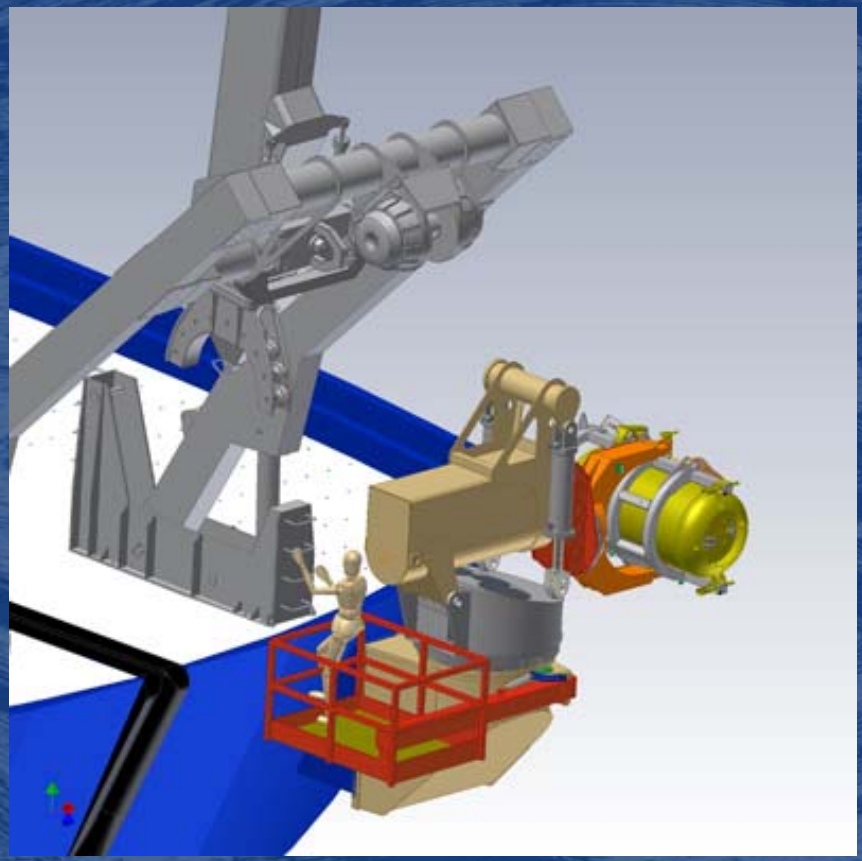
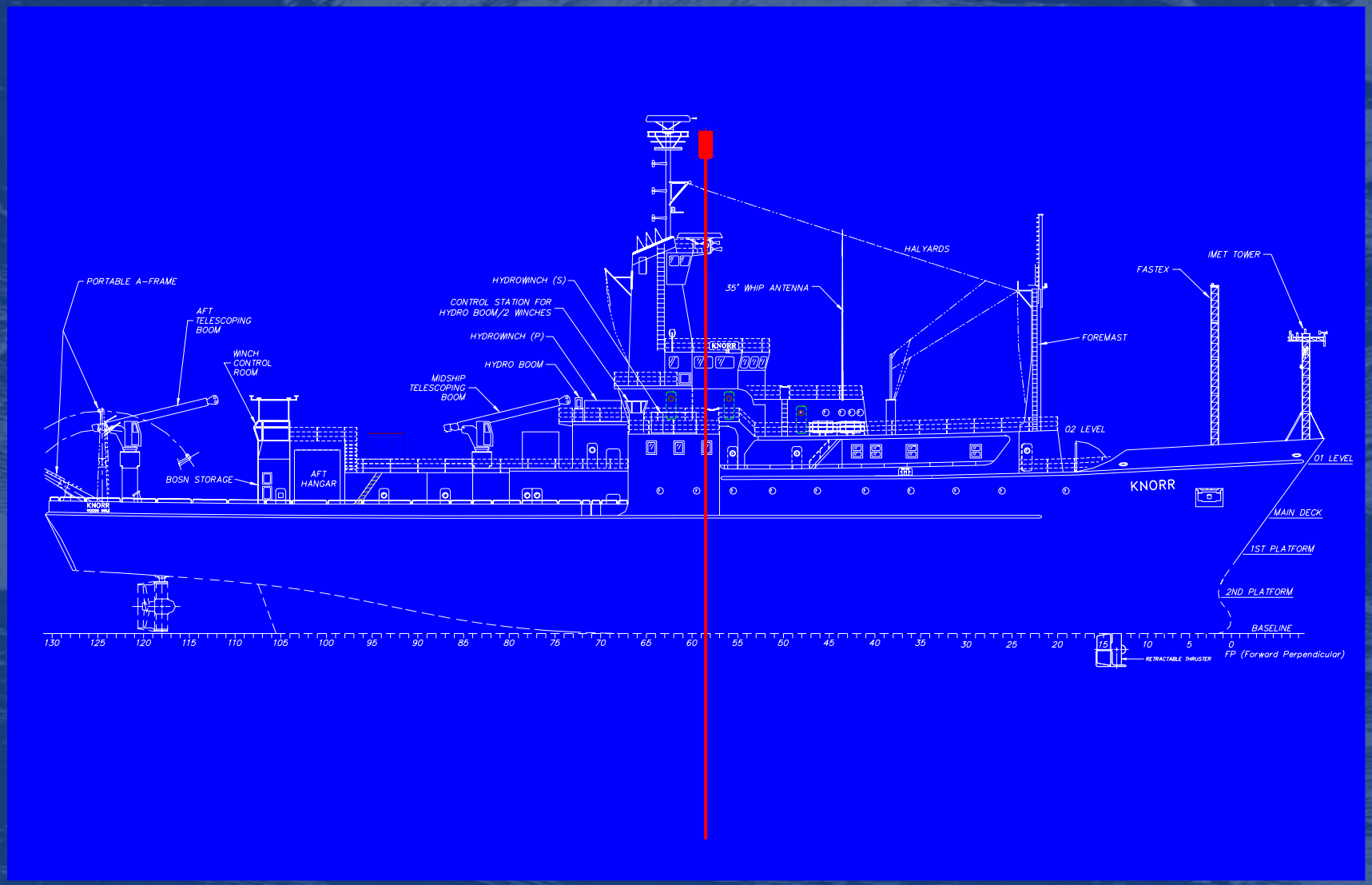
WHOI LONG CORE R/V KNORR



