The Actuarial Profession

making financial sense of the future

GIRO conference and exhibition 2010 Yves Colomb and Darren Farr



Piracy

12-15 October 2010

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Introduction

- Who are we?
- Why Piracy?
- What are we presenting today?
 - Data and Results.
 - Risk management techniques.
 - Gulf of Aden analysis.
- What are we NOT presenting today?
 - Further details in our GIRO paper "Marine Piracy"....
 - and at the Plenary session on Friday morning.



Data Issues

 Main source of data: ICC International Marine Bureau "Piracy and Armed Robbery Against Ships" reports ("IMB Reports")

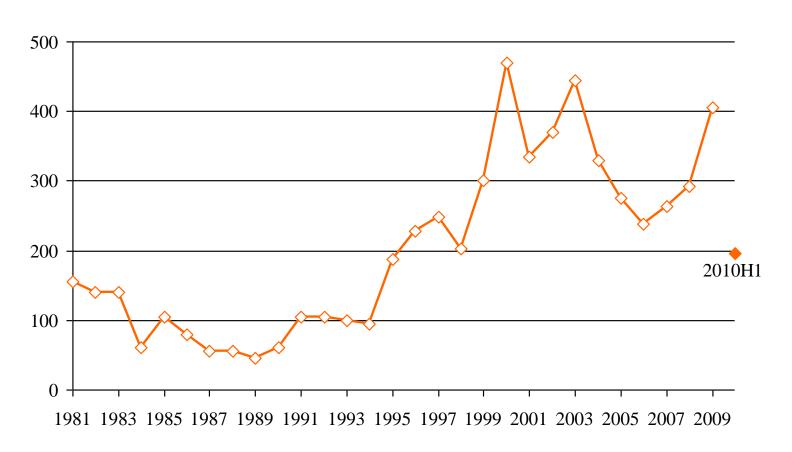


- Data Issues
 - Limited volume.
 - Under-reporting.
 - Possible bias.

