

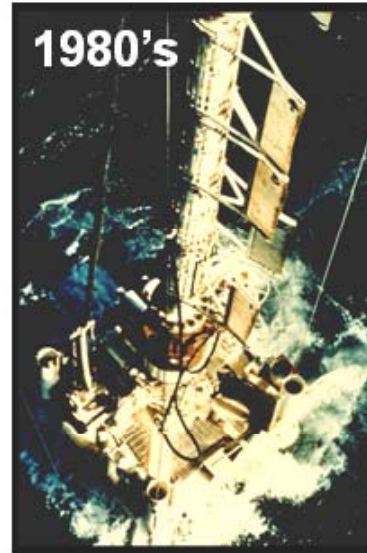
# History of Offshore and Subsea Standards

## and What's the Future ?

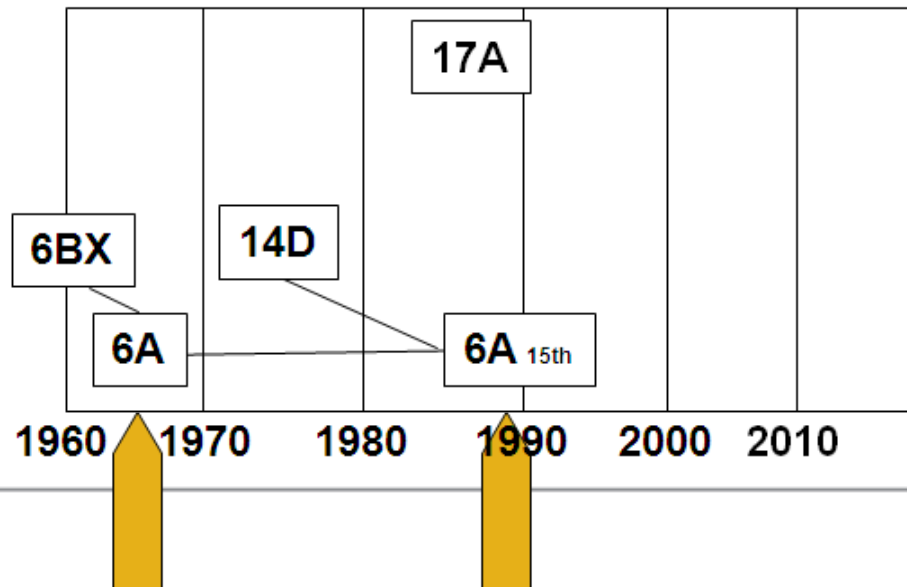
Brian Skeels



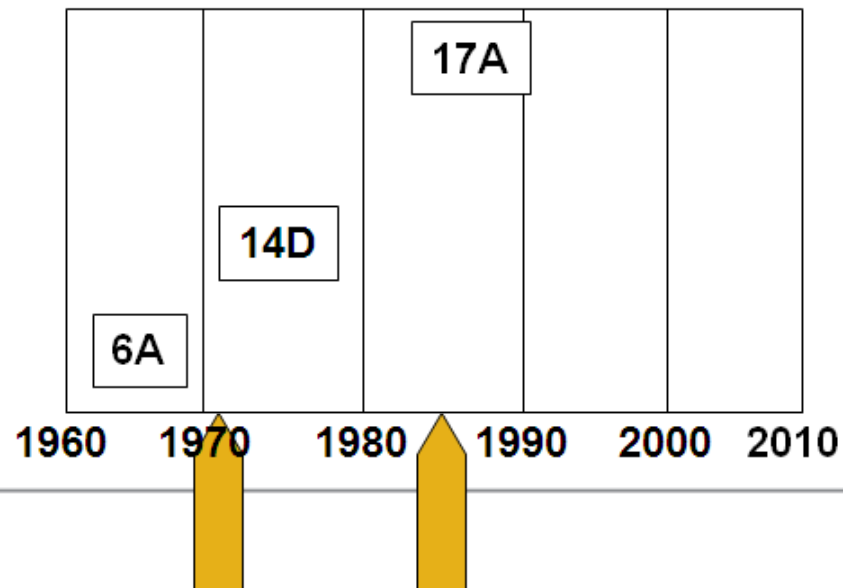
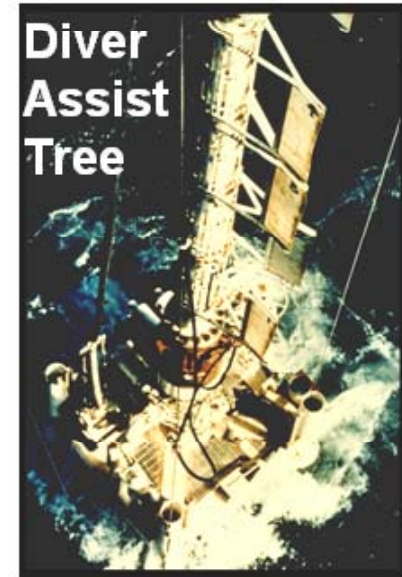
# Design Standards Coming of Age



