite broadband like MarineTel, and China's Beidou navigation satellite constellation (slated for completion in May of this year) to function. With the addition of high throughput high-throughput Ka-band satellites in 2019, the system will be able to handle the increasing demand from "internet of things" and smart ship applications.

This system is important for a number of reasons: First, it is another example of the commercial value that Chinese companies see from space applications which are helping drive a large number of space launches. Second, the system is explicitly part of China's Military-Civil Fusion project [军民融合] which seeks to achieve strategic effects for both the military while enhancing the broader Chinese civilian economy. Deployed aboard civilian ships or acting as a backup for military systems, the MarineTel will augment Chinese existing maritime communications networks.
End OE Watch Commentary (Wood)

> **"*Currently, more than 4,000 fishing vessels in China's waters use the "MarineTel" service.*"**

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On Chinese cargo ships at sea far from shore, ship information and video monitoring images are transmitted back to China in real-time through satellite broadband, and the land and sea are coordinated to realize the real-time monitoring and management of ocean-going ships by enterprises.

In China's littoral waters, fishermen can use the satellite broadband network to send video exchanges on WeChat to sell freshly caught fish and to conduct online transactions through trading platforms and traceability management systems. This improves profits for fishermen and ensures that buyers can get the freshest food.

More than ten satellites in geostationary orbit act as a datalink connecting China with Chinese ships at sea.

The China Aerospace Science and Technology Corporation and Sino Satellite Communications Corporations' "MarineTel" [海星通] service provides satellite broadband integrated services for 6,000 Chinese ships and offshore platforms and covers more than 95% of global routes.

The "global network" created by this satellite constellation allows Chinese ships to travel to the ends of the earth and without disconnecting.

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Over the past two years, due to the maritime environment and fishery resources in the past two years, China's fishery industry has been transformed and upgraded, and ships at sea can no longer afford to be cut off. Especially in Zhejiang, Fujian and other provinces, local ship service companies and shipowners have made increasing requirements for their ships to be able to have easy access to the internet and maintain links back to shore.

The ocean is vast, the weather is volatile, and stable and reliable satellite communications are an important guarantee for the safe sailing of fishing vessels. MarineTel connects to satellite equipment on fishing boats and is just like using wifi at home for fishermen. When they go out to sea, they can access the Internet with their mobile phones. ..Currently, more than 4,000 fishing vessels in China's waters use the "MarineTel" service.