SJØFARTSDIREKTORATET
Norwegian Maritime Directorate

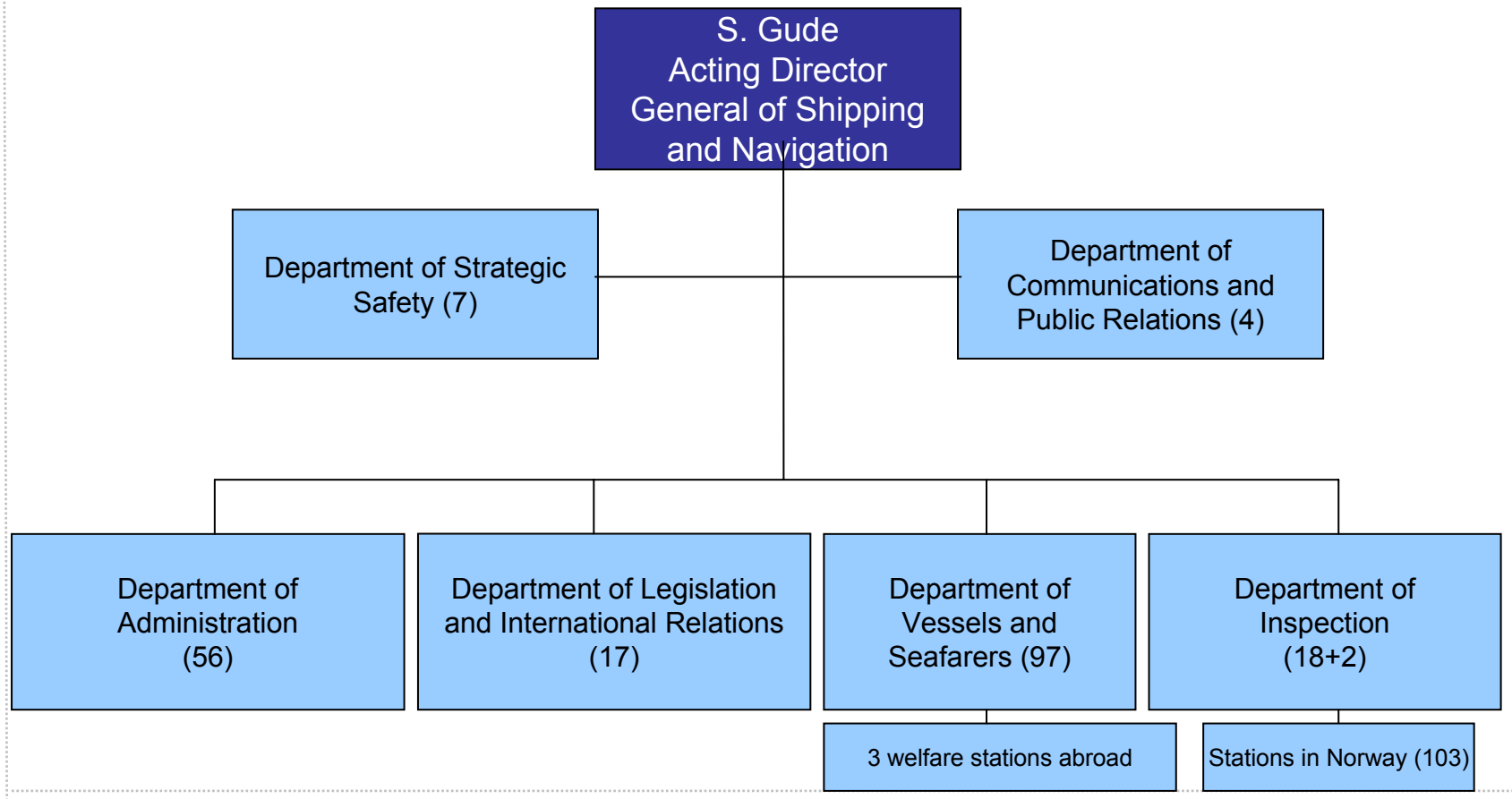
Norwegian Maritime Directorate

Arne Bakkevig

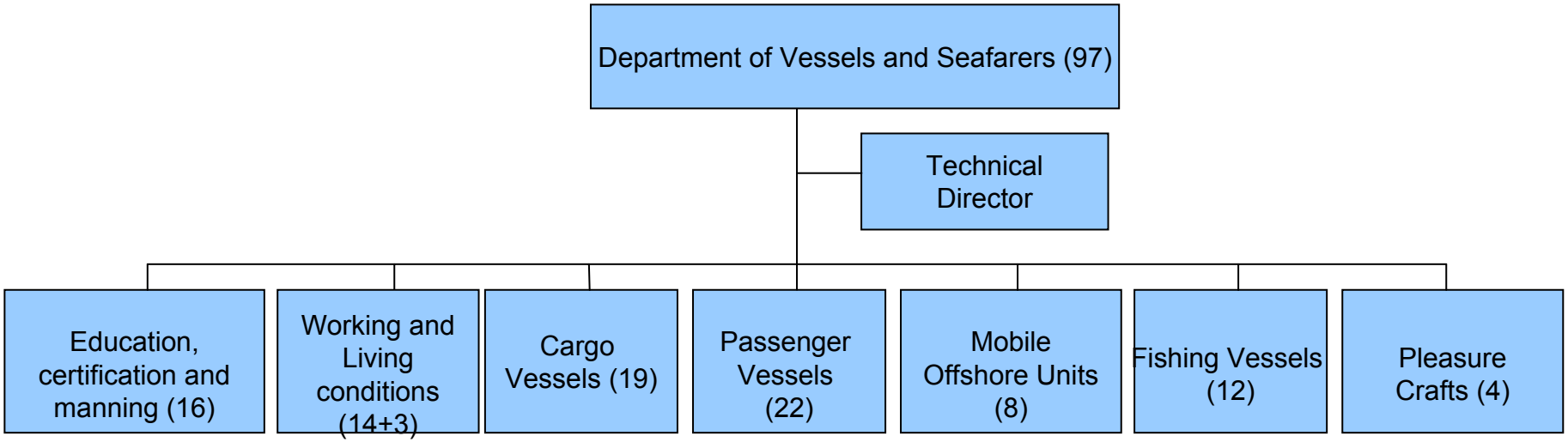
Organisation

- 308 employees
- Head office in Haugesund – 200 employees
- 19 stations
- 3 welfare stations abroad
  - **Aberdeen**
  - **Port Said**
  - **Rotterdam**

Organisation chart



Vessels and Seafarers



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Key figures 2008

Especially high level of building activity

- Cargo vessels: 120 newbuildings, as opposed to 30-40 per year in recent years
- Passenger vessels: 65 newbuildings and larger rebuilds, as opposed to 25-30 per year in recent years
- Mobile offshore units: 7 newbuildings, as opposed to 3-4 per year in recent years
- Fishing vessels: A steadily increasing level of building activity
- 24 offshore vessels and 4 passenger vessels have so far been delegated to classification societies.

Key figures 2008

- Unannounced inspections of NIS/NOR (aim 450): 609
  - Incl. fishing vessels under 10,67 metres (227)
- Port State controls: 735
  - 31,4 % (average over 3 years – aim 25 %)
  - Detention of 22 foreign vessels –> 2,5%
- Certificate inspections: 2.029
- Other inspections (rebuilding, marine casualty, etc.): 756
- Identification measurements: 889
- Personnel certificates: 17.000

  (Max. processing time is 4 weeks, usually within 1-2 weeks)
- The budget for 2008 is: NOK 298 mill
- Income from fees: NOK 185 mill