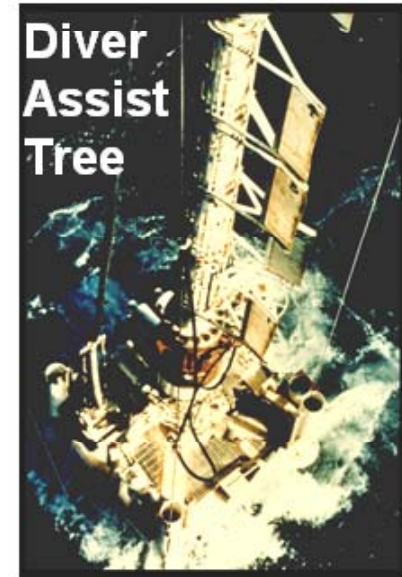
RP 17 A - 1984



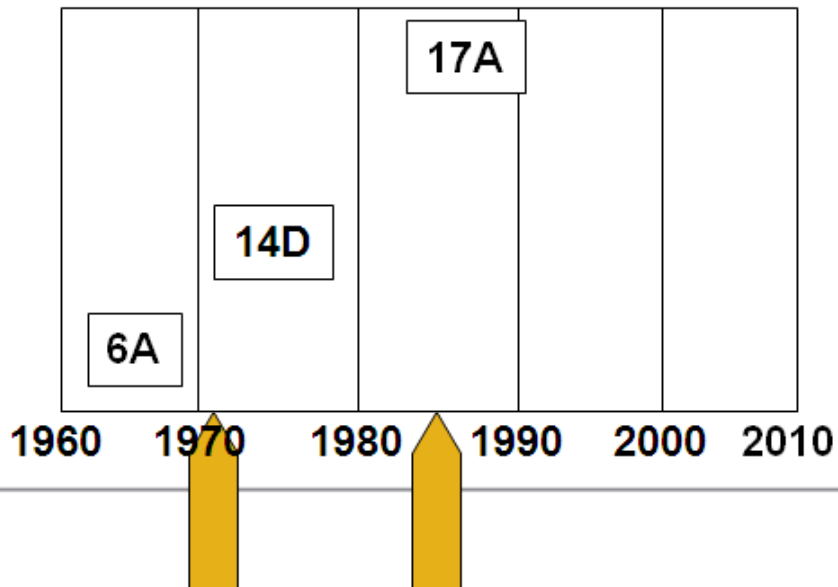
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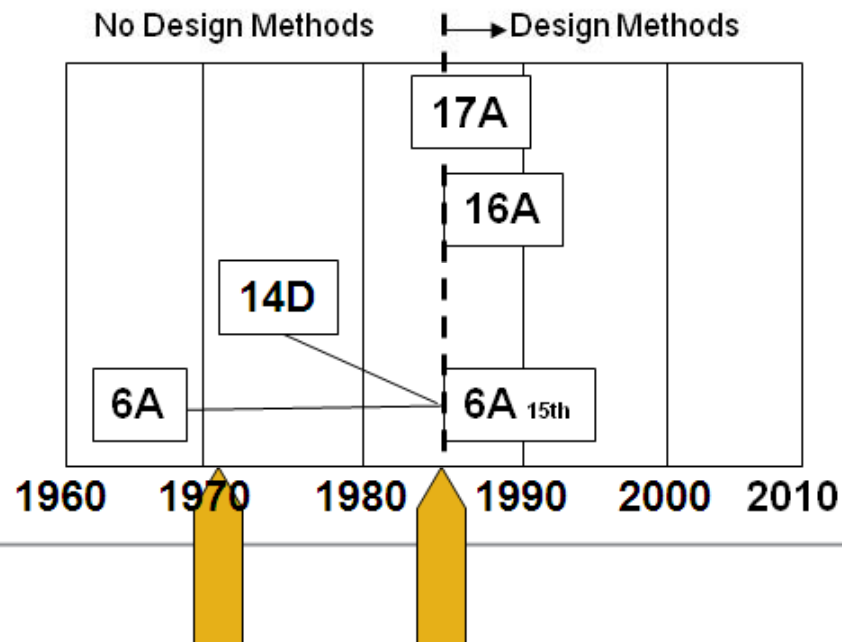
