MCD DEVELOPMENT – MORE PAPERWORK ON YOUR DESK

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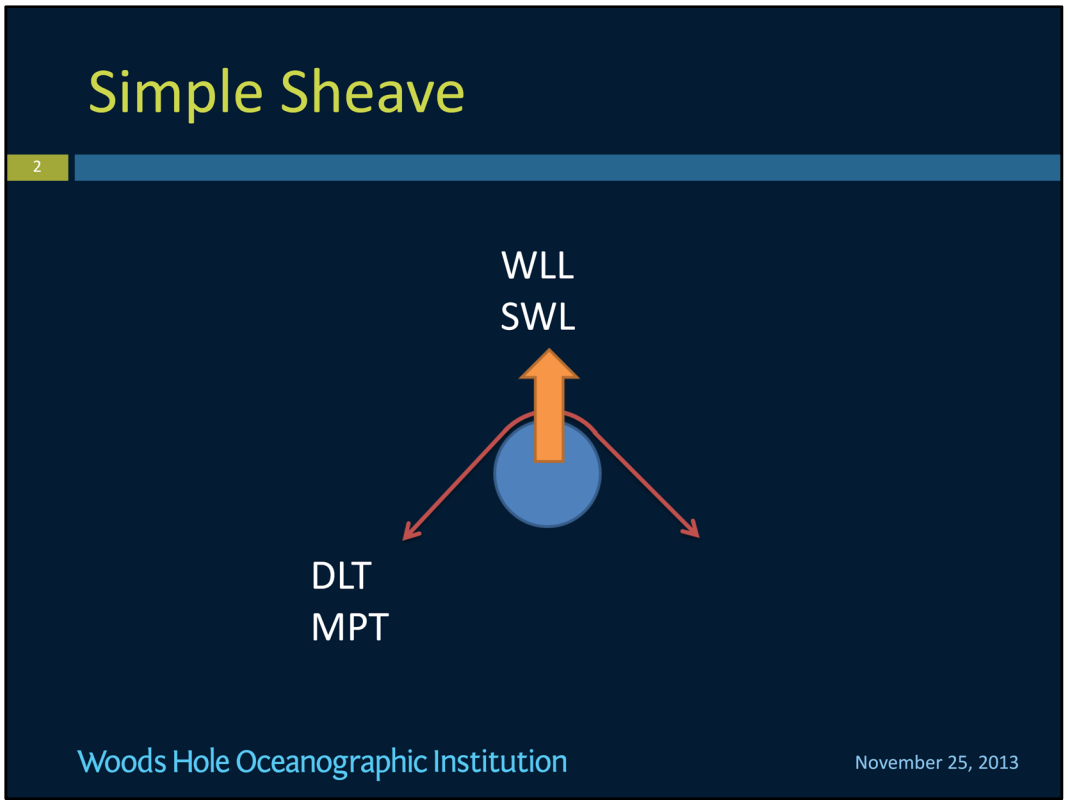
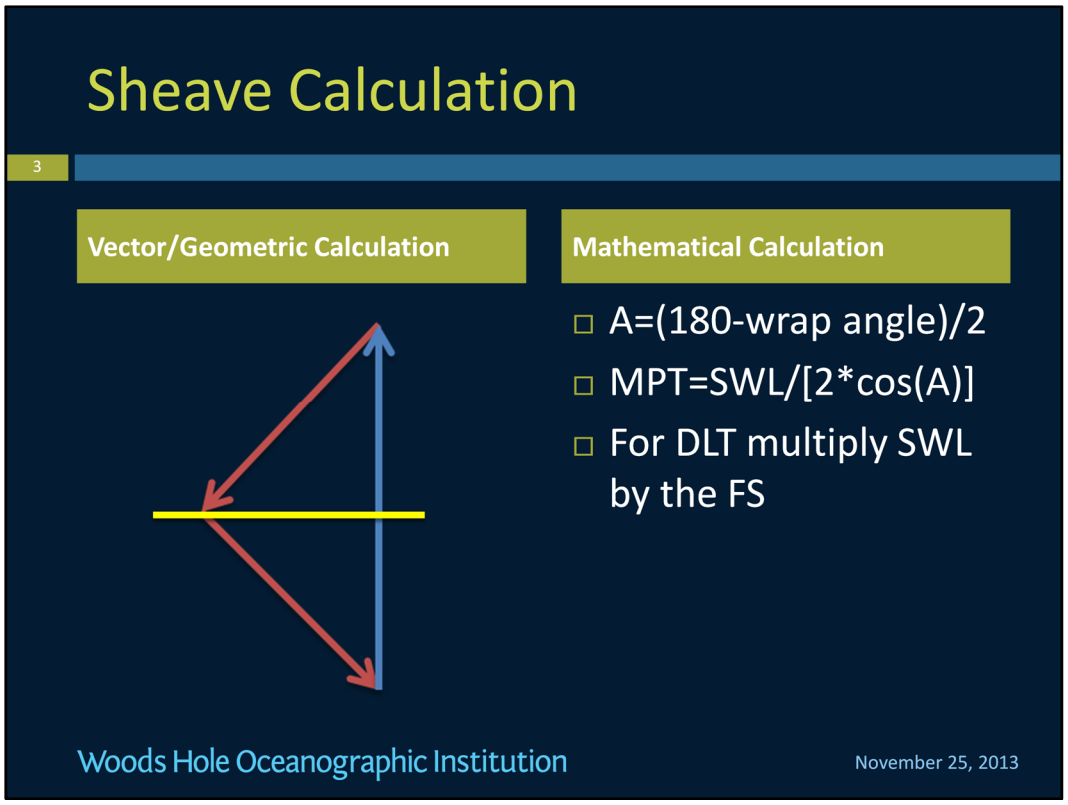
UNOLS East Coast Winch Pool