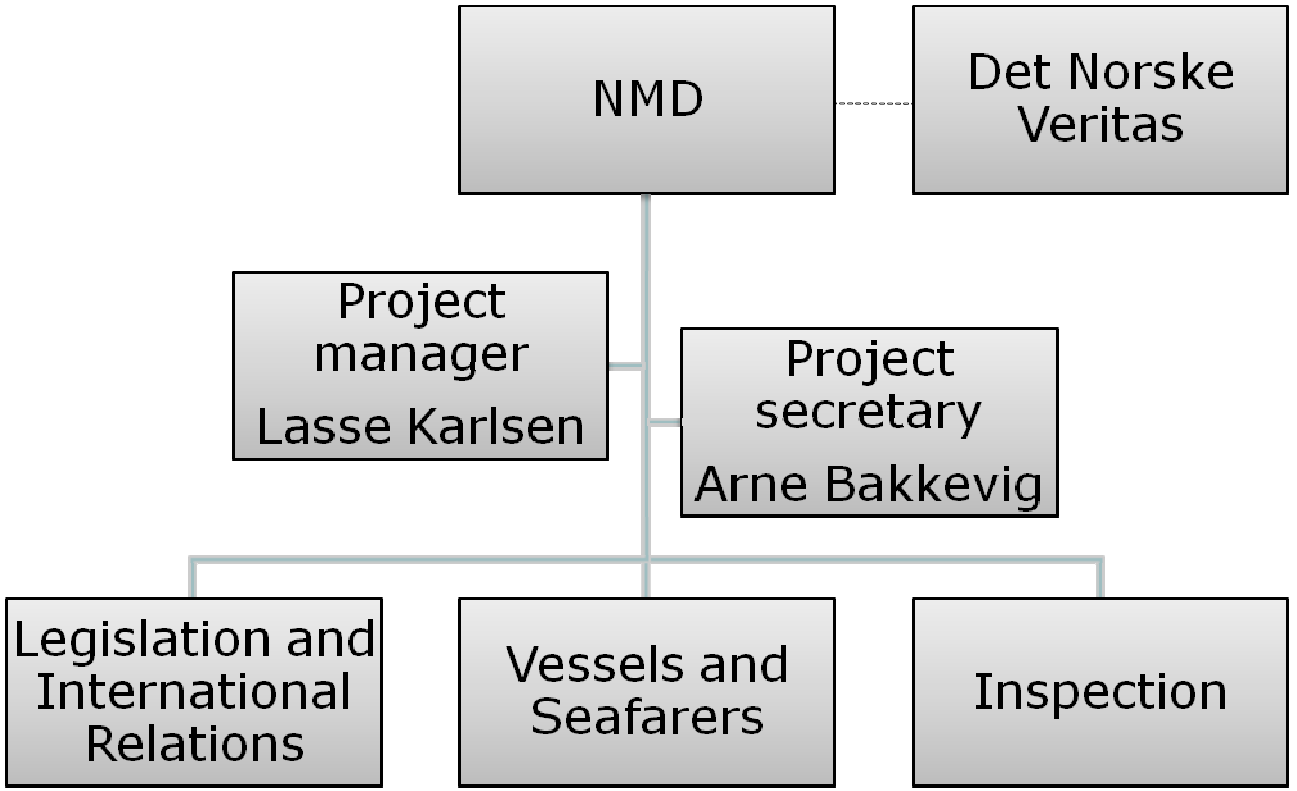
SJØFARTSDIREKTORATET
Norwegian Maritime Directorate

Safety measures for anchor handling vessels and mobile offshore units

Report from the Norwegian Maritime Directorate

Arne Bakkevig
Per Jostein Breivik
Ole Morten Fureli

Organisation of the NMD working group



Discussions with other parties

- Winch manufacturers
- Supplier of stability instruments
- Norwegian Shipowners Association and AH/PSV- ship owners
- AH ship designers
- Oil Industry Association (OLF)
- Rig operators
- Spesialists on survival suits (SINTEF, manufacturers)
- Training institutions
- Petroleum Safety Authority, Norway
- Foreign authorities (HSE and MCA, DK, SE, BR, USCG)
- DNV Nordic Committee for Safety at Sea
- Members of the BD Commission

Evaluations and assessments

- The commissions report:
  - **Background information**
  - **Recommendations**
- Anchoring of Mobile Offshore Units and tasks performed by AHTS vessels
  - **Methodology and practice for anchoring**
  - **Equipment**
  - **Contributions from the industry**
- Test calculations concerning stability

Criticism to the NMD

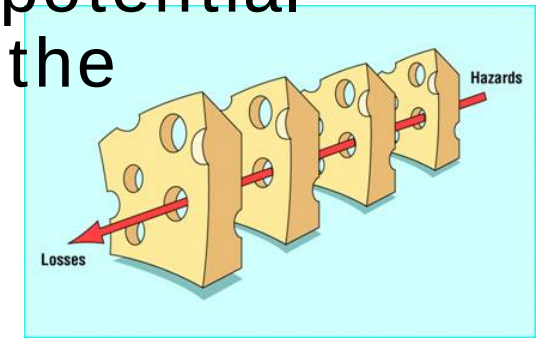
- Unfortunate practice regarding stability approval
  - **Immediate measures**
  - **Increased focus on ship specific information**
- Failure to uncover weaknesses in ISM audits performed by RO
  - **Monitor and observe RO during ISM audits**
  - **NIS/NOR circular (class instruction)**

