Hydrostatic Pressure Actuated Cable Cutter

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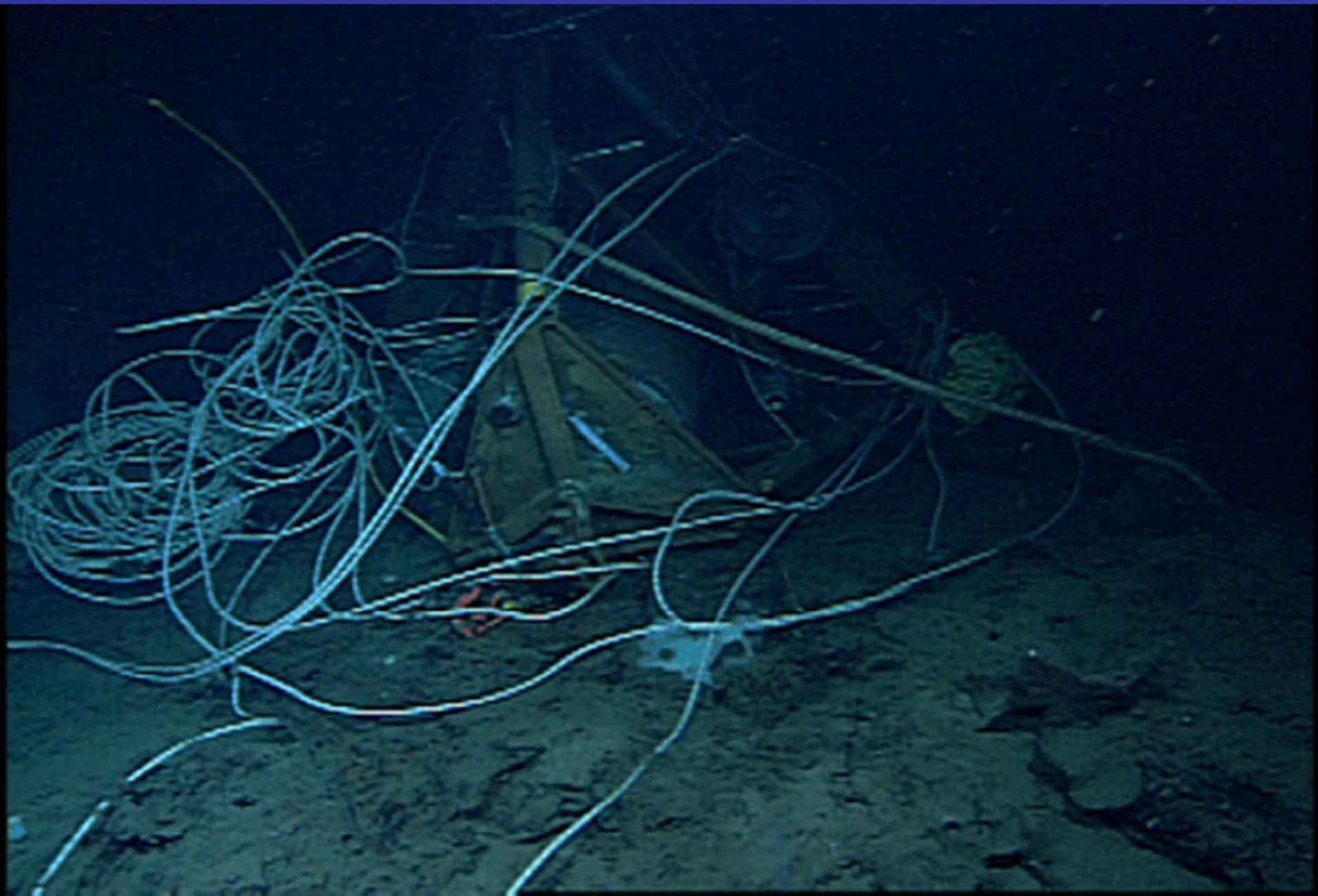
Potential Use Conditions

- Cable fouling or damage
- Instrument immovable on bottom
- Cable breaking strength rating
- Winch mechanical failure
- Shipboard emergencies (ie. collision avoidance, fire, flooding, loss of power)



Design Concepts

- Rupture Disc design – wide range of burst pressures, poor accuracy
- Electrically Activated design – expensive, time consuming, potential danger on deck, prone to failure
- Shear-Pin design – simple, accurate, inexpensive

