

NASP
Origin and Cause-Appraisals on
Boat Losses

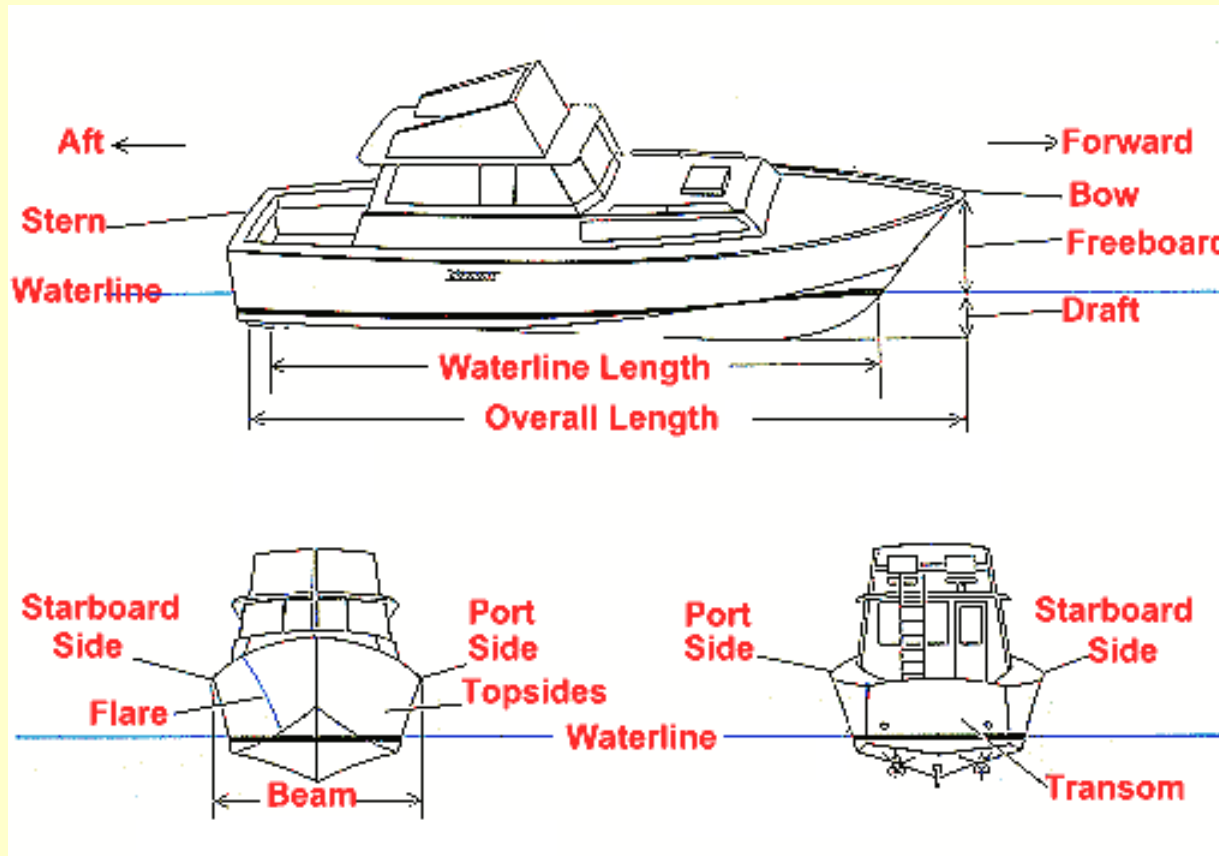
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Boat Terminology 101



How boats get broken

- Statistical analysis of our relational database*
 - Operator Error
 - Mfg defect/quality control
 - Wear & Tear- lack of maintenance
 - Blister problems
 - Multi-problems

**MACM 1996, In-Service Failures from a Marine Surveyors Perspective, an update; Gregory T. Davis*

Statistical Analysis

Operator Error

- Collisions 17%
- SSO 61%
- Maintenance 14%
- Grounding 5%

- Mfg/QC Problems 3%



Statistical Analysis

- Wear & Tear
 - 1%
- Blister Problems
 - < 1%
- Multi Problems
 - Fire 15%
 - Sinking 18%
 - Weather 46%
 - Theft 17%
 - Trailering 4%