Safety philosophy

- In joint operations the planning body must include all participating parties
- Ship owner and master are made responsible to perform qualified assessments
- Specific training of crew with regard to planning and execution
- Compliance to planned safety is presumed
- Safety measures must be reflected by the chartrer
- In addition new technical rules is proposed
- Barriers are introduced in several areas

Proposed measures

- To be considered as a whole – both operational and technical measures:
  - **Safety in a holistic perspective**
  - **Presume that the competence implicated in rules, procedures and plans are adhered to.**
- Ship owners/managers responsibility to develop and maintain a safety management system, c.f. ISM code
- Risk assessments must include all potential hazards, including the total risk of the operation



Proposed measures

- Operational limits
  - **Winch power**
  - **Stability**
  - **Bollard pull**
- Improved training of personell (STCW – ISM)
- Planning criteria for both:
  - **AH vessel**
  - **Rig**
- Evaluation of design criteria for AH vessels and winches
  - **Stability**
  - **Emergency release**
- Stability instrument

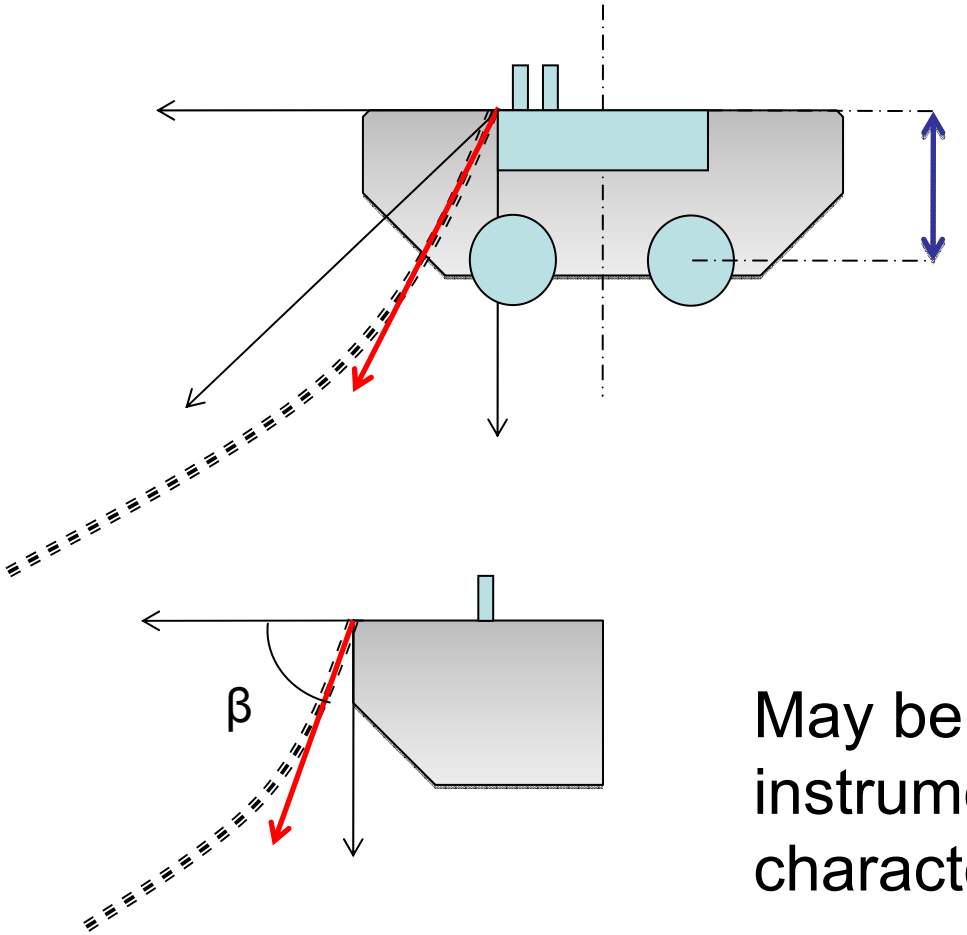
