Operation Jackstay

Replenishment at Sea (RAS) is how a ship takes on more supplies when they are at sea and not near a port. Another ship comes alongside and transfers equipment, food or fuel. The **jackstay** is a strong wire cable that connects the ship needing the supplies to the ship bringing the supplies.

The two ships come close together, around 50 metres between them.

One ship uses a **line thrower to fire a line over to the other ship.** The jackstay line is stretched out between the two ships and a pulley is attached that can slide along the line. The pulley has ropes on either side that can pull it in both directions.

The supplies are then attached to the pulley and pulled across to the other ship.

DID YOU KNOW:
Jackstays can be used to carry an item weighing up to 200 kg!

A jackstay passing a ladder between HMNZS Canterbury and HMNZS Wellington. The Navy personnel have to keep the line tight by hand!

Replenishment at Sea is the main role of HMNZS Aotearoa, the Royal New Zealand Navy's largest ship. As well as carrying supplies and equipment the ship also resupplies other ships' fuel.

This means ships can refuel on the move without having to go into port. For this they also use a jackstay, and a fuel hose is sent down the line. The fuel hose is connected to the ship's fuel tank and the liquid fuel transferred.

It took HMNZS Aotearoa eight and a half hours to transfer 3.35 million litres of ship and airplane fuel to USS Boxer, a US Navy ship, while in the Pacific Ocean in August 2024!

TORPEDO BAY
NAVY MUSEUM

Operation Jackstay

YOU WILL NEED

- Line
- String
- 2 paperclips
- Cardboard to make a basket
- Tape/glue
- Object to transfer

YOUR CHALLENGE

For this challenge you are not allowed to touch the object being transferred or the container you use to carry the object.

Transfer the object from point A to point B and back to point A using the materials supplied. The jackstay line must remain fixed at both ends so that it cannot move.

One group member is allowed to touch the string, but not the line.

DID YOU KNOW:
Aotearoa can even fill two ships' fuel tanks at the same time!