

Construction for the U.S. offshore market and the U.S. shipping market: effects of free v. regulated markets

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Peter Lovie

Vice President, Business Development,
Secretary/Treasurer
American Shuttle Tankers L.L.C.
A unit of Teekay Shipping (NYSE: TK)

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Rice Global Forum is all about competitiveness in the E&C community

Today's story concerns how free v. regulated markets have affected one segment of the construction business;

Frame of reference: (1) construction of oil & gas production facilities for overseas or domestic locations in the Gulf of Mexico, contrasted with (2) construction of larger ships (not Navy), particularly oil tankers, e.g. >35,000 dwt;

Effects on all of us - our companies and as individuals;

Effects on owners (oil companies);

Effect on my company.

Shuttle tankers in the Gulf of Mexico:

**A new free market for transportation
deals with regulation and entrenched practices**

Contracting to transport oil from offshore locations to refineries by tankers instead of pipelines: a new business in the Gulf of Mexico

Flexibility: shuttle tankers serving any combination of future production locations (red dots) and existing ports (blue dots)



Typical Shuttle Tanker for GoM

Simple and yet sophisticated:

Dynamically Positioned (DP2)

Bow Loading System

Cargo capacity:	565,000 bbls
Length overall:	800 feet
Moulded breadth:	138 feet
Draft (sg .88 t/m ³):	40 feet
Deadweight:	80,000mt @ 40 ft



Loading rates:

Midship manifold:	66,000 bph
Bow loading:	50,000 bph
Discharge rate:	66,000 bph
(total discharge in 12 hours)	



US Flag, Jones Act Vessel
Classed by ABS, LR or DNV
Double Hull per IMO and OPA 90

Contracts for construction of offshore structures

No regulations require structures for Gulf of Mexico be built in GoM, currently build in Finland, Korea, UAE and USA.

No regulations stop fabrication in the U.S. for many overseas locations, other than sometimes preferences for local content.



Free market:

Born in the USA,

Compete in the USA,

Compete in the international market.

U.S. construction for overseas destination

South Texas: Gulf Marine Fabricators (Technip)

2003 contract won in international competition;

Compliant tower for Angola:

22,680 metric tons of steel;

ChevronTexaco Belize-Benguela field;

about same steel weight as two shuttle tankers.

Additional contracts earlier years – reference list follows.

Louisiana: Gulf Island Fabrication, Inc.

Export of many structures and production modules;

Reference list follows.

Gulf Marine Fabricators, Inc. - Ingleside Texas (1)

List of all projects for overseas destinations undertaken by Gulf Marine Fabricators since the facility began operation.

PROJECT	OWNER	WEIGHT / DESCRIPTION	WATER DEPTH	COMPLETION DATE
Ardalin Project, Western Siberia	Polar Lights Co. c/o Conoco Inc.	1700 Tons (84 Module Bases and Miscellaneous Associated Steel Structures)	N/A	April 1993
Maraven Refinery Expansion Venezuela	Weeks Marine Inc.	980 Tons (Piling Fabrication)	N/A	March 1995
Escravos Gas Compression Project; Offshore Nigeria	Chevron Nigeria	669 Tons (Jacket) 1,478 Tons (Piles) 197 Tons (Bridges) 20 Tons (Flaretowers)	32'	November 1996
Escravos Gas Compression Project; Offshore Nigeria	Chevron Nigeria	9000 Tons (Modules—8—Fabrication & Outfitting)	N/A	November 1996
Offshore Sable Island Nova Scotia, Canada	Sable Offshore Energy Project	1500 tons (Thebaud 4-Leg Jacket)	92'	September 1998
Offshore Sable Island Nova Scotia, Canada	Sable Offshore Energy Project	2200 tons (North Triumph 6-Leg Jacket)	262'	September 1998

Gulf Marine Fabricators, Inc. - Ingleside Texas (2)