ISM

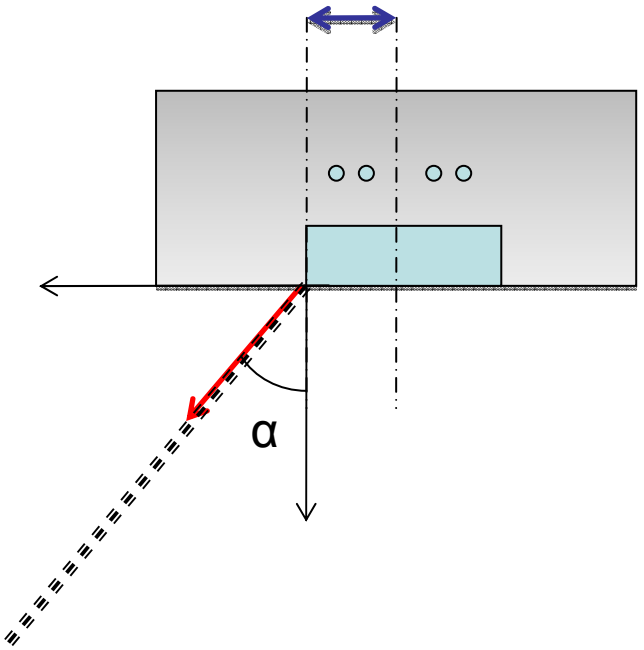
- It is the opinion of the NMD that ISM, as is, requires:
  - **Risk assessments for all operations**
  - **Vessel specific procedures**
  - **Overlap / familiarisation / handover**
  - **Identification of competency needed in addition to STCW requirements**

Vessel specific manual

- Relevant information to be collected in dedicated manual
- Assumed consumption plan for water, fuel oil and ballast
- Procedures for how to find:
  - **The vertical centre of gravity**
  - **Capacity / permissible tension**
- Stability instructions based on the consumption plan illustrating the influence of the use of roll reduction tanks and water ballast on the capacity
- Anchor handling procedure
- Winch information
- Risk assessments

α & β





May be found via navigation instruments and line characteristics/length?

Stability criteria

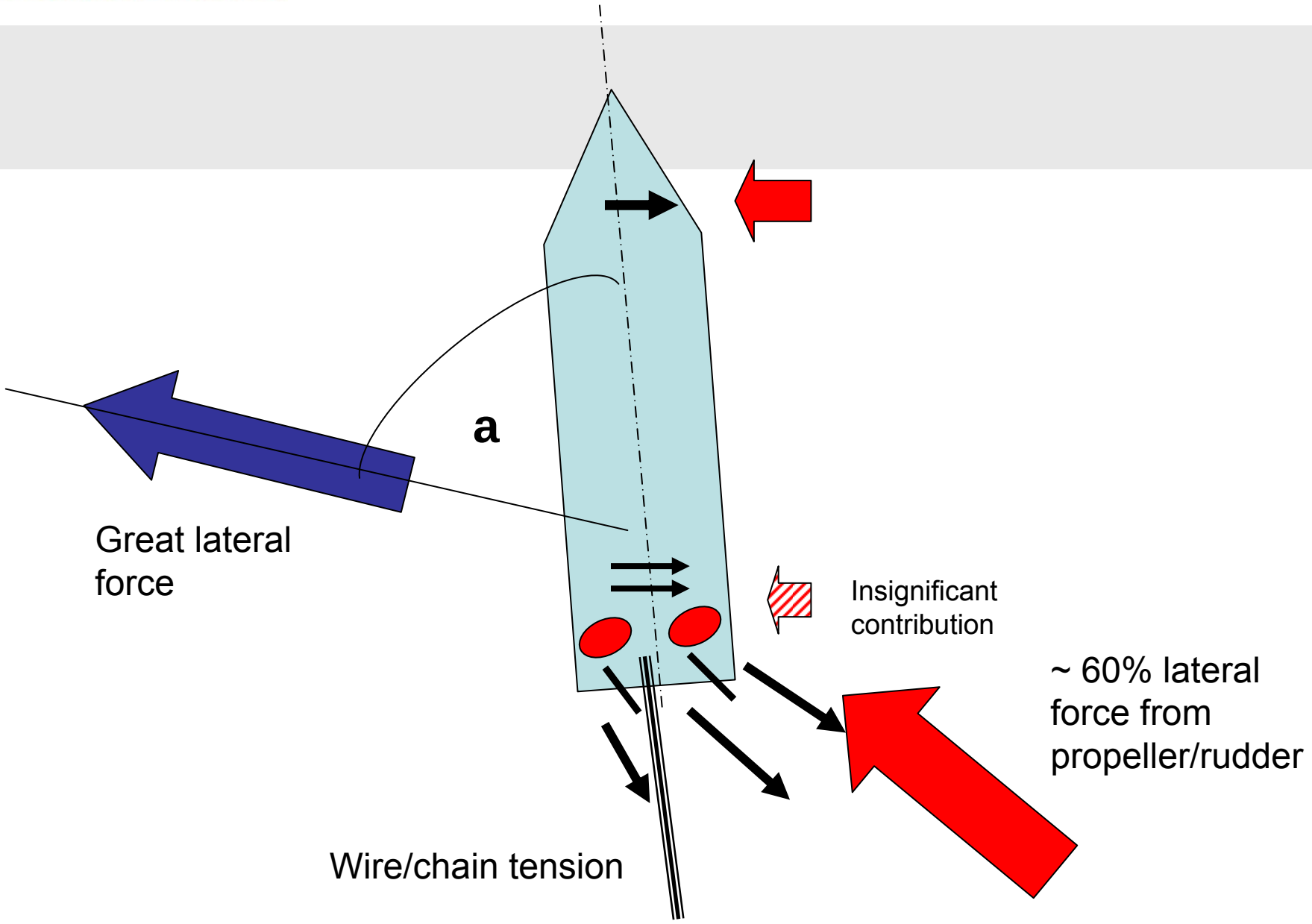
- Four criteria defining a vessels capacity for a given loading condition:
  - **15°, water on deck, 50 % of GZmax**
  - **Area requirement between heeling arm and righting arm**
- Limit curves for maximum permissible heeling moment to be made based on these four criteria

