

# TEEKAY MARINE SERVICES

## Improving Maritime Quality and Performance




► TEEKAY – THE MARINE MIDSTREAM COMPANY®

# The shipping industry...

## Who are the players in the ship management arena?

- ▶ Ship owners – operating their own ships
- ▶ Third party ship managers – managing other's ships
- ▶ Financial institutions – only involved in ship finance, leaving ship operations to someone else
- ▶ Asset managers – ships viewed as assets for trading based on the S&P markets



**Is it any wonder  
we have a quality  
challenge?**

# Quality Drivers

- ▶ Legislative
- ▶ Customer (ie: TMSA, vetting and PSC inspections)
- ▶ Shareholders
- ▶ Stakeholders

# Legislation

- ▶ Derived from IMO – consensus driven
- ▶ Many operators construe legislation as the bar set by the industry - the highest standard required
- ▶ More reactive than proactive
- ▶ Based on compliance versus goal setting culture



**Need to learn from  
other industries**

# Customer

## Driven by customers and not from within the organisation...

- ▶ TMSA – excellent document in terms of defining best practices
- ▶ Large variations in requirements between level 1 - 4
- ▶ No significant perceptible advantage to shoot for level 4 versus level 1



**A missed opportunity**

**Or**

**A phased approach**

# Responsible Shareholders

**Driven from within the organisation and from the heart....**

- ▶ Believe excellence in HSEQ performance makes good business sense therefore beneficial to shareholders
- ▶ Genuine desire to improve quality and performance – good corporate citizens
- ▶ Proactive, not reactive
- ▶ Goal based culture – well above the legislative bar set by the regulators; continually striving to improve

# What does it take to improve? TMS Strategic Framework

## CORE PURPOSE / CORE VALUES / HSEQ POLICY

- Strategies -

FINANCE	OPERATIONS		CUSTOMER	PEOPLE
Cost Effective Operations	Leadership In Risk Management	World Class Asset Base	First Class Customer Service	World Class Staff Onboard & Ashore

- Initiatives -

<ul style="list-style-type: none"> <li>COST TIME</li> <li>STRATEGIC CONTRACTS</li> <li>VESSEL PERFORMANCE</li> <li>VALUE LOG</li> </ul>	<ul style="list-style-type: none"> <li>TORA</li> <li>SOFID</li> <li>ELP</li> <li>SAFETY IN ACTION</li> </ul>	<ul style="list-style-type: none"> <li>SIMS</li> <li>MAINTENANCE MGMT</li> </ul>	<ul style="list-style-type: none"> <li>DANAOS</li> <li>FUSION</li> <li>VQS</li> <li>3C's</li> <li>CIS</li> </ul>	<ul style="list-style-type: none"> <li>SCOPE</li> <li>B2B</li> <li>MGMT. TRAINING</li> <li>KNOWLEDGE POOLS</li> <li>EMPLOYEE SURVEYS</li> </ul>
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- Main KPI's -

<ul style="list-style-type: none"> <li>OPEX</li> <li>DRY DOCK COSTS</li> </ul>	<ul style="list-style-type: none"> <li>LTIF</li> <li>TRCF</li> </ul>	<ul style="list-style-type: none"> <li>AVAILABILITY</li> <li>PORT STATE CONTROL DEFICIENCIES.</li> </ul>	<ul style="list-style-type: none"> <li>VETTING DEFICIENCIES</li> <li>FLAWLESS VOYAGES</li> </ul>	<ul style="list-style-type: none"> <li>RETENTION SEASTAFF</li> <li>RETENTION SHORE STAFF</li> </ul>
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## Organization – Operations and Standards & Policies Group

### Marine Operations Management System – MOMS

<b>PLAN</b> <ul style="list-style-type: none"> <li>CUSTOMER REQ.</li> <li>REGULATORY REQ.</li> <li>CORPORATE REQ.</li> <li>BALANCED SCORECARD</li> <li>PERFORMANCE MEASURES</li> </ul>	<b>DO</b> <ul style="list-style-type: none"> <li>PROCEDURES / POLICIES</li> <li>RAISING AWARENESS</li> <li>TRAINING / EDUCATION</li> <li>IMPROVEMENT PROGRAMS</li> </ul>	<b>CHECK</b> <ul style="list-style-type: none"> <li>AUDITS</li> <li>INSPECTIONS</li> <li>INCIDENT + NEAR MISS INVESTIGATIONS</li> <li>KPI REVIEWS</li> </ul>	<b>ACT</b> <ul style="list-style-type: none"> <li>BALANCED SCORECARD REVIEWS</li> <li>RISK REVIEWS</li> <li>MOMS MANAGEMENT REVIEWS</li> </ul>
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STRATEGY

