命令模式

REFpt [(partlist)] [l, t, v] | [TOP] | [BOTTOM]

Sets the Reference Point of one or more parts.

设定单个或多个子模型的参考点。

REFpt [(partlist)]

Shows the current reference point of one or more parts (screen only).

屏幕显示单个或多个子模型当前定义的参考点。

Definition: Reference Point - an arbitrarily assigned point associated with a given part, used for various purposes. It is not the origin. Reference Point coordinates —as well as all other coordinates — are measured from the origin.

定义： 参考点：出于各种目的，人为设定的和子模型相关的点。参考点不是原点。参考点的位置是相对于原点来标记的。

Although every part (displacer as well as tank) has its own Reference Point, they are used primarily for tracking and controlling fluid levels in tanks. The STATUS and TC command outputs show Reference point heights relative to a waterplane. Reference Points may be used to set fluid levels via the LOAD command. Spilling tanks (see the TYPE command) use their Reference Points as spilling points.

每一个子模型（排水类子模型或舱室）都有它的参考点，参考点主要用来追踪或计量舱室液位。命令 STATUS 和 TC 可以显示参考点相对于水面的高度。LOAD 命令可以通过参考点设定液位的高度。放泄舱室（查看命令 TYPE）可以用它的参考点作为泄漏点。

参数说明

(partlist)

The list of part names (displacer or tank) which are to have their Reference Point changed or displayed. A part name may end in an asterisk to include all parts whose names have the same beginning. If this parameter is omitted, the current part selection is assumed.

要改变或显示参考点的子模型清单（排水类子模型或舱室）。子模型名称可以用星号*结尾以选中所有开头字母相同的子模型。如果省略这个参数，当前的子模型被选中。

l, t, v

Longitudinal, transverse, and vertical coordinates of the Reference Point. MIN or MAX can used in place of t to specify the minimum (portmost) or maximum (starboardmost) values at the given l and v for each selected part. Likewise MIN or MAX can be used in place of v to specify the lowest or highest points at given l and t for each selected part. PMIN and PMAX act like MIN and MAX but only consider components with positive effectiveness.

参考点的纵向，横向和垂向的坐标位置。MIN 或 MA 可以代替 t 表示在给定纵向和垂向坐标平面上选定子模型的最小（最左侧）或最大（最右侧）。同样，MIN 或 MAX 可以代替 v 表示在给

定纵向和横向坐标平面上选定子模型的最低点或最高点。PMIN 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。

TOP

Uses the center of the top of the part as the Reference Point (see below).

使用子模型顶端的中心点作为参考点（如下）。

BOTTOM

Uses the center of the bottom of the part as the Reference Point.

使用子模型低端的中心点作为参考点。

Note: Although the Geometry File contains Reference Point coordinates, they may not be set at any meaningful location (they are often at the origin; ie. 0,0,0). It is the responsibility of the user to set the Reference Point locations before using them.

注意：虽然模型文件含有参考点坐标，但它们可能被设置在无意义的位置（经常被设置在原点位置）。用户在使用参考点前一定要定义好它们的位置。

Operation

操作

When the coordinates are given (either explicitly or via the TOP or BOTTOM parameter), the Reference Point of the part(s) is set accordingly. If more than one tank part is indicated by a part name ending in an asterisk, then all tanks matching that designation will have their Reference Points set.

当设定了参考点的坐标位置（设定明确坐标或通过 TOP /BOTTOM 参数设定），那么子模型的参考点就设定完毕。如果子模型是通过子模型名称加星号*选中的多个子模型，那么选定的多个子模型的参考点就设定完毕。

Note that a part's Reference Point is not required to lie within the volume of the part.

子模型的参考点并不需要位于子模型内部。

If the l, t, v coordinates are given, all three must appear. However, an asterisk may be used to indicate that the present coordinate is to remain unchanged. For example,

如果设定了 l, t, v 坐标，那么三个方向的坐标都要写明。然而星号*可以表示当前使用的坐标保持不变，例如：

REFPT 10, *, *

sets the longitudinal coordinate to 10 while leaving the transverse and vertical coordinates unchanged. Furthermore, a number may be appended to an asterisk thereby indicating that the present value is to be incremented (or decremented). For example.