THE ‘PROBLEM’


PORTABLE A-FRAME
AFT TELESCOPING BOOM
WINCH CONTROL ROOM
BOSN STORAGE
AFT HANGAR
MIDSHIP TELESCOPING BOOM
HYDRO BOOM
HYDROWINCH (P)
CONTROL STATION FOR HYDRO BOOM/2 WINCHES
HYDROWINCH (S)
35' WHIP ANTENNA
HALYARDS
FOREMAST
FASTEX
IMET TOWER
02 LEVEL
01 LEVEL
MAIN DECK
1ST PLATFORM
2ND PLATFORM
BASELINE
KNORR
RETRACTABLE THRUSTER
FP (Forward Perpendicular)
130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0

Long Coring Concept

SYSTEM OVERVIEW

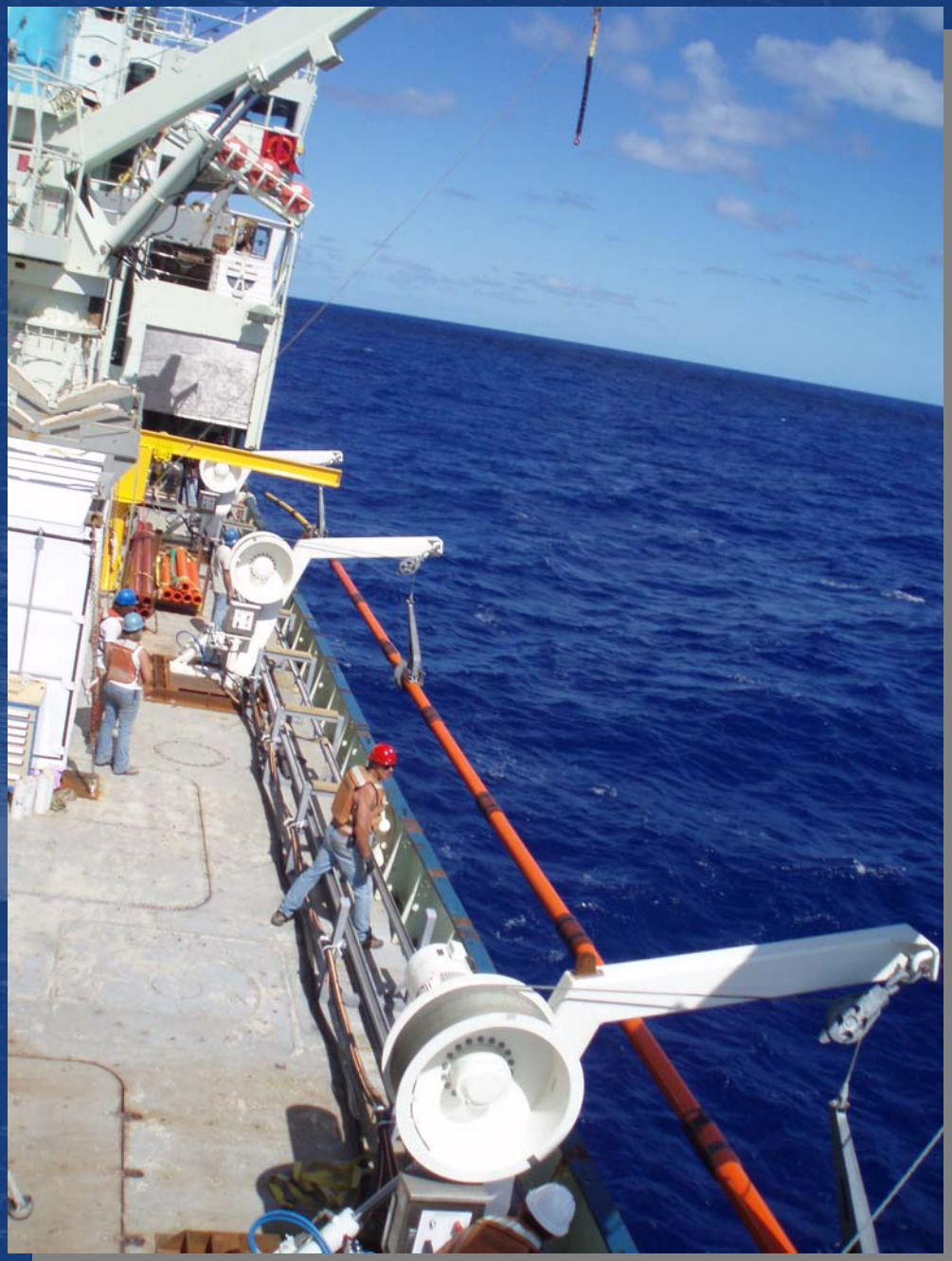
- CURRENT MAX CORE LENGTH = ~46 M
- TAPERED WALL BARREL ASSEMBLY
- VARIABLE WEIGHT HEAD = 3,000-27,500#
- ACOUSTIC MODEM RELEASE
- HI-MODULUS SYNTHETIC MAIN ROPE
- ODIM CTCU ROPE HANDLING SYSTEM
- ALLIED A-FRAME AND ‘GRAPPLE’
- STERN SHEAVE
- PROGRAMMED STARBOARD DAVITS [H/V trans]

HYBRID ROPE

- 2” DIA. 12 X 12 TORQUE BALANCED
- BREAK STRENGTH = 365,000 #
- 7.5 KM LONG
- PLASMA + VECTRAN
- FIELD REPAIRABLE
- ELONGATION w/ 30,000 # CORER @ 5,000 METERS DEPTH = ~2.0 M