EXECUTION

# Environmental Leadership Program (ELP)

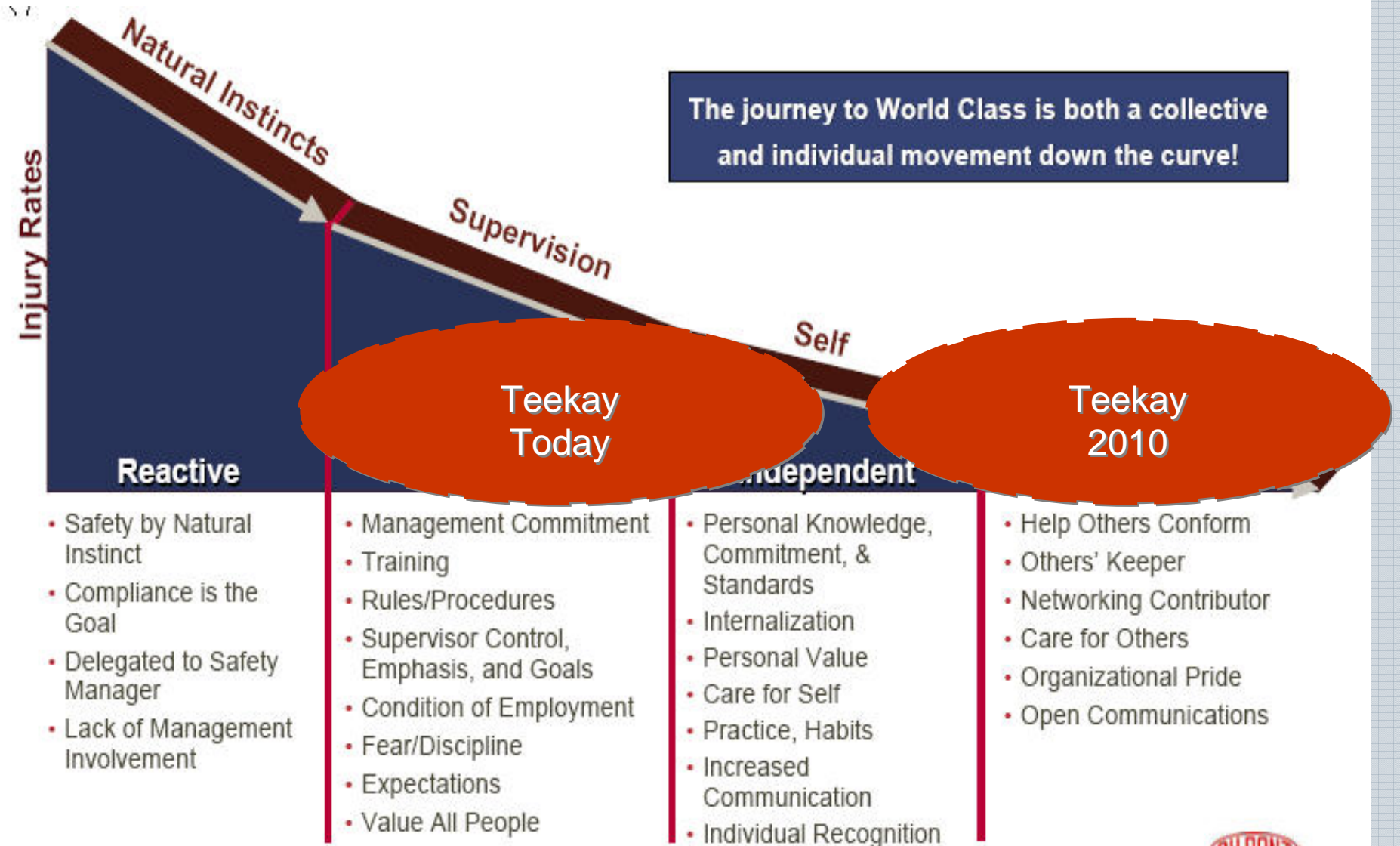
- ▶ Energy Conservation Program
  - Vessel Performance Optimization (hull, propeller, engine)
  - Voyage optimization (ie: weather, trim, speed)
  
- ▶ Reduction of garbage disposal at sea
  - Target 50% reduction from 2006 volumes by 2012
  
- ▶ Advanced bilge treatment systems
  - "Dry Bilge" concept (ie: bilge settling tanks, soot containment, polishing filters, mechanical seals)
  - Upgrading with latest centrifugal OWS