Design Concepts – Shear Pin

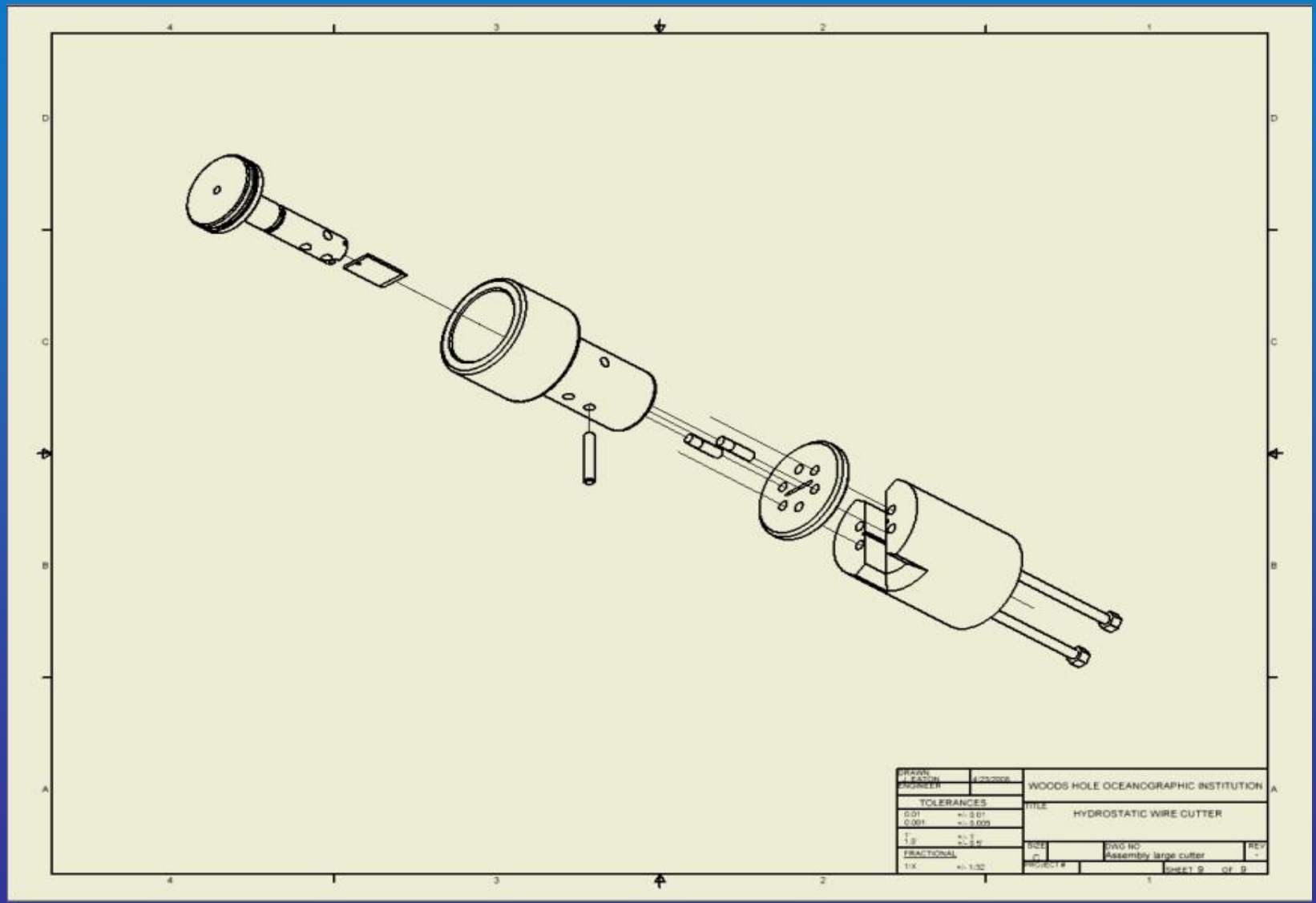
- Safe
- Portable
- Reliability
- One time use
- Ease of deployment
- Minimal number of parts

Design Concept - Pin

- Single size pin
- Drill center of pin
- Depth selected by cross section
- Allows for uniform material
- Brass pins

Assembly and Deployment

- Unit mostly pre-assembled for rapid rigging and deployment
- Piston cylinder housing assembled with o-rings, backing rings, heat treated blade, piston and guide plate in place
- Brass shear pin(s) installed according to actuating depth range


DRAWN
CHECKED
ENGINEER
4/25/2006
TOLERANCES
0.01 +/- 0.01
0.001 +/- 0.005
1° +/- 1°
1/2' +/- 0.5°
FRACTIONAL
1/X +/- 1/32
WOODS HOLE OCEANOGRAPHIC INSTITUTION
TITLE
HYDROSTATIC WIRE CUTTER
SIZE
C
DWG NO
Assembly large cutter
REV
-
PROJECT#
SHEET 9 OF 9

Testing

- ¼ in jacketed cable
- 5300 psi

- ¾ in spectra
- 1500 psi

Specifications

- Weight – 30lbs / 13.5kg
- Maximum depth – 3500 m
- Material – stainless steel
- Blade – heat treated steel