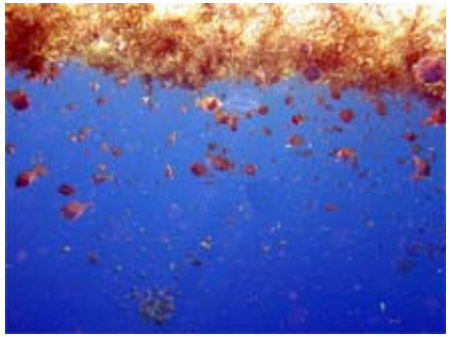

http://oceanexplorer.noaa.gov/explorations/03edge/background/sargassum/sargassum.html

Cable Laying and Repair - Cable Ship Operations

Dr. R.J. Rapp, Director, Industry & Marine Liaison, TE SubCom

Submarine Cables in the Sargasso Sea

23 October, 2014

George Washington Law School

Washington, DC

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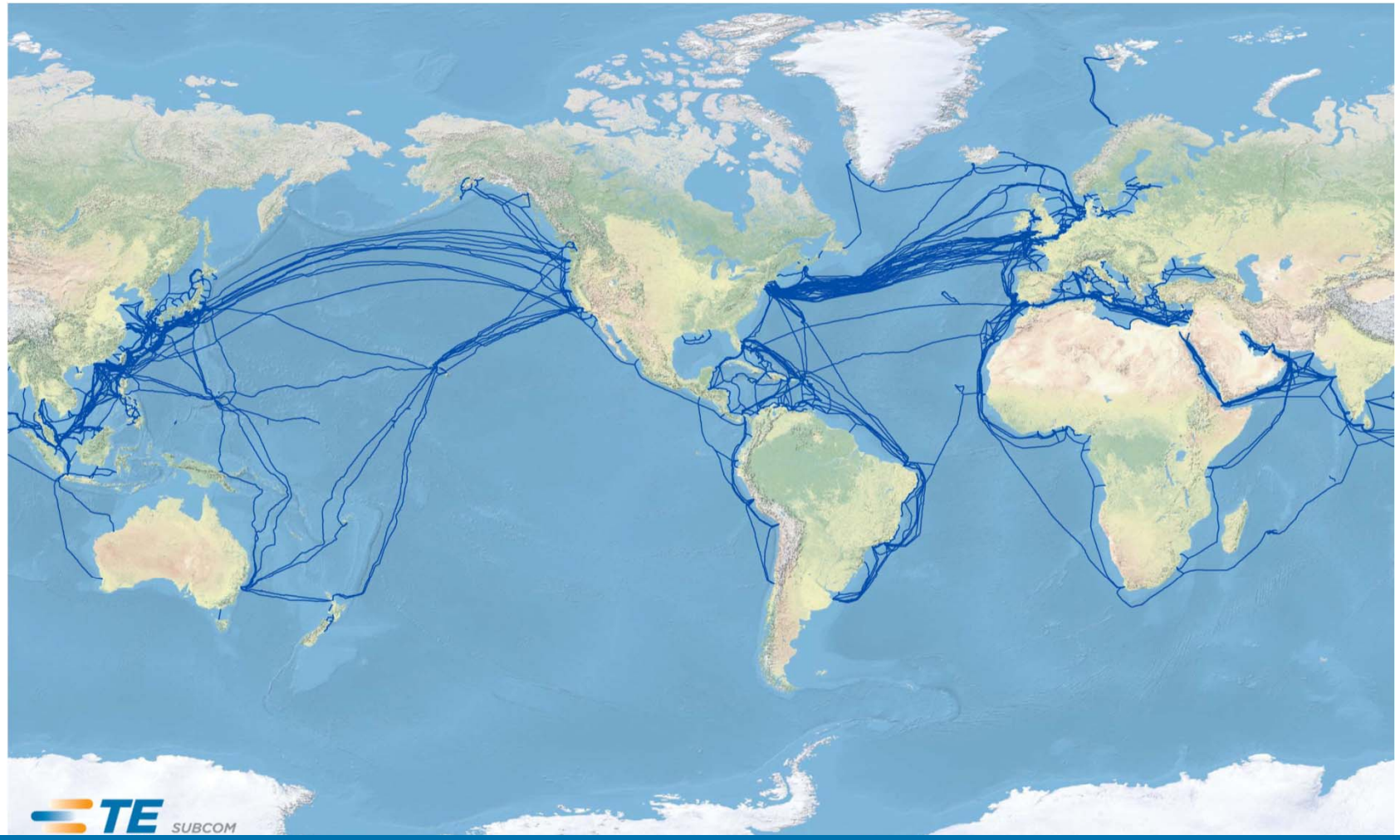
Global Undersea Cable Routes – Active Cables



Carry more than 98% of international internet, data, and telephone traffic. Comprise extremely high reliability components with redundant paths.

