

命令模式

GHS DRAFT @ location [/TRUEFSM] [/GMRA] [/NOWARN]

Computes and displays hydrostatic properties using the current waterplane, VCG, free surface, damage condition and wave in GM mode.

在 GM 模式下使用当前水线面、VCG、自由表面、破损情况和波浪计算并显示给定吃水的静水力性能。

GHS DRAFT @ location /KM

Computes and displays hydrostatic properties using the current waterplane, etc. in KM mode.

在 KM 模式下使用当前水线面计算并显示给定吃水的静水力性能。

GHS DRAFT @ location d1, ..., dn

Computes and displays hydrostatic properties at one or more drafts using zero heel with the current trim, VCG, damage condition, and wave in KM mode.

在 KM 模式下使用当前平浮、纵倾、VCG、破损情况和波浪计算并显示一个或多个吃水的静水力性能。

GHS DISPL = w1, ... wn

Computes and displays hydrostatic properties at one or more displacement-determined drafts using zero heel with the current trim, VCG, damage condition, and wave in KM mode.

在 KM 模式下使用当前平浮、纵倾、VCG、破损情况和波浪计算并显示一个或多个排水量的静水力性能。

参数说明

DRAFT @ location

Specifies the longitudinal location at which the drafts are taken. Drafts are in the centerplane, perpendicular to the baseline. If the DRAFT@ parameter is omitted, DRAFT @ LCF is assumed.

指定读取吃水的纵向位置。吃水为船中纵剖面上的吃水，并垂直于基线。如果省略 DRAFT@ parameter，那么将默认为 DRAFT @ LCF（漂心纵向位置）。

/TRUEFSM

Causes true FSM values to be used during the calculation of BM. If not present, formal values as specified by the FSMMT command are used.

在计算 BM 时使用真实的 FSM 值。如果不存在，则使用 FSMMT 命令指定值。

/GMRA

Causes the transverse GM to be obtained from the slope of the righting arm curve at small heel increments and decrements relative to the current heel angle.

使横向 GM 从复原力臂曲线斜率而得，相对于当前横倾角度，横倾角增量和递减很小。

/NOWARN

Omits the caution normally displayed when GM obtained from the righting-arm curve exceeds significantly the standard waterplane GM.

忽略警告，通常当从复原力臂曲线获得的 GM 值明显大于标准的从水线面获得的 GM 值时显示警告。

/KM

Forces KM to be reported instead of GM. Normally GM is shown when current draft is used.

在报告中显示 KM 值，而不显示 GM 值。一般当计算当前吃水时，会显示 GM 值。

d1, ..., dn

A list of drafts. If none are given, the current draft is assumed. When given in foot units and inches are included (e.g. 3'00, 3'01 ... 6) the drafts are displayed in ft'inch format.

一系列的吃水。如果省略吃水，那么默认为当前工况吃水。如果吃水用单位英尺给出且包含英寸时（例如：3'00, 3'01 ... 6），那么输出的吃水以 ft'inch 的形式显示。

w1, ..., wn

A list of displacement weights. These indirectly determine draft(s) at the current trim angle.

一系列的排水量，排水量间接地设定了当前纵倾下的吃水。

Notes:

注意:

See the HS command for pure hydrostatic properties unencumbered by ties to CG.

参看 HS 命令了解更多基础的静水力值输出。

See the COMPONENT command for coefficients of form and volumes.

参看 COMPONENT 命令了解船形系数和体积输出。

Operation

操作

The GHS command computes and displays hydrostatic properties at one or more drafts using the current trim, VCG, damage condition and wave. Heel and trim must not exceed 45 degrees. At large angles of trim and heel, the actual locations of LCG and TCG become more important than the VCG. The use of centerplane draft (as opposed to origin depth used by HS) also has limitations at higher trim and heel angles.

GHS 命令使用当前纵倾、VCG、破损条件和波浪计算并显示一个或多个吃水处的流体静水力性能。横倾和纵倾不得超过 45 度。在大角度的横倾和纵倾下，LCG 和 TCG 的实际位置变得比 VCG 更重要。使用中心平面处的吃水（与 HS 使用的原点深度相反）在较高的纵倾和横倾角度上也有局限性。

Note that the GHS command does not produce or require equilibrium.

请注意，GHS 命令不会产生或要求平衡。

The GHS command operates in two distinct modes:

GHS 命令有两种不同模式：

1) GM mode shows the current waterplane respecting any deflection. The absence of draft or displacement values triggers this mode. The free surface effects of any liquid tanks are considered when calculating BM. The total-weight VCG is used for the moment-to-trim and for the GM values. If the AXIS rotation is not zero, GMT is replaced by GMA (GM about the current axis) which is derived from righting arms; also GML and moment to trim are omitted.

