OFFSHORE ENERGY
A REINSURANCE ACTUARY'S VIEW

CARe – May 6th and 7th, 2010

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Agenda

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1. What is Offshore Energy
2. Market Statistics
3. Pricing Issues
4. Recent Market Developments
5. Future Market Developments

What is Offshore Energy Insurance?

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1. Insurance covering physical damage and liability exposures of a variety of energy companies
   - Production Platforms
   - Mobile Drilling Units
2. Risks
   - Construction
   - Physical Damage
   - Removal of Wreck
   - Control of Well
   - Liability

Deepwater Horizon Oil Rig - Explosion

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Source: USCG website, official US government photographs

Deepwater Horizon Oil Rig - Explosion

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What are some of the possible losses?

- Insured hull value $560 million
- Removal of wreck
- Sue and labor
- Business interruption
- Liability
- Pollution – responsibility of well operator

Upstream versus Downstream

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Upstream: the searching for and the recovery and production of crude oil and natural gas. The upstream oil sector is also known as the exploration and production (E&P) sector.

Downstream: the refining of crude oil, and the selling and distribution of natural gas and products derived from crude oil.

What definition of E&P may include

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1. Offshore fixed and floating platforms, offshore storage systems, sub-sea facilities, offshore pipelines and other associated offshore equipment.
2. Mobile offshore drilling units and associated equipment.
3. Offshore construction and installation projects.
4. Land rigs, pumping stations, gathering stations, flowlines, pipelines and properties related to the exploration and production of oil, gas and/or extractive businesses.
5. Vessels, (including oil tankers, liquefied natural gas carriers, and other watercraft operating in connection with the oil and gas industry.)
6. Oil and gas products in the course of transit and/or storage.
7. Onshore property (e.g. terminals, gas compression stations, warehouses, etc.) where it forms part of an E&P package.

Risks outside the definition of E&P

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1. Onshore refineries, petrochemical and chemical plants
2. Onshore utilities
3. Onshore gas transmission systems
4. Onshore LNG plants

E&P Portfolios consist of

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1. Fixed and floating property for:
   - major oil companies
   - national oil companies
   - independent E&P companies
2. Contractors (On & Offshore E&P)
3. Construction & installation
4. Control of well and extra expenses
5. Redrill

Territories

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1. Africa
2. Asia
3. Australia
4. Black Sea
5. Europe
6. Gulf of Mexico
7. Mediterranean Sea
8. Mid East
9. North America
10. North Sea
11. South America
12. Worldwide

Gulf of Mexico vs Rest of the World

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1. Wind rates much higher in the Gulf of Mexico
2. Attritional loss ratios lower in the Gulf of Mexico than rest of the world
3. That doesn't necessarily mean that long term profitability is better
4. North sea – Africa, Far East

Global Offshore Energy Premium by Market

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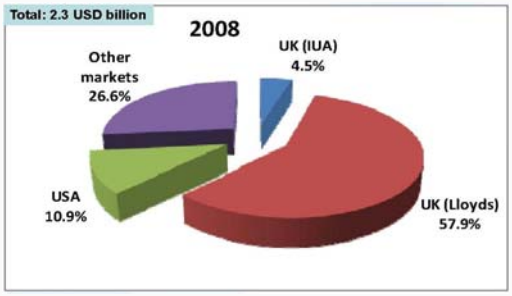

Source: International Union of Marine Insurance
Global Marine Insurance Report 2009

Offshore Energy – Gross Reported Loss Ratios Underwriting Years 1996 to 2008

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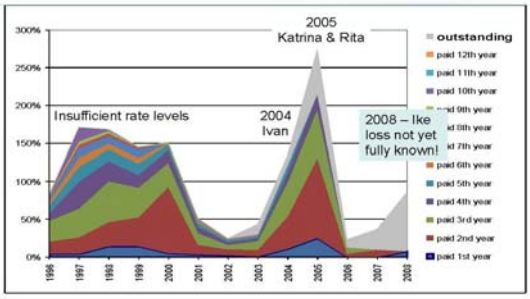

Source: International Union of Marine Insurance
Global Marine Insurance Report 2009

Offshore Energy – Paid and Total Claims, Gross Premiums as reported, U/W Year 2001 to 2008 (USD)

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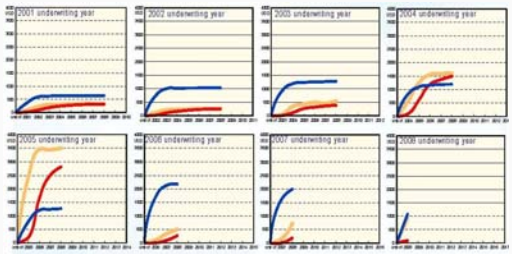

Blue line = Gross Premium; Red line = Paid Claims , Yellow line = Paid+Outstanding claims
Totals of 3 IUMI members – UK Lloyds & IUA, USA

Source: International Union of Marine Insurance
Global Marine Insurance Report 2009

Energy Mobiles, Day Rates, Oil Price Global Offshore Energy Premium

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Source: International Union of Marine Insurance
Global Marine Insurance Report 2009

Basic Pricing Issues

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1. Quota Share and Non-Proportional
   - Gulf including and excluding wind
   - Rest of the world
2. Attritional (non-cat) versus large versus cat losses
3. Gulf of Mexico wind exposure
4. Exposure and loss trends
5. Loss distributions
6. Cat Modeling

Experience Rating Issues

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1. Attritional (non-cat) versus cat loss ratio
2. Restate historical losses for coverage changes following recent hurricanes
3. How to treaty unusual large (shock) losses
4. Loss trending

Loss Development

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1. No industry defaults
2. Usually company data is usable
3. Separate attritional – Cat losses
1. Loss development from company to company relatively consistent – shared market
2. Varies based on client reserving practices

Loss Trending

1. No industry defaults
2. Proxies from other lines?
3. Weighting of various economic indices
   - Energy, Metals, labor, etc
4. Other external indices

Size of Loss Distributions

1. No industry defaults
2. Shared market – how to handle syndicated losses?

Cat Pricing Issues

1. Gulf of Mexico versus rest of the world
2. Cat Models
3. Lloyds Realistic Disaster Scenarios
4. Is recent storm activity an aberration or the new normal?

Lloyds Realistic Disaster Scenarios

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1. Scenarios used to stress test individual companies and the market as a whole

2. Used to evaluate aggregate market exposures as well as the exposure of each syndicate to those specific events

Recent Storm History

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1. Ivan

2. Katrina and Rita in 2005
   - Huge rate increase
   - Coverage Restrictions

3. Ike and Gustav in 2008
   - Further rate increases

4. In-between storms, some softening of rates and terms

Recent Market Developments

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1. Companies reducing Gulf of Mexico wind exposure
2. Changes in use of Mobile Rigs
3. Improved modeling tools/aggregate quantification
4. Pricing stability
5. Technology – exploration, catastrophe modeling, pricing
6. Floating Production, Storage and Offloading (FPSO)

Future Developments

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1. Global economy
2. Price of oil
3. Alternative energy sources
4. Climate change
5. Potential new offshore drilling
6. Improvements in technology

THANK YOU FOR YOUR ATTENTION

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