

# The emerging world of vessel tracking

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For ages, the allure of going to sea, has been the ability to cast off all lines, escape all ties with civilisation and sail the oceans blue. Similarly, years ago aviators flew the skies free as a bird. Regrettably, those carefree days are behind us! The high stakes of an aviation or maritime incident, and the demand for greater efficiencies in our transportation systems, have led to the evolution of tracking technologies, which to date, have been slow in coming for the maritime community.

The aviation community has had a comprehensive aircraft tracking and control system in place for years through the use of radars and aircraft transponders. The maritime community is now finally moving in the same direction through the use of new satellite and line of site VHF communication technologies that are providing worldwide vessel tracking.

## The need for vessel tracking

The one watershed event that accelerated vessel tracking was the 9/11 attacks on the U.S. Authorities quickly realised a terrorist incident involving vessels could have even greater impacts, and some opined the maritime transportation sector was the least secure and most vulnerable. U.S. Coast Guard Commandant, Admiral Tom Collins highlighted the importance of tracking vessels when he stated “with regard to Maritime Domain Awareness, which is the centrepiece of our maritime security strategy, we believe that the installation of Automatic Identification System (AIS) and Long Range Tracking Devices will aid enormously in providing the necessary information on in-bound maritime shipping, long before ships reach our ports.”

These concerns led to a series of U.S. and international regulations and treaties to bolster security. In 2002, the International Maritime Organization (IMO) passed the International Ship and Port Facility Security (ISPS) Code requiring a suite of enhanced security measures. These included the installation of worldwide satellite tracking equipment, Ship Security Alert Systems (SSAS) and a line of site VHF radio vessel tracking devices, AIS on vessels sailing the oceans to aid the monitoring of vessels' present positions, past port calls and transits. The IMO also passed a resolution which in part stated that the IMO “urges contracting governments to take, as a matter of high priority, any action needed at national level to give effect to implementing and beginning the long-range identification and tracking of ships.” Clearly, the U.S. and the international community are poised to implement systems that track the approximately 60,000 vessels that ply the seas. For the U.S. alone, some 8,000 deep draft vessels call on U.S. ports annually making vessel tracking a daunting challenge.

While vessels have been installing these new communications technologies to provide a worldwide vessel tracking system, the equipment and processes required to receive, evaluate and disseminate this surge of information is years off from being fully implemented by governments. The biggest challenges are building and operating the shore based receiving stations around the world to process the vessel information transmitted by vessels AIS transponders and determining the systems to be used in collecting and sharing this information.

## The role of MISNA

Recognising vessel tracking is the wave of the future, several commercial and non-governmental entities are developing the



systems needed to receive and process vessel position data today. One organisation, the non-profit Maritime Information Services of North America (MISNA), comprised of a network of Maritime Exchanges in U.S. and Canada, has developed the capability to bring in both AIS and satellite generated data into a hybrid vessel tracking system called the Automated Secure Vessel Tracking System or ASVTS. MISNA advocates information on vessels' positions when shared with government and commercial maritime interests can aid “safe, secure, efficient and environmentally sound maritime operations.” In most cases MISNA's vessel tracking system uses existing on board satellite and VHF communications systems to economically track vessels around the world for a US\$3 a day, a cost every shipper should be able to easily absorb. MISNA has also built a network of AIS receiving stations around the U.S. which report a vessel's position every minute when in an AIS covered area. When a vessel is outside an AIS area, which is 95% of the time, position reports are provided every few hours by the satellite tracking systems.

To date, participation in the Long Range Identification and Tracking (LRIT) component of MISNA's secure vessel tracking system is voluntary and is evolving into the “Standard of Care” for responsible ship operators. The owner, operator and affiliates can all view vessels' positions through use of a user name and password on a secure internet site, information that aids the efficient



AIS and satellite tracking by MISNA's Automated Secure Vessel Tracking Service.



Ability to determine where a vessel has been before arriving in port.



Vessels operating in Alaska – Summer 2004 (Voluntary participation in ASVTS).



APL China sailing from Dutch Harbour, Alaska after loading seafood products destined for the Far East.

mobilisation of tugs, pilots, shore gangs and agents. Their password determines which vessels they are authorised to see. The Coast Guard has a “master password” and sees all participating vessels. Over time the Coast Guard, Customs and Border Protection and other agencies will view participating vessels as lower risk vessels and non participants as “high risk” aiding their port clearance and inspection decision process. Vessel charterers will also evaluate a vessel’s participation in a tracking system as part of their vetting process.

The U.S. Coast Guard Admiral in charge of Alaska operations, Admiral Jim Olson, realised the quickest way to increase his ability to protect vessels sailing his enormous operating area was to ask vessel operators to voluntarily participate in the ASVTS tracking programme. As a result, his Operations Centre, Captain of the Ports, Coast Guard security vessel patrols and boarding

teams, are all able to view the locations of all tankers, cruise ships, ferries and many tugs and container ships plying Alaska waters and the Pacific. This information helps the Coast Guard identify anomalies in a vessel’s transit, positively identify prior ports of calls, and respond to emergencies. The tracking system essentially provides a safety and security net for vessels. The owners and operators of the vessels are also realising benefits in having this information available. The Alaska programme may well serve as a model for a ‘today solution’ for implementing a practical, low cost tracking system that aids both government and the marine industry. It is proving to be a ‘cheaper, better, faster’ industry developed solution.

The expression “when life gives you lemons, make lemonade” applies to the onset of the vessel tracking initiatives. If the days of casting off all lines and escaping civilisation are over, the challenge is to make vessel tracking a useful, value added tool. Several in the marine industry are doing just that and finding ways to accelerate an industry developed vessel tracking solution that meets the needs of governments while also aiding commercial interests.

**ABOUT THE AUTHOR**



**Captain Ed Page** is a 1972 graduate of the U.S. Coast Guard Academy who served as a commissioned officer for 29 years before retiring to start the Marine Exchange of Alaska. Captain Page served in a variety of marine safety positions around the U.S. and overseas including an assignment as Captain of the Port for Los Angeles/Long Beach, one of the U.S. busiest ports, and as Chief of Marine Safety and Security for the Pacific Coast. He presently is the President of the Maritime Information Services of North America and resides in Juneau, Alaska.

**ABOUT THE ORGANISATION**

**Maritime Information Services of North America (MISNA)** is a coalition of non-profit maritime information service organisations dedicated to providing information, communications and services to ensure safe, secure, efficient and environmentally sound maritime operations. Established in 1995, MISNA represents the commercial maritime community's shared commitment to proactively address the challenges faced by the Coast Guard, Customs and Border Protection, other federal and state agencies and industry in a cooperative and cost efficient manner.

**ENQUIRIES**

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