1) GM 模式显示当前水平面的任何变挠度。缺少该模式状态的吃水或排水量。在计算 BM 时，会考虑所有舱室的自由表面影响。总重量*VCG 的变化用于计算纵倾弯矩和 GM 值。如果是非 0 转轴，则用从复原力臂获得的相对于当前轴的 GMA 值来代替横向的 GM 值，同时纵向的 GML 和纵倾力矩会被缺省。

GM and moment-to-trim (which is based on GML) require that the center of gravity lie in a line passing through the center of buoyancy and perpendicular to the waterplane; i.e., these values have meaning only when the vessel is in equilibrium. It is therefore assumed that the weight, LCG and TCG are such that equilibrium is satisfied at the current waterplane. The VCG is not changed.

GM 值和纵倾力矩（基于 GML 计算）要求重心位置在穿过浮心并垂直于水平面的垂线上，即只有船舶位于平衡状态时，这些数值才有意义。在计算静水力时，命令假设计算的每一吃水下的 weight, LCG 和 TCG 都处于当前水线面的平衡状态，VCG 保持不变。

2) KM mode shows the current draft or series of drafts/displacements. This mode is triggered by the presence of draft or displacement values (or by the /KM parameter when draft is not given). If no draft is specified, the current draft is used. If displacements are given commensurate drafts are shown at the LCF.

2) KM 模式显示当前吃水或一系列吃水/排水量。此模式由存在吃水或排水量（或未给出吃水时由 /KM 参数对应）。如果未指定吃水，则使用当前吃水。如果给予排水量，则在 LCF 位置显示相应的吃水。

KM becomes cumbersome with trim and worse with nonzero heel; hence heel is forced to zero for this mode. Free surface is not included and deflection is ignored. The VCG used for the moment-to-trim computation is from the fixed weight (tanks ignored).

KM 在平衡纵倾时变得繁琐，在平衡横倾时则更难，因此，在此模式下，横倾被迫归零。不考虑自由液面，忽略挠度。用于纵倾弯矩计算的 VCG 来自固定重量（不是液体重量）。

Display Output

显示输出

GHS displays draft, buoyancy or displacement weight, longitudinal and vertical center of buoyancy, weight per increment (inch or cm.) of immersion, longitudinal center of

flotation, moment per increment (degree, inch or cm.) of trim, GML and GMT (or KML and KMT).

命令 GHS 显示输出吃水，排水量，纵向和垂向的浮心位置，每英寸或每厘米排水量，纵向的漂心位置，纵倾每增加一度/一寸/一厘米所产生的力矩，GML 值和 GMT 值，或 KML 值或 KMT 值。

The draft is taken at the location specified, and the manner of reporting trim depends on whether a reference length has been defined by the LWL command.

吃水读取在所指定的位置处，纵倾输出的格式取决于是否设定参考水线长，即定义 LWL。

If the transverse center of buoyancy is required, the HS command may be used. Although the waterplane area is not shown by GHS, it is easily obtained from the weight to immerse one inch (or centimeter). (The HS command shows waterplane areas directly, if required.)

如果需要计算横向的浮心位置，可以用命令 HS 计算。虽然 GHS 没有输出水线面面积，但是很容易从每厘米或每英寸吃水吨数来求得。（如果需要，HS 命令可以直接显示水线面面积）。

Coefficients of form are available on a component-by-component basis via the COMPONENTS command.

通过 COMPONENTS 命令，可以得到基于构部件计算的船型系数信息。

Nondisplay Output

无显示输出

The hydrostatics data are preceded by the current heel and trim angles and an indication of the location at which the draft is taken.

在静水力表的前面会标明计算静水力时的横倾和纵倾，并会标明吃水的显示位置。

A table is defined which includes columns for draft (as defined above), buoyancy/displacement weight, displacement volume, center of buoyancy, waterplane area, longitudinal and transverse center of flotation, longitudinal and transverse BM, weight to immerse (one inch or cm.). Units are the same as in the display output.

静水力表包含吃水，排水量，排水容积，浮心，水线面面积，纵向和横向的漂心位置，纵向和横向的 BM 值，每英寸或每厘米吃水排水量，单位和显示输出相同。

Examples

样例

Hydrostatic properties in the current condition:

显示在当前浮态下的静水力：

GHS

Making a common table of hydrostatic properties; VCG at 0:

输出常规的静水力表，重心高度为 0:

VCG = 0

GHS DRAFT @ 0 = 2, 2.5, ..., 14

The current condition with formal FSM; draft shown 55.0 aft of the origin:

显示当前浮态的静水力，吃水显示原点往尾 55 处的吃水，考虑正式的自由液面倾斜力矩:

GHS DRAFT @ 55.0

Trimmed hydrostatics; drafts at the LCF:

计算纵倾状态下的静水力，吃水显示漂心位置的吃水:

TRIM = 1/100

GHS 5 6 ... 20