Trends in Recent Claims

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Claims in General – A broad look

1) PERSONAL INJURY
2) CARGO
3) LIABILITY such as P & I
4) HULL & MACHINERY
5) DEFENCE (Legal fees)

Today we will look at the generality of Hull & Machinery claims and examine some recent issues with the container trades.
OLD HAZARDS DIE HARD

What are we looking at?
1981 RO-RO CARGO / Main Engine

Nos. 3A & 3B liners are broken

Estimate: $2,000,000 (Case Report: 1550)
1979 GAS CARRIER (LPG) / Propeller

Estimate: $ 750,000   (Case Report: 1445)
TANKER CO (DH) / Grounding

Estimate: $2,700,000  (Case Report: 1487)
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Estimate: $2,700,000 (Case Report: 1487)
GENERAL CARGO / Explosion in Hold

Estimate: $ tba  (Case Report: 1485)
1987 TANKER / Explosion & Fire

Estimate: $ SUBSTANTIAL  (Case Report: 1597)
A view from the Wheelhouse!
1990 TANKER Chem/Oil / Grounding

Estimate: $ Very High    (Case Report 1786)
1987 TANKER / Explosion & Fire

Estimate: $ SUBSTANTIAL  (Case Report: 1597)
1981 LPG CARRIER / Explosion & Fire

Estimate: $ 1,710,000  (Case Report: 1598)
1996 CONTAINER 5551 TEU / Fire / Explosion

Estimate: $ HIGH  (Case Report: 1532)
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Estimate: $ HIGH (Case Report: 1532)
2002 CRUISE SHIP / Fire (Accommodation)

Estimate: $ TBA  (Case Report: 1529)
2002 CRUISE SHIP / Fire (Accommodation)

Estimate: $ TBA  (Case Report: 1529)
1969 CRUISE SHIP / Fire (ER)

Estimate: $3,600,000  (Case Report: 1569)
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1969 CRUISE SHIP / Fire (ER)

Estimate: $3,600,000  (Case Report: 1569)
1996 CONTAINER 4434 TEU / Aux Engine

Estimate: $250,000  (Case Report: 1543)
2003 CRUISE SHIP / Aux Engine

Estimate: $650,000 (Case Report: 1519)
2006 PASSENGER FERRY (New Build) / Fire

Estimate: $3,500,000  (Case Report: 1458)
CONTAINER >10000TEU (New Build) / Fire

Estimate: $ HIGH
2001 BULKER (OS) / Grounding

Estimate: $ tba  (Case Report: 1570)
2001 BULKER (OS) / Grounding

Estimate: $ tba  (Case Report: 1570)
1993 REEFER / Heavy Weather

Estimate: $258,000  (Case Report: 1605)
EXPENSIVE KIT – EXPENSIVE CONSEQUENCES
2002 LNG CARRIER / Turbo Generator

Engine room’s turbo-generator area.
Damaged No.1 turbo-generator on right hand side

Estimate: $258,000
(Case Report: 1605)
2002 LNG CARRIER / Turbo Generator

Damaged turbine casing, lower half

Estimate: $ 2,000,000 (Case Report: 1552)
2002 LNG CARRIER / Turbo Generator

Damaged big pinion gear that drove the alternator remains in gearbox

Estimate: $2,000,000
(Case Report: 1552)
2002 LNG CARRIER / Turbo Generator

Smashed up steam turbine rotor assembly

Estimate: $2,000,000
(Case Report: 1552)
2002 CRUISE 1080pax / POD Damages

Estimate: $1,700,000 (Case Report: 1479)

Fatigue spots noted in the starboard bearing raceway

Thrust Bearing
IT IS THE SAME OLD STORY
LITTLE NEW
SLOPPY WORK AND
INADEQUATE SYSTEMS
HIGH COST CASUALTIES (By Number) (Repair Costs > $250,000)
Numbers Versus Costs

Treat with Caution!
Let us not forget the human cost
SECTION 2  CONTAINERS

- Statistics
- Principle of forces in a container stow
- Causes of container collapse
- Lashing / securing of containers
- Stowage aspects
- Stability
- Heavy (parametric) rolling
- Container weights
RECENT DIFFICULTIES WITH CONTAINERS
Lashing equipment (Evolution of Twistlocks)
Lashing System (Unilock) Failure