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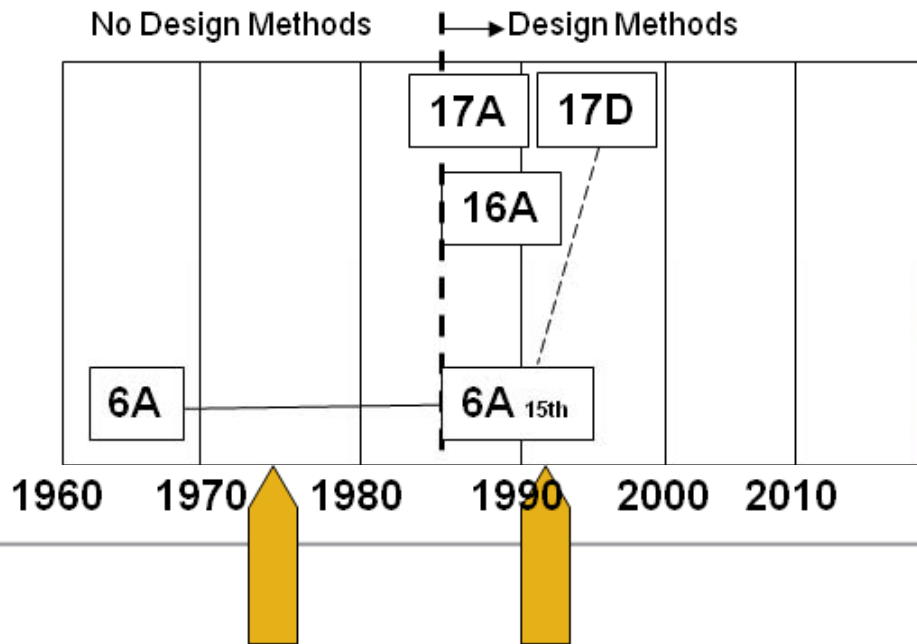
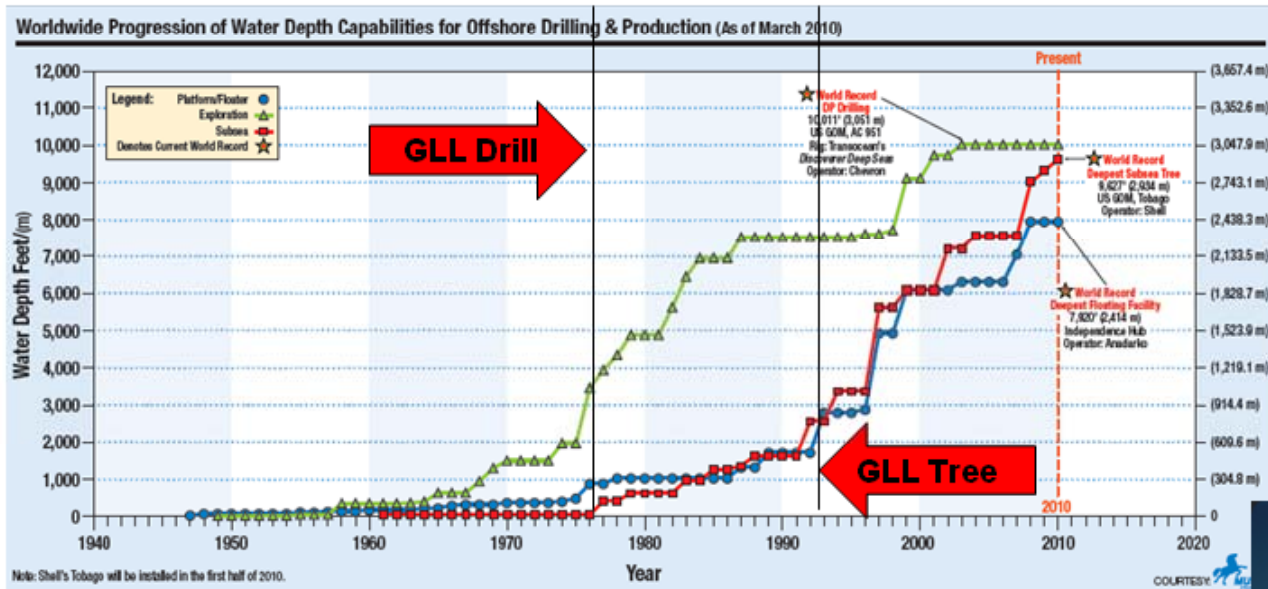
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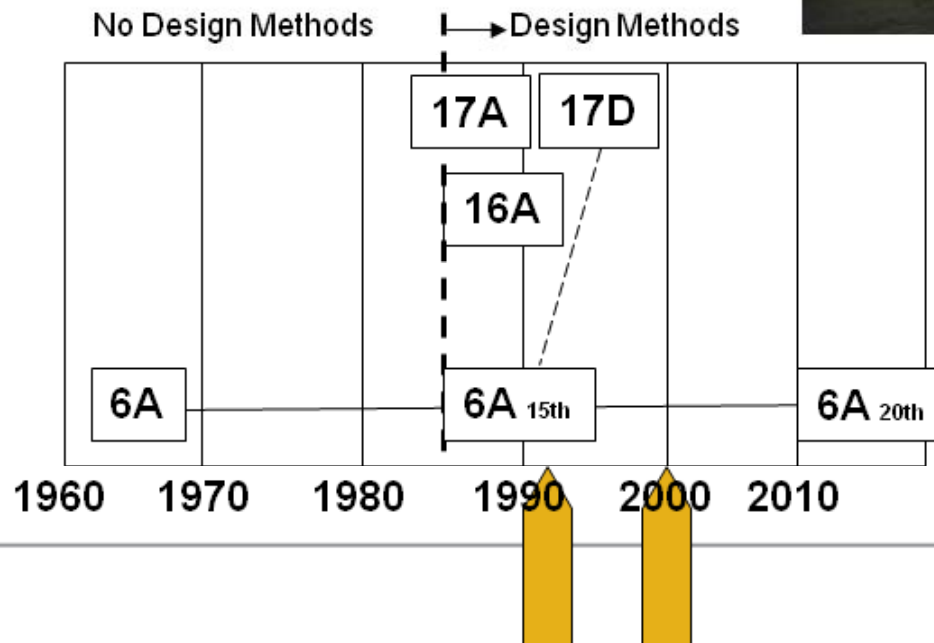
