

命令模式

CONTents [(tanklist)] [description] [density] [/COLOR:n]

Changes the contents of one or more tanks.

改变单个或多个舱室的舱容物质。

CONTents [(tanklist)]

Shows the current contents of one or more tanks (screen only).

只是屏幕显示当前单个或多个舱室的舱容物质。

CONTents /TABLE

Displays the current contents list (screen only).

只是屏幕显示当前舱容物质列表。

参数说明

(tanklist)

The names of the tanks or groups which are to have their contents changed or displayed. Individual names in the tanklist may end in an asterisk to represent all tanks whose names have the same beginning. If this parameter is omitted, the current tank selection is assumed (see the TANKS command for establishing a current tank selection).

要被改变或显示舱容物质的舱室或组（参看 group 命令）的名称。可以用字母加星号*的形式表示选中名称以此字母开头的所有舱室。如果忽略此参数，则默认选中当前舱室。（参看命令 TANKS 了解如何选中当前舱室）。

Description

An optional description of the tank contents which indicates a constant or temperature dependent density. May be up to 12 characters long; must be enclosed in quotation marks if more than one word. A list is maintained of certain words which are recognized and are associated with specific gravities to be used in case the density parameter is omitted. These are:

舱容物质的描述（可选项）比如温度和密度，最多可达 12 个字符，如果多于一个单词，则必须用引号引起。程序含有默认的舱容物质名称和与其关联的比重，使用时可以缺省比重参数。如下：

Description	Abbr.	Default spgr (standard Scale)
DIESEL OIL	DO	0.870
FRESH WATER	FW	1.000
FUEL OIL	FO	0.870
GASoline		0.740
HYDr OIL	HO	0.924
KERosene		0.812
LUBE OIL	LO	0.924
SALT WATER	SW	1.025
SEWage		1.025

SEA WATER	SEAWATER	Same as External Water
描述	缩写	默认比重
DIESEL OIL	DO	0.870
FRESH WATER	FW	1.000
FUEL OIL	FO	0.870
GASoline		0.740
HYDr OIL	HO	0.924
KERosene		0.812
LUBE OIL	LO	0.924
SALT WATER	SW	1.025
SEWage		1.025
SEA WATER	SEAWATER	同外界环境水域密度相同

A contents description in the form of "oil @ t" allows the temperature of the "oil" contents (either OIL or an alternate petroleum substance, 7 characters maximum) to be set where t is the temperature. If the "oil" name begins with "ASPHAL", then temperature-volume correction values for asphalt cements and cutback asphalts are used; if "oil" begins with "ASPEMU", corrections for emulsified asphalts are used. The temperature may subsequently be changed by entering a new "oil @ t" description without specifying a new density, in which case the weight of the contents remains the same while the density and volume are recalculated. The temperature is normally given in °F with English units or °C with metric units, though an explicit "F" or "C" may be included regardless of the units in effect. Once defined by CONTENTS, a new oil substance can be entered in the Load Editor "Contents" field as "oil@t" (or simply "oil" to mean "oil@60F"). If "@ t" appears by itself, then temperature is adjusted for any selected petroleum tanks.

可以采用"oil @ t"的描述形式来定义特定温度下“油”的密度（oil 代表油或其它石油物质，最多 7 个字符）。其中 t 表示温度值。如果描述名称 oil 以"ASPHAL"开头，则使用沥青膏和轻制沥青修正的温度-容积（temperature-volume）值。如果描述名称 oil 以"ASPEMU"开头，则使用乳化沥青修正值。可以通过定义新的"oil @ t"来改变舱室温度，舱室装载的重量仍保持不变，密度和容积会被重新被计算。一般当英制单位时，温度的单位为°F；公制单位时，温度的单位为°C。可以通过符号“F”和“C”来明确指出温度单位，而忽略当前单位。一旦命令 CONTENTS 定义了“油”类的舱容物质，新的舱容物质"oil @ t"可以在装载编辑器的"Contents"列中调用。如果单独显示参数"@ t"，则表示这个“油”类舱室的温度已被调节。

Density

The density to be assigned to the contents. The density may be given as specific gravity, American Petroleum Institute (API) gravity, kilograms per cubic meter, or the keyword SEA, which stands for "the same specific gravity as the water environment outside the vessel" (see the WATER command). This parameter may be omitted if the content description and density have been previously defined. If this parameter is given it overrides and replaces any density associated with the description. If API gravity is given, "API" must follow the number. If kilograms per cubic meter are given "DEN" must follow the number.