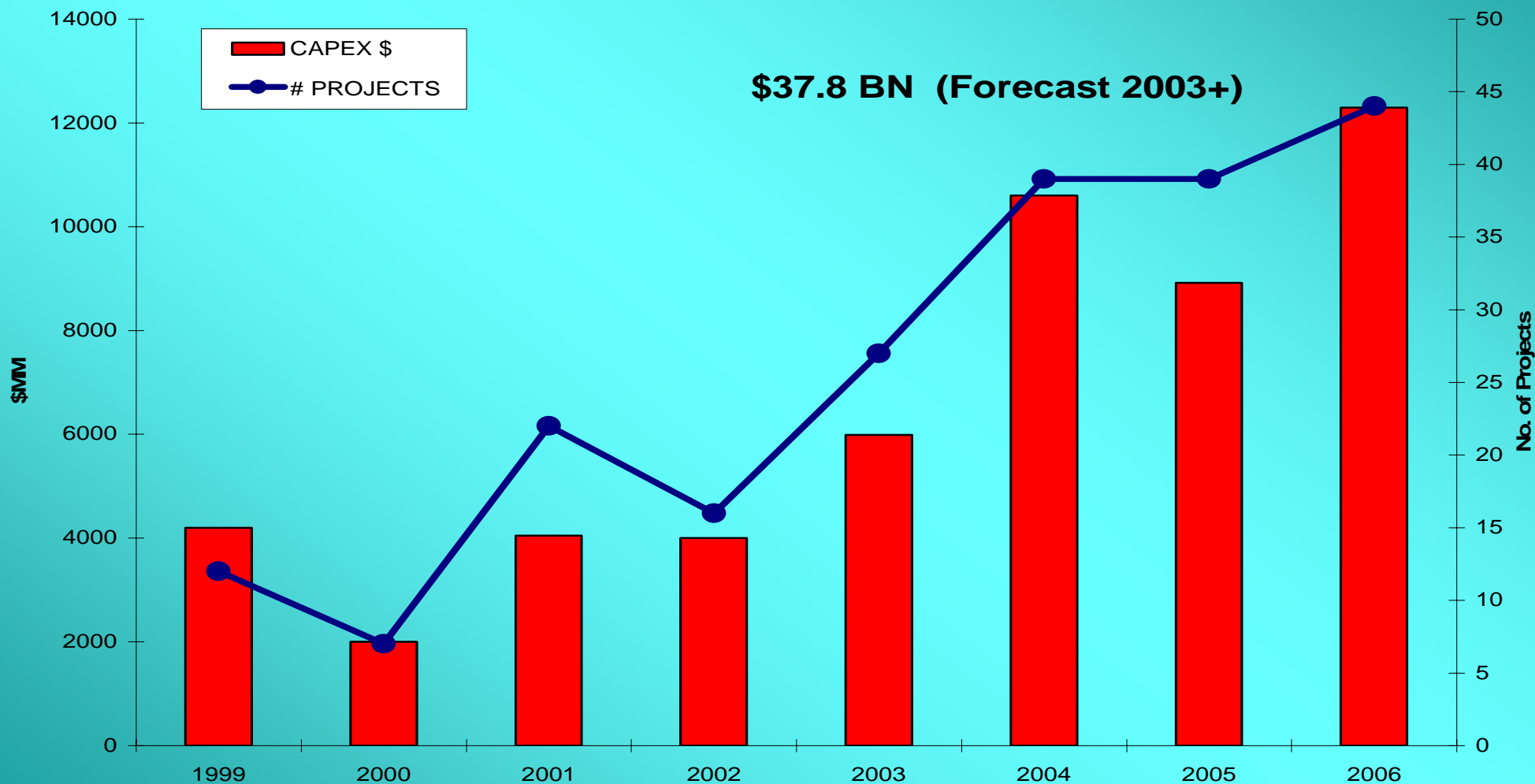
List of all projects for overseas destinations undertaken by Gulf Marine Fabricators since the facility began operation.

Mobil Jade Block B - Equatorial Guinea W. Africa	Mobil Equatorial Guinea, Inc.	7800 tons 4-Leg (Jacket) 3200 tons (Piles)	550'	October 1999
Pemex Production Deck Cantarell Field Akal B	Pemex Exploration y Produccion	8000 Tons (8-Leg Deck & Outfitting)	N/A	April 2001
Pemex C-1 Deck Cantarell Field Akal B	Pemex Exploration y Produccion	7000 Tons (8-Leg Deck & Outfitting)	N/A	April 2001
Pemex C-2 Deck Cantarell Field Akal B	Pemex Exploration y Produccion	7000 Tons (8-Leg Deck & Outfitting)	N/A	April 2001
Kizomba "A"	ABB Lummus Global Inc.	TLP Tendons (14)	2400'	July 2003
Sanha Tomboco	Daewoo (DSME)	2404 tons (8-Pile Jacket) 2452 tons (Piles)	228'	September 2003