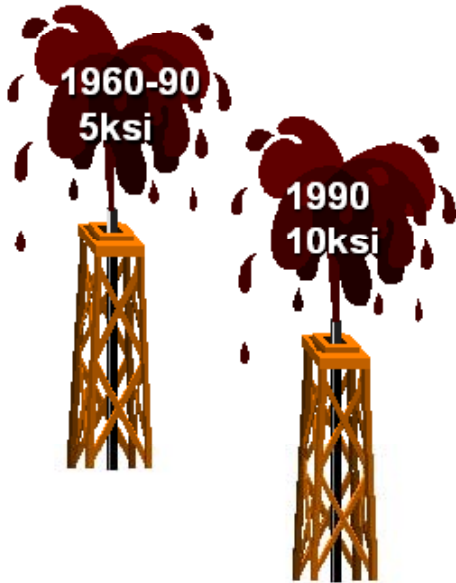
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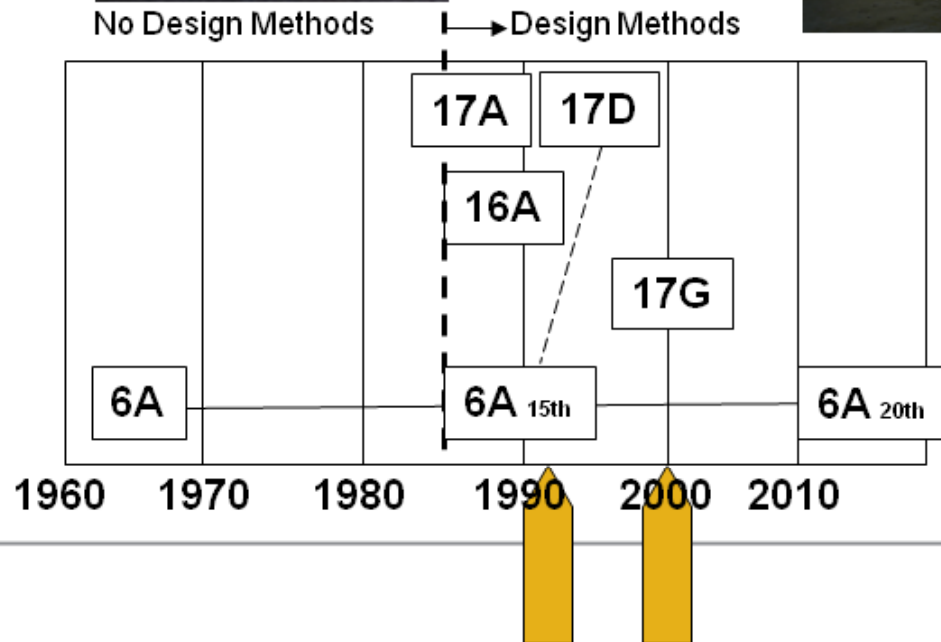
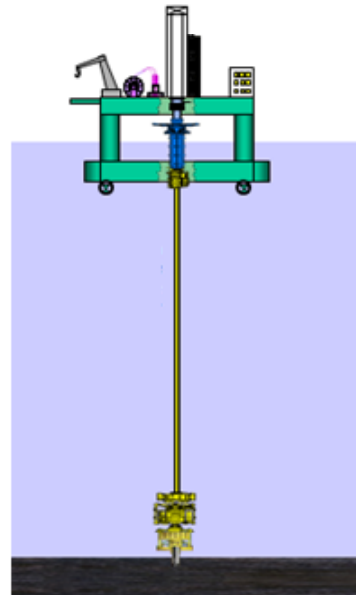
