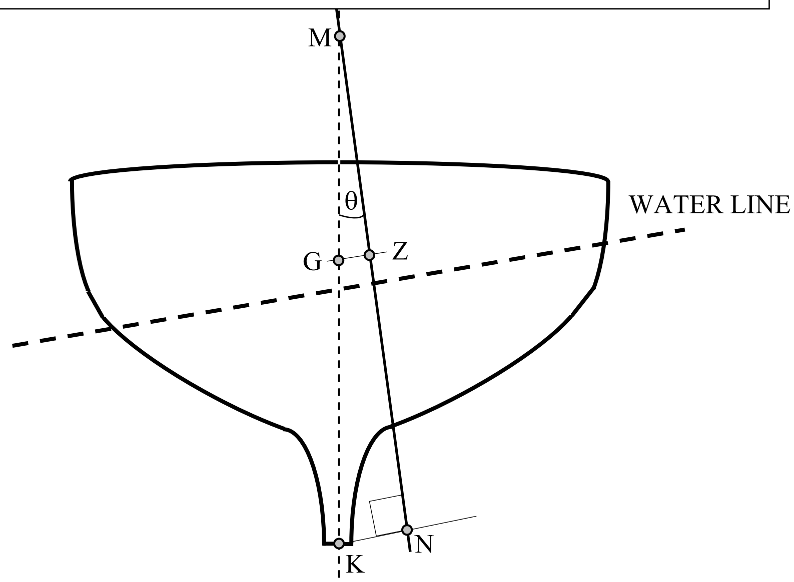
STABILITY INFORMATION BOOKLET

"……………………………"

[This may be replaced by a suitable drawing/photograph of the yacht if preferred]



[This space to be kept clear for MCA approval stamp]

Date…………………

CONTENTS

General Particulars

Name

Official Number

Port of Registry

Owner’s name and address

Classification Society

Builder

Yard Number

Date of keel laying

Principal Dimensions

Length overall (LOA)	m
Length between perpendiculars (LBP)	m
Max Beam	m
Depth	m
Assigned Freeboard	m
Max Summer loaded draught	m
Max Displacement at Summer Load Draught	T
Gross Tonnage	

Area of operation *[insert actual text for Short Range yachts, actual imposed limitation (LY1 yachts) otherwise, if appropriate, state Unlimited]*

Standard of survivability *[state either “intact stability” or “intact & damage stability” as appropriate]*

Number of Crew

Number of passengers

Notes to the Master

1. General Instructions

The loading *[condition/s]* shown in this booklet represent *[a]* typical service *[condition/s]*. Where a loading condition departs from those shown in this book a separate calculation should be made to ensure compliance with the stability criteria.

2. General Stability Requirements

It is important to ensure that in any sailing condition the stability of the yacht complies with the criteria of section 11 of the *[The Safety of Large Commercial Sailing & Motor Vessels – A Code of Practice (LY1)/ The Large Commercial Large Yacht Code (LY2)]*.

[This yacht meets the Code requirement for a sailing mono hull as follows:

a. range of RR degrees
b. steady angle of steady heel HH degrees]

[This yacht is capable of sailing under power provided by the main engines and has to comply with stability requirements for both motor yachts and sailing yachts.

[Limiting KG curves for this yacht are provided at page [XX]. These curves include the provisions of [intact/intact and damage] stability criteria for motor yachts contained in the Code.]

[If the vertical centre of gravity of any sailing condition, after correction for free surface effects, lies below the limiting KG curve on page [XX] compliance with the requirements of the Code for [intact/intact and damage] stability is ensured. It must be appreciated however, that compliance can never guarantee survivability in the event of damage and good seamanship must prevail under such circumstances.]

[This vessel has not been assessed for damage stability, and therefore might not remain afloat in the event of damage or flooding.]

[This yacht has been provided with X tonnes of fixed ballast for stability purposes. The position of this ballast is shown on the drawing at page Y. This ballast is not to be moved or removed without prior consultation regarding the consequences on stability. Should the ballast be required to be removed for survey/repair or any other reason it must be returned to its original position and made secure against movement.]

[Where yachts are fitted with keels that may be retracted information is to be provided on the use and effects on stability, with reference to the appropriate loading conditions included in the book]

3. Precautions against capsize

Compliance with the stability criteria does not ensure immunity against capsize or absolve the Master from his responsibilities. Masters should therefore exercise prudence and good seamanship having regard to the season of year, experience of the crew, weather forecast and the navigational zone, and should take appropriate action as to the speed, course and sail setting warranted by the prevailing conditions.

Before a voyage commences care should be taken to ensure large items of equipment and stores are properly stowed to minimise the possibility of both longitudinal and transverse shifting under the effect of acceleration caused by pitching and rolling, or in the event of a knockdown to 90 degrees.

All external hull doors and flush hatches *[to be listed]* are to be closed and secured.

The number of slack tanks should be kept to a minimum. Where port and starboard tanks are cross coupled, such connection should be closed at sea to minimise the reduction in stability.

In adverse weather conditions and where there is the possibility of encountering a severe gust, squall or large breaking wave, all exposed doors, hatches, skylights, vents, etc. should be closed and securely fastened to prevent the ingress of water. Storm boards and shutters etc. should be fitted.

The amount of sail carried is at the discretion of the Master and his decision will have to take into account many factors.

4. Angles of down flooding

The angle of down flooding is the angle of heel at which progressive down flooding of the yacht will occur due to the immersion of an opening. For this yacht the following openings have been identified:

Description	Area of Opening (m^2)	ANGLES OF IMMERSION (degrees)	
		100% Consumable	10% Consumable
Saloon *[X]*	*[A]*	$[\theta_1]$	$[\theta_4]$
Crew *[Y]*	*[B]*	$[\theta_2]$	$[\theta_5]$
Gallery *[Z]*	*[C]*	$[\theta_3]$	$[\theta_6]$

Critical Flooding is deemed to occur when the lower edge of openings have an aggregate area in m^2, greater than;

$$\frac{Vessel\ Displacement(Tonnes)}{1500}$$

The master should note that the presence of vents and skylights significantly reduce the ability of the yacht to withstand down flooding and with such openings securely closed the safety of the yacht is enhanced considerably.

In assessing the risks of down-flooding, the Master should be guided by figures 1 and 2:

Figure 1: shows the maximum recommended steady heel angle to prevent down flooding in gusts. Operation of the yacht at a greater heel angle would result in down flooding if it were to encounter the strongest possible gust in the prevailing turbulent air stream, which could exert a heeling moment equal to twice that of the mean wind.