Results – Recent Trends

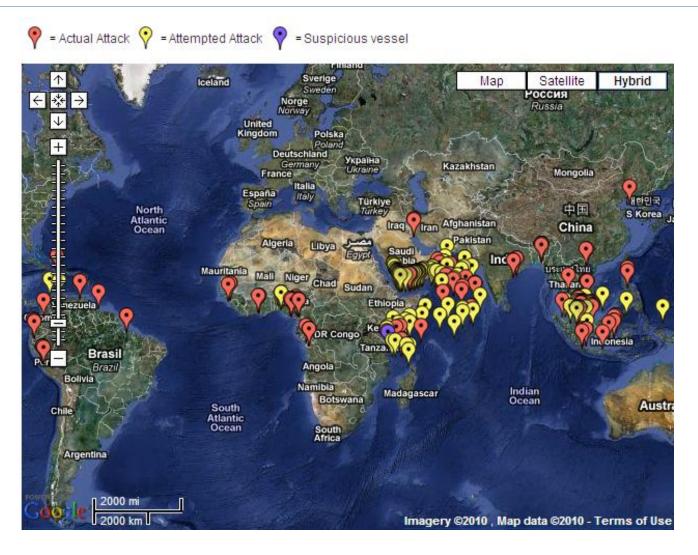
Source: IMB

Number of attacks per year - Global



Modern Piracy – 2010 Attacks as at September

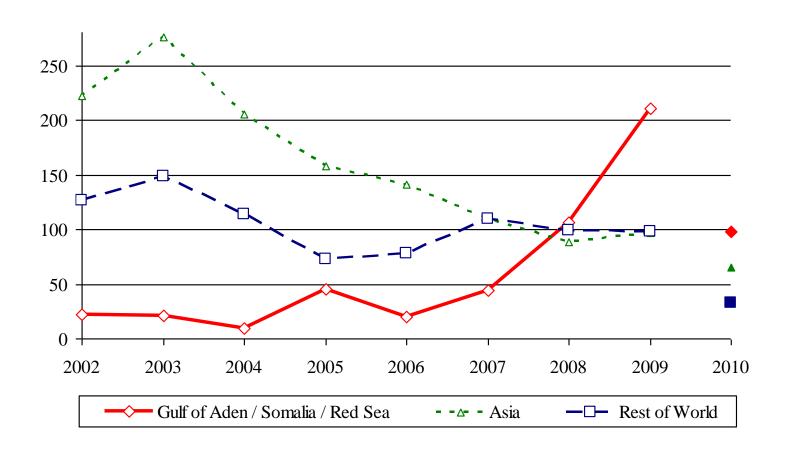
Source: IMB / Google Maps



Results – Hot Spots

Source: IMB

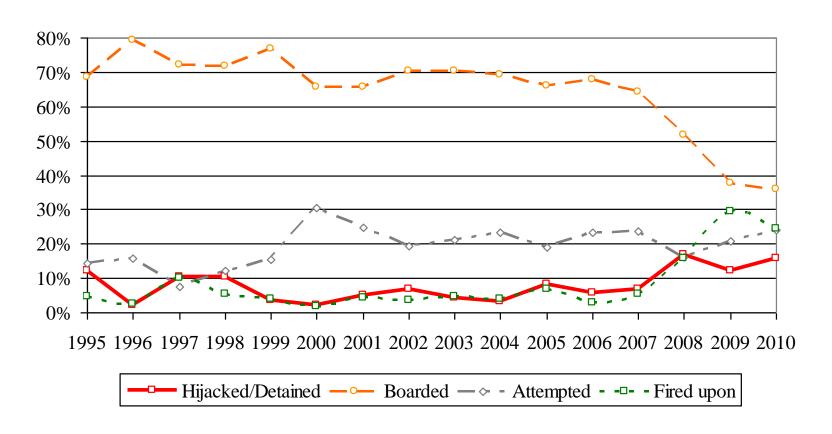
Number of attacks per year - by Area as at 30th June 2010



Results – Change in Methods (1)

Source: IMB

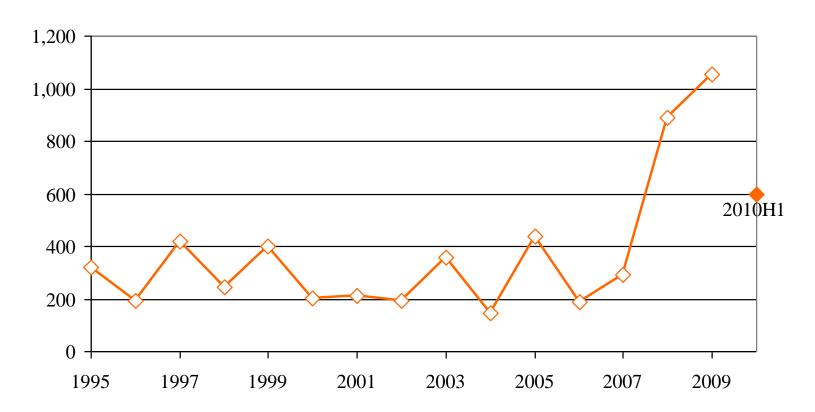
Split of type of attacks by year - as at 30th June 2010



Results – Change in Methods(2)

Source: IMB

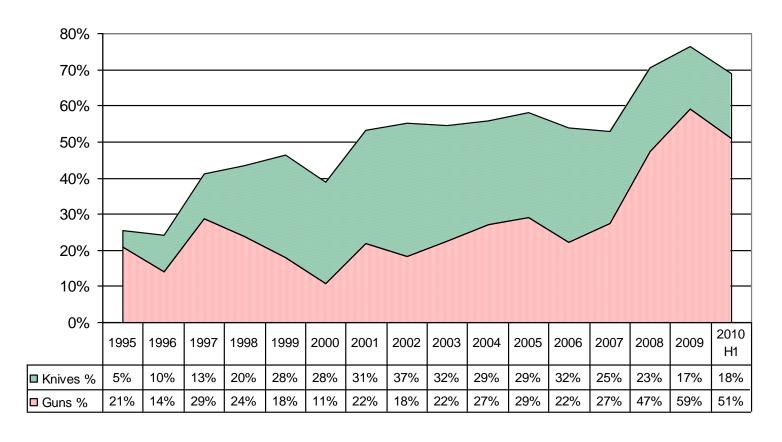
Number of crewmembers held hostage by year



Results – Change in Methods(3)