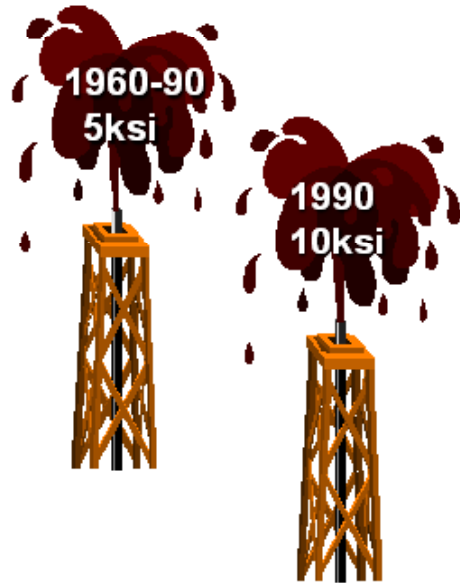
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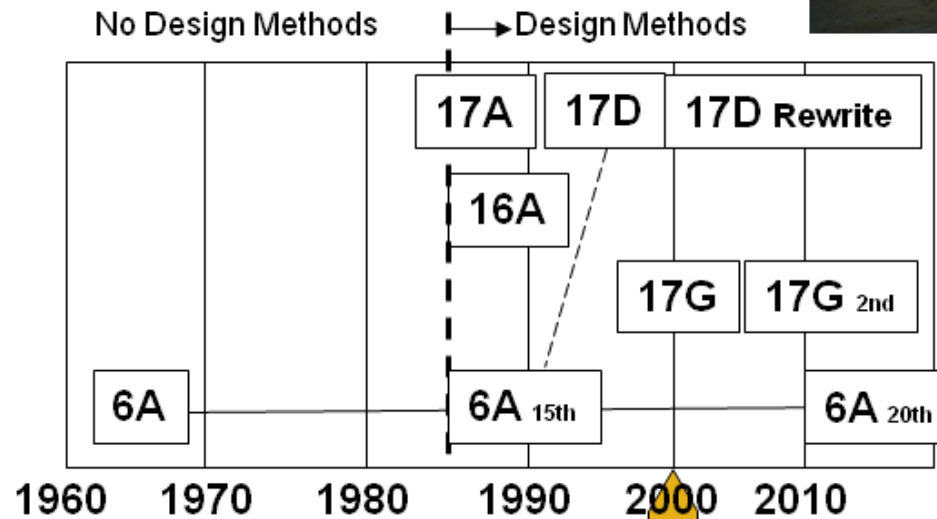
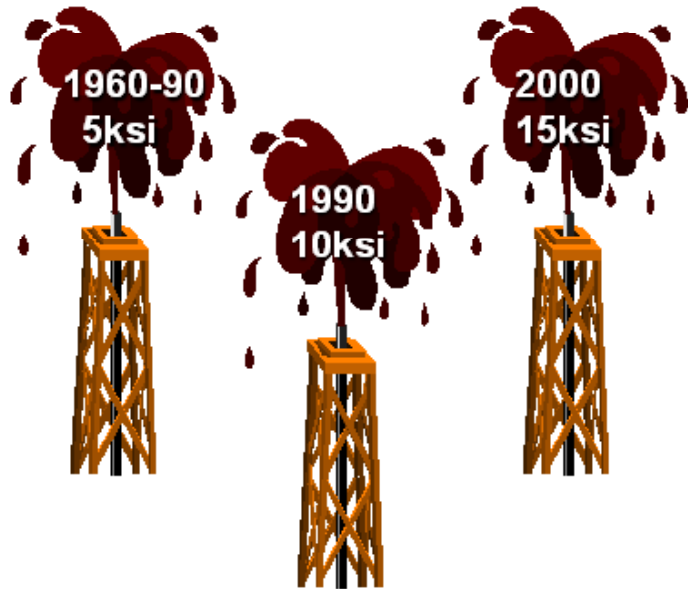