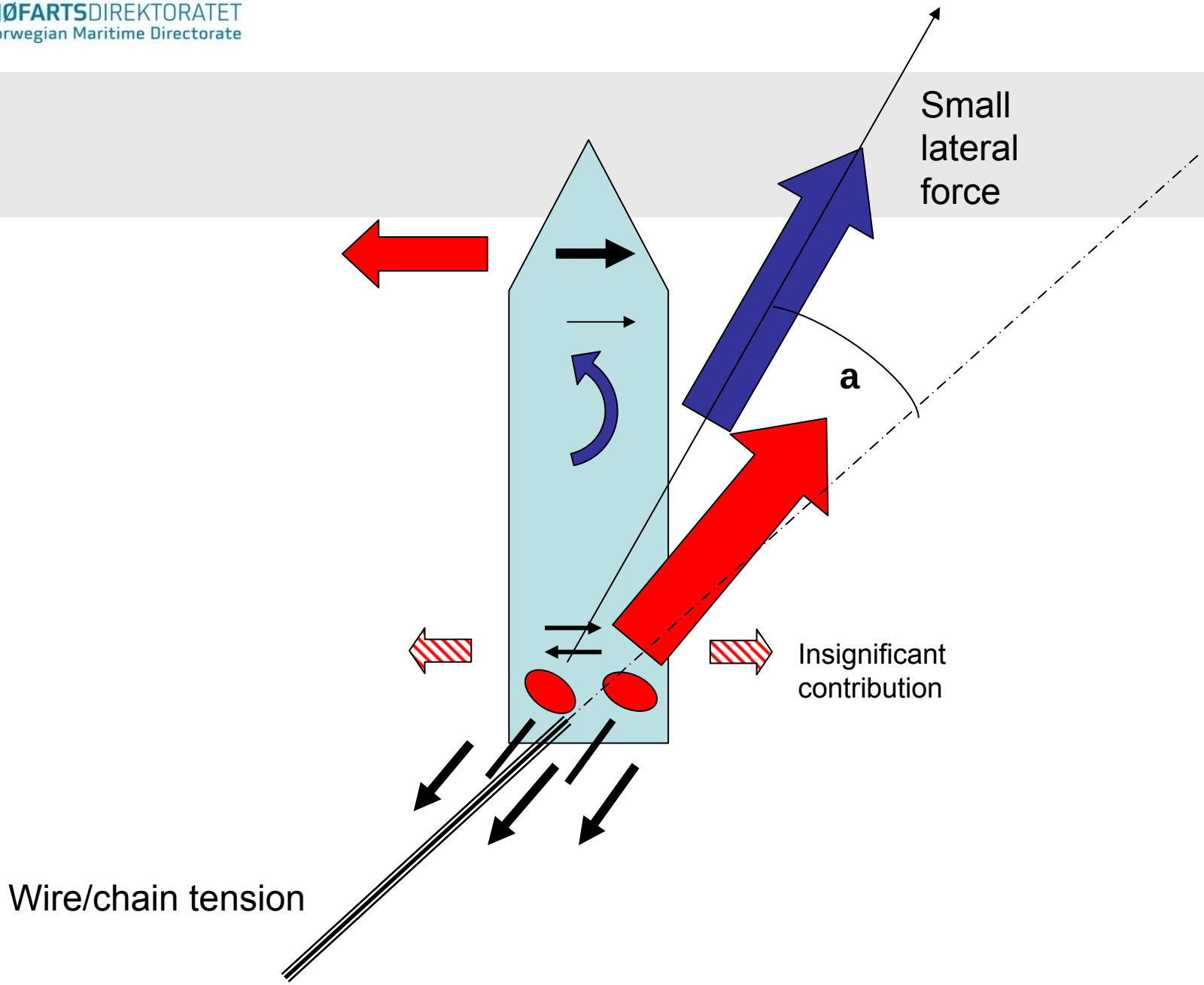
Stability criteria

- New mandatory conditions to be submitted for approval:
  - **10%, 100% and critical intermediate**
  - **Weight on winches 33%, 67% and 100%**
  - **Minimum one roll reduction tank**
- The Master is made responsible to make sure that the figures provided in the RMP includes dynamic additions and is within the vessels given capacity

Training/operation

- Manoeuvring
  - **Main propellers and rudders**
  - **Side thrusters**