Source: IMB

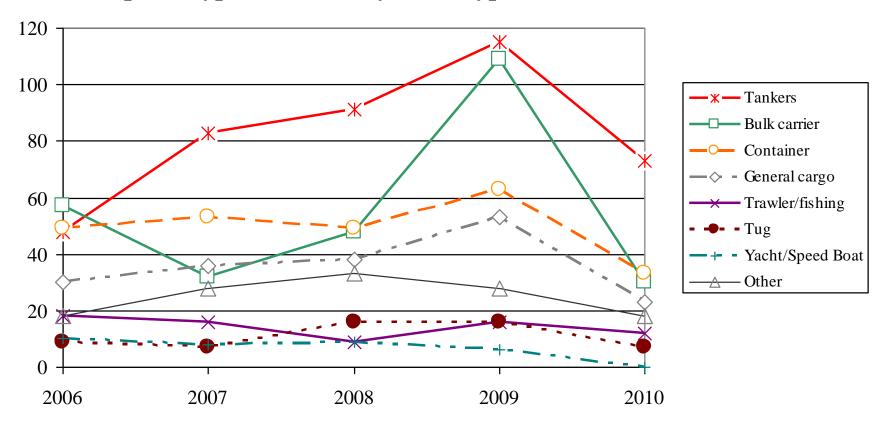
Type of arms used during attacks



Results – Attacks by Vessel Type

Source: IMB

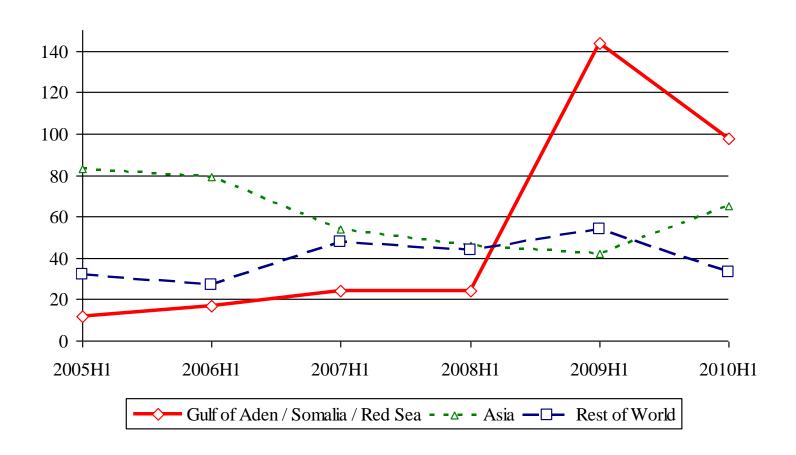
Split of type of attacks by vessel type - as at 30th June 2010



Results – Seasonal Impact Removed

Source: IMB

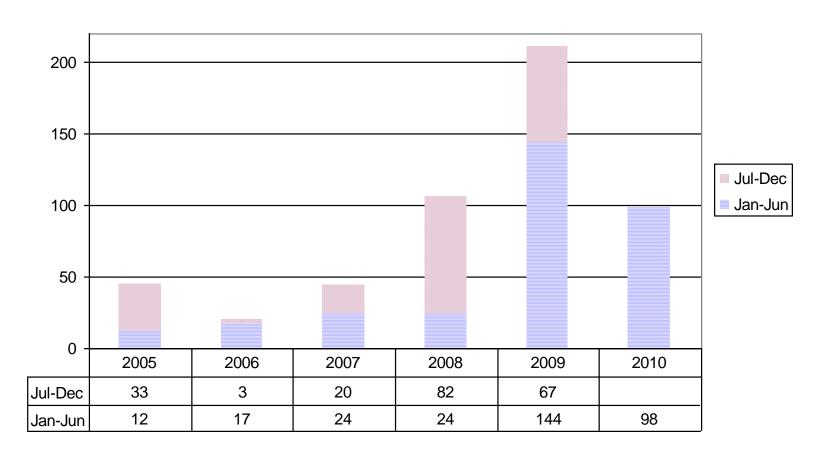
Number of attacks in First 6 Months of each year - by Area



Results - Gulf of Aden

Source: IMB

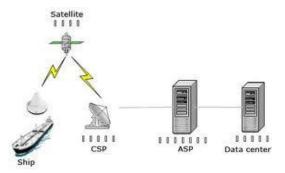
Number of attacks in Gulf of Aden - 6 Month Splits



Risk Management – Shipowners (1)

- Methods used include:
 - 24 hour standing watch.
 - Constant monitoring of radars.
 - Crossing areas during the night.
 - Maintaining high speed throughout.
 - over 15 knots.
 - Minimising external communication.
 - Minimising deck lighting.
 - Avoiding known pirate areas altogether.





