

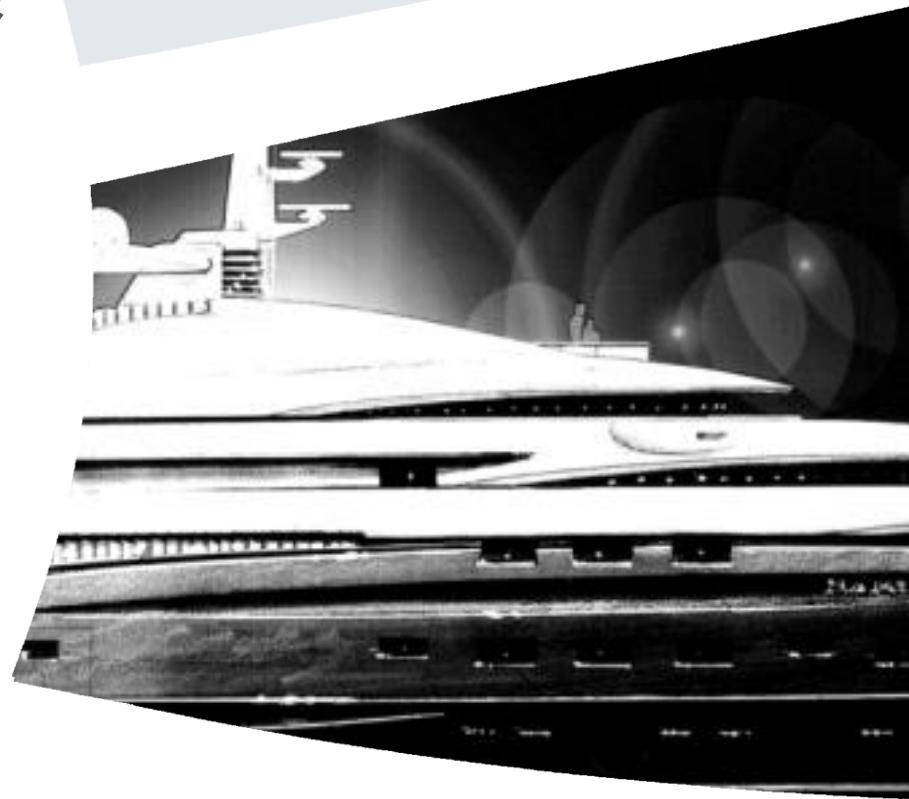
# The PYC

## Overview of Key Parameters & Design Decisions

**Presented by Alex Meredith Hardy**

Naval Architect  
BMT Nigel Gee

12<sup>th</sup> January 2012



# Contents

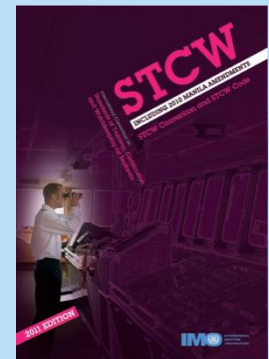
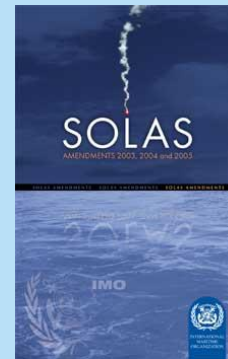
- What is the PYC?
- Why was the PYC needed?
- Background on PYC
- PYC Table - Categories of Yacht
- PYC Table - Influence on Design Decisions
- Final Thoughts

# What is the Passenger Yacht Code?

- Is a Code for yachts that applies equivalent standards to existing international conventions
- Sets out technical, safety and operational standards appropriate to the size and operation of the yachts using the code.
- Applicable for 13-36 passengers
- Yachts of any size (no GRT limit)
- Yachts engaged and not engaged in trade
- International Voyages
- Could be considered as a 'natural progression' from LY2, although 'philosophically' it is very different.

# Why was the PYC Needed?

- Prior to PYC yachts subject fully to the IMO regulatory framework for passenger ships.
- International Conventions for passenger ships have been designed for “merchant” ships not superyachts
- Yachts have a very different operating pattern and risk profile when compared to typical commercial passenger ships
- International Conventions in some instances considered unreasonable or disproportionately onerous for a yacht



• **Increased cost**

**Restricted design**

**Lifeboats**

# Background on PYC

- Developed by the Red Ensign Group – Flag State
- Currently does not cater for sailing yachts or composite yachts
- The code covers: Loadline, Construction Subdivision & Stability, Fire, LSA Radio & Nav, Accommodation Requirements, H&S, Tenders, Helicopters and Boarding Arrangements, Manning and Medical.
- Stepped Approach – Safety requirements reduce as the range of operation reduces.
- The PYC framework is based on SOLAS, LL and STCW. However cannot ‘pick and mix’ between these and PYC. PYC to be applied in full where required.