Figure 2: shows the maximum recommended steady heel angle to prevent down flooding in squalls. Operation of the yacht at a greater heel angle would result in down flooding if it were to encounter the heeling effects of a squall arising from a storm or frontal system which may result in a heeling moment many times greater than that of the mean wind. For this reason the Master should have regard to the maximum steady heel angle curves presented for a range of squall speeds.
By using the readings from the inclinometer and anemometer the master should be able to determine the degree of risk of capsize in gusts or squalls which may occur in the prevailing weather system. He may then decide to shorten sail together with other actions he considers necessary.

Additional care should be taken when sailing with the wind from astern, as in the event of the vessel broaching or a gust striking the yacht on the beam, the heeling effects of the wind may be increased to a dangerous level when the preceding heel angle was small.

Maximum Steady Heel Angle to Prevent Down Flooding in Gusts.

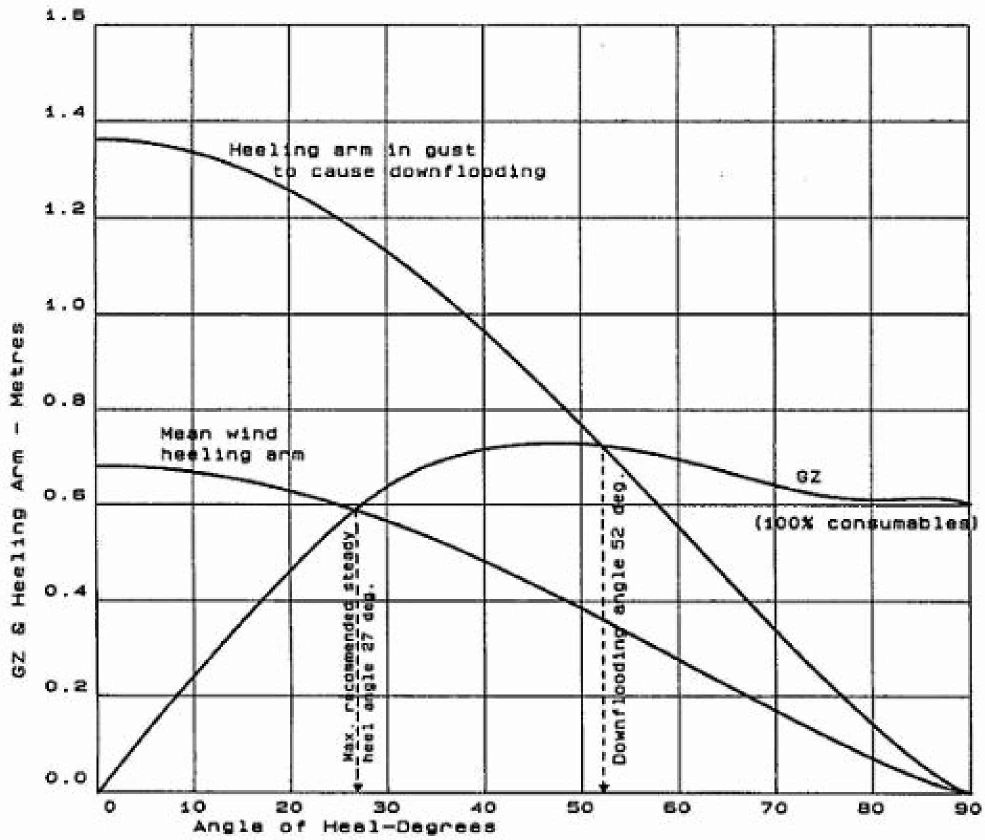


Figure 1

[Figure 1 is to be replaced by a curve specific to the yacht in question]

GUSTING CONDITIONS

When sailing in a steady wind the yacht heels to the angle at which the heeling arm curve intersects the GZ curve. When struck by a gust the heel angle will increase to the intersection of the gust heeling arm curve with the GZ curve. The heeling moment increases in proportion to the square of the apparent wind speed.

The derived angle of steady heel for this yacht is *[YY]* degrees. Provided the yacht is sailed at a steady angle of heel less than this value it should be capable of withstanding a wind gust equal to 1.4 times the actual wind velocity (i.e. twice the actual wind pressure) without immersing critical down flooding openings. The critical down flooding openings for this yacht are as shown in table *[MM]* on page *[XX]*. This heel angle is shown on the curves of maximum Steady Heel Angle to prevent down flooding in Squalls at page *[YY]*.