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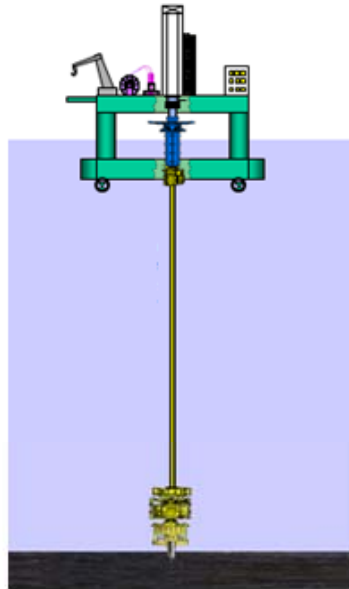
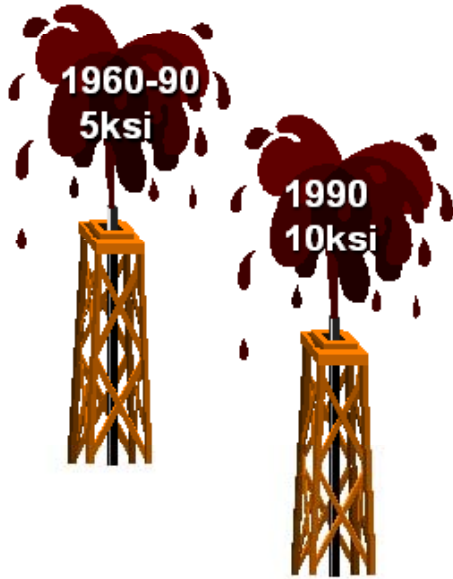
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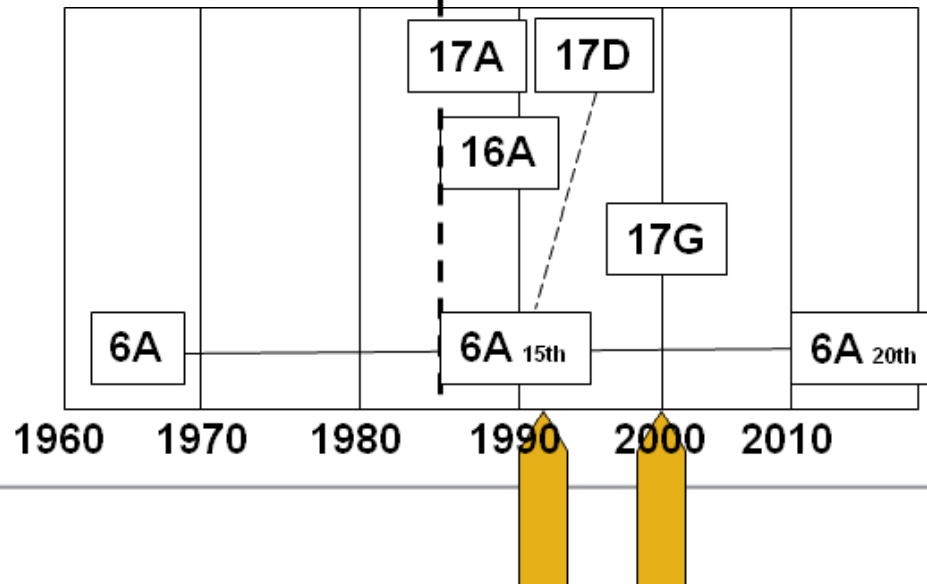


