

命令模式

BOOM ["description",] w | RAT | DELTA, l0, t0, v0, length, swing, topping [,pinoffset [,jiblen [,jibangle]]] [/FROM [LIGHT SHIP]] [/[P]LEN:l1[,l2]] [/[PED:loc[:len]]] [/[NOTE:"note"]] [/[GYRADIUS:lr,tr,vr | OFF] [/[BOX:l,w,h] [/[LPA:lpa[,lca[,vca]]] [/[NOWARN]

Adds an item to the Fixed Weight, locating it by means of a boom description.

增加一重量项目到固体重量，通过吊臂类型的描述说明信息给定重心位置。

BOOM /AZ2: azimuth[/CW | /CCW]

Defines an alternate boom azimuth convention for visible Crane Data.

通过变量来定义 BOOM 的替代方法和规则。

参数说明

"description"

Up to 25 characters (must be enclosed in quotation marks if more than one word). If this parameter is absent, the weight is incorporated into the Light Ship.

描述信息说明最多 25 个字符（如果有多个单词，必须要用引号引起）。如果省略这个参数，此重量项目将被增加到空船重量。

w

The weight to be added, in the current weight units (see the UNITS command).

被增加的重量数值，单位为当前的重量单位（参看命令 UNITS）。

RAT

An alternative to w, this keyword selects a weight which diminishes the trim righting arm. Requires prior weight vs. displacement equilibrium.

重量 w 的一种可选形式，它将增加一个重量，用于抵消纵倾回复力臂。要求先求解浮态平衡。

DELTA

An alternative to w, this keyword selects a weight which brings about weight/displacement equilibrium at the present draft.

重量 w 的一种可选形式，它将增加一个重量，使得浮态在当前吃水下平衡。

l0, t0, v0

Location of the rotational center of the base (longitudinal, transverse, vertical coordinates).

基座旋转中心的位置（纵向，横向和垂向坐标）。

length

The length of the main boom.

主吊臂的长度。

swing

The horizontal angle of the boom (in degrees) relative to the stern (0° at the stern, 90° off the starboard side, etc.).

吊臂相对于船尾的水平夹角（船尾方向为 0 度，指向右舷为 90 度等）。

topping

The vertical angle of the main boom relative to the horizontal. 0° is perpendicular to the ship's vertical axis (i.e. horizontal). 90° is vertical. Negative is below horizontal.

吊臂在垂向方向和水平方向的夹角。当和 Z 轴垂直时，夹角为 0（例如：吊臂为水平放置）。当吊臂竖直向上时，夹角为 90 度。当吊臂位于水平线以下时，夹角为负值。

pinoffset

The horizontal distance between the main boom hinge pin and the center of the crane base about which it rotates. Assumed to be zero if absent.

水平方向上，主吊臂铰链销和基座旋转中心的距离。如果缺省，默认为 0。

jiblen

The length of the jib boom which is attached to the upper end of the main boom. If this parameter is absent there is no jib boom.

主吊臂前延伸悬臂的长度，如果省略此参数，便认为无延伸臂。

jibangle

Angle which the jib boom makes with the main boom. A positive angle has the jib boom below the main boom. If this angle is zero, the jib boom is a straight extension of the main boom.

主吊臂前延伸悬臂和主吊臂的夹角。若悬臂在主吊臂延伸方向的下方，夹角为正。若夹角为 0，那么悬臂在主吊臂的直线延伸方向上。

/FROM LIGHT SHIP

Causes the light ship to be replaced by a point weight that is reduced by the same amount as the weight being added. /FROM is an acceptable abbreviation.

使空船重量变为点重量，并减去新增加的重量。可以简写为/FROM。

/[P]LEN: l1 [, l2] /PED: loc [, len]

Distributes the base and pedestal shear over length. See the ADD command for details.

将基座的剪应力在给定的长度范围内分布。参看命令 ADD 了解详细信息。

/NOTE: "note"

Specified a note to show in the Load Editor footer. See the ADD command for details.

