

# Load Reduction Analysis



*Broussard, Louisiana  
October, 2002*

**NAUTILUS CONTRIBUTION:** Project Manager / Developer (Feb, 2002 to October, 2002)

## **OBJECTIVE:**

Develop rig enhancements to save space and reduce payloads on jack-up fleet upgrades with the intended goal of enabling greater competitive marketing advantages.

## **PROJECT:**

Nautilus was commissioned to develop an upgrade study for Ensco Jack-up rigs related to space savings and payload reduction. The study was performed in four phases to create innovative ways in maximizing space and identify fixed and variable loads that can be reduced, combined or eliminated. This was to allow greater working capacities on Ensco's existing fleet of jack-ups and potentially target deep gas in shallow GoM waters.

## **DELIVERABLES:**

### **④ Phase I: Define the Scope of Work.**

- Identify the ideal ENSCO Jack-up unit to make a base case study.
- Categorize, define and label each area (space) on base Jack-up.
- Categorize and determine an inventory of fixed and variable loads using the base case Jack-up.

### **④ Phase II: Identify potential SPACE SAVINGS.**

- Develop a working matrix comparing space used that may be combined, reduced, or eliminated vs. potential costs. Develop a scale of ranking.
- Identify and rank space according to greatest savings vs. least estimated capital expenditure using the scale of ranking.

### **④ Phase III: Identify potential LOAD REDUCTIONS**

- Develop a working matrix comparing loads that may be moved, reduced, combined, or eliminated vs. potential costs. Develop a scale of ranking.
- Identify and rank loads according to greatest reduction vs. least estimated capital expenditure using the scale of ranking.

### **④ Phase IV: Report findings.**

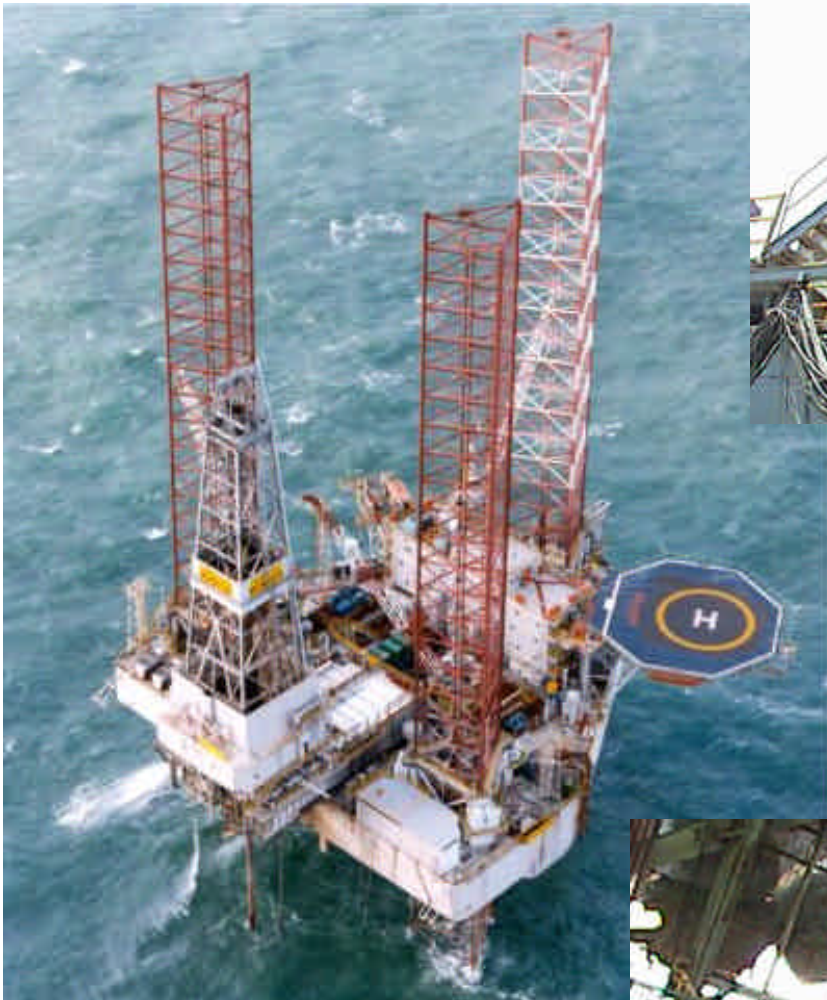
- Assemble a comprehensive report to identify all findings. The report will include:

## **RESULTS:**

Ensco implemented many of the load reduction and space saving findings. Raw water towers are being replaced with new water delivery systems, drill line spool relocation considered, mud house weight reduction implemented, docking plugs installed in preload tanks, composite product replacement on many rig elements considered. Various other weight reduction projects to be considered in rig refurbishment AFEs.