  - **Bodyways movement**
- Stability
  - **GZmax at 15° – rank vessel**
  - **Use of roll reduction tanks**
- Mandatory additional training for officers on vessels dealing with external forces


a
Great lateral force
Insignificant contribution
~ 60% lateral force from propeller/rudder
Wire/chain tension


Small
lateral
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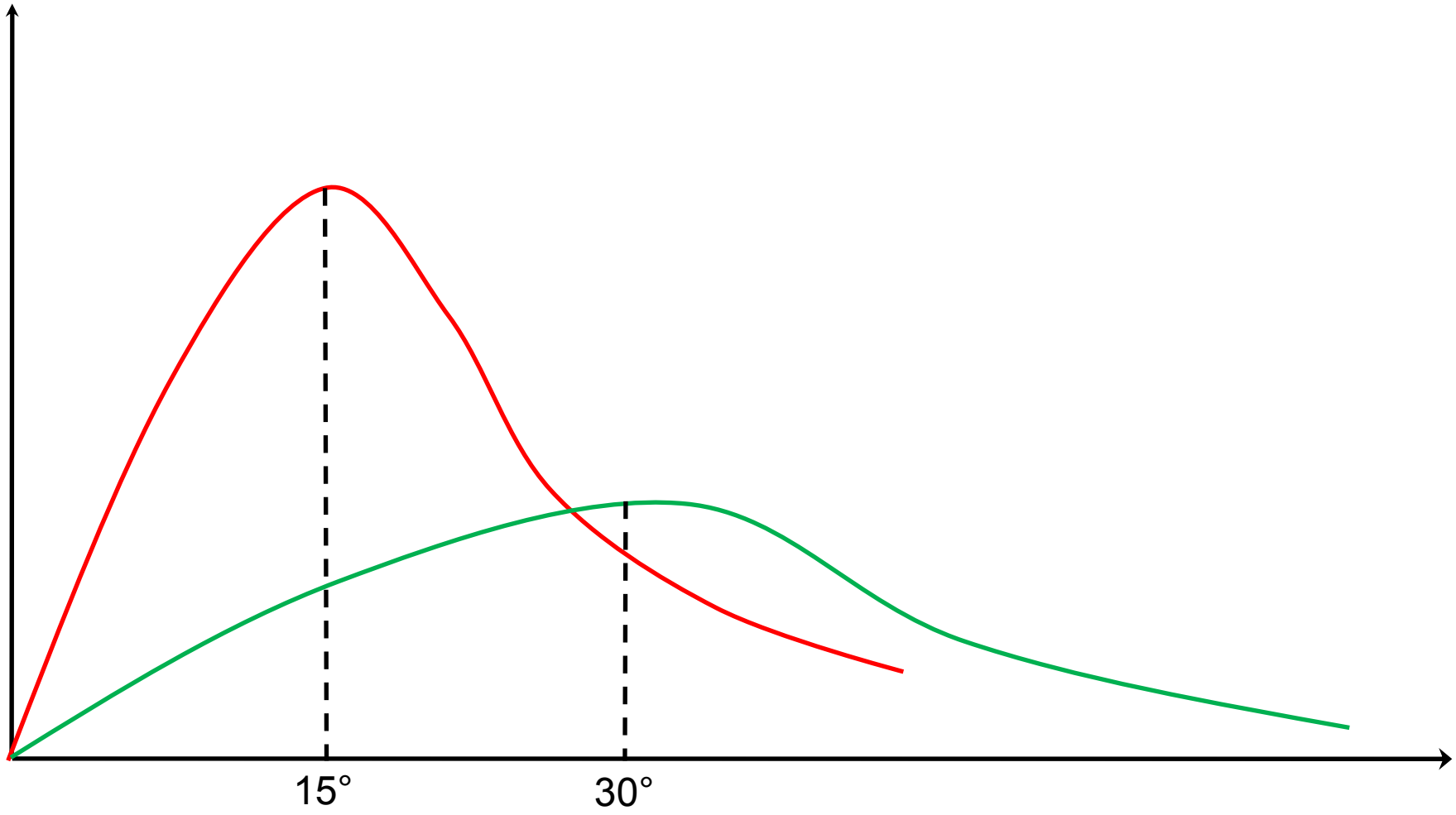
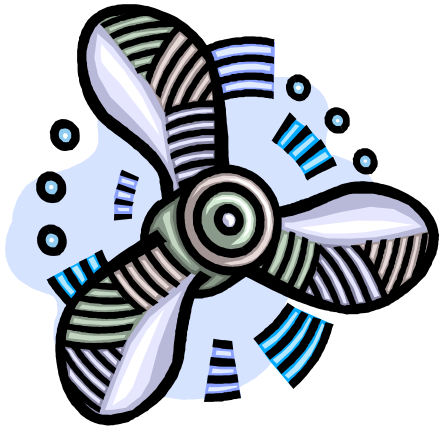
Stability characteristics