Statistical Analysis

- Weather broken down
 - Windstorm 56%
 - Seiche < 1%
 - Tornado 1%
 - Rain 2%
 - Flood 7%
 - Freezing 20%
 - Lightning 14%



Federal regulations

- **Boating Safety Act of 1972**
 - 33CFR 173 “Subchapter S”
Boating Safety
 - 173- Vessel Numbering
 - 175 Equipment Requirements
 - 179 Defect notification
 - 181 Manufacturer Requirements
 - 183 Boats and Associated equipment

- **Navigation**
 - 33CFR “Subchapter C”
 - Aids to Navigation
 - “Subchapter D”
 - International Navigation rules
 - “Subchapter E”
 - Inland Navigation rules
 - “Subchapter F”
 - Operating a vessel while intoxicated



Federal Regulations

- 33 CFR 181
Manufacturer requirements
 - Certification of **Compliance**
 - Identification of Boats
 - PFD labels
- Compliance
 - Certifies boat meets requirements of part 183
 - Must be labeled
 - Hull identification format, location, permanency, hidden HIN

Federal Requirements

- 33 CFR 183 Boats and Associated Equipment
 - Capacity information
 - Safe loading
 - Safe powering
 - Flotation
 - Electrical systems
 - Fuel systems
 - Ventilation
 - Start in gear protection
 - Capacity rating in persons and gear for boats less than 20'
 - Powering rating for boats less than 20'
 - Flotation for boats less than 20'
 - Electrical covers: Ignition protection; batteries, wiring, over current protection

Federal Requirements

- Fuel systems
- Tank materials
- Labels
- Tanks openings
- Tank vent systems
- Fuel pumps
- Carburetors
- Stop valves
- Filters
- Fuel line materials
- Tank installation
- Accessibility
- Plugs and fittings
- Hoses and connections A1, B1 A2, B2
- Hose clamps
- Fuel tank fill system
- Anti-Siphon protection
- Fuel filter and strainer installation
- Grounding
- Tank testing and certification

Federal Requirements

- Ventilation
- Gasoline engines only
- Powered system
- Natural system- engine and fuel compartments
- Start in gear
- Outboard motors



Federal Requirements

- Administered by



- www.uscgboating.org
- Recreational Products Assurance Branch
- Peter Eikenberry Sr.
- 202-267-6894

ABYC Standards and Recommended Practices

- www.abycinc.org
- Compliance guidelines for builders in meeting Federal Requirements
- Technical standards for the industry
- Education of the industry
- FLOTATION COMPLIANCE GUIDELINE
- VENTILATION
- ELECTRICAL SYSTEM
- FUEL SYSTEM
- SAFE LOADING AND POWERING

ABYC Standards

ABYC®

NMMA “Certified”

- National Marine Manufacturers Association
 - www.nmma.org
 - Engineering Compliance – Tom Marhevko
 - Federal Requirements using the “Compliance” guidelines published by ABYC
 - ABYC industry standards – not all (Change is coming)
 - Internal standards
 - Random plant/boat inspections
 - NMMA ‘certified’ label

NFPA

- National Fire Protection Association
www.nfpa.org
 - NFPA 302 – Pleasure and Commercial Motor Craft
 - NFPA 303 – Fire Protection Standard for Marinas and Boatyards
 - NFPA 30A – Automotive and Marine Service Station Code

‘Other’ organizations

- SAE- Society of Automotive Engineers
 - Engines and engine mounted accessories
- ABBRA- American Boat builders and Repairers Association
 - Travel lift operators classes
 - Operations manual
- MOA- Marina Operators Association (part of NMMA)

Considerations

- Federal law mandates
 - USCG factory visit program
 - Larger builders generally in compliance
 - Smaller builders ?
- NMMA certification
 - Most larger builders are members of the certification program

Considerations

- ABYC
 - Many builders are members in order to get the standards book
 - Most larger builders have some type of program to comply with the standards
 - This is the industry standard
- NFPA
 - Most builders do not know of NFPA 302.
 - 302 is a mirror of some of ABYC
 - Marina's do not know of NFPA 303
 - NFPA 303 is the law in Maryland

Loss examples



NASP Origin and Cause-Boats

- Thank You



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