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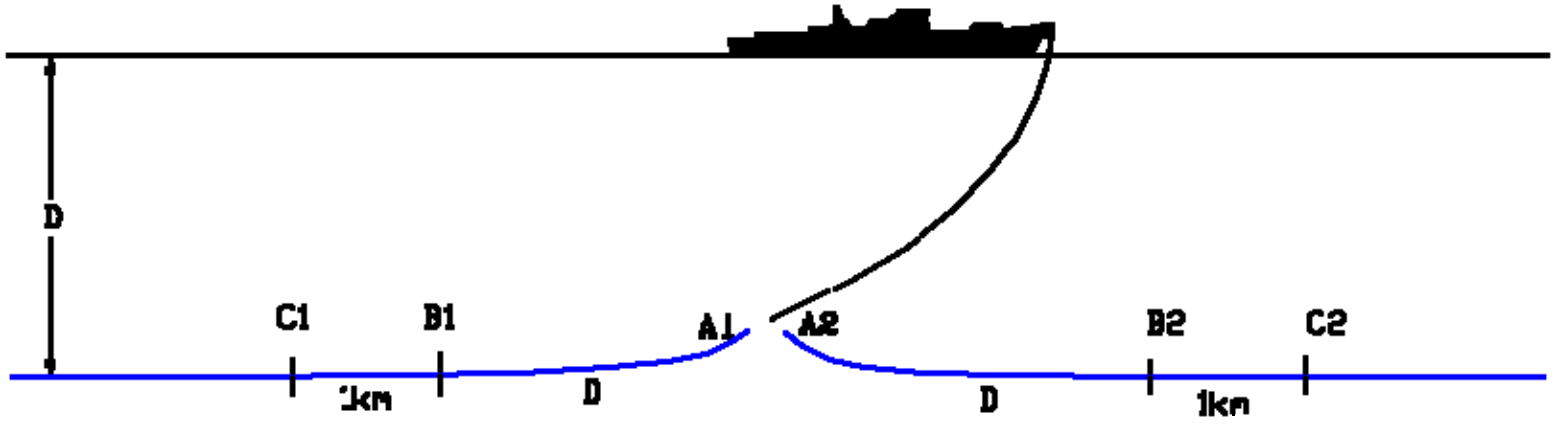
Cable Repair Cutting Drive

Note this series of slides to be replaced by video

- Different repair methods are used in different depths and conditions
- One common method starts with the ship dragging a cutting grapnel to cut the cable
- For cables buried deeper than 1 m into the seabed, multiple cutting runs may be needed to find the cable



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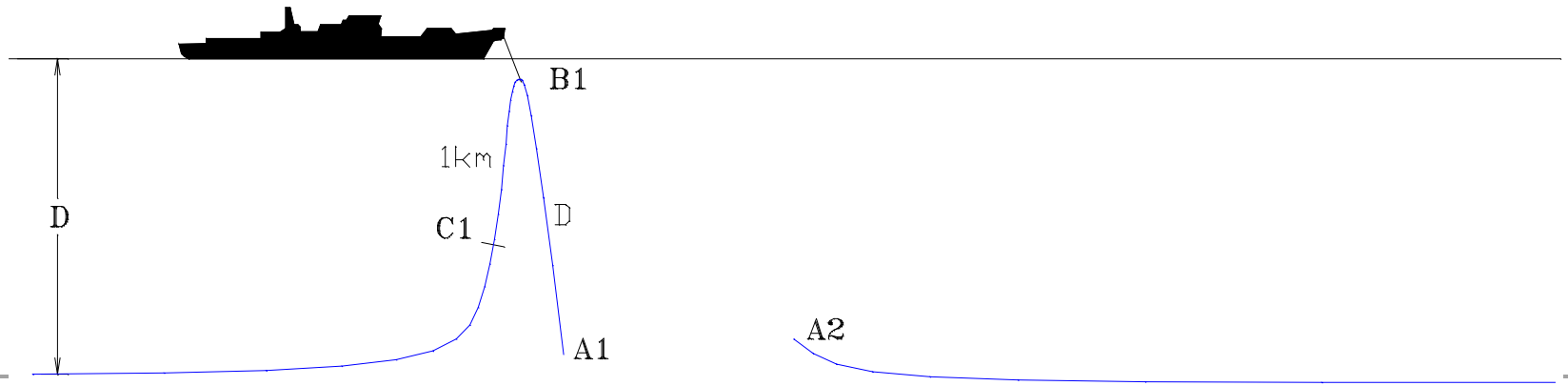
Cable Repair Recovering First End

- After the cutting drive, the holding drive picks up one end of the cable
- The end is tested to see if there are any more faults between it and shore
- Any damaged cable is cut out until the end tests clear to shore