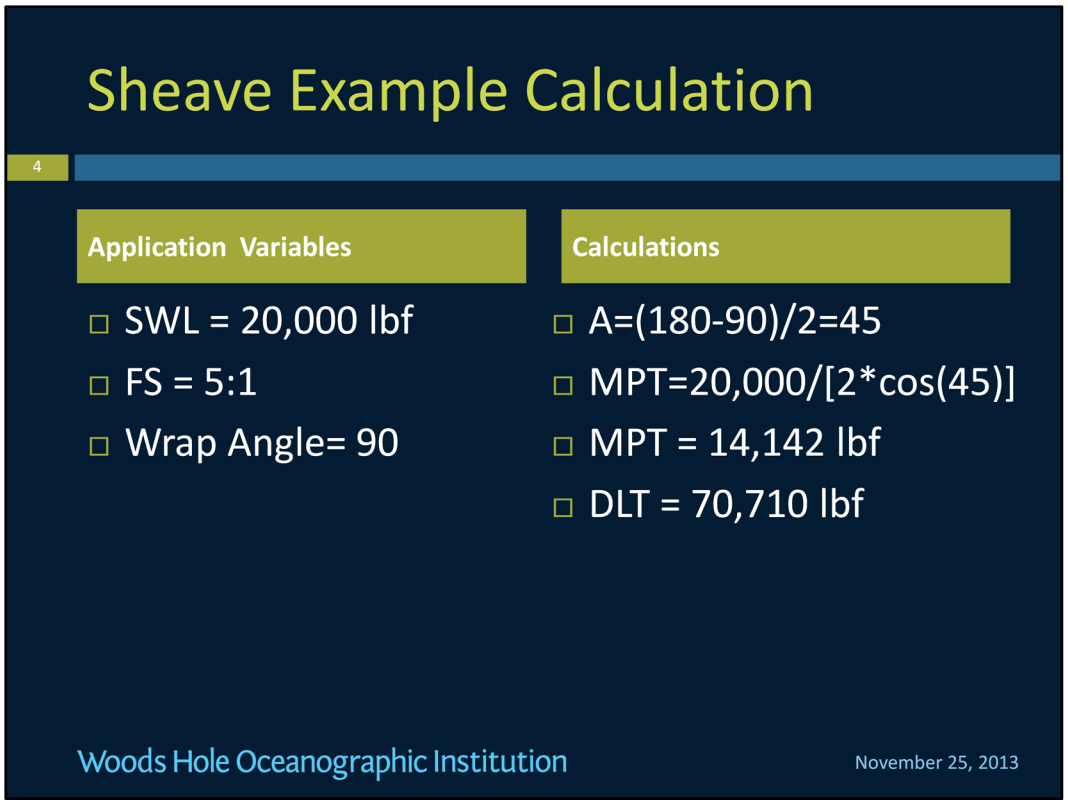
Typically SWL is the load at the shackle. This should be verified before proceeding. MPT translates the SWL at the shackle into a tension. It often times includes a specific wrap angle.



