命令模式

PULL "description", force [@ h1 [, f2 @ h2]...]
[lcf ,tcf, vcf, azimuth, elevation] [/MAX: maxforce]

Defines a pull force originating outside the vessel, whose direction remains fixed with respect to the waterplane at the given azimuth and elevation angles.

定义作用于船舶的外力，在给定的转轴和升角下，相对于水线面此力方向保持不变。

PULL ["description"] OFF

Deletes a pull force, or all pull forces if no description is given.

删掉一个外力，如果不指定名称描述，将删掉所有的外力。

PULL [REPort]

Displays all pull forces (to the screen only if REPORT is absent).

显示所有的外力。（如果省略 REPORT，只是屏幕显示）

参数说明

"description"

Up to 25 characters (must be enclosed in quotation marks if more than one word).

最多 25 个字符（如果多于一个单词，一定要用引号引起）。

force

The magnitude of the pull force, in the current weight units (see the UNITS command).

外力值，采用当前重量单位。（查看命令 UNITS）。

f1 @ h1 [, f2 @ h2]...

Specifies an arbitrary pull force function of heel, to be used in place of a single force parameter. The force is as specified for each given heel angle, linearly interpolated between adjoining angles, and holding the last value beyond the given range. If all heels are non-negative, the force function reflects to port as well. The force values must not switch sign. Load Editor supports pull force changes at any heel by scaling the force function.

指定随横倾角变化的外力，而不是指定单一的力。在每一横倾角下都指定力值，相邻的横倾角通过线性插值得到力值，当横倾角超给定范围时外力保持为最后一个设置的值。如果所有的横倾角非负值，则这个力函数可以应用到左舷。力不能改变正负号。在装载编辑器中，外力根据浮态变化和定义的函数自动计算外力大小。

lcf, tcf, vcf

The point at which the pull force is applied in current length units, relative to the origin. Must be given in longitudinal, transverse, vertical order. MIN or MAX can used in place of tcf to specify the minimum (portmost) or maximum (starboardmost) values at the given lcf and vcf on the surface of the vessel. Likewise MIN or MAX can be used in place of vcf for the lowest or highest displacer points at given lcf and vcf. PMIN and PMAX act like MIN and MAX but only consider components with positive effectiveness.

力作用点相对于原点的位置坐标，以当前的长度单位为单位，必须按照纵向，横向和垂向的顺序给定。MIN 或 MAX 可以代替 tcf 表示在给定的 lcf 与 vcf 船舶平面的最左侧和最右侧。MIN 或 MAX 可以代替 vcf 表示在给定的 lcf 与 tcf 船舶平面最下端和最上端。MIN 和 PMAX 作用方式与 MIN 和 MAX 相同，但它们只考虑了构部件且只取正值。

azimuth

The horizontal pull angle measured clockwise starting from starboard (0° starboard, 90° aft pull, etc.).

垂直于船中线，从右舷开始的水平夹角，顺时针方向转。(指向右舷为 0 度，指向船艉为 90 度)。

elevation

The vertical pull angle measured counterclockwise relative to the waterplane (0° is level, 90° is upwards perpendicular to the waterplane, negative is downwards).

垂向方向上，外力相对于水平面的夹角，逆时针旋转。（水平时为 0 度，向上垂直于水平面时为 90 度，为负值时，力的方向向下）。

/MAX: maxforce

Establishes a maximum pull force for the item as a guideline for the operator when using Load Editor. Also fixes the VCG location in Load Editor. If maxforce is 0, then the VCG location is fixed without showing a "Load%" value.

当使用装载编辑器时，为操作者设定最大力作为操作指导。同时在装载编辑器中固定 VCG 的值。如果 maxforce 为 0，那么将固定 VCG，但不显示力的”Load%”值。

Operation

操作

A pull force is defined by specifying its description, magnitude, location, and angle relative to a level starboard-directed pull. Once defined, the pull force magnitude can be changed without restating its location and angle.

通过定义力的名称描述，力值，位置和相对于右舷的角度来定义外力。如果定义完毕，可以更改力的大小而不需重新定义它的位置和角度。

The effects of PULL forces are split between the STATUS, HMMT, and TMMT reports. Pull forces are broken into three components relative to the waterplane: vertical, horizontal athwartships, and horizontal fore and aft. These force components are recomputed whenever the waterplane changes. The force and moment effects of pull force vertical components are itemzed by STATUS PULL and STATUS DISPL. The moment effects of pull force horizontal components are itemized by HMMT REPORT and TMMT REPORT according to their direction.

拉力的影响分为状态、HMMT 和 TMMT 报告。相对于水平面，拉力分为三个组成部分：垂直、水平运动和水平前后。每当水平面发生变化时，都会重新计算这些力分量。垂直拉力分量的力和力矩效应按状态拉力和状态分布列出。拉力水平分量的力矩效应由 HMMT REPORT 和 TMMT REPORT 根据其方向逐项列出。

Display Output

显示输出

PULL REPORT produces a table listing each pull force's description, location, and angle.

PULL REPORT 会生成表格列出每个力的名称描述，位置和角度。

Nondisplay Output:

无显示输出

none.

无

Examples

样例

Defining a port-directed pull force with 45?elevation:

定义垂直于左舷的力，升角 45 度：

PULL "Towline" 100 20 -10 0 180 45

Changing the pull force:

改变拖力的大小：

PULL "Towline" 50

Changing the pull force to a function of the current heel:

定义和当前的横倾角成函数关系的力：

PULL "Towline" 100 @ 0, 50 @ 20, 25 @ 40

Deleting the pull force:

删除力：

PULL "Towline" OFF

Reporting all pull forces:

报告显示所有的力：

PULL REPORT