设定纵向坐标为 10，横向和竖向的坐标保持不变。此外，可以在星号后附加一个数字，从而表示现值将递增（或递减）。例如。

REFPT *, *, *+0.25

increments the vertical coordinate by 0.25 while leaving the others unchanged. (No space or other separator may occur between the asterisk and the number other than a plus or minus sign.)

垂向坐标 z 增加 0.25，其余坐标保持不变。（在星号*和数值间除了+号和-号外，不允许空格或隔离符号存在。）

The TOP and BOTTOM parameters can be used instead of explicit coordinates. Both take, for longitudinal and transverse coordinates, the center of the rectangle which circumscribes the plan view of the part. TOP uses the largest vertical coordinate on the part for the vertical coordinate of the Reference Point; BOTTOM uses the least vertical coordinate.

可以用 TOP 和 BOTTOM 参数可代替明确的坐标位置。对纵向和横向，子模型在相应方向上两个端面平面的中心。在垂向方向上，TOP 表示子模型的最大竖向坐标值，BOTTOM 表示子模型的最小竖向坐标值。

These features may be combined effectively, for example, to locate a Reference Point some fixed distance above the bottom of a tank:

这些功能可以组合使用，例如：使参考点位于舱室底部向上某固定距离。

REFPT BOTTOM

REFPT * * *+.042

An additional feature allows the vertical coordinate of the Reference Point to be located such that the point lies on the current waterplane. This is accomplished by using the keyword WPl in place of the vertical coordinate. For example,

另外可以通过关键词 WPl 代替参考点的竖向坐标值，使参考点的竖向坐标位于当前的水面高度上。例如：

REFPT * * WPL

leaves the longitudinal and transverse coordinates alone but sets the vertical coordinate such that the point is on the current waterplane (exclusive of any wave). This feature is useful when examining cases of intermediate flooding, since the LOAD HEIGHT command may be used to set tank loads such that their surfaces are at a given distance from their Reference Points.

保持纵向和横向的坐标值不变，设定垂向坐标位于当前水面高度上（不考虑波浪）。这种功能可以用来检查瞬间的浸没。命令 LOAD HEIGHT 可以通过设定距参考点的高度来设定载荷。

If one or more Critical Points name a particular tank that is of type DAMAGED, its Reference Point may be modified automatically. See the CRTPT command for more information.

如果单个或多个关键点标记 DAMAGED 的子模型，它的参考点会自动被更新。更多信息查看命令 CRTPT。

Display Output

显示输出

Display mode is activated when no point coordinates are given or implied. For example,

当不给定任何坐标点时，显示模式被激活。例子

REFPT

lists the Reference Points of the currently-selected part(s). If none are currently selected, all tanks are listed. All tanks are listed.

列表当前选中子模型的参考点。如果目前无选中的子模型，会列表所有舱室的参考点。

This output is shown on the screen only. For output to disk or printer, use the PARTS command.

这个输出只是屏幕显示。若输出到磁盘或打印文件，使用 PARTS 命令。

Nondisplay Output:

无显示输出

none.

无

Examples

样例

Showing the Reference Point assigned to the HULL:

显示标记于船壳的参考点。

REFPT(HULL)

Setting the Reference Point assigned to the HULL:

设定参考点标记船壳

REFPT(HULL) 53, 10, 12.5

Setting all Tank reference Points at the level of the highest point on each tank:

设定所有舱室的参考点位于舱室的最高点上。

REF(*) TOP

Setting the current part's Reference Point to a location on its port surface:

把当前的参考点设置在最左侧。

REF 43.5a, MIN, 6.5

Setting the current part's Reference Roint to the origin:

把当前子模型的参考点设置到原点。

REF 0,0,0

Repeating a stability analysis with increasingly higher spill points:

随着进水点的升高，重复进行稳性计算。

MACRO REPEAT `Defining a macro to do one case. 定义一宏命令

.STABILITY `Call the STABILITY macro to do the analysis. 运行稳性分析

REF(HOPPER) * * *+.5 `Increment the vertical Reference Point coordinate. 把参考点垂向坐标增加 0.5

/

REF(HOPPER) 22, 17, 15 `Set up the initial Reference Point. 设定初始的参考点

.REPEAT(4) `Call the REPEAT macro 4 times. 运行宏 REPEAT4 次

`Note: The reference point is now at 22, 17, 17

注意：现在参考点的高度为 17