PUGET SOUND ROPES ANACORTES, WA

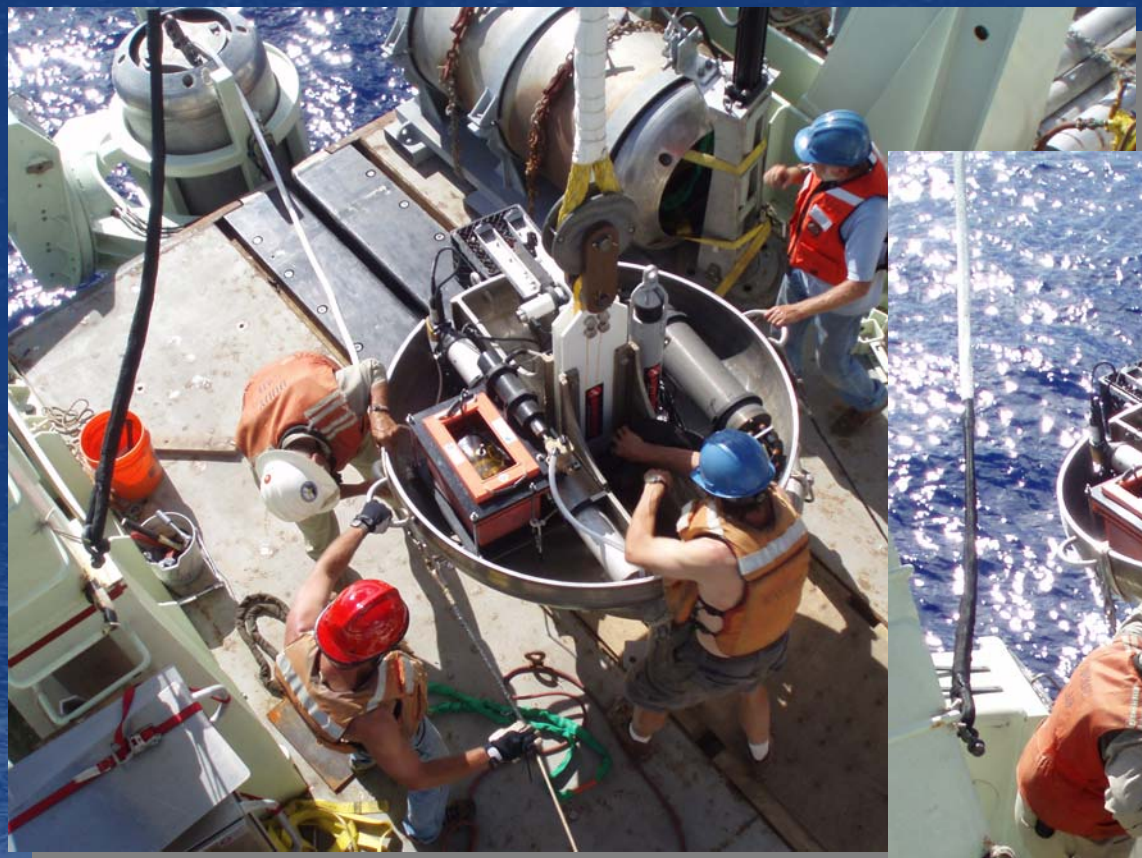
FIRST 150 FOOT LONG ATTEMPT
ODP SITE 1063/GPC5 4585 METERS