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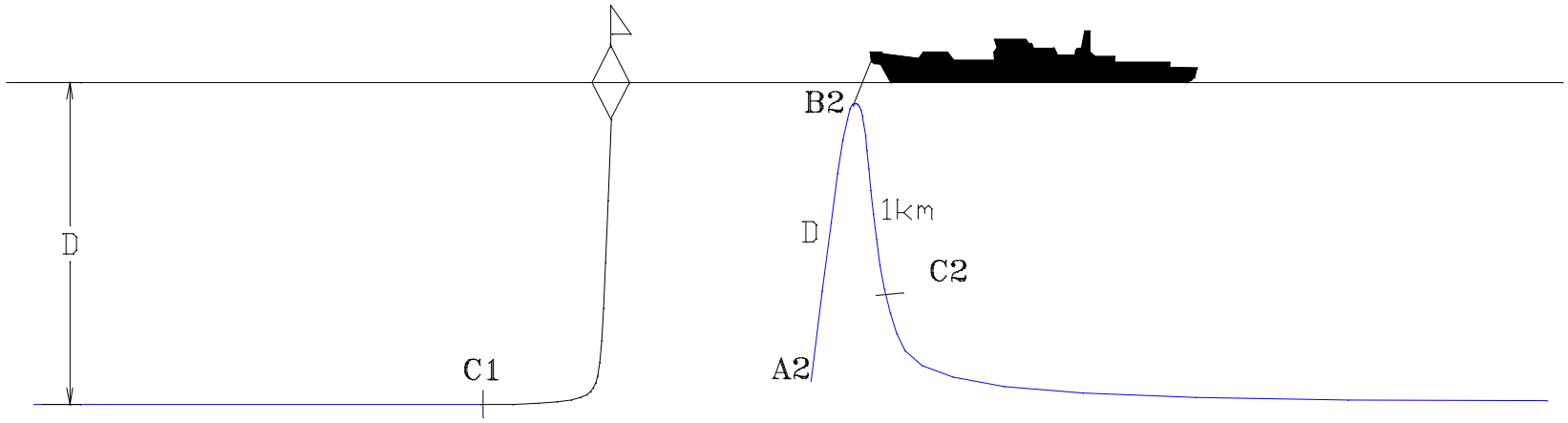
Cable Repair Recovering Second End

- After any damaged cable is removed from the first end and it tests clear to shore, the first end is left on a buoy
- The second end is picked up and tested, and any damaged cable is cut out



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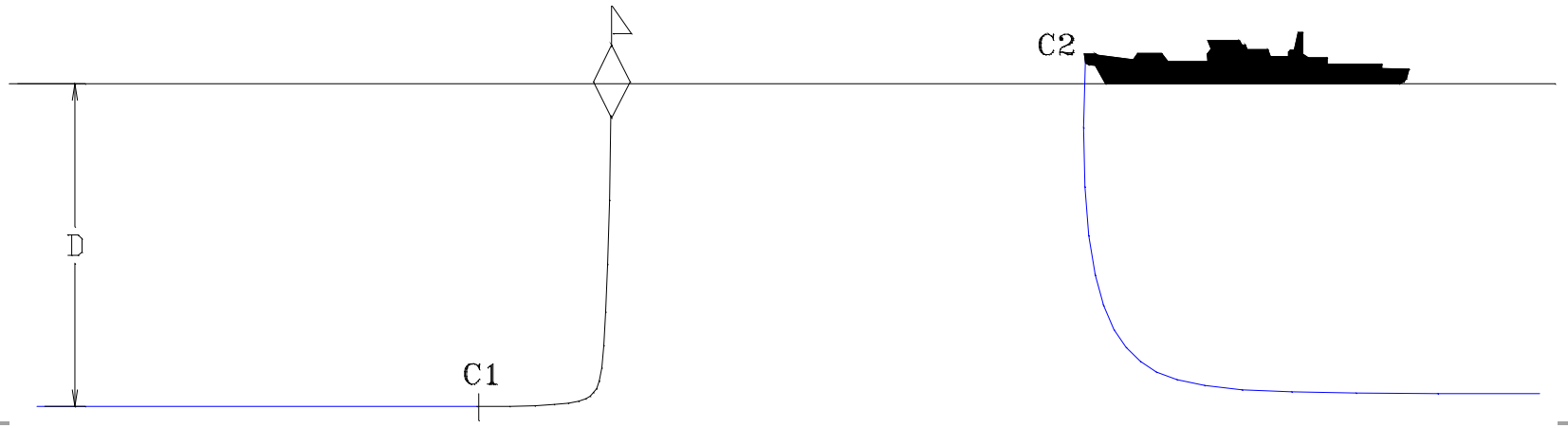
Splicing Spare Cable (Initial Splice)