Bollard pull certificate

- Bollard pull certificate as a regulatory requirement:
  - **Gross continous bollard pull**
  - **Bollard pull reduced for all relevant power consumers (net continous bollard pull)**



Winch and winch operator

- Prototype testing to SWL
- Onboard tests to bollard pull
- Periodical function tests
- Emergency function:
  - **Regain righting arm within 3 sec**

- Certificate requirements for winch operators

Liferafts

- Amendments to increase the probability of liferafts emerging in the event of capsizing:
  - **Include capsizing in SOLAS**
  - **Improve liferaft cradles and integration of cradles on the vessel**

Emergency transponder

- Amendments to increase the probability of emergency transponders emerging in the event of capsizing:
  - **Additional free float EPIRB - one on each side**
  - **Include capsizing in SOLAS**

Survival suits

- Project to evaluate functional requirements in light of:
  - **Capsizing**
  - **Donning time**
  - **Walking on sloping and slippery surfaces**

- Survival suits should be kept readily available close to mustering stations

Voyage Data Recorder

- Mandatory VDR for certain types of vessels (GT > 299):
  - **S-VDR**
  - **Additional data storage unit integrated in the free float EPIRB**

Stability Instrument

- Mandatory stability instrument for certain types of vessels (GT > 499):
  - **Adapted to the new stability criteria**
  - **A tool for assessing the vessel's capacity based on a given loading condition**
  - **Mandatory training through STCW**

Pre IMO initiative actions

- July 2009
  - **National hearing based on our report**
- October 2009
  - **Deadline for hearing comments**
- October – December 2009
  - **Dedicated meetings to discuss hearing comments and finalize IMO initiatives**

IMO Strategy

- Propose new agenda items at MSC 87 (May 2010) for the following sub-committees:
  - **SLF**
    - Dedicated stability requirements and stability manuals for AH vessels
  - **DE**
    - Winch design requirements
  - **COMSAR**
    - EPIRB requirements
  - **NAV**
    - Manoeuvring
  - **STW**
    - Dedicated AH vessel training and certification