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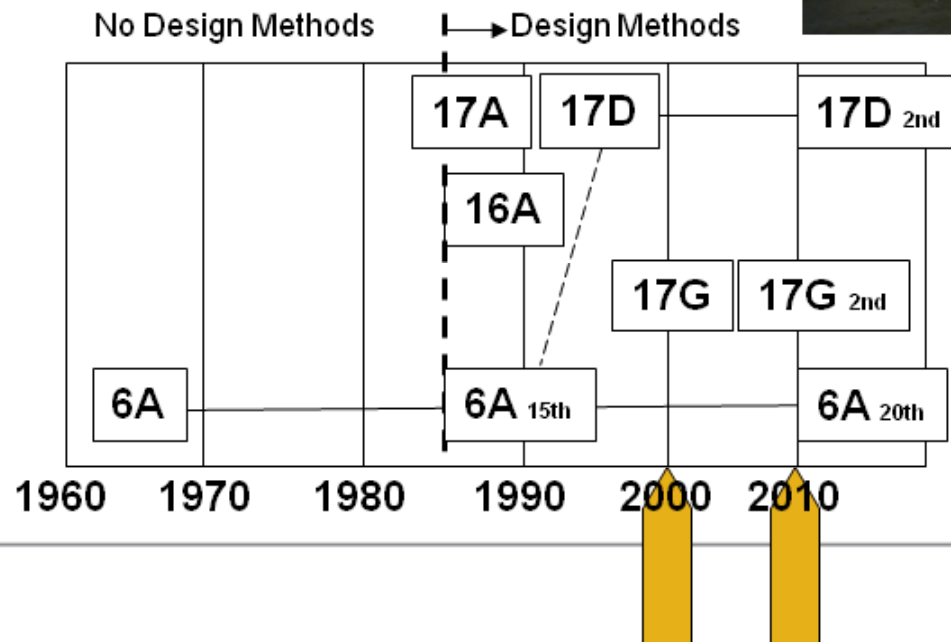
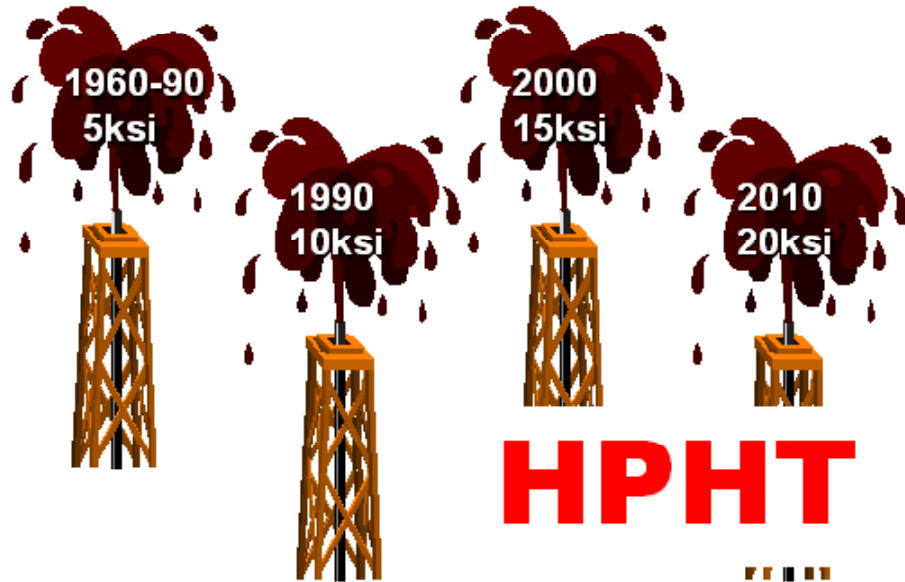


