

# CSIR-developed removable Davit System enables integrated anti-piracy operations



## In brief

The Cape sea route has become a preferred option for shipping companies in response to increasing incidence of piracy along the East African coast line. In response, South Africa has had to consider effective means to combat such activities and safeguarding the integrity of our maritime territory.



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The South African National Defence Force (SANDF) identified the need to have a larger, more agile, high-speed maritime capability ready for rapid deployment on the ocean. The CSIR developed a novel hosting system that allows for the loading of more - and different types of - vessels onto larger navy ships. During the development phase and undertaking of sea trials, the SANDF needed to respond to an actual piracy threat on the East coast of Africa. With the pilot model of the hosting system installed, the SA Navy had their first success with the CSIR's new system - despite still being in demonstrator version. With such technology as building block to a highly mobile, integrated maritime capability, the SA Navy is in a stronger position to counter maritime threats, protect maritime assets (including natural resources) as well as the economic sea-lines of communication against multi-national crime syndicates and safeguarding the integrity of waters along the South African - and broader African - coasts.

## The challenge

The 2012 Draft Defence Review states: "The substantial increase in acts of piracy along Africa's coastline is of grave concern as it threatens the peace, security and stability of the continent. Somali pirates have operated as far south as the Mozambique Channel and as far east as 72° East towards the Maldives. As a direct consequence of the piracy along the east coast of Africa, a growing number of shipping companies have had to route their ships via the Cape Sea Route instead of using the Suez Canal. Such dynamics, together with requests from foreign governments and multilateral organisations, have compelled South Africa to provide a response to such security threats. As such, Defence will play a key role to help combat piracy, especially since recent incidents have occurred along the SADC coastline."

In stepping up to this challenge, the SA Navy very soon realised that their existing anti-piracy deployment capabilities needed to be extended to be larger, faster and more integrated. This came down to the fact that ships needed to carry more than just their own workboats. Not only adding capabilities to the ship load, the solution also needed the required agility to be rapidly deployed and returned to a mother ship - while at speed.

## CSIR Research

The CSIR's maritime security group already had experience in the field of controlled surface deployment of boats from moving ships. A removable Davit System was one solution that was put to stringent sea trials along the Cape Peninsula with various different boats from the Maritime Reaction Squadron, SA Special Forces as well as the SA Navy.

The system comprises a wave compensating hydraulic davit system mounted on a load vector compensating base. The base also houses the drive system with local and remote controls, stored energy for a full deployment and recovery operation as well as the logistic support equipment needed for the boat. The complete system fits onto an ISO container footprint mounted and adapted on the ship's deck. The davit system can accommodate boats of various hull shapes weighing up to 5 tonnes. The boats as well as crew can be lowered and retrieved safely by the davit system with the hosting ship underway. Two of these davit systems are normally fitted to a ship, with another two boats housed in the ships boat bay on CSIR-developed cradle systems.

These trials with the Davit system, ended with the SA Navy awarding the project team a "Bravo Zulu" - Navy-speak for a job well done.

## Outputs

While sea trials were underway, South Africa - through the SA Navy - was called upon to prepare for anti-piracy operations. The Navy requested use of the newly-developed model of the removable davit system for operational application in their combat exercise. That success led to further orders for more such systems.

Apart from successfully supporting integrated naval operations on the East coast of Africa, the CSIR-developed capability has also allowed the SA Navy to conduct extended operations up the West coast of Africa, ensuring the SANDF's mandated responsibilities within the SADC and African Union security environments.

More systems were subsequently developed to outfit Navy Frigates as well as the supply vessel, SAS Drakensburg, for integration missions on a rotation basis. This allowed the SA Navy to integrate its warship capability with various specialised elements within the South African National Defence Force to create an extended off board capability. This capability includes visit, board, search and seizure, interdiction, insertion and recovery over beaches, as well as augmenting search and rescue capabilities.

The longer term impact of these types of integrated capability building blocks is that these systems can also be utilised on new naval procurements creating a highly mobile maritime capability to help counter maritime threats in and around the South African waters, but also broader maritime assets around Africa. The SA Navy now has the ability to protect South Africa's territorial integrity (including natural resources) as well as the economic sea-lines of communication against multi-national crime syndicates and acts of piracy.



The development of the removable davit system has resulted in technology packages that have attracted international attention. The system also potentially offers good business opportunities for SME organisations to support the manufacturing processes involved, stimulating the engineering environment supporting ship building and support within South Africa.

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