Note: If both description and density are given, they must be given in that order.

设定舱容物质密度，密度可以按照以下方式给定：比重，美国石油协会(API)，千克每立方米，或关键词 SEA，表示比重和船舶外的环境水域的比重相同(参看命令 WATER)。如果舱容物质和密度之前已经定义过，可以省略此参数。如果此参数被设定，它将取代任何已存在的与此舱容物质描述相同的密度。如果设定 API 比重，则数值后必须有"API"。如果给定千克每立方米，则数值后必须有"DEN"。

注意：如果物质描述和密度都给定，它们必须按照命令要求的顺序给定。

/COLOR:n

Specifies a color number from 0 to 15 (same as defined for the MESSAGE command, except 0 for default coloring and 15 for black) to be used when displaying this tank content.

设定舱容物质显示的颜色编号，从 0 到 15（和命令 MESSAGE 定义相同，其中 0 表示默认颜色；15 表示黑色）。

Operation

操作

The Geometry File contains a contents description and density for each tank as they were assigned in Part Maker (see the Part Maker and Tank Maker sections of the manual). Changing the TYPE of a tank (see the TYPE command) affects its contents when going from type INTACT to type FLOODED and vice versa. Other than that, the only way to change the contents settings from the geometry file is with the CONTENTS command, or by editing the contents column using Load Editor.

通过 Part Maker 可以在模型文件中定义舱室舱容物质描述和密度（参看 Part Maker 和 Tank Maker 手册部分）。在改变液舱的类型（完整/破损，参见 TYPE 命令）时，液舱内的液体会发生改变。如果要保持液舱内的液体不随舱的完整或破损而变，则必须通过 CONTENTS 命令重新定义或在 LOAD EDITOR 中液体类型列进行定义。

When either description or density is given, the contents of the specified tank(s) is set accordingly. If more than one tank is indicated by a tank name ending in an asterisk, then all tanks matching that designation will have their contents set.

给定物质描述或密度后，指定舱室的舱容物质就相应的被设定好了。如果舱室名称是以开头字母加星号*的格式，那么与之匹配的所有舱室的舱容物质即被一起设定。

The contents assigned to a tank remains in effect even when the tank is empty.

即使舱室是空的，给舱室设定的舱容物质也是有效的。

If the density of a loaded tank is changed, either the weight or the volume (load factor) must also change as a result. Depending on the parameters included, a contents command which changes density can be interpreted as either a contents exchange or a contents transformation. If a description name is given, then a fluid exchange is assumed and the load is kept constant while the weight of the new fluid is calculated. If the description is given as "*" or if only the temperature is changed, then the weight of the fluid in the tank is kept constant and the density change results in a

new load factor. An exception to the above rule occurs when specifying the density of a cargo at a standard temperature for a content description which includes a different temperature; this case is treated as a contents exchange rather than a transformation.

如果装载舱的物质密度发生变化，则重量或体积（装载系数）也必须因此而改变。根据包含的参数，更改舱容物质密度的命令可以解释为物质交换或转换。如果给出了舱容物质的详细名称，则假定物质之间的交换，并且在计算新物质重量时装载率保持不变。如果描述为“*”或仅更改温度，则舱容物质的重量保持不变，密度的改变会导致装载系数随之改变。有一个例外，规定舱容物质的密度是标准温度时的密度，在不同温度的情况下，应视为物质交换而不是转换。

If either description or density is an asterisk, no change is made to the respective setting. For example, if description is omitted and only density is given, the description of the contents assigned to the tank is left unchanged and the contents is assumed to have transformed into the given density, so weight is kept constant. This is useful for temporarily changing the contents to sea water.

如果舱容物质或密度设定为星号*，那么相应的设定未被改变。例如：如果舱容物质描述被忽略，只设定密度，那么舱室的舱容物质描述未被改变，此时，假设舱容物质的密度转换为给定的密度，因此重量保持不变。这可用于暂时将舱容物质改为海水。

If only one asterisk is given (density being omitted) the density is set to the value associated with the current contents description. This is useful for resetting a tank to its original contents after being loaded with sea water.

如果只给定单个星号*(忽略密度)，那么密度设定为与当前舱容物质描述相关联的密度。当舱室加载海水后，这可用于将舱室的舱容物质改为初始舱容物质。

CONTENTS description 0 can be used to disable a substance to be unavailable for entry in Load Editor (unless a TANK is currently selected which traps "Value out of range".) CONTENTS OFF 0 can be used to disable and remove all substances from contents list.