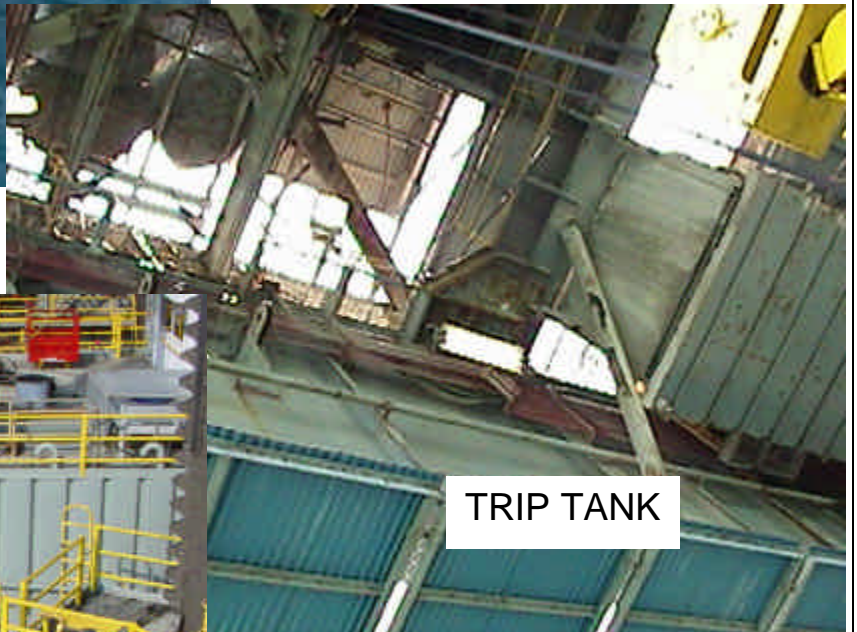
## **CONTACT REFERENCE:**

Mike Kelly, ENSCO Rig Manger, Broussard, Louisiana.  
(now VP Operations for TODCO, Houston (713) 278-6024)

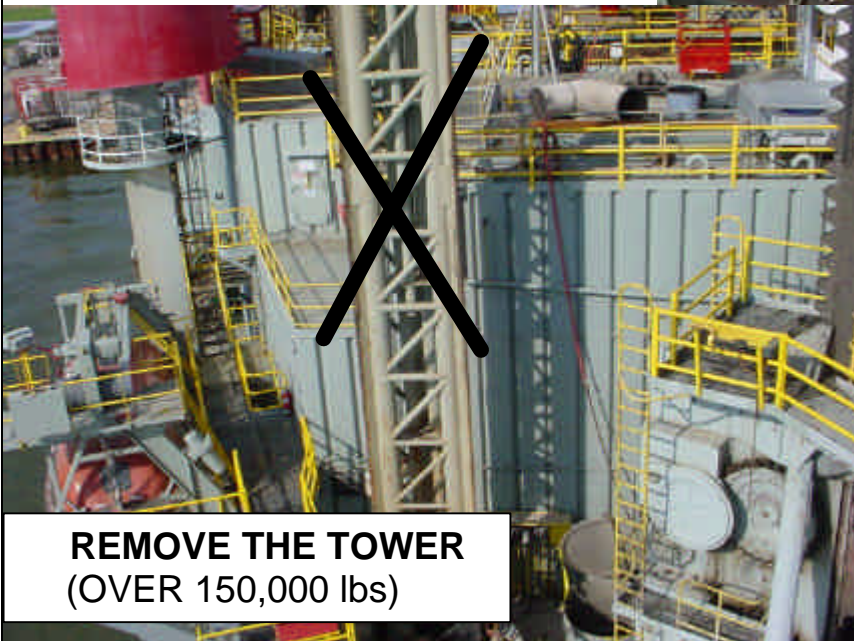


DRILL LINE SPOOL

## EXAMPLES OF LOAD REDUCTION PROJECTS



TRIP TANK



**REMOVE THE TOWER**  
(OVER 150,000 lbs)