# Safety in Action (SIA)

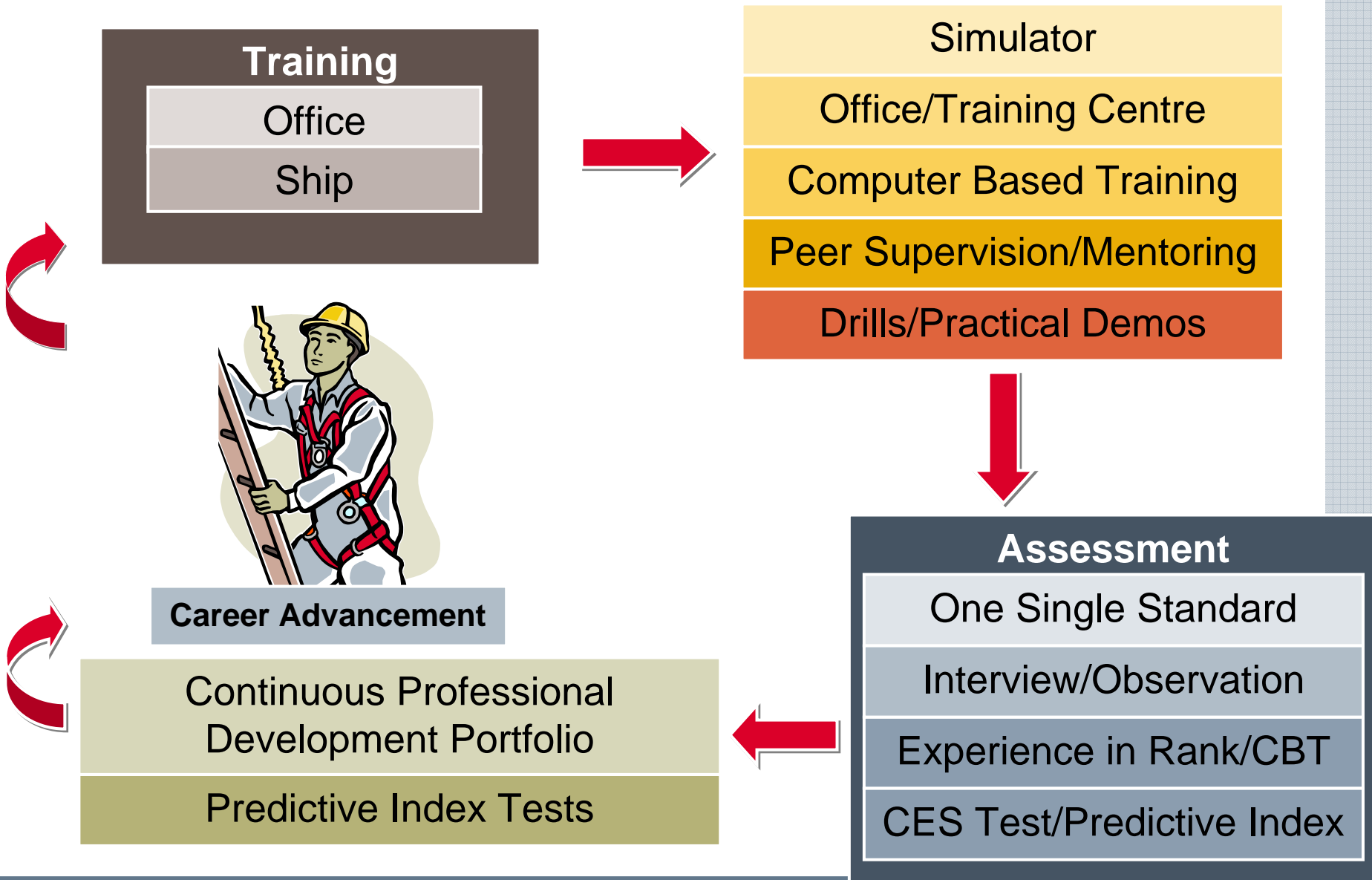
- ▶ Behaviour-based safety initiative
- ▶ Program developed in cooperation with DuPont Safety Resources
- ▶ To train 5,700 seafarers and shore management staff over a period of two years
- ▶ Investment of \$ 5.5M in this initiative
- ▶ Key objective is achieving safety excellence

# Safety in Action Program

The journey to World Class is both a collective and individual movement down the curve!



# SCOPE Concept



# Competence Requirements – Example

The screenshot displays the STA 3.1C (Vessel) software interface. The main window is titled "Competence Requirements" and shows a hierarchical tree structure of competencies. The "SCOPE" category is expanded, showing sub-categories like "01 - MASTER" and "1005 - ANCHORING". The "1005.01 - Vessel Manoeuvring Characteristics" item is selected and highlighted in blue. Below the tree, there are "Expand All" and "Collapse All" buttons, and a status bar indicating "2800 Records Found".