No Design Methods

Design Methods

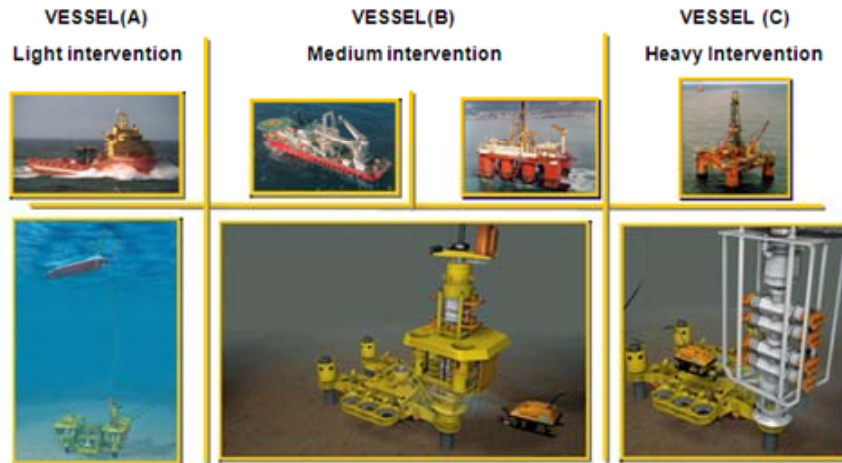


# Design Standards Coming of Age

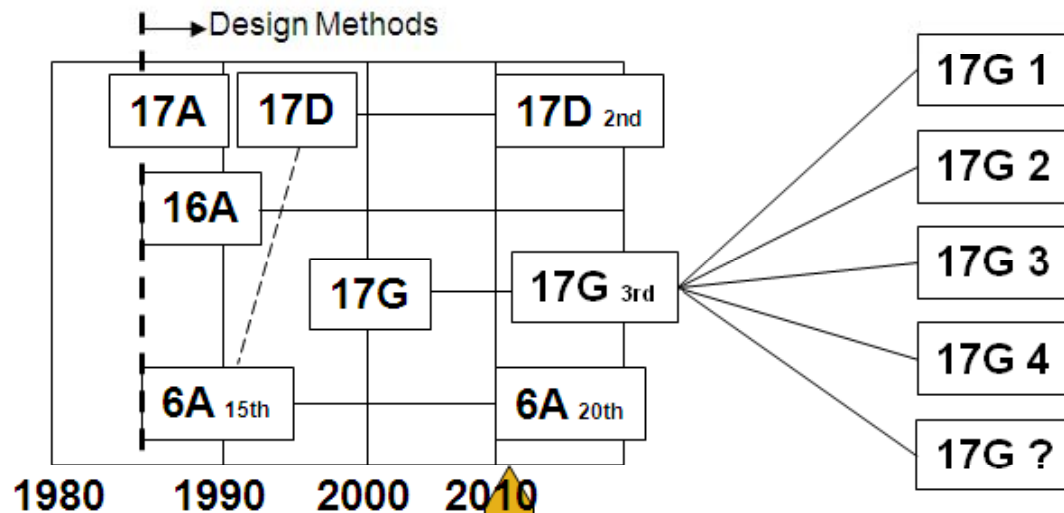
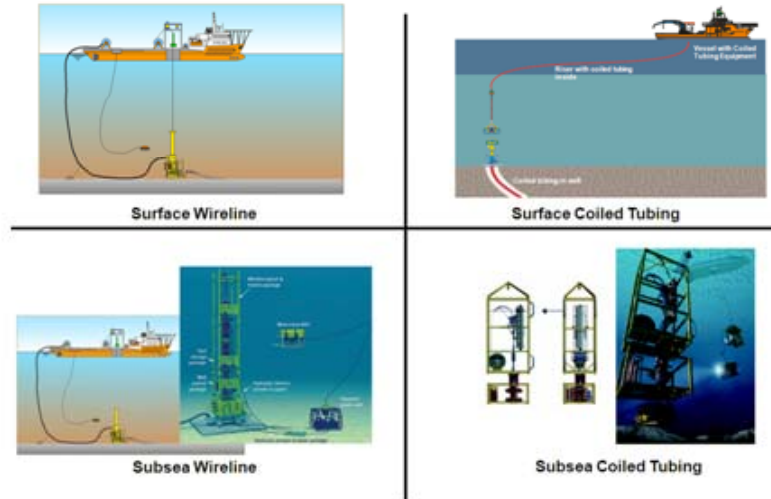


# Design Standards Coming of Age

## Current Classification of Well Intervention



## LWI Technology Concepts



# What's Macondo's Impact?



**NTTAA**

**National Technology Transfer and Advancement Act  
(NTTAA)**

PUBLIC LAW 104-113  
NATIONAL TECHNOLOGY TRANSFER AND ADVANCEMENT ACT OF  
1995



- **Already have plenty of Industry Standards – USE THEM**
  - Some need some updating, but most are in pretty good shape
  - More cross communication between 6, 16 and 17 subcommittees
  - By law, BOEMRE has to write regulations around Industry Standards if published. If you don't want bureaucrats writing technical specs., get involved.
- **"Plan B" for contingencies will be in place before any work is permitted**
  - Several standard interface points will be required to latch on to damaged equipment
  - More barrier planning for every step of the operation will be required
  - Focus now is on drilling, but soon shift to intervention; production not so much...
- **Training and Experience will be expected**
  - Apprenticeships & more rigorous simulator training required – update drilling; initiate intervention
  - More "fire drills" and periodic testing of safety equipment expected; more recertification cycles

# API/ISO Cross Reference

Remember API and ISO are separate organizations who are working together to have a cross-reference.

DESCRIPTION	API Standard	ISO Standard
Surface wellhead and tree equipment	Spec 6A	10423
Drill-Through Equipment	Spec 16A	13533
Casing and Tubing	Spec 5CT	10426
Materials for H <sub>2</sub> S Service	NACE MR-01-75	15156
Design and operation of subsea systems	RP 17A	13628-1
Flexible pipe	RP 17B	13628-11
TFL systems	RP 17C	13628-3
Subsea wellhead and tree equipment	Spec 17D	13628-4
Production control umbilicals	Spec 17E	13628-5
Subsea controls	Spec 17F	13628-6
Design & operation of completion/workover risers	RP 17G	13628-7
ROV and ROT interfaces	RP 17H	13628-8
Unbonded flexible pipe	Spec 17J	13628-2
Bonded flexible pipe	Spec 17K	13628-10
Flexible Pipe Ancillary Equipment (Spec)	Spec 17L1	13628-16
Flexible Pipe Ancillary Equipment (RP)	RP 17L2	13628-17
HIPPS	RP 17O	13628-14
Dynamic Risers	RP 2RD	13628-12