Curves of maximum Steady Heel Angle to Prevent down flooding in Squalls

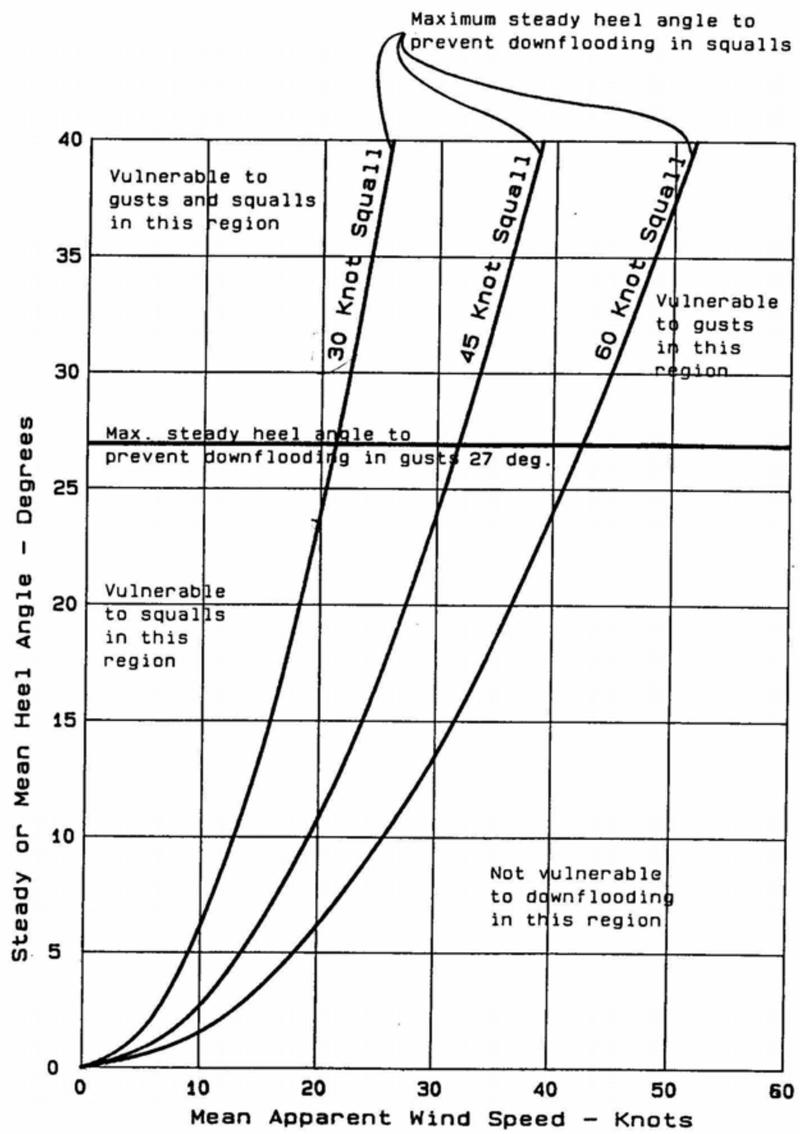


Figure 2

[Figure 2 is to be replaced by a curve specific to the yacht in question]

SQUALL CONDITIONS

Curves of the maximum steady heel angle indicate the range of mean or steady heel angles beyond which the yacht will suffer down flooding in the event of a squall.

Operation of the yacht in cyclonic conditions particularly in the hours of darkness, where severe squalls are imminent requires the recommended maximum steady heel angle to be reduced depending on the mean apparent wind speed in accordance with the curves presented above.

Examples Showing the Use of the Maximum Steady Heel Angle Curves

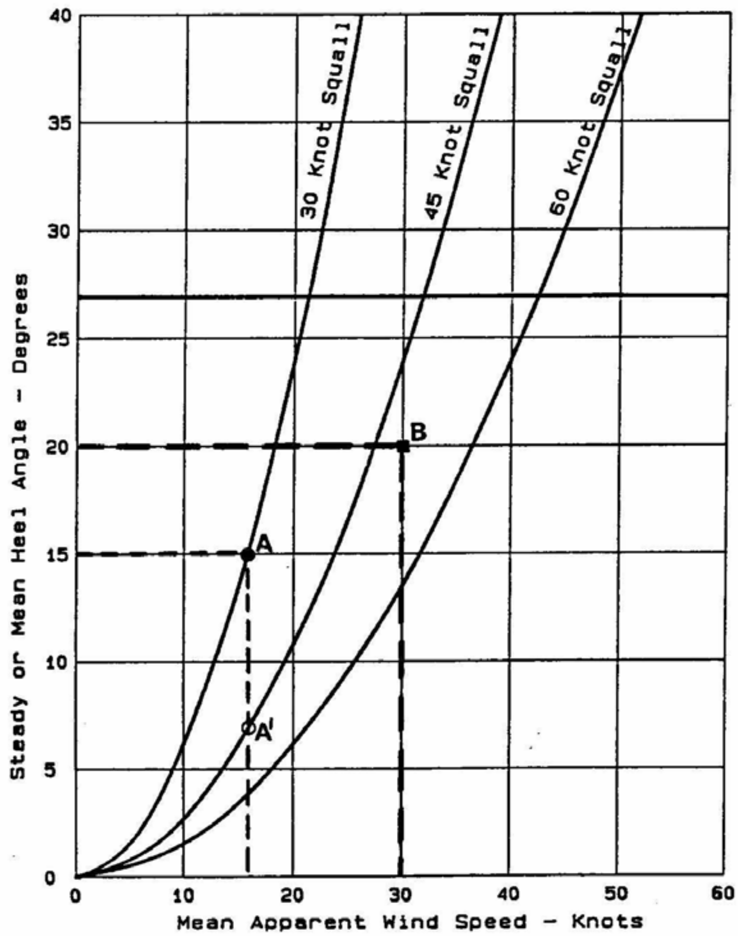
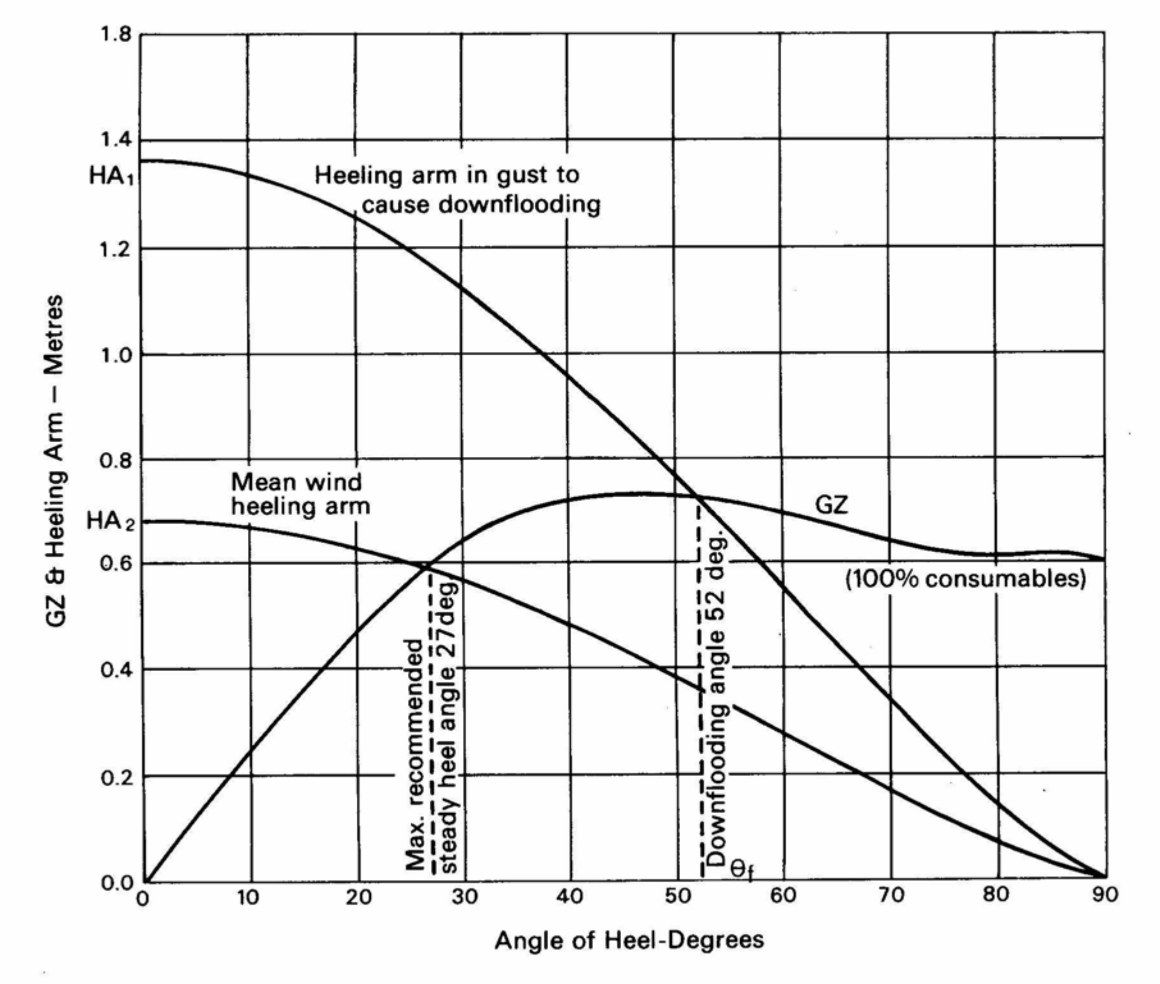