Risk Management – Shipowners (2)

- Methods used include:
 - Armed security guards.
 - Razor wires / fencing
 - especially where Freeboard below 8 metres.



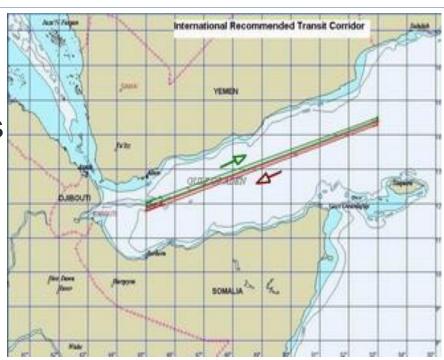
- Locked doors
 - Particularly Bridge and Engine Room.
- Safe rooms.
- Purchase K&R insurance.
- Use Internationally Recommended Transit Corridor (IRTC).





Risk Management – International

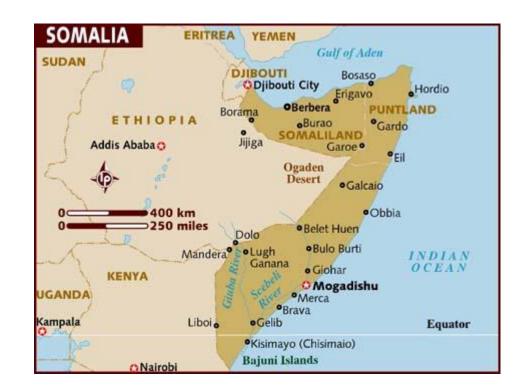
- Naval
 - IRTC
 - UK Maritime Trade Operations (UKMTO)
 - Operation Atlanta
- Insurers
 - Private Navy
- Political
 - US Presidential Decree April 2010
 - Somalia government





Cost Model - Introduction

- Gulf of Aden / Somalia only.
- Claims frequency / average cost methodology.
- Also impact of rerouting.
- Updated from model in Paper.



Cost Model – Severity

Observed ransom payments as at July 2010:

Year	Average (US\$m)
2006	0.1
2007	1.5
2008	2.1
2009	3.0
2010	5.2



Plus additional costs – estimated at 50%

Cost Model – Frequency

Data sources: Claims figures from IMB; exposure from Suez Canal Authority

Year	Vessels	Attacks	Hijacked / Boarded	Attack Rate	Hijack Rate	CLAIMS FREQUENCY
2002	13,447	22		0.16%		
2003	15,667	21		0.13%		
2004	16,850	10		0.06%		
2005	18,224	45		0.25%		
2006	18,664	20	6	0.11%	30%	0.03%
2007	20,384	44	12	0.22%	27%	0.06%
2008	21,415	106	44	0.49%	42%	0.21%
2009	17,228	211	47	1.22%	22%	0.27%
2010 H1	8,651	98	28	1.13%	29%	0.32%

Cost Model – Combined

Year	Average Cost	Claims Frequency	EXPECTED COST US\$
	US\$m		Per Transit
2006	0.2	0.03%	48
2007	2.3	0.06%	1,325
2008	3.1	0.21%	6,357
2009	4.4	0.27%	12,109
2010 H1	7.9	0.32%	25,440

Predictions for 2010?

Cost Model – Our Forecast

Year	Average Cost	Claims Frequency	EXPECTED COST US\$
	US\$m		Per Transit
2006	0.2	0.03%	48
2007	2.3	0.06%	1,325
2008	3.1	0.21%	6,357
2009	4.4	0.27%	12,109
2010	8.9	0.64%	57,132

Estimated total cost - US\$1bn

Cost Model – Rerouting via Cape (1)



Cost Model – Rerouting via Cape (2)

All figures in US\$

Via Suez Canal

Increased Insurance

Additional security costs

- TOTAL

185,000

60,000

245,000



Via Cape

Additional sailing costs

Less Suez Canal tolls

– TOTAL

1,200,000

- 260,000

940,000

Additional cost per transit

695,000

Some thoughts

- Piracy is not new.
 - Though evolving and growing more sophisticated.
 - Will Terrorists take control?
- Current hot spot is Gulf of Aden.
 - Where next?
- Actions by shipping companies and Navies / Governments having limited results.
- Impact on world trade
 - Reduced use of Suez Canal.
- Ransom costs increasing.
- Solution to Somalian piracy lies Onshore.

Questions?