The "Rank Requirements/Detail" section is also visible, showing a "Rank Requirements" tab and a "Details" tab. The "Details" tab is active, displaying the following information:

- Critical For Rank: Yes
- Checked By: OnBoard asses...
- Guidelines:
  - Methods for demonstrating competence:
  - Assessment of evidence obtained from:
    - .1 approved in-service experience
    - .2 simulator training
    - .3 Bridge team Training
  - Demonstrate ability to:
    - maintain windlass and anchor equipment in good working condition
    - ensure that brake bands thickness is regularly checked and measurements recorded
    - ensure that chain stoppers are adjusted and clearance are maintained

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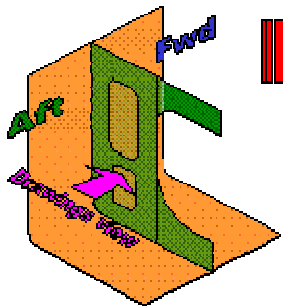
# Structural Integrity Management System (SIMS)

- ▶ Development of ship specific inspection manuals - an industry exemplar
- ▶ Demonstrable high level of crew motivation and involvement
- ▶ Tank inspection and hull structures are a part of SCOPE competency
- ▶ Standard inspection system for crew and third party inspectors
- ▶ Establish a "go to" centre of excellence for structural matters within the organisation

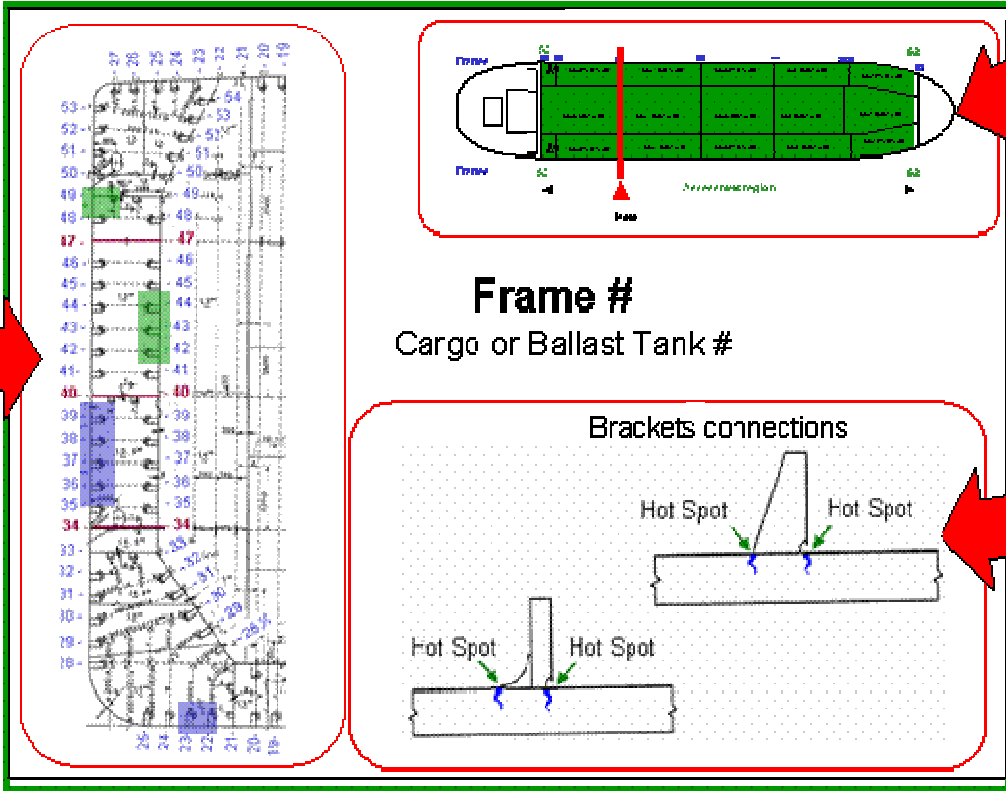
# Typical Page Layout

## HOT SPOT LOCATOR

A scanned image of the frame (from the "as built" drawings) is used to locate the position of the critical connection (hot spot) in the tank.



All drawing views are looking forward except as specified



## FRAME LOCATOR

The red line indicates the position of the frame in the ship.

## Frame #

Cargo or Ballast Tank #

## TYPICAL CONNECTION DETAILS

These sketches will indicate the location where "Hot Spots" may be expected.

Details or orientation of the connections may differ depending on their location in the frame.

## Color keys

Areas to look at on the **Forward** side of the Bulkhead.

Areas to look at on the **after** side of the Bulkhead.

Note: in the case of Web Frames, both sides of the web frame at the connection should always be inspected

Areas to look at due to fatigue condition.

Areas to look at due to structural design.

Areas that require action.

Areas that require special attention.

# Recipe for Improving Maritime Quality & Performance

- ▶ Shareholder belief and support – prepared to invest
- ▶ No compromise on safety or environmental protection issues
- ▶ Passion to achieve operational excellence and be an industry leader
- ▶ Long-term viability rather than short-term gains
- ▶ A committed organisation