Figure 3

Example A the yacht is reaching, with a steady apparent wind speed of 16 Knots. The mean heel angle is 15 degrees. Forecasts and visible cumulo-nimbus clouds suggest squalls may be imminent. By plotting the heel angle and wind speed (point A in figure 3) the indication is that the yacht will be in danger of heeling to the down flooding angle in squalls of 30 knots. In order to increase safety from down flooding, say, to withstand squalls of up to 45 knots, sails should be handed or reefed to reduce the mean heel angle to 7 degrees (point A^{I} in Figure 3) or less.

Example B The yacht is beating in gusty conditions with a mean apparent wind speed of 30 knots. The mean heel angle is 20 degrees. No squalls are expected. The heel angle is significantly less than 27 degrees, the maximum recommended steady heel angle, and there is therefore a good safety margin against down flooding in a strong gust. Plotting these values of wind speed and heel angle (point B in Figure 3) also indicates that the yacht would not be vulnerable to down flooding in a squall unless it resulted in a wind speed in excess of about 50 knots. There is thus no need to reduce sail area on the grounds of stability.

[NOTES FOR CONSULTANTS ON THE DERIVATION OF THE MAXIMUM STEADY HEEL ANGLE TO PREVENT DOWN FLOODING IN GUSTS



$$HA_1 = \frac{GZ_f}{\cos^{1.3}\theta_f}$$

where HA_1 *is the magnitude of the actual wind heeling lever at 0 degrees which would cause the yacht to heel to the down flooding angle* (θ_f) *or 60 degrees whichever is least*

GZ_f *is the lever of the yacht's GZ curve at the down flooding angle* θ_f *or 60 degrees whichever is least*

HA_2 *is the mean wind heeling arm at any angle* θ *degrees*

$$= 0.5 \times HA_1 \times \cos^{1.3}\theta]$$

[NOTES FOR CONSULTANTS ON THE DERIVATION OF CURVES OF MAXIMUM STEADY HEEL ANGLE TO PREVENT DOWN FLOODING IN SQUALLS

Curves of Maximum Steady Heel Angle in Squalls

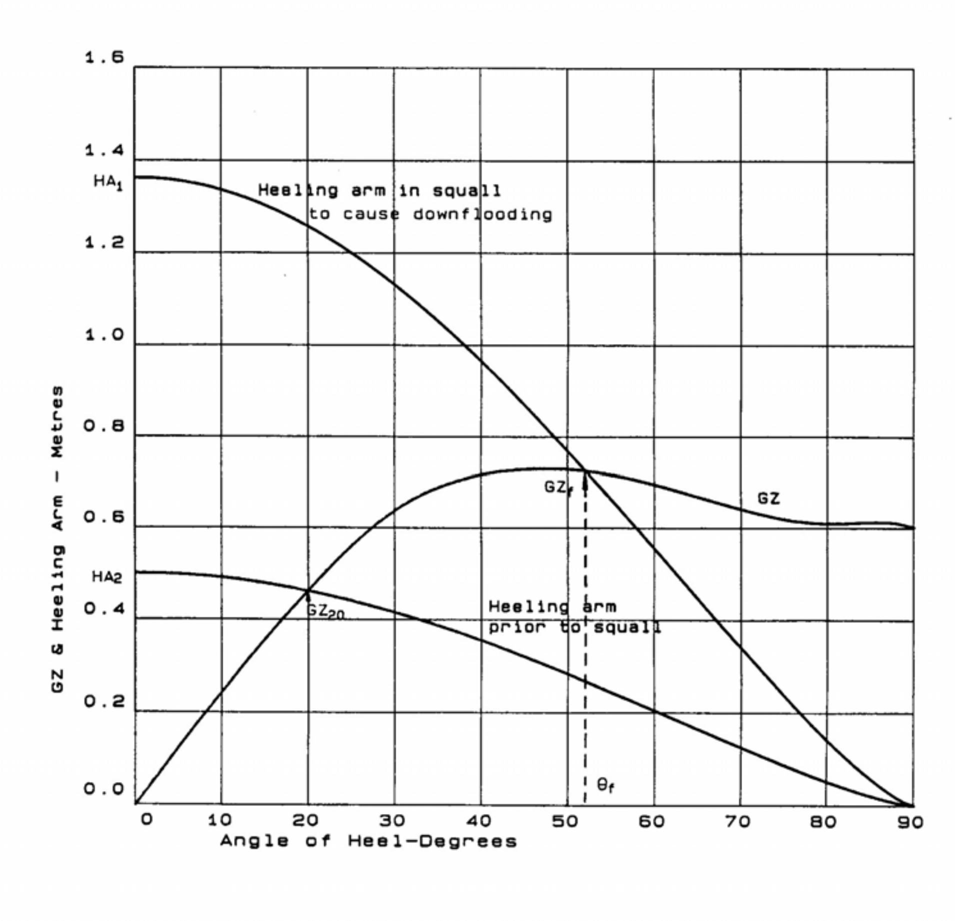
The wind heeling moment is proportional to wind pressure, and the apparent wind speed squared. It is also dependant upon the area, height, shape and camber of the sails, the apparent wind direction and the prevailing gradient; however these are difficult to calculate and are not included in the consideration in the provision of Curves of Maximum Steady Heel Angle due to Squalls included in the stability information book. These curves consider only the GZ curve and the angle of down flooding, the effect of differing wind speeds being considered by proportion.