December 2003: Far East > USA. New vessel, 4,500 teu
Twistlocks ‘not to blame’ for box losses
History of some recent incidents involving Fully Automatic Twislocks  FAT(confirmed)

<table>
<thead>
<tr>
<th>Vessel</th>
<th>Ship size</th>
<th>Month</th>
<th>Nos.lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>ship 1</td>
<td>8750 teu, built '05</td>
<td>Aug.'05</td>
<td>85</td>
</tr>
<tr>
<td>ship 2</td>
<td>4500 teu, built '05</td>
<td>Dec.'05</td>
<td>60</td>
</tr>
<tr>
<td>ship 3</td>
<td>800 teu</td>
<td>Dec. '05</td>
<td>25</td>
</tr>
<tr>
<td>ship 4</td>
<td>4500 teu, maiden voy.</td>
<td>Jan.'06</td>
<td>appr. 60</td>
</tr>
<tr>
<td>ship 5</td>
<td>8500 teu, built '04</td>
<td>Feb. '06</td>
<td>58</td>
</tr>
<tr>
<td>ship 6</td>
<td>8500 teu, built '04</td>
<td>Feb. '06</td>
<td>50</td>
</tr>
<tr>
<td>ship 7</td>
<td>8500 teu, built '05</td>
<td>Feb. 06</td>
<td>46</td>
</tr>
<tr>
<td>ship 8</td>
<td>8500 teu, built '05</td>
<td>Feb. '06</td>
<td>85</td>
</tr>
</tbody>
</table>

Equipment on board: T-4 / T-5

- Total lost over 6 months: approx. 450 containers.
- Excl. approx. 250 damaged.
- Total estimated loss of cargo / containers: USD 30-40 million
- Excl. damage to ship / lost schedules / stevedore exp. Etc.
Incident Description, Location of Loss

Ship 1, August ’05.
8750 teu. Pacific

Total lost:
Bay 66: 32 containers
Bay 70: 15 containers
Bay 74: **38** containers
Tot.: 85 containers  (approx. 50 others heavily damaged)
Incident Description, Location of Loss
Incident Description, Location of Loss
Incident Description, Location of Loss
Separation Level
Separation
Separation
Dislocation of Stacks
Dislocation of Stacks
Difference between “fat” and “sat” loss

Fully automatic locks

Semi automatic locks
## Difference between “fat” and “sat” loss

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Revolving cones</strong></td>
<td><strong>Fixed steel body</strong></td>
<td>F: Locking / damage to corners. -/-/-</td>
</tr>
<tr>
<td><strong>Symmetrical shape</strong></td>
<td><strong>Assymetrical shape</strong></td>
<td>F: Fails if applied wrong -/-/-</td>
</tr>
<tr>
<td><strong>Requires manipulation o.b.</strong></td>
<td><strong>No manipulation o.b.</strong></td>
<td>F: saves money and time +/+/+</td>
</tr>
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<td><strong>Individual lock at 4 corners</strong></td>
<td><strong>Operates in pairs</strong></td>
<td>F: Reduced locking redundancy -/-/-</td>
</tr>
<tr>
<td><strong>Locks in every direction</strong></td>
<td><strong>No locking in vertical direction</strong></td>
<td>F: Less security -/-/-</td>
</tr>
<tr>
<td><strong>Surface contact</strong></td>
<td><strong>Linear contact</strong></td>
<td>F: Damage to corner castings / less grip -/-/-</td>
</tr>
<tr>
<td><strong>ISO: O.K.</strong></td>
<td><strong>ISO: not O.K</strong></td>
<td>F: application /locking failure</td>
</tr>
</tbody>
</table>
Locks breaking out of corner castings
Vertical accelerations
Vertical accelerations (?)