OFFSHORE CONSTRUCTION CONTRACTS FOR OVERSEAS DESTINATIONS - GULF ISLAND FABRICATION, INC., HOUMA, LOUISIANA

CUSTOMER	PROJECT NAME	LOCATION	DESCRIPTION	COMPLETION	CONTRACT TYPE
BRITISH GAS	MISKAR-A	TUNISIA	8-PILE JACKET (2050 TONS), DECK w/FACILITIES(3310 TONS) AND PILING FOR 209' WATER DEPTH	07-11-94	LUMP SUM BID
BRITISH GAS	"DOLPHIN"	TRINIDAD	8-PILE JACKET (4150 TONS), DECK w/FACILITIES (2450 TONS) AND PILING FOR 358' WATER DEPTH	08-09-95	LUMP SUM BID
BP	PEDERNALES	VENEZUELA	(2) 8-PILE JACKET, DECK, PILE & FACILITIES (2765 TONS)	06-15-97	ALLIANCE WITH INCENTIVES
GLOBAL IND. - CHEVRON	BANZALA	CABINDA	4-PILE JACKET, DECK, PILE & FACILITIES (1674 TONS)	07-06-98	
CMS NOMECO	ALBA	EQUATORIAL GUINEA	4-PILE JACKET, DECK, PILE, & FACILITIES (4726.61 ST)	01-12-99	
SAIBOS / RANGER OIL	W. AFRICA	W. AFRICA	3-PILE PLATFORM	03-10-00	
EXXONMOBIL	ALMA	NOVA SCOTIA	4-PILE JACKET (2,100 TONS) & PRODUCTION TOPSIDES (2,200 TONS)	06-05-03	
SBM-IMODCO	"KUITO"	W. AFRICA	3 PRODUCTION MODULES for FPSO; (1400, 725, & 450 TONS)	11-10-02	
McDERMOTT / TOTAL	ARIES / CARINA	ARGENTINA	2 EA. - 4-PILE JACKET (1,200 TONS) & PILES	07-15-03	
BHP	ANGOSTURA	TRINIDAD	3 EA. - 4-PILE JACKETS & 2 EA. TOPSIDES	WORK IN PROGRESS	

Projected investments in GoM deepwater developments



Source: *Oil & Gas Investor*, November 2003, p.34
(chart from *Quest Offshore*)

Continuing and growing GoM requirements

\$12 billion in GoM deepwater projects in 2006
(source: Quest Offshore)

40-50% is drilling, allow for management, engineering, financing:

Say \$6 billion in construction delivered and installed in 2006.

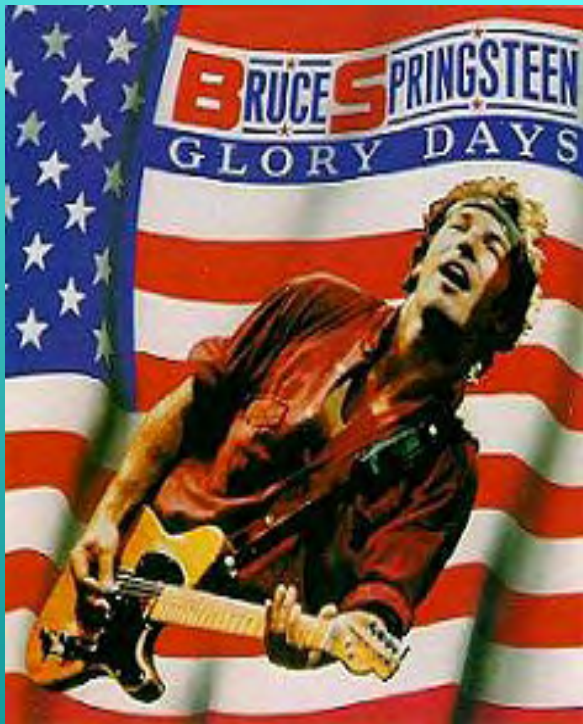
Trend is upwards – more developments in deeper and deeper water in more and more remote locations in GoM.

Regulated shipping market under The Jones Act

Introduced by Senator Wesley Jones of Washington state in 1920 as the “Shipping Act of 1920”

Protectionism of the 1920s: originally intended to protect the Alaska shipping trade, keep it to U.S. flag vessels.