# PYC Categories & Table

CATEGORY OF PASSENGER YACHT	OPERATIONAL AREA	DAMAGED STABILITY STANDARDS APPLICABLE		ENHANCED SURVIVABILITY	LSA SCALE			MAXIMUM PERSONS	FIRE PROTECTION
		≤80 M	>80 M		≤80 M	>80 M	≤80 M AND >500 GT		
Pleasure Vessel not Engaged in Trade	Unlimited	D		---	300% DLLR & MES			99	In addition to the normally applicable requirements, fully addressable fire detection and fire suppression systems are to be provided.
			P	---		300% DLLR & MES		99	
Passenger Yacht Unrestricted (Engaged in Trade)	Unlimited	D		2 Compartment Enhanced.			300% DLLR & MES	99	In addition to the normally applicable requirements, fully addressable fire detection and fire suppression systems are to be provided.
			P	2 Compartment Enhanced.		300% DLLR & MES		50	
PY1	Prescribed International Voyage	D		2 Compartment Enhanced.	300% DLLR & MES			99	In addition to the normally applicable requirements, fully addressable fire detection and fire suppression systems are to be provided.
			P	2 Compartment Enhanced.	300% DLLR & MES			99	
PY2	PY 2 Area is within 60 n.m. of a safe haven and not more than 20 n.m. from land in weather conditions not exceeding wind force 6 and sea state 5 on Beaufort scale.	D		---	300% DLLR & MES			99	In addition to the normally applicable requirements, fully addressable fire detection and fire suppression systems are to be provided.
			P	---	300% DLLR & MES			99	

# PYC Categories / Range

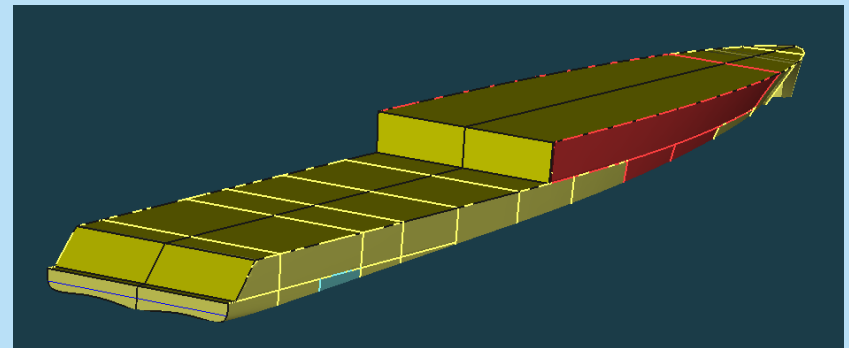
CATEGORY OF PASSENGER YACHT	OPERATIONAL AREA
Pleasure Vessel not Engaged in Trade	Unlimited
Passenger Yacht Unrestricted (Engaged in Trade)	Unlimited
PY1	Prescribed International Voyage
PY2	PY 2 Area is within 60 n.m. of a safe haven and not more than 20 n.m. from land in weather conditions not exceeding wind force 6 and sea state 5 on Beaufort scale.

- 4 x PYC Categories of Yacht
- ‘Engaged in Trade’ – Charter or Hire Agreement
- Unlimited Range – Does not include Polar Regions
- Prescribed International Voyage
  - Within 200nm from port or place of safety
  - Voyage max 1000nm from initial point of departure
- PY2 Operational Area
  - Within 60nm of a safe haven
  - Not more than 20nm from land
  - Wind limit Force 6 / Sea State Limit 5

# PYC Categories / Stability

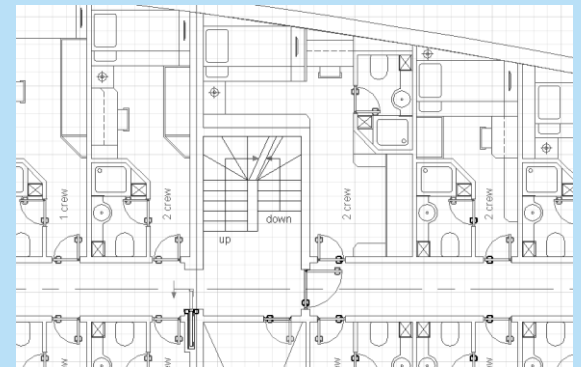
CATEGORY OF PASSENGER YACHT	OPERATIONAL AREA	DAMAGED STABILITY STANDARDS APPLICABLE		ENHANCED SURVIVABILITY
		≤80 M	>80 M	
Pleasure Vessel not Engaged in Trade	Unlimited	D		---
			P	---
Passenger Yacht Unrestricted (Engaged in Trade)	Unlimited	D		2 Compartment Enhanced.
			P	2 Compartment Enhanced.
PY1	Prescribed International Voyage	D		2 Compartment Enhanced.
			P	2 Compartment Enhanced.
PY2	PY 2 Area is within 60 n.m. of a safe haven and not more than 20 n.m. from land in weather conditions not exceeding wind force 6 and sea state 5 on Beaufort scale.	D		---
			P	---

- Deterministic / Probabilistic
- Yachts <80m can use probabilistic
- Yachts >80m must use probabilistic
- 2 Compartment Enhanced – Is an additional deterministic stability provision for PYU and PY1 yachts (Longer Range Commercial Yachts).