As a sailing yacht heels the wind heeling moment decreases and at any heel angle (θ) between 0 (upright) and 90 degrees it is related to the upright value by the function:-

$HM = HM_0 \cos^{1.3}\theta$ *where HM_0 is the heeling moment when upright.*

The heel angle of a sailing yacht corresponds to the intersection of the heeling arm (HA) with the righting arm (GZ) curve, where HA = HM/displacement.

When subjected to a gust or squall the yacht heels to a greater angle where the heeling arm curve corresponding to the gust wind speed intersects the GZ curve.



The yacht will suffer down flooding when the heeling arm curve intersects the GZ curve at the down flooding angle. This situation is illustrated in the above example diagram where the "heeling arm in squall" curve intersects the GZ curve at 52 degrees. (This "heeling arm in squall" curve can represent any wind speed).

If a scenario is assumed where sufficient sail is set to heel the yacht to the down flooding angle (60 degrees should be used if the actual down flooding angle exceeds this value) in a squall of, say 45 knots, then the wind speed can be predicted which would result in any lesser heel angle in these circumstances. The upright heeling arm in the squall (HA_1) is derived from:-

$$HA_1 = \frac{GZ_f}{\cos^{1.3}\theta_f}$$

If a steady heel angle prior to the squall of 20 degrees is considered, the corresponding value of the upright heeling arm HA_2 can be derived :-

$$HA_2 = \frac{GZ_{20}}{\cos^{1.3} 20}$$

The ratio HA_2/HA_1 corresponds to the ratio of wind pressures prior to the squall and in the squall thus for a squall speed (V_1) of say 45 knots resulting in down flooding, the wind speed prior to the squall (V_2) which would result in a heel angle of 20 degrees would be:-

$$V_2 = V_1$$

$$V_2 = V_1\left(\frac{HA_2}{HA_1}\right)^{0.5}$$

In this example, which is illustrated in the diagram,

θ_f = 52 degrees
GZ_f = 0.725 metres
HA_1 = 1.362 metres
GZ_{20} = 0.464 metres
HA_2 = 0.503 metres
Hence V_2 = 27.4 knots

Thus when sailing with an apparent wind speed of 27.4 knots at a mean heel angle of 20 degrees, an increase in the apparent wind speed of 45 knots from the same apparent wind angle would result in down flooding if steps could not be taken to reduce the heeling moment.

These values correspond to a point on the 45 knot squall curve in Figure 2, which was derived from a series of such calculations using different steady heel angles. Similarly, the curves for other squall speeds are derived using different values for V_1.

These calculations should be performed for both loading conditions and the results corresponding to the worst case (i.e. the lowest maximum steady heel angles) presented in the Stability Information Booklet]

5. Operating Restrictions

[If there are any operating restrictions details are to be included in this section Such operating restrictions could include, but not necessarily limited to, items such as restricted range/weather, maximum speed and handling of the yacht, limitations on use of consumable fluids, trim restrictions etc. If there are no operating restrictions a note is to be included to that effect.]

6. Master's Shipboard Procedures

[Consideration of damage stability has been assumed with the yacht initially in the upright condition. Therefore in the event of damage an attempt should be made to either reduce the heeled angle or heel slightly away from the damage.]

[This section is to include **any** *procedures relating to the safe operation of the yacht affecting stability or survivability following damage, hit by squalls etc that the master is to be made aware of in order that the appropriate action can be taken either in the course of normal seagoing preparation or in the case of an emergency. The following are examples, and not to be considered exhaustive, of what is expected. These are to be modified as required to suite the specific yacht in question:-*

"As part of familiarisation with the yacht all persons, including passengers, should be briefed on the operation of sliding watertight doors and advised to keep well clear when they are closing."

"IN SHELTERED ANCHORAGES AND IN PORT:

> *The master is responsible for evaluating the risks and hazards present and taking appropriate precautions.*
> *It is recommended that the door from the garage to the engine room is kept closed whenever the transom door is open."*

"PREPARING FOR SEA.

> *External hull doors and flush hatches (to be itemised) to be closed, secured and recorded.*
> *Internal hinged WT doors (to be itemised) are to be closed and secured.*
> *Internal sliding WT doors (to be itemised) are to be tested immediately before departure.*
> *Sidelights capable of being opened are to be secured closed."*

"PREPARING FOR ROUGH WEATHER PASSAGE.

> *The master is responsible for taking appropriate precautions whenever rough weather is anticipated. The precautions should include (but are not limited to) the following:*
>
> > *All loose gear (including tenders etc,) on deck, and in the garage/lazarette are to be securely lashed in place.*

Large or Heavy Items of furniture to be secured.
The shutters provided are to be put up over the windows.
Deadlights are to be closed and secured.
Secure closing devices as appropriate."

"AT SEA

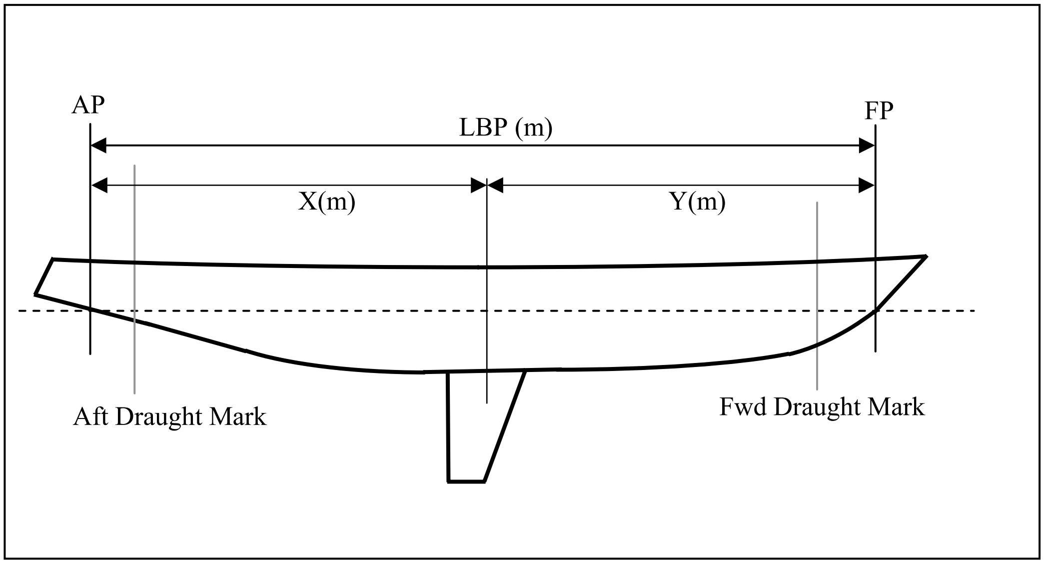
Internal sliding WT doors, situated at XYZ may be left open, but consideration should be given to closing them when risk of hull damage and flooding increases e.g. in fog, in shallow rocky waters, in congested shipping lanes, when entering and leaving port and at any other time the master considers appropriate. Sliding WT doors should be checked daily to ensure that nothing has been placed in way of the door or where it might fall into the opening and prevent the door from closing.