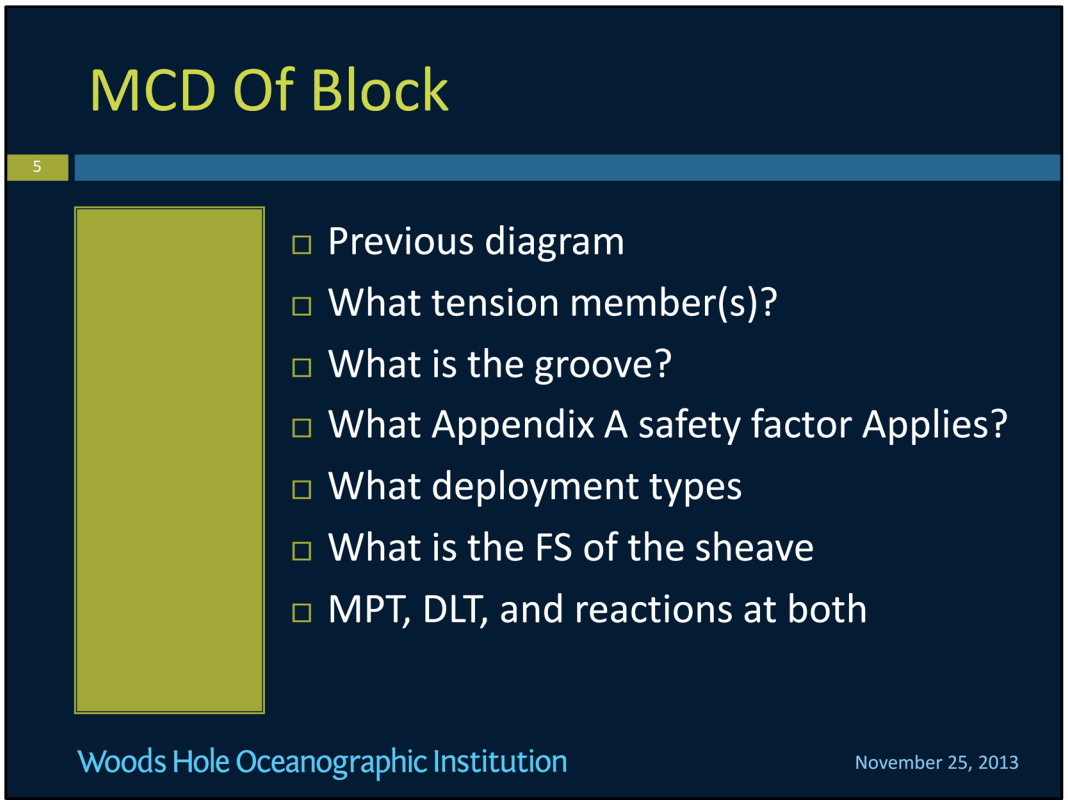
The SWL and MPT (two because the wire enters and exits) vectors have a sum of zero.

The formulas provided here are for a static idealized case. Typically the wire angle varies during a cast. You will want to use the worse case. MPT is the working tension. Multiply the SWL by factor of safety to calculate the DLT for the Sheave. DLT should be greater than the breaking strength of the tension member.

These equations can be solved for the angle to find the maximum angle acceptable.



This example clearly exceeds the needs of .322. It is suitable for .681 cable

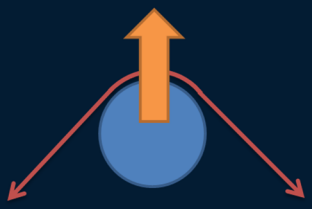


Include all pertinent information about the sheave.

Completed Calculation

6

Reaction at MPT
SWL = 20,000



MPT = 14,140

Woods Hole Oceanographic Institution

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Include geometry with forces and reactions in MCD

Discussion