Starboard Davits

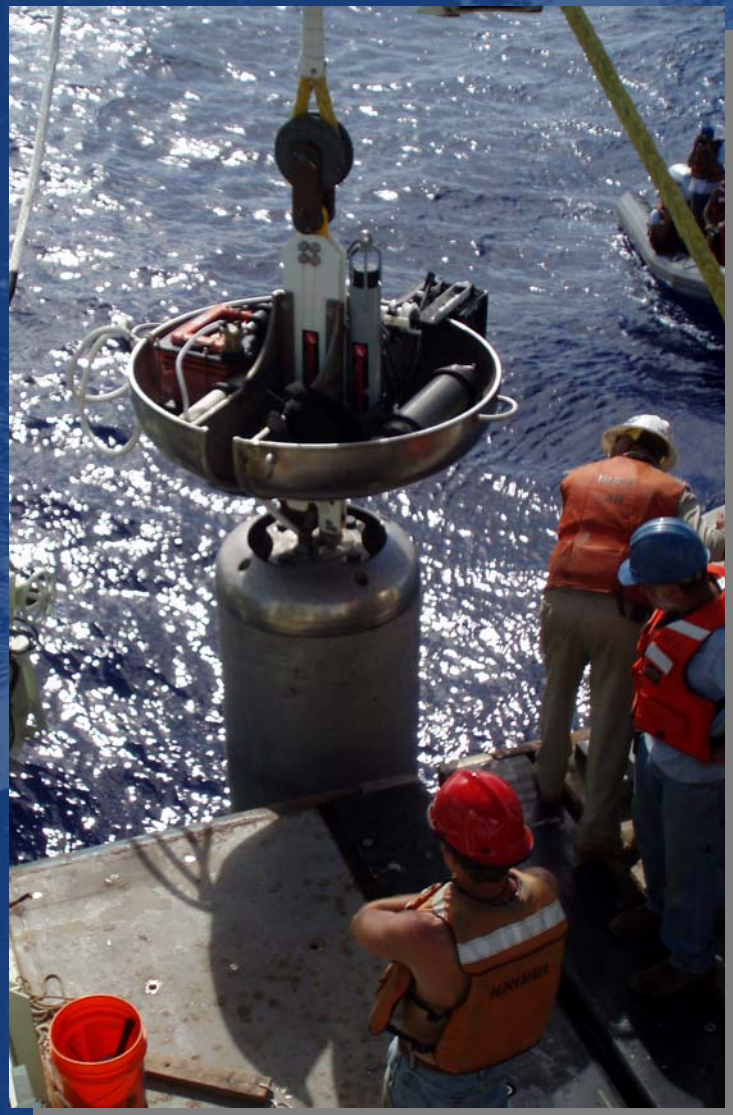

KNORR
WOODS HOLE

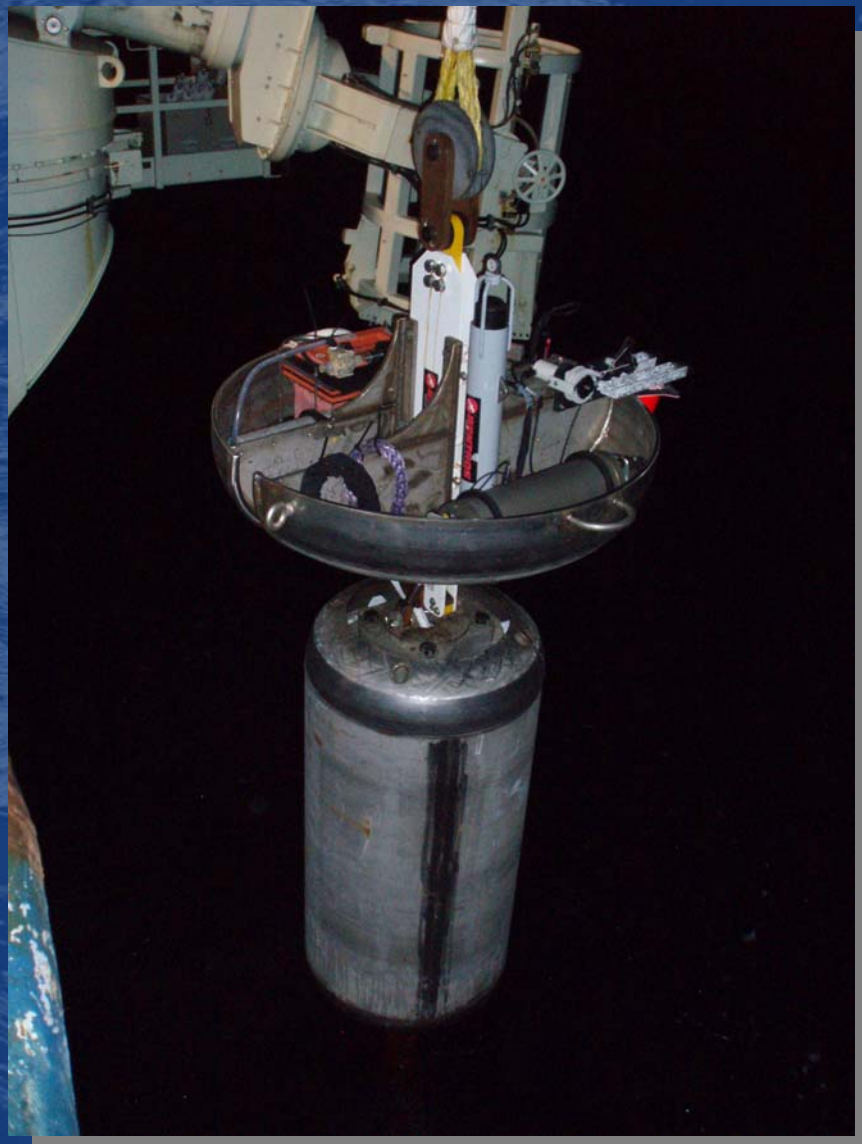
GRAPPLE SWINGS CORE FROM STARBOARD TO STERN FOR RELEASE MODULE RIGGING



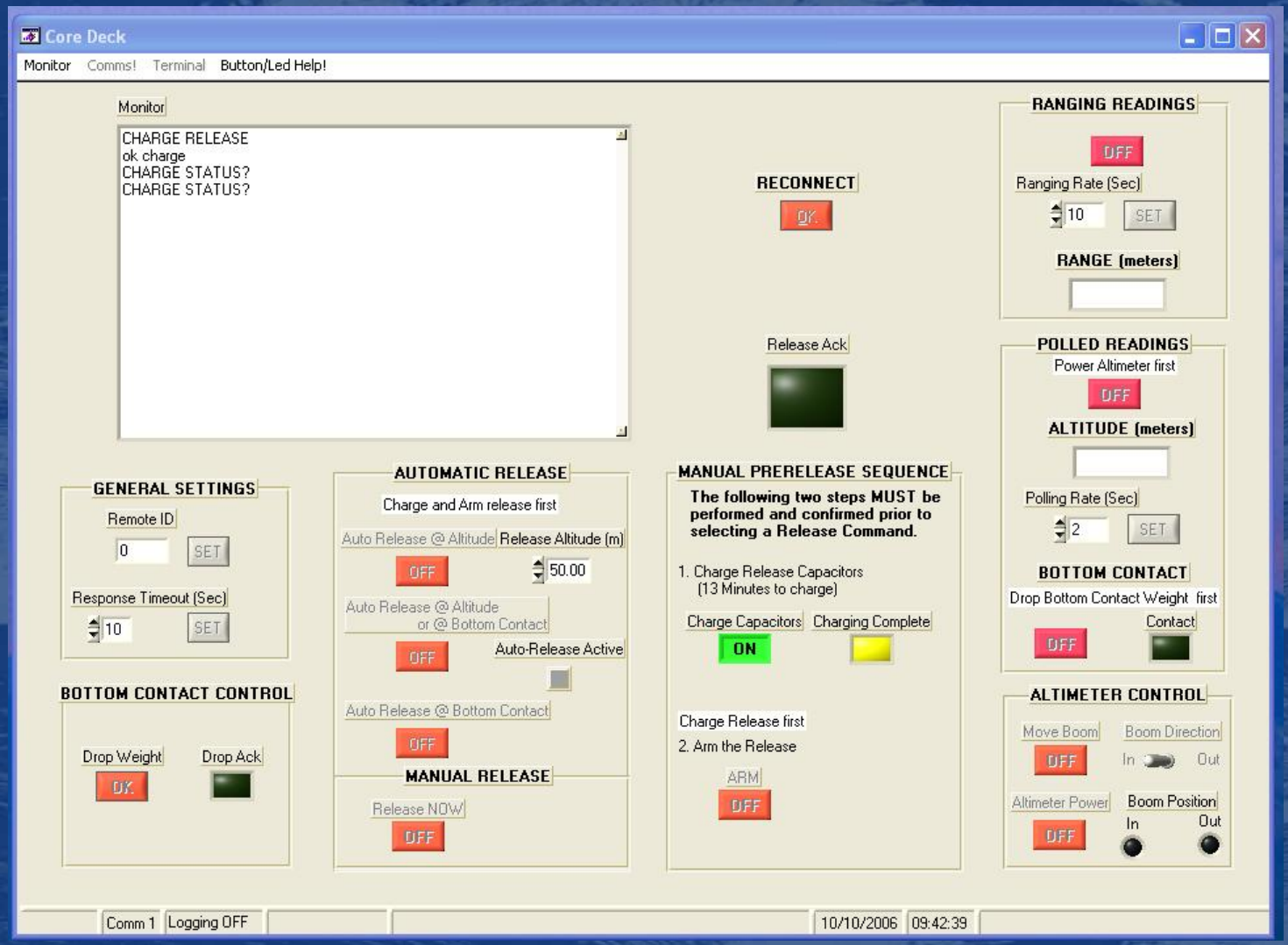