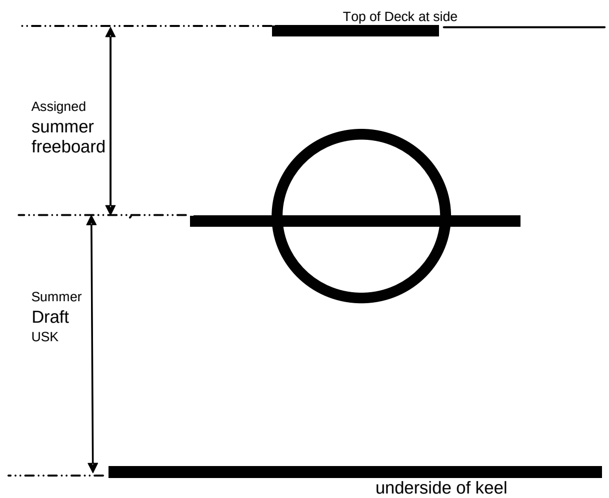
Sliding WT doors should be checked daily to ensure that nothing has been placed in way of the door or where it might fall into the opening and prevent the door from closing."]

Internal hinged water tight doors, situated at XYZ, should remain closed but may be opened when passing through.

[A copy of the sail plan and details is to be included here]

Draught Marks, Freeboard Mark and Datum reference Information

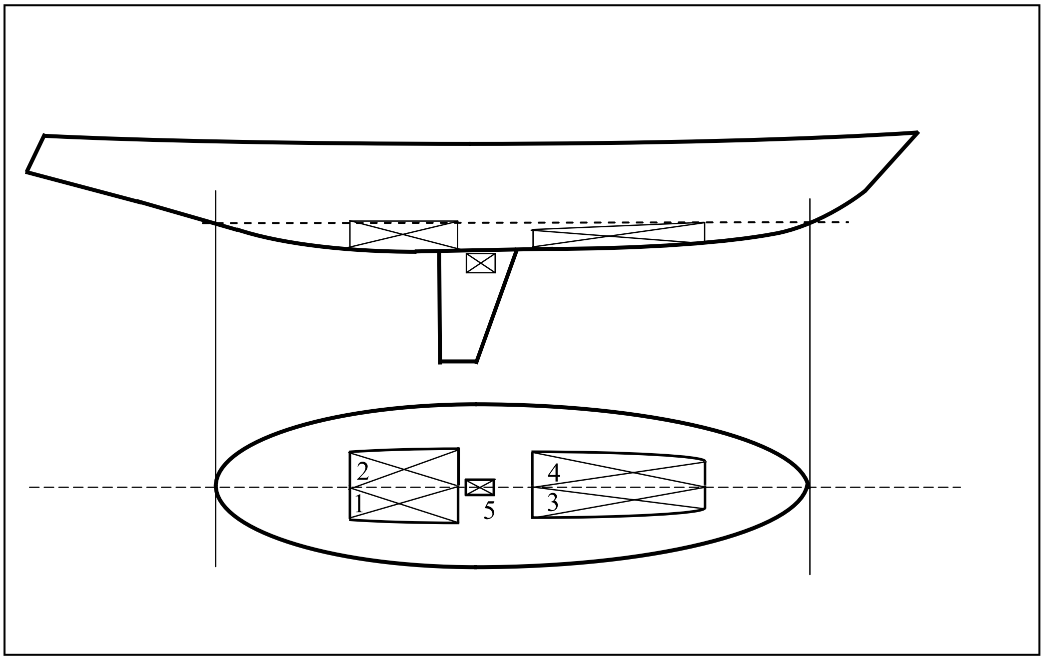




Longitudinal datum	=	*[AP/amidships/FP]*
Transverse datum	=	centreline
Vertical datum	=	*[base line/underside of keel (amidships/AP])*
Aft Perpendicular	=	*[? metres aft amidships]*
Fwd Perpendicular	=	*[? metres fwd amidships]*
Aft Draught Marks *[N]* metres AB	=	*[X metres aft amidships]*
Fwd Draught Marks *[N]* metres AB	=	*[Y metres fwd amidships]*

[the above drawing is to include details of the keel thickness and, if the yacht has a rake of keel, the profile is to be modified to show the rake of keel and include dimensions]

Tank Capacities, arrangement of Tanks and Free Surface Moments



No	Name	SG	Frames	Volume	Mass	VCG	LCG	TCG	FSM

Loading Conditions

The following conditions of loading are to be provided:

- Departure (100% consumables)
- Half Load (50% consumables) (*OPTIONAL CONDITION*)
- Arrival (10% consumables)
- Practical Departure and arrival conditions if different from above

[Stability information is to be submitted for consideration to show 100% and 10% consumables. After consideration, providing the difference between the two loading conditions is agreed to be small only one condition (the most onerous) need be included in the stability information to be endorsed and provided for the use of the master or person in charge of the yacht.

If the difference in draught and trim between departure and arrival conditions is small, the angle of down flooding to the worst point will, to all intents and purposes be the same and only one loading condition need be included. Also, providing there is little change in the vertical centre of gravity the GZ curve will be the same. It is to be noted that the most onerous loading condition should include the most onerous disposition of sails and spars resulting in the highest vertical centre of gravity (KG). Noting this, the maximum steady heel angle will be the same and as long it is greater than 15 degrees the requirements of the Code will be met.]

Inclusion of a lightship condition in the stability information is not considered to be of any onboard practical use and may be excluded.

[Whereas the following may indicate that certain items may be excluded from the stability information provided to the master, full details are still to be submitted to Ensign to show that the yacht complies.]