# Stability - Influence on Design

- Probabilistic vs Deterministic
- Probabilistic is a more design intensive – Compliance Issue
- Probabilistic can offer more flexibility on compartment arrangement. e.g. a large tender bay or engine room possible
- Enhanced Survivability – Increased levels of transverse subdivision
  - Reduced Design Flexibility
  - More stairwells impact on GA and Guest Areas
  - More structure / Bulkhead Penetrations / WT Doors / Construction Cost



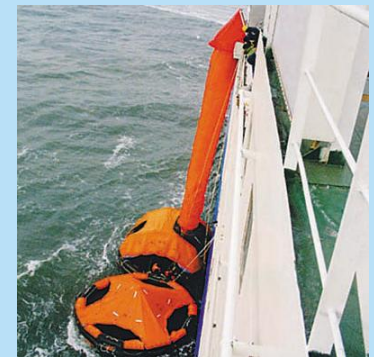
# PYC Categories / LSA / Complement

CATEGORY OF PASSENGER YACHT	OPERATIONAL AREA	DAMAGED STABILITY STANDARDS APPLICABLE		ENHANCED SURVIVABILITY	LSA SCALE			MAXIMUM PERSONS
		≤80 M	>80 M		≤80 M	>80 M	≤80 M AND >500 GT	
Pleasure Vessel not Engaged in Trade	Unlimited	D		---	300% DLLR & MES			99
			P	---		300% DLLR & MES		99
Passenger Yacht Unrestricted (Engaged in Trade)	Unlimited	D		2 Compartment Enhanced.			300% DLLR & MES	99
			P	2 Compartment Enhanced.		300% DLLR & MES		50
PY1	Prescribed International Voyage	D		2 Compartment Enhanced.	300% DLLR & MES			99
			P	2 Compartment Enhanced.	300% DLLR & MES			99
PY2	PY 2 Area is within 60 n.m. of a safe haven and not more than 20 n.m. from land in weather conditions not exceeding wind force 6 and sea state 5 on Beaufort scale.	D		---	300% DLLR & MES			99
			P	---	300% DLLR & MES			99

- 150% DLLR / MES each side
- Minimum of 100% DLLR required each side. MES alone not permitted
- Loss of any 1 survival craft, still 100% either side
- PYU 80m+ is limited to 50 persons.

# LSA/Complement - Influence on Design

- Commercial Unrestricted PY over 80m – Normal crew on this size can be over 50+. This is unlikely to be a suitable solution. Alternative is:
  - Get Lifeboats.....or
  - Reduce your range (PY1 or PY2)
- Result → Commercial Unrestricted PYs will be less than 80m LL
- DLLRs, MES, Rescue Boats & Escape Routes



# PYC Categories / Fire Protection

CATEGORY OF PASSENGER YACHT	FIRE PROTECTION
Pleasure Vessel not Engaged in Trade	In addition to the normally applicable requirements, fully addressable fire detection and fire suppression systems are to be provided.
Passenger Yacht Unrestricted (Engaged in Trade)	In addition to the normally applicable requirements, fully addressable fire detection and fire suppression systems are to be provided.
PY1	In addition to the normally applicable requirements, fully addressable fire detection and fire suppression systems are to be provided.
PY2	In addition to the normally applicable requirements, fully addressable fire detection and fire suppression systems are to be provided.

- No 'steps' in standard between categories
- For all categories, as there are no lifeboats on board, an increased level of fire protection is applied.
- Limitations on types of build & outfit materials
- Reinforces SOLAS philosophy of the ship 'being its own best survival craft'.



# Category - Influence on Design

- Unlimited Range – Could influence length consideration
  - Less 80m – Limited to 99 persons
  - More 80m – Either: Limited to 50 persons    Private yacht    Lifeboats
- Mass Production – Series of Yachts – Design for Worst Case?
- Charter Operating Profile – Restricted Range - Reduced Revenue?
- Re-Sale Value
- PYU, PY1 or PY2 (Engaged in Trade) - Can always revert back to a Private Yacht

# Final Thoughts

- Any yacht with more than 12 passengers is a passenger ship and subject to passenger ship requirements.
- Still Early Stages - How will yacht design & build respond?
- How important is it to have 36 passengers. How will the popularity of the code compare to LY2?
- How important is it to avoid the use of lifeboats? Balance of Pros and Cons requires significant consideration.

# Thank You

**Alex Meredith Hardy**

Naval Architect

BMT Nigel Gee

12<sup>th</sup> January 2012