设定在装载编辑器界面底部显示的说明信息。参看命令 ADD 了解详细信息。

/GYRADIUS: lr,tr,vr | OFF

Sets static radius of gyration around own CG (or none even around vessel CG if turned OFF).

指定以重量项目对于本身重心为中心的回转半径（如果用 OFF，则设置为全船 CG）。

`/BOX: length, width, height`

Sets static rotational inertia of the weight evenly distributed over the specified box shape.

将重量项目的转动惯量均匀分布到指定的矩形中。

`/LPA: area [,lca [,vca]]`

Assigns lateral plane area with optional longitudinal and vertical centers (default=CG) for fixed weight contribution to heeling moment calculations.

定义固定重量的受风面积及其纵向和垂向位置（如无规定，取在 CG 位置）用于横倾力矩的计算。

`/NOWARN`

Avoids the warning message when the given item replaces another.

当给定的重量项目取代其它重量项目时，不出现警告信息。

`/AZ2: azimuth [/CW|/CCW]`

Defines an alternate Crane Data angle convention such that the specified azimuth represents the current stern-relative BOOMAZ variable value. Alternate angles increase counterclockwise (same as BOOMAZ) unless /CW is included. The BOOMAZ2 system variable can be used to retrieve or set the boom azimuth according to this alternate definition.

定义 BOOM 的替代方法，主要是以船尾为参照的变量 BOOMAZ。除非有 CW 选项，角度增加以逆时针为正（和 BOOMAZ 相同）。系统变量 BOOMAZ2 可以用来提取或设定吊臂的空间位置。

Operation

操作

The effective center of gravity of the weight item is determined from the boom description. In other respects this command is similar to the ADD command.

新加重量的重心取决于吊臂的描述信息，而在其它方面，此命令和命令 ADD 相似。

The boom description is converted into the center of gravity of the weight item. Thereafter only the center of gravity is retained - the boom description does not appear in the STATUS listing of the weight.

吊臂的描述信息会转换为其重量项目的重心位置。此后将只保留重心位置，在 STATUS 命令显示的重量信息中，并不会显示吊臂的描述信息。

The item can later be removed via the DELETE command. If item description matches an existing item, that item is replaced.

通过命令 DELETE 可以将定义的重量删掉，如果重量描述符合已存在的重量项目，那么将取代已存在的重量项目。

The RAT and DELTA parameters are analogous to those on the LOAD command. See the LOAD command for details.

参数 RAT 和 DELTA 的作用与在 LOAD 命令中的作用相似，参看 LOAD 命令了解详细信息。

Crane Module Variables

Crane 模块变量

Several special crane-oriented variables beginning with "BOOM" need to be pre-defined and configured in order for CRANE module operations to work:

为操作 Crane 模块，一些特殊的以 BOOM 开头的变量需要预先定义和设置：

VARIABLE BOOMAZ

`boom azimuth angle in degrees relative to stern

相对于船尾的吊臂方位角

VARIABLE BOOMEL

`boom elevation angle in degrees relative to horizontal

相对于水平面的吊臂起升角度

V (LEN) BOOMLEN

`boom length (pin to sheave or jib base)

吊臂长度（吊臂铰链销到滑轮或悬臂的长度）

V (WE) BOOMHOOK

`hookload weight

吊重

V (WE) BOOMCAP

`hookload capacity (for reporting percent of capacity)

最大吊重能力（为报告中显示，最大极限的百分比）

V (LEN) BOOMPINO

`boom hinge pin offset from crane base centerline

吊臂铰链销与基座中心线的距离

V (LEN) BOOMPINH

`boom hinge pin height above the baseline

吊臂铰链销相对于基线的高度值

The following crane variables may optionally be configured:

下面为可选的和吊有关的变量：

VARIABLE BOOMJANG

`jib angle in degrees below the boom

延伸悬臂和主吊臂夹角

V (LEN) BOOMJLEN

`jib length

延伸悬臂长度。

VARIABLE BOOMJIB

`shows Jib Angle if 1 or 2, or Knuckle Angle if 3

当为 1 或 2 时，为包含延伸悬臂夹角信息，3 代表包含折角信息

V (LEN) BOOMSHV

`horizontal extension due to sheave radius

由于滑车半径在水平方向的的延长

V (LEN) BOOMBASX

`crane base longitudinal location on the ship

吊车基座中心在纵向方向的位置

V (LEN) BOOMBASY

`crane base transverse location (default=0)

吊车基座中心在横向方向的位置（默认为 0）。

V (LEN) BOOMBASZ

`crane base height above baseline (default=BOOMPINH)

吊车基座距基线的高度（默认与 BOOMPINH 铰链销距基线高度相等）。

VARIABLE BOOMNUM

`crane number in Crane Data box title (<=0 if Stowed)

吊车数据框上标题处显示的吊车编号（收起状态，<=0）

VARIABLE BOOMLT1

`limit before yellow Trim angle in Crane Data box

吊车数据框中纵倾角变为黄色之前的限制。

VARIABLE BOOMLT2

`limit before red Trim angle in Crane Data box

吊车数据框中纵倾角变为红色之前的限制。

VARIABLE BOOMLL1

`limit before yellow List angle in Crane Data box

吊车数据框中横倾角变为黄色之前的限制。

VARIABLE BOOMLL2

`limit before red List angle in Crane Data box

吊车数据框中横倾角变为红色之前的限制。

VARIABLE BOOMLC1

``limit before yellow Capacity% in Crane Data box`

吊车数据框中装载量 Capacity%变为黄色之前的限制。

VARIABLE BOOMLC2

``limit before red Capacity% in Crane Data box`

吊车数据框中装载量 Capacity%变为红色之前的限制。

Boom radius is managed using BOOMRAD, which is a special system variable calculated from BOOMEL, BOOMLEN, BOOMPINO, BOOMJANG, BOOMJLEN and BOOMSHV. Setting BOOMRAD also changes BOOMEL. These variables plus BOOMPINH, BOOMBASX, and BOOMBASY are used to calculate Effective Radius from centerline shown in the Crane Data box that appears using the LOAD EDIT /CRANE parameter in Load Editor with windows.

吊臂回转半径储存在系统变量 BOOMRAD 中,它通过变量 BOOMEL, BOOMLEN, BOOMPINO, BOOMJANG, BOOMJLEN 和 BOOMSHV 计算得到。设定回转半径 BOOMRAD 同时也变相的改变吊臂起升角度 BOOMEL。这些变量连同变量 BOOMPINH, BOOMBASX, 和 BOOMBASY 被用来计算相对于中心线的回转半径。使用命令 LOAD EDIT /CRANE 进入装载编辑器的界面,则吊车数据框中会显示此回转半径。

Output

输出

none.

无

Examples

样例

Adding a 10-ton weight suspended from the end of a boom which has its base at 150, 5, 32. The length of the boom is 65, the swing angle is 90° and the topping angle is 25°:

在吊臂的末端悬挂一 10 吨的重物,吊臂旋转中心位置为 (150, 5, 32), 吊臂长 65, 水平方位角为 90 度, 起升角度 25 度。

BOOM "SUSPENDED WEIGHT", 10, 150, 5, 32, 65, 90, 25

Creating a macro for a crane having a main boom length of 50 a pin offset of 5.5 and no jib boom:

定义 CRANE1 宏命令, 主吊臂长 50, 铰链销相对旋转中心线偏移 5.5, 无延伸悬臂。

MACRO CRANE1

BOOM "CRANE LOAD", %1, 150, 5, 32, 50, %2, %3, 5.54

/

Positioning the crane with a 15-ton load, swing 90° to port, horizontal:

装载此吊车：吊重 15 吨，吊臂水平指向左舷。

.CRANE1 15, -90, 0

BOOM PARAMETERS