[Where yachts are fitted with keels that may be retracted, both conditions are to be fully considered in the stability information to be submitted.]

Sample Stability Loading Condition

Condition No. *[YY Departure 100%] Consumables*

ITEM	Load %	WT	LCG m *forward AP*	Long Mom	VCG above base (KG)	Vertical Mom	FSM
Passengers and effects	-						-
Crew and Effects	-						-
Provisions and stores Deck A	-						-
Provisions and stores Deck B	-						-
Provisions and stores Deck C	-						-
Permanent Ballast	-						-
Jet Skis etc	-						-
Tender	-						-
No V Fresh water tank (P)							
No W Fresh water tank (S)							
No X Diesel Oil Tank (p)							
No X Diesel Oil Tank (p)							
No Y Ballast Tank (P)							
No Z Ballast Tank (S)							
No A Lub Oil tank							
No B Grey Water Tank							
Total Dead Weight							-
Lightship Weight							-
Displacement							

Mean Draught at LCF (D_m)		Trim = $\frac{\text{(separation of LCB \& LCG) x Displacement}}{\text{MCT x 100}}$ = m
LCF (m forward AP)		
LCB (m forward AP)		Draught Aft (D_A) = $D_M \pm \frac{LCF}{LBP}$ x Trim = m
MCT (TM/cm)		
KM_T (m AB)		Draught Forward = $D_M \pm$ Trim = m

VCG above base (KG)	
Free Surface Correction (FSC)	
KG liquid (KG_L)	
KG_{max}	

Explanation and notes on completing Sample Stability Condition.

Calculating the Displacement and Centres of gravity

- Add the appropriate weights in column 3 (WT) and, for fluids, also complete column 2 (Load %) to indicate the % fill for each tank.
- Add the longitudinal and vertical centres of gravity in columns 4 (LCG) and 6(VCG) respectively.
- Multiply the weight of each item by its centre of gravity to obtain the longitudinal and vertical moments and enter in columns 5 (Long Mom) and 7 (Vertical Mom) respectively.
- From the tank capacity table *[page NN]* enter Free Surface Moment (FSM) into column 8.
- Sum columns 3, 5 and 7 and enter totals in the Total Dead Weight row.
- Sum Total Dead Weight and Light Ship Weight and enter total in Displacement row column 3.
- Similarly sum Total Dead Weight and Light Ship longitudinal and vertical moments and enter totals in the Displacement row, columns 5 and 7 respectively.
- Divide Displacement row column 5 by Total Displacement row column 3 to calculate LCG for the loading condition, and enter the result in column 4 of that row.
- Divide Displacement row column 7 by Displacement row column 3 to calculate VCG for the loading condition, and enter the result in column 6 of that row.
- Sum column 8 (FSM) and enter total into Displacement row column 8.

Obtaining Draught and trim

- Using the hydrostatic particulars provided on page *MM*, **for zero trim,** interpolate for the Displacement of the loading condition above and obtain values for Draught, LCB, LCF, MCT and KMT.
- Trim is calculated from the stated formula: If the LCB is forward of the LCG the trim is by the stern and if the LCB is aft of the LCG the trim is by the head (bow). It is to be noted that the trim so calculated is for the length used in the formulation of the hydrostatics – usually Length between perpendiculars (LBP) and will need to be corrected for the positions of the draught marks if significantly different.
- As the yacht trims about the LCF, trim is proportioned over the length (LBP) and either added to or subtracted from the mean Draught (Dm) depending on whether the trim is by the stern or by the head.

Stability compliance

- The Free Surface Correction (FSC) is obtained by dividing column 8 of the Displacement row by the Displacement (column 3 of the same row).
- The KG liquid (KG_L) is obtained by **adding** the FSC to the VCG in column 6 in the Displacement row. (The effect of free surface is a virtual rise in the vertical centre of gravity)
- The KG liquid (KG_L) is compared with the KG_{max} obtained from page [*NN]*. If the KG_L is less than KG_{max} the loading condition complies with the stability criteria.

Hydrostatic Particulars

Tabular output showing Displacement, Draught, LCB, LCF, TPC, KMT and MCT across the range of operational draughts/displacements and trims.

Cross Curves of Stability

Tabular output showing KN values across the range of operational draughts/displacements and trims.

NOTE:
Water Density =1.025 T/m^3
K is to underside of keel at amidships
Draught is to underside of keel at amidships

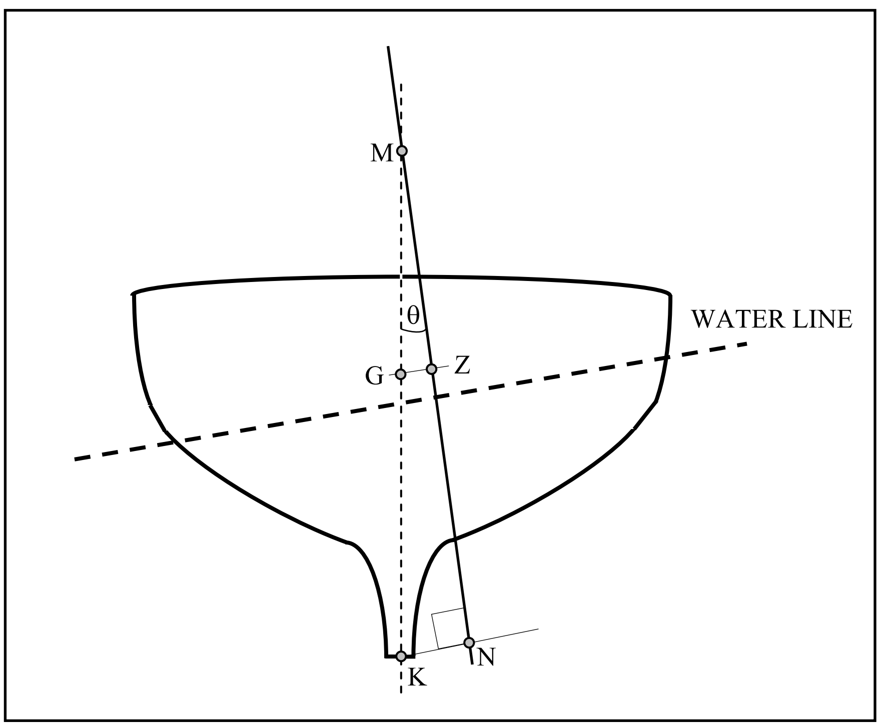
Notes on use of KN Curves

KN curves for *[displacements/draughts]* of *[X to Y tonnes/metres]* are presented for angles of heel at intervals between *[0 and Z]* degrees.