- After all damaged cable is removed, the ship adds a piece of spare cable long enough to reach between the ends
- Below the ship is performing the Initial Splice (first end of the spare cable)



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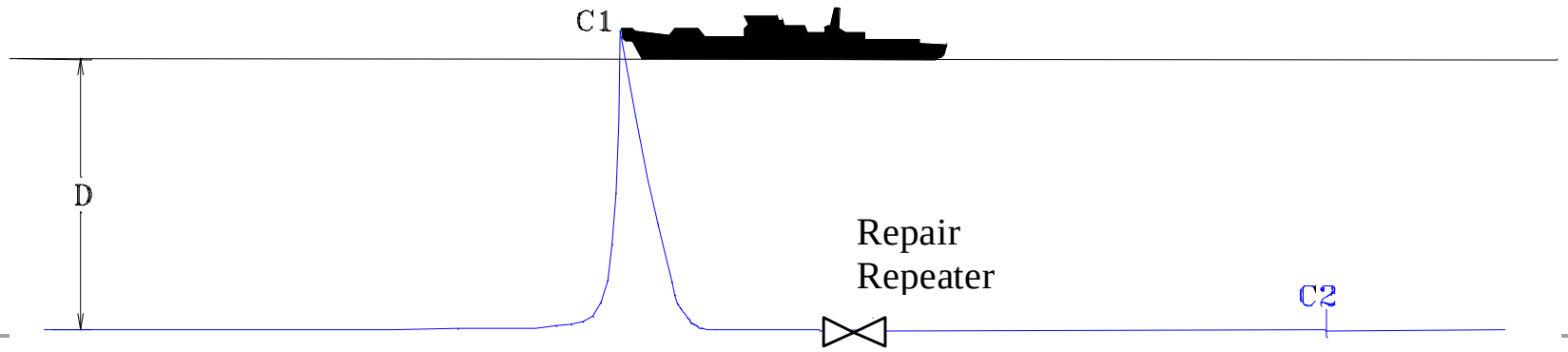
Repair Final Splice

- The length of spare cable needed depends on the amount of cable removed and the water depth
- If much length is added, an extra repeater may be needed
- Below the ship is making the Final Splice



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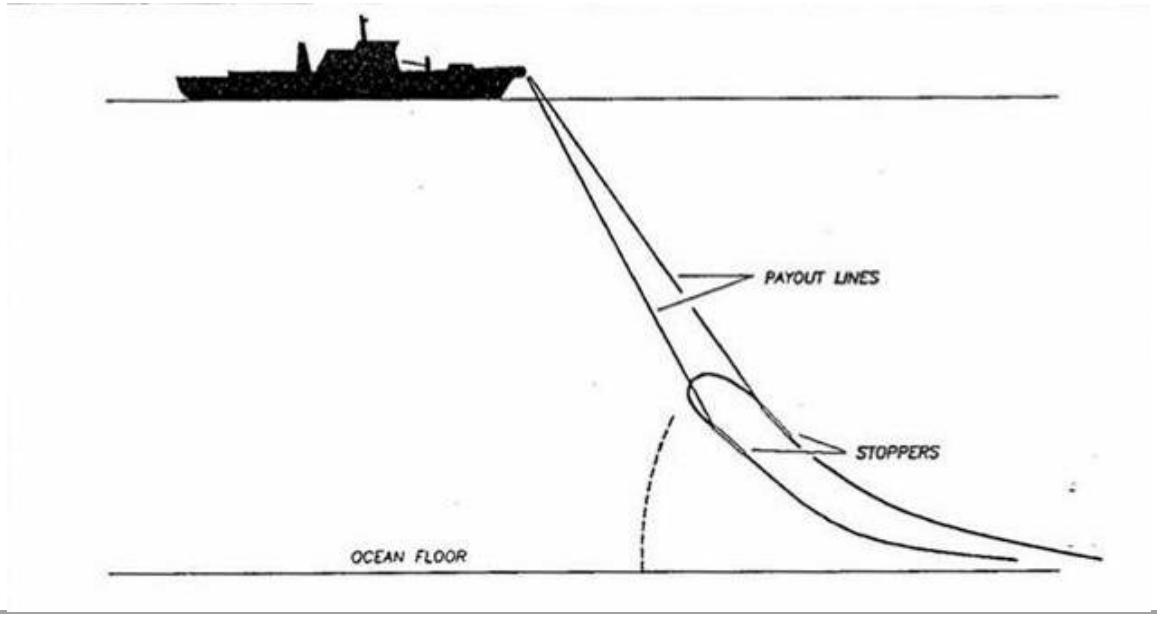
Laying Out & Burying Final Splice

- After the final splice is completed and tested, it is lowered carefully to the seabed
- The Final Splice may be buried with a Remotely Operated Vehicle (ROV) for protection, if seabed conditions allow



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