Sister vessel, after replacement of FAL’s to SAT’s
No centralized statistics available. P & I Clubs, shipowners and operators are not prepared to disclose their records.
Estimates on Container Loss

P&I Club figures:

- UK Club: 15% of major claims (>USD100,000,=) due to container loss. Average cost per incident: USD 475,000,=  
- Gard: approx. 50 containers lost every year  
- NoE: 50-100 containers, last year
Estimates on Container Loss

Surveyor figures:

BMT De Beer:

- Approx. 25-30 cases a year

- Our estimate: 10,000 containers per year, involved in container collapse, of which 25% lost overboard
  - Approx. 0.02% of total movement
Collapse Under Deck / On Deck
Estimates on Container Loss ($)

Value involved: 500 million USD (cargo and equipment)

Excluding costs for:

- Clean-up of water / beaches (eg. “Sherbo” 1993)
- Stevedoring
- Disruption of vessel’s operations / schedule
- Damage to ship
- Chemical contamination
Causes of Container Collapse

Navigation / ship’s behaviour
- weather routing
- parametric rolling

Lashing / securing
- application
- condition

Container collapse

Stowage
- weight distribution
- discharge planning

Stability (gm)

Container
- condition / age
- size
- declared weight
Accelerations Acting on a Container in a Seaway
Forces in a Container Stow

Fu = Uplift force (20 t. / 25 t.)
Fc = Compression force (83 t. at bottom)
Fr = Racking force 15 t.)
Fs = shear force (15 t.)
Examples (Too High Racking Force)
Examples (Too High Compression Force)
Examples (Too High Compression Force)
Examples (Too High Uplift Force)
Lashing Equipment

Fixed arrangements, belonging to the vessel’s structure:

- Deck sockets, foundations
- Lashing rings
Lashing Equipment

Loose equipment, supplied by either the owners or the time charterers of the vessel:

- Lashing bars + turnbuckles
- Bottom twistlocks
- Twistlocks between the tiers
Lashing Equipment, Main Failures

- Wear and tear, damage, lack of maintenance / condition monitoring
- Mixing of different systems
- Wrong application
- Incompatible components in one system
Lashing Equipment

Poor condition of twistlocks, bottom foundations
Lashing Equipment

Poor condition of twistlocks, bottom foundations
Lashing System Failure
Arrival L.A.
Unilock, System Failure
Operation of Unilock (OSHA)
Stowage Aspects

Failure to lock bottom twistlocks in 76 mm. ISO space
Stowage Aspects

31 x 20’ lost Malta - Europe
Stowage Aspects
Stowage also applies to contents!
Oops!
Who is in charge of stowing this?
Stability, Rolling Effects

G = Gravity point
B = Buoyancy point
GM = Stability
Stability, or rather lack of it!
Stability

IMO sets criteria for minimum GM (= 0.15m)
There are no criteria for maximum GM, except for:

CONTAINER SHIPS!!
Major Incidents (APL, China), 1998

Largest casualty in history, total
700 damaged, 350 lost. Loss:
$100,000,000,=.
Effect of Heavy Rolling on Containers
Major Incidents ("OOCL America")

L.A. to Taiwan, 350 lost, 217 total loss on board
Major Incidents ("OOCL America")

Cause: Heavy rolling (45 degr.)
Parametric rolling ??
## Misdelegation of Container Weight

### Weight differences

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<thead>
<tr>
<th>Tonnage as per B/L</th>
<th>BAY 50</th>
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</table>

- **B/L A**
- **B/L B**
- **B/L C**
Misdeclaration of Container Weight

Weight differences (impact on the lashing forces acc. Lloyds)

SP
- Uplift
- 100%
- 5.7 m.t.
- 9.1
- 11.6
- 11.6
- 15.3
- 18.9

B/L
- Uplift
- 280%
- 224%
- 23.6
- 12.9
- 12.1
- 7.1
- 11.2
- 18.9

Swl = 20 tonnes
Swl = 25 tonnes
Lessons To Be Learnt:

- Read and strictly adhere to the Container Lashing Manual (training ship’s crew).
- Look after stability of the ship (often too high, without corrections being made)
- Container weights are often in excess of shipper’s declarations
- Avoid try-outs of unproven new lashing systems.
- Be careful with container lashing software eg. weak containers / low roll angle.
- Regular check of the lashing equipment (company audits)
A Current Issue – FLEXTANKS
A loaded tank stowed in container – looks OK?
Not Really!
The well rounded container.
(Look for the latest “Carefully to Carry”)
THANK YOU!
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