To obtain righting arm (GZ) curves at a given displacement, the following equation should be used:

$$GZ = KN - KG \sin\theta$$

This enables the value of GZ to be calculated at each of the heel angles presented, and subsequently plotted as in the loading conditions presented herein.



Tank Usage and Free Surface Moments

Provided a tank is completely filled with liquid no movement of the liquid is possible and the effect on the ship's stability is precisely the same as if the tank contained solid material.

Immediately a quantity of liquid is withdrawn from the tank the situation changes completely and the stability of the ship is adversely affected by what is known as the 'free surface effect'. This adverse effect on the stability is referred to as a 'loss in GM' or as a 'virtual rise in VCG' and is calculated as follows:

$$\text{Virtual rise in VCG/ } Loss\ of\ GM = \frac{Free\ Surface\ Mmt(Tonnes\ m)}{Vessel\ Displacement(Tonnes)}$$

When preparing loading conditions, it is to be noted that free surface effects must be allowed for the maximum number of tanks which are slack or shortly to become slack in that given loading condition. *[This will mean that, for departure conditions all main fuel tanks as well as fresh water tanks are considered to be slack.]*

The number of slack tanks should be kept to a minimum. *[Where port and starboard tanks are cross coupled, such connection should be closed at sea to minimise the reduction in stability.]*

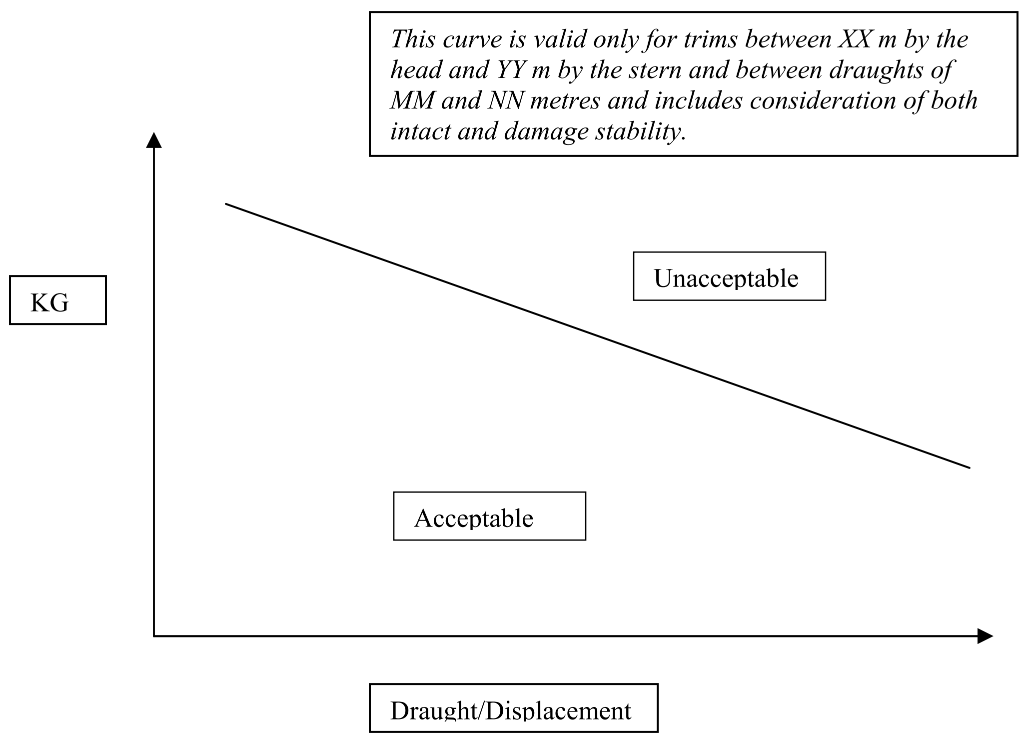
Where ballast tanks are used they should be 'pressed full' or 'empty' as far as possible.
Dirty water in the bilges must be kept to a minimum.

Max KG limiting criteria (KG_{max})

[A Table or Curve is to be included, as considered appropriate, covering the operational draught and trim range. One set of data is to be provided representing the combined effects of satisfying both intact and damage (where appropriate) stability requirements.

If possible a single table or curve (or even a single value) satisfying the whole draught and trim range based on the worst case should be provided and should be labelled to show the extent of application.

Any draught or trim limitation arising from stability consideration should be clearly documented in the Notes to the Master.]



Notes on use of the Curve

If, for any loading condition within the stated operational trim and draught range, the vertical centre of gravity (corrected for free surface effects) falls below the limiting curve compliance with the stability criteria contained in the Code is met.

Beaufort Scale of Wind Speeds and Corresponding Pressures

Beaufort Number	General Description	Limits of Speed in Knots	Pressure kg/m^2
0	Calm	below 1	0 to 0.02
1	Light air	1 to 3	0.02 to 0.2
2	Light Breeze	4 to 6	0.3 to 0.6
3	Gentle Breeze	7 to 10	0.8 to 1.7
4	Moderate Breeze	11 to 16	2.0 to 4.2
5	Fresh Breeze	17 to 21	4.8 to 7.3
6	Strong Breeze	22 to 27	8 to 12
7	Near Gale	28 to 33	13 to 18
8	Gale	34 to 40	19 to 26
9	Strong Gale	41 to 47	27 to 37
10	Storm	48 to 55	38 to 50
11	Violent Storm	56 to 63	52 to 66
12	Hurricane	64 and over	68 and over

Lightship History

An inclining experiment was undertaken at *[QQ on xx/yy/xxxx]*. The resulting lightship figures are as follows:

Lightship	LCG	VCG	TCG

The above lightship does not include the following items which are to be included in the loading condition as deadweight items. Should any of these items be changed during the life of the yacht, the loading conditions are to be modified to take account of the difference in weight and centres of gravity and their effect n the stability of the yacht:

Item	Weight	LCG	VCG	TCG
[Main tender]				

Whenever a significant change is made to the lightship, verified either by inclining experiment, lightweight check or calculation, the results are to be indicated in the following table and endorsed by an approved surveyor.

Lightship	LCG	VCG	TCG	Date	Reason

Inclining Experiment Report

[A copy of the agreed inclining experiment report is to be included.]