



APPLICATION STORY

The FLIR Systems Navigator Pan / Tilt was installed just above the bridge of the M.V. Golden Bay. It helps the crew to avoid deadly accidents.

Avoiding collisions in port and in open water

Cement carrier installs thermal imaging camera to avoid deadly accidents

***Golden Bay Cement** has its origins in the earliest New Zealand cement manufacturing ventures in Northland in the 1870's. Today, with an annual production capacity of 900,000 tonne, the Portland plant is New Zealand's largest cement manufacturing operation. From its Portland manufacturing plant, near Whangarei, a range of cement products are shipped to markets around New Zealand and the Pacific.*

Portland's raw materials are quarried from two substantial seams of limestone, one behind the Portland plant and the other 32km north at Wilsonville. Golden Bay cement is a premium Portland cement which is used in commercial, industrial and residential construction.

From Portland, bulk cement is distributed by ship and then trucked to customers. Transporting cement requires specific handling and storage conditions, hence specialized cement carrier ships are the preferred method of transportation.

Transporting cement

Cement is described as a "minor bulk" cargo, but is extremely important to the construction industry. Traditionally transported in bags, finished cement is today carried largely in bulk, a powder cargo sufficiently fine to be handled pneumatically, moving through large diameter pipes on a column of air.

Old cement ships were basically bulk carriers with bags handled manually in a laborious operation which could take days. Modern cement carriers are specialized ships that will carry no other cargo, and while classified as dry bulk carriers, are fully enclosed vessels which more resemble tankers. They are distinctive craft, with complex cargo handling equipment in the pneumatic plant, an extensive system of conveyors and often a high tower on the foredeck.

The cement carrier used by the Golden Bay Cement Company is the M.V. Golden Bay with a capacity of 4,500 tonnes. Needless to say that it is not always easy to maneuver a ship of this size and weight. It takes some time to change direction and slow down.

Avoiding collisions

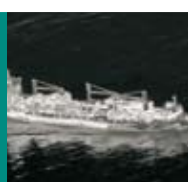
The crew of the Golden Bay is well aware of the fact that they need to stay alert at all times, especially when entering small coastal harbours around New Zealand. The M.V. Golden Bay operates a regular schedule which entails unloading at six different harbours throughout the country. The two captains in charge of the ship on a rotating roster are Mr Tony Murphy and Mr Peter Robinson. The captains are pilot exempt so they navigate and dock at each harbour under their own power and guidance without any assistance from harbour authorities or support vessels.

"One of the biggest dangers is that we may not see very small craft when entering harbours," says Mr. Peter Robinson the Captain of M.V. Golden Bay. "Hitting one of these boats might not damage our ship, but the crew of the other boat could be killed. Avoiding collisions this is already hard in daytime but becomes a lot more difficult in total darkness."

"In order to avoid this type of accident we rely heavily on radar. Unfortunately, although radar is an indispensable tool, it cannot pick everything up. Very small boats are sometimes missed by radar. During the night, we need to rely on the navigation lights of other vessels. When they are well lit, we will see them from far enough distance to change course, if necessary. The problem is that sometimes owners of small boats do not realize the importance of navigation lights. Boating with defective or non-working navigation lights can bring their vessel, and even more important, themselves, in great danger. Not too long ago we had a near-miss in which we almost mowed down a small, unlit vessel."







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Mr. Peter Robinson, Captain of the M.V. Golden Bay: "Thermal imaging has proven its worth on board the M.V. Golden Bay. It helps to avoid accidents."

A near-miss

Mr. Ian Niblock, of the Northland Regional Council, says the two people on board owe their recent lucky escape to the professionalism of the officers and crew of the cement carrier M.V. Golden Bay.

"The duo were anchored in the middle of Whangarei Harbour's Portland Channel on a small, unlit fibreglass runabout that the M.V. Golden Bay's equipment had not registered as a radar target," Mr. Niblock explains.

"The cement carrier's crew spotted the boat at the last minute and it was only the practice of good navigation procedures on board the cement carrier that avoided a collision between the two vessels. Too many people are placing themselves - and others - at unnecessary risk of injury, or even death, by travelling the region's harbours without navigation lights. They are placing themselves and others at risk by ignoring one of the most fundamental rules of navigation – see and be seen."

"Navigation lights are an essential part of a boat's safety equipment, yet the Regional Council has been receiving an increasing number of complaints about boats navigating at night without them. Ignorance is probably to blame for the majority of these incidents."

Thermal imaging: seeing clearly at night

"Not only we are very concerned about safety. Our own safety but also the safety of other vessels and their crew," says Mr. Robinson, captain on the M.V. Golden Bay. "In order to avoid deadly accidents at night, we looked for a solution that could help us to detect small boats and objects that are not detected by radar.

The Joystick Control Unit for the Navigator Pan / Tilt is integrated in the bridge.

A solution that seemed very promising to us was thermal imaging, so when we saw it demonstrated at the Auckland Boatshow we immediately got in contact with Mr. Steve Kershaw of Absolute Marine. Absolute Marine provided us with a fixed Navigator that we simply used as a hand-held so we could evaluate its effectiveness on our next voyage. When we came into the Whangarei Harbour it was in complete darkness and it became immediately obvious that thermal imaging system was a tremendous asset."

A small cost to increase safety

"Thermal imaging has definitely proven its worth on board the M.V. Golden Bay. The Navigator Pan/Tilt is a small cost compared to having a deadly accident."

The FLIR Systems Navigator produces a crisp image which is projected on a 20" LCD screen installed on the bridge.

Navigator Pan/Tilt detects small vessels in total darkness

"Our customer opted for a FLIR Systems Navigator Pan/Tilt thermal imaging camera." explains Mr. Kershaw of Absolute Marine, the distributor of FLIR maritime products in New Zealand. "On the M.V. Golden Bay it was easily installed just above the bridge, which gave the camera a terrific uninterrupted perspective. The FLIR camera is approximately 15 metres above sea level and despite it being at a distance of over 70 metres to the bow of the ship, its performance is quite remarkable. Its thermal images are projected on a 20" overhead LCD screen which is installed on the bridge."

"We have three people on the bridge when we enter port," explains Captain Robinson. "When entering at night the Duty Officer is responsible for the FLIR system and he monitors our progress while operating the joystick control unit which turns the Navigator Pan/Tilt in the desired direction. The Navigator Pan/Tilt is a great tool. It produces a crisp image in total darkness on which the smallest of details can be seen. A small vessel is easily detected at a range of practically 1000 metres which gives us enough time to change the course of the ship if necessary. Thanks to its ability to pan 360° horizontally and tilt +/- 60° vertically, we can scan either side of the ship and verify our exact position against channel markers. It greatly improves our situational awareness."

"It definitely complements our existing radar. When we have a blip on our radar screen, we can now see what the blip really means."

"See and be seen. A primary rule of navigation. On board the M.V. Golden Bay we make sure that we see others. We can not run the risk to bring our vessel, its cargo and crew in danger regardless of how others are behaving. Thermal imaging is helping us do this," concludes Captain Robinson.

The M.V. Golden Bay: a cement carrier with a capacity of 4,500 tonnes.

For more information about thermal imaging cameras or about this application, please contact:

FLIR Commercial Vision Systems B.V.
Charles Petitweg 21
4847 NW Teteringen - Breda - Netherlands
Phone : +31 (0) 765 79 41 94
Fax : +31 (0) 765 79 41 99
e-mail : flir@flir.com
www.flir.com

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