Latching the Release

FULLY RIGGED-GOING DOWN





Release Module Deck Unit



Recovery of the Acoustic Release

COREHEAD CAPTURE

GRAPPLE ROTATION TO STARBOARD

DEPLOYMENT OF RECOVERY CLAMPS

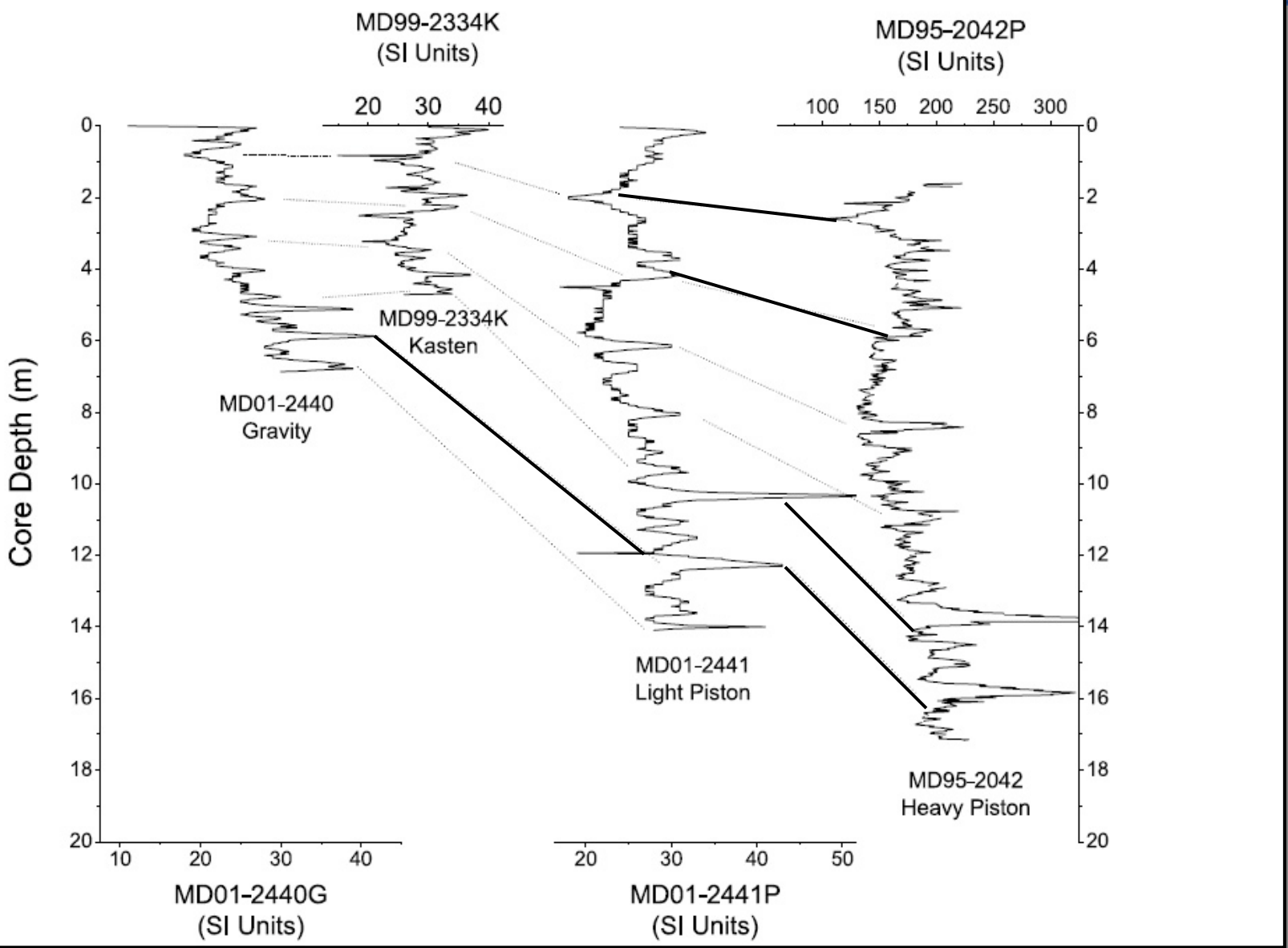
VERTICAL TO HORIZONTAL TRANSITION

RECOVERY COMPLETE

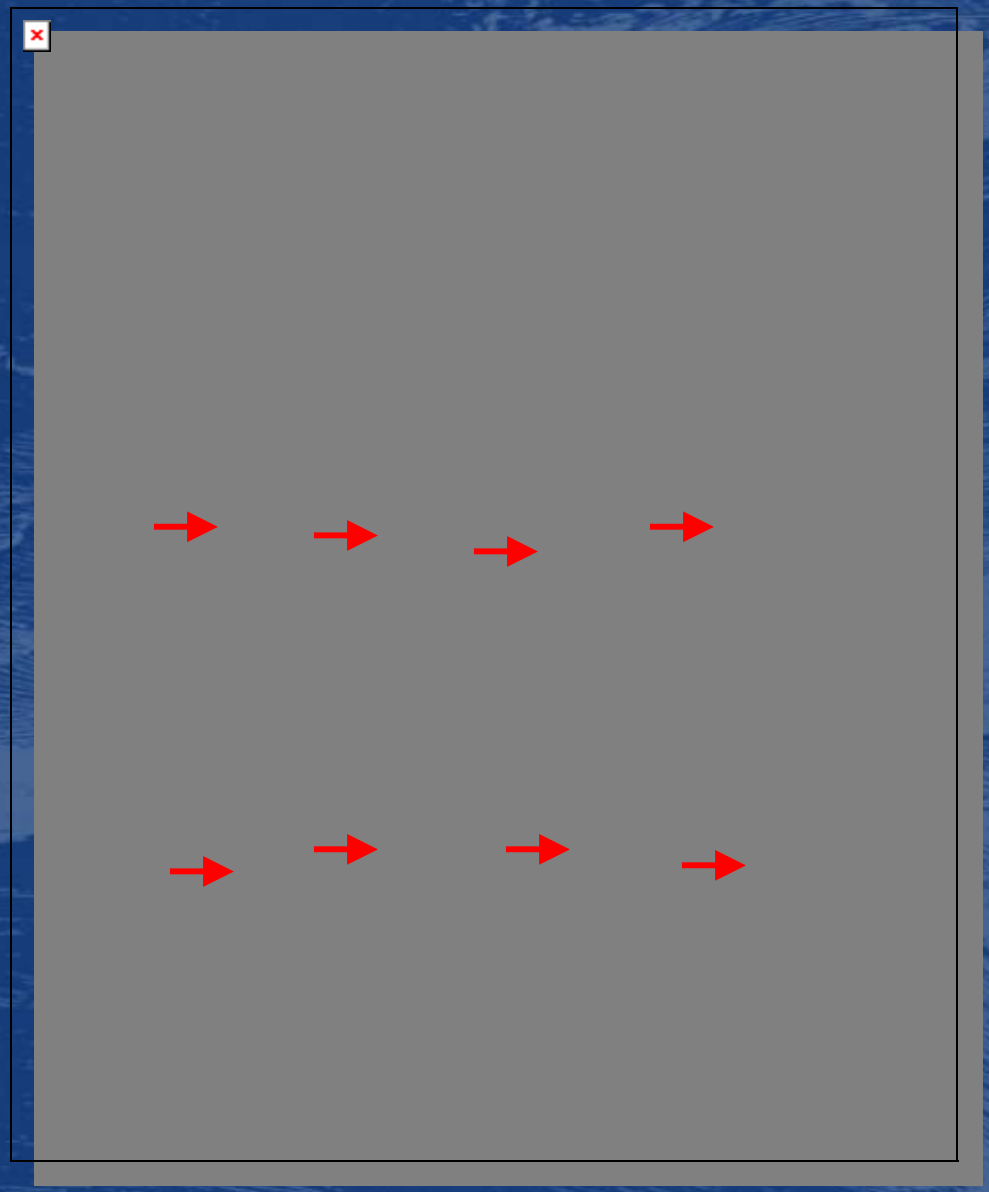
Core extrusion

Core extrusion


Piston Core Performance

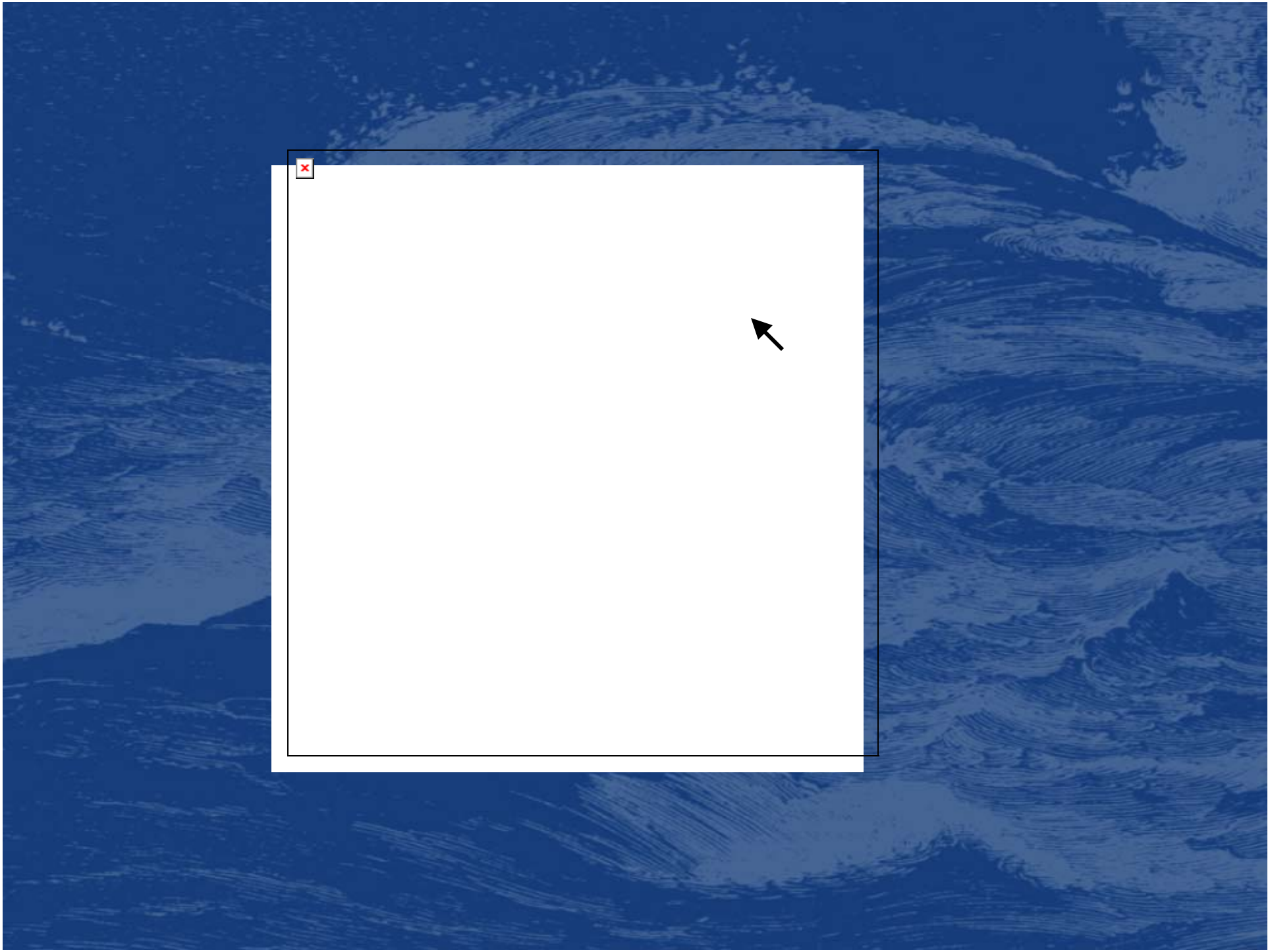