Requires all goods shipped by water from one point in the U.S. to any other point in the U.S. must by law be in ships that are “**born in the USA**”:-



- + Carried in vessels built and documented (flagged) in the U.S.;
- + Crewed by U.S. citizens;
- + Owned and operated by U.S. citizens.

U.S. flag (Jones Act) tankers: Retirals required by law under the Oil Pollution Act of 1990 (OPA 90)

Year for retiral	Product tankers	Crude tankers
2002	2	4
2003	1	5
2004	3	2
2005	3	1
2006	4	3
2007	1	1
2008	1	3
2009	2	--
2010	1	--
2011	--	6
2012	--	4
2013	--	2
2014	--	4
2015	--	1

Source: Marad website

Retiral Totals: 18 < 70,000 dwt < 37

Not requiring retiral
under OPA 90

21

Built 1975-2000

3

Built 1975-1979



U.S. (Jones Act) new tanker construction requirements

Tanker retirements under OPA 90

+

Normal retirements of older OPA 90 qualified vessels

+

Potential fleet growth;

+

Shuttle tankers

Compare with worldwide order books (tankers delivered each year):-

	<u>U.S. builders</u>	<u>Elsewhere in world</u>
2004	4	320
2005	1	279
2006	1	56

Source: www.marinelog.com

U.S. flag (Jones Act) replacement market

Assume no growth in fleet and typical shipyard costs to make time charters viable:-

	Product tankers, 18 x \$75 million (say)	= 1.35
plus	crude tankers, 37 x \$150million (say)	= 5.55

Total replacement market during 2002-2015, about: \$7.9 billion

Average in 2006, say: \$0.6 billion

Equivalent to roughly **one tenth**
of the offshore construction market for U.S. GoM.

Effects of the Jones Act: Government help to offset commercial results

CCF Capital Construction Fund . . . 401K for shipbuilding

CDS Construction Differential Subsidy. Offsets the extra daily cost of operating higher cost U.S. built vessels;

Marad Title 11 up to 87.5% of CAPEX guaranteed by U.S. government. Extensive project costs get capitalized.

GAO report to Senator John McCain, June 2003:

- \$5.6 billion guaranteed in 1993-2002, \$1.3 billion of it defaulted, net of \$0.5 billion lost;
- \$20 million unallocated at June 2003, no new funds requested for 2004;
- ++ Mobile Offshore Drilling Units projects have been successful.

Effects of regulated market:

Markets adjust – sea transport and U.S. ship construction

Major shipping companies [like Teekay, NYSE: TK] who control AST, find no incentive to hold U.S. fleets, instead control 149 tankers (including 47 shuttle tankers), all foreign flag.

U.S. based companies can own foreign flag fleets (e.g. OSG);

U.S. flag fleet is now small compared to the rest of the world, e.g.

U.S. flag tankers: 5.5 million dwt

Foreign flag tankers: 298.6 million dwt.

(Comparison: U.S. does not have 1.8% of the world's airline fleet!)

U.S. imports more and more gasoline and diesel – costs less than sea transport from U.S. refiners. Critical for West Coast.

Depending on source, Jones Act costs the U.S. economy \$2.5 to \$10.0 billion per year extra

(Compare with U.S. airlines - no requirement to buy U.S. built airplanes)



Adam Smith 1723-1790

Author of celebrated treatise on An Inquiry into the Nature and Causes of The Wealth of Nations (1776).

Pioneering Economist & Philosopher.

Introduced the concepts of division of labor and a market economy.

Educated at University of Glasgow, later Professor of Logic there. A native of Kirkcaldy, Scotland

Here at Rice University in 2004, I propose we now nominate him as the patron saint of the offshore market!

Conclusions

1. U.S. offshore fabrication market has grown to be several times that of U.S. commercial ship construction. While world's shipping business has grown, U.S. ship construction has shrunk;
2. Despite skepticism, U.S. offshore fabricators can successfully compete in a free (international) market;
3. Regulated market has not worked for constructing ships, crippled market size. Jones Act costs the country \$billions extra. Protectionism of the 1920s out of place in 2000s. Economics v. politics!
4. Example today of how (a) American ingenuity succeeds in a free market, and (b) how lack of regulation works to the benefit of both our country and its people! Nothing new - Adam Smith recognized the market economy phenomenon in 1776!