



Case Details

The Department of Defence wanted to monitor an extensive range of destructive experiments as part of the decommissioning of a destroyer escort "The HMAS Derwent". By deliberately setting fires and initiating explosions, they expected to gather data that will lead to improved passive and active protection systems for warships. This process was known as the Ship Survivability Enhancement Program (SSEP).

Key Requirements

- Large number of channels
- Large storage capacity
- Compatible with radio equipment
- Rugged and robust

dataTaker Data Logging Products

- 1 Cost effective data logging solutions
- 2 Capable of measuring and logging DC voltage, current and resistance sources in addition to digital signals
- 3 Suitable for small to large scale applications
- 4 Rugged design and construction provides reliable operation under extreme conditions
- 5 Designed and manufactured in Australia to the highest quality standards



HMAS Derwent: This Australian Destroyer Escort was decommissioned in 1994 and was laid to rest underwater West of Rottnest Island.

dataTaker Solution

Equipment

- dataTaker DT505 data logger x5
- dataTaker Channel Expansion Modules (CEM) x10
- Steel Boxes
- 4 MB PCMCIA Memory Cards
- Radio Communication

Sensors

- Thermocouples
- Infrared Smoke Densitometers
- Differential Pressure Transducers

Implementation Notes

A number of threat scenarios ranging from accidental fires to blast fragmentation of a direct hit by a warhead were enacted on the ship. The smoke flow generated by the on-board fires also needed to be monitored. In such a hostile environment the data logging equipment had to be rugged, robust and capable of both storing the data itself, and instantly transmitting it to a remote computer that would serve as a backup.

Five dataTaker DT505 data loggers each with two channel expansion modules were installed and placed in steel boxes with amplifier boards for the infrared smoke densitometers. Wires from the thermocouples measure temperature and from the differential pressure transducers measure air velocity and connected directly to the dataTaker data logger inputs.

The DT505 stored all data and transmitted it to the backup computer. For all intents and purposes the tests were carried out on a fully functioning ship with power plant, air conditioning and ventilation systems working normally. The data gathered during the SSEP helped marine engineers and other scientists improve the chances of survival of personnel and ships in the Australian Navy.