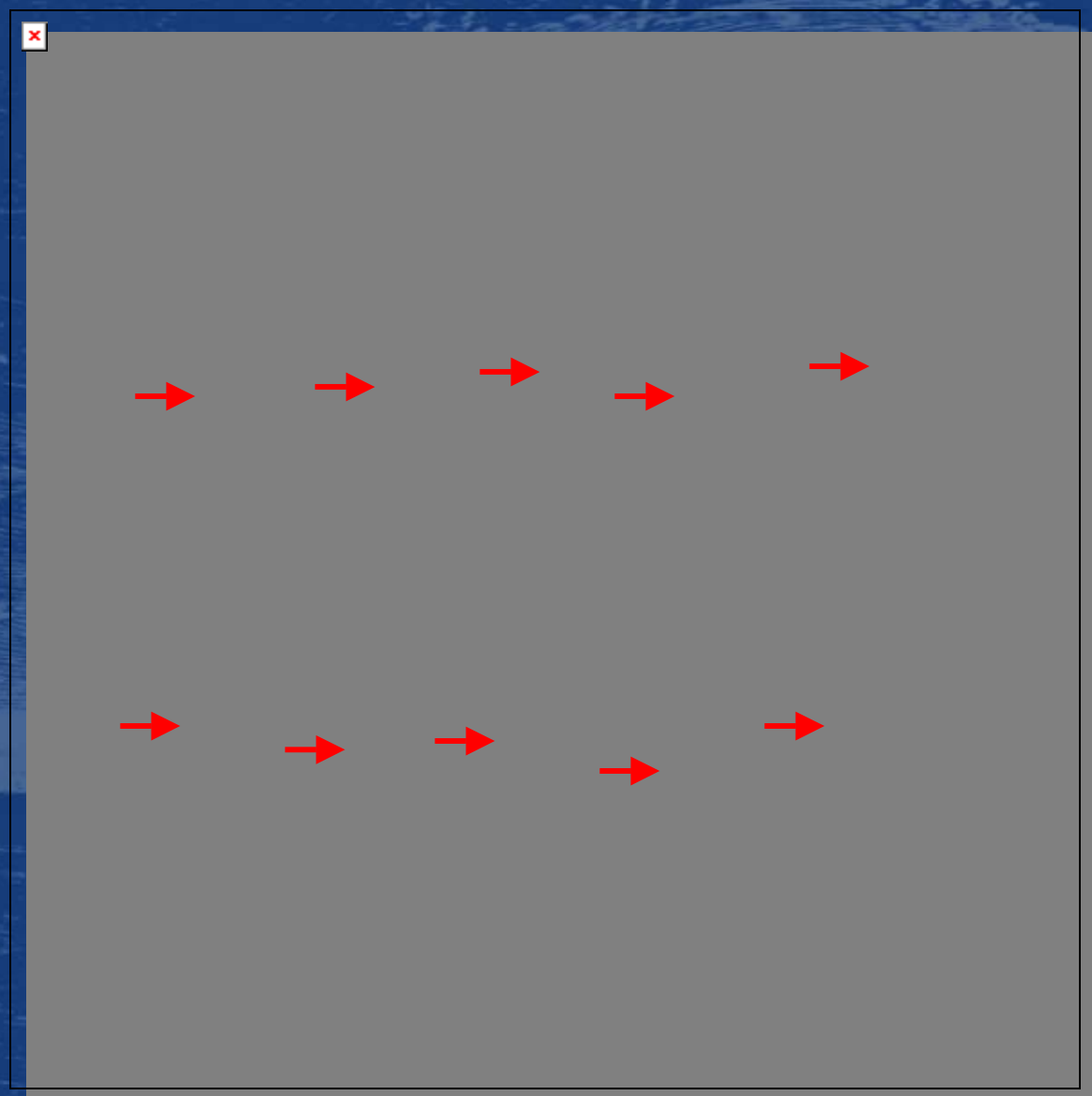
Skinner and McCave, 2003



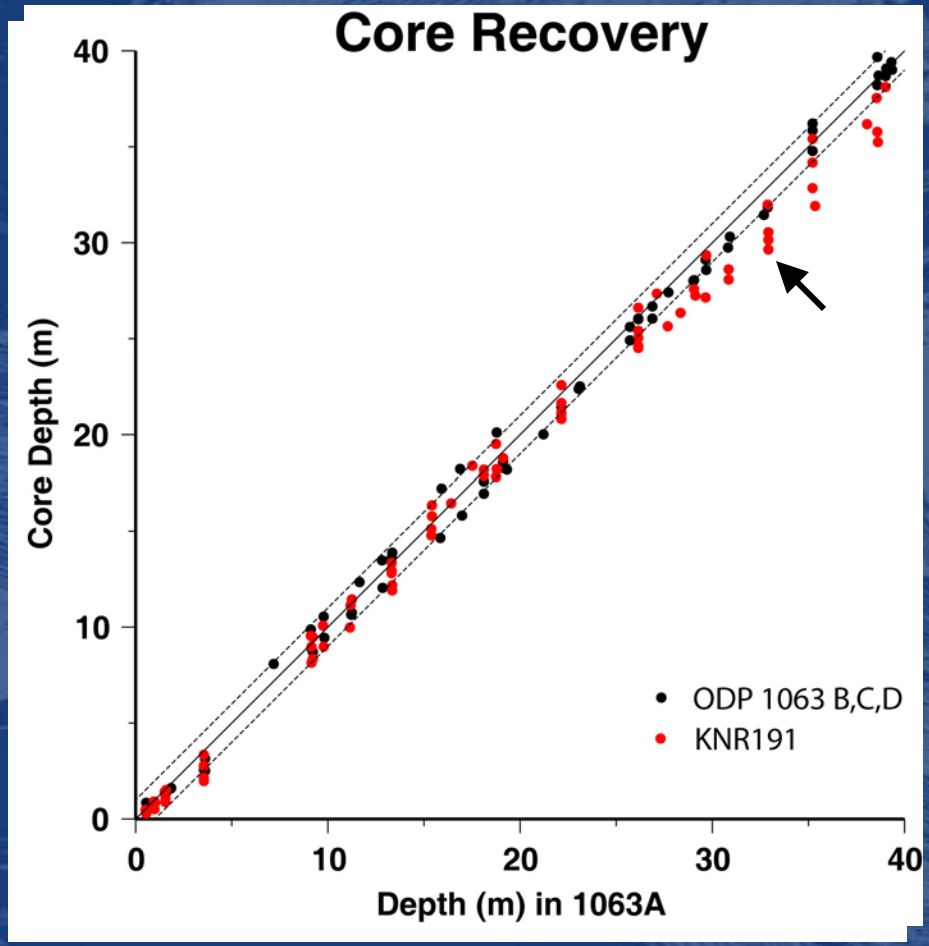
ODP 1063
Sites A, B, C, D

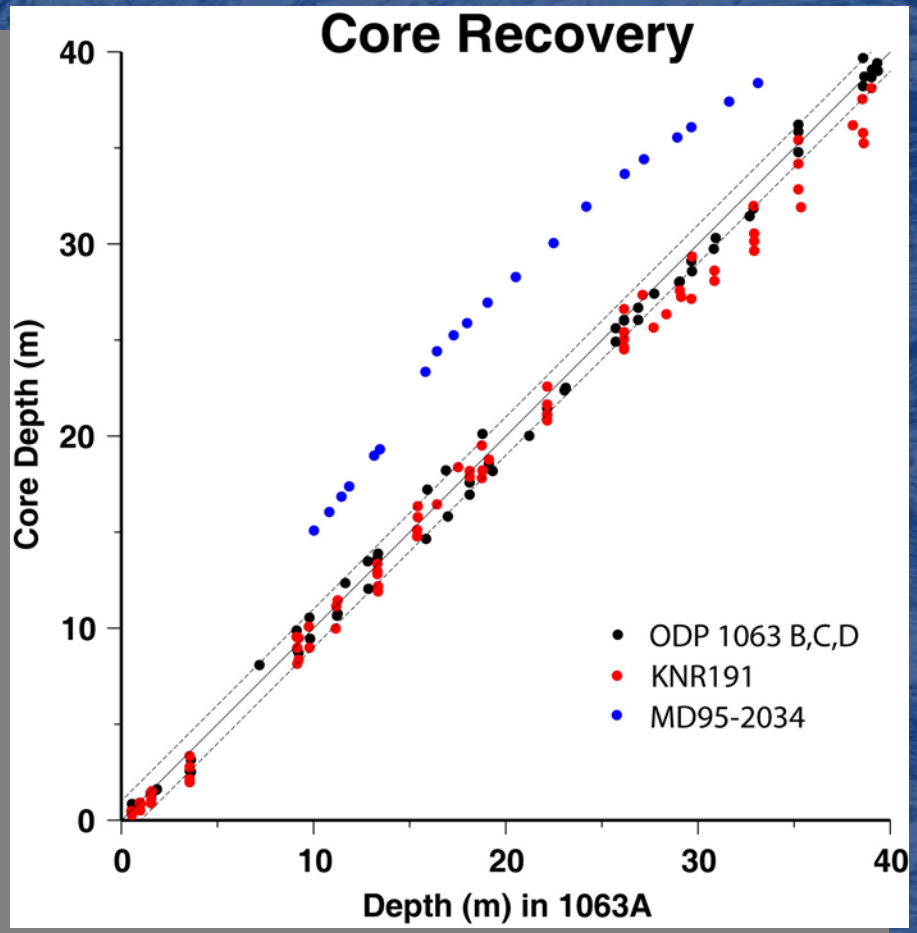
Keigwin, Rio, and Acton, 1998





KNR191
Piston Cores


Core Recovery
Core Depth (m)
Depth (m) in 1063A
0
10
20
30
40
ODP 1063 B,C,D
KNR191


Core Recovery
Core Depth (m)
Depth (m) in 1063A
0
10
20
30
40
ODP 1063 B,C,D
KNR191
MD95-2034