CONTENTS description 0 可以将设定一个舱容物质在装载编辑器中不可被调用。（设置时如果有当前舱室被选中，则会显示错误"Value out of range"）。CONTENTS OFF, 0 可以设定所有舱容物质无效或从舱容物质列表中移除所有物质。

Note that the TYPE FLOODED command automatically changes the contents to sea water (both description and density); and subsequent use of TYPE INTACT automatically restores the contents.

命令 TYPE FLOODED 会自动将舱室舱容物质改为海水（包含舱容物质描述和密度），接下来的命令 TYPE INTACT 会自动恢复舱室的初始舱容物质。

Whenever a new description is given (except the "oil @" form) which is not contained in the recognized list, the list is extended to include it together with the supplied specific gravity. Likewise, if a description is given which matches a description in the list with a differing density value, the new density replaces the one in the list (but the new density does not automatically extend to all tanks having that description, only to the ones addressed by the tanklist in the command).

当定义不在程序默认舱容物质列表中存在的新的舱容物时（不包含"oil@"形式），此舱容物质和比重会添加到列表中。如果新定义舱容物质的描述已经存在于列表中，但密度不同，新的密度会取代表列表中的密度（但新的密度不会自动取代所有含有此舱容物质的舱室密度，只会取代那些被选中的舱室）。

Similarly, when a Geometry File is read, the list is updated by the contents information which the geometry file contains.

同样的，当读入模型文件后，会根据模型文件中含有的舱容物质数据而更新舱容物质列表。

The list is reset to its initial configuration, as shown above, by the CLEAR command which is executed before a new Geometry File is read.

在读入新的模型文件前，利用 CLEAR 命令，会重置舱容物质列表为初始设置。

A list entry can be added or changed without involving any tank by issuing the CONTENTS command when no tank is being addressed; i.e. when the default tank list is "off" and no tank names are given with the command. Any unwanted entry in the list can be deactivated by setting its specific gravity to zero. Lower-case letters in the description are preserved if it is a new entry or replaces an old entry which has been deactivated.

可以使用命令 CONTENTS 直接增加或者更改舱容物质到列表，而不通过任何舱室来实现，例如不选中任何舱室（tank off），也不指定任何舱室的名称。可以通过设置比重为 0 来将不需要的舱容物质移除舱容物质列表。如果是新加的或者替代已经删除的舱容物质，则舱容物质描述中小写字母部分将被保留。

Using Specific Gravity

使用比重

When using specific gravity, the standard scale is assumed unless the USCG or 60°F option is in effect (see the SPGR command). For example,

当使用比重时，采用默认标准除非设置了 USCG 或 60°F。(参看命令 SPGR)。例如：

CONTENTS (FO3.S) Diesel, 0.87

specifies the density by specific gravity.

通过比重设定密度

Using API Gravity

使用 API 比重

Using the API form, for example,

使用 API 格式，例如：

CONTENTS (CARGO1.P) Crude, 25 API

the density of the contents is calculated according to the API petroleum scale. This form does not include any reference to temperature and is simply another way of designating density.

物质密度根据 API 石油标准计算。这种方式不考虑任何的温度，只是定义密度的另一种方式。

A more specialized form applying to petroleum products and involving the temperature of the contents is illustrated as follows:

一种更专业的方式是根据温度来定义石油物质的密度，形式如下：

CONTENTS (CARGO1.C) "oil @ 80F", 25 API60

In this example, the temperature of the contents is set to 80°F. The F (or C in metric units) is optional but may be used to override the current units. The special "API60" keyword assigns the API gravity that the oil would have it were at the standard 60°F temperature. If "API" is used instead, it assigns the gravity the oil has at its current temperature (80°F in this example).

在这个例子中，舱容物质的温度设定为 80°F。F(华氏度或 C 为摄氏度)为可选，用于取代当前单位。关键词"API60"表示采用标准温度 60°F 时的 API 比重。如果使用关键词"API"，表示比重为在当前温度下（在例子中为 80°F）。

For the same tank, the command:

同一舱室，命令：

CONTENTS (CARGO1.C) "oil @ 70F", *

changes the temperature of the contents while the API gravity at 60°F remains the same. The density of the contents is calculated for the new temperature. The weight in the tank remains unchanged. This command can also be abbreviated as:

改变物质温度，但是 60°F 时的 API 比重保持不变。密度会根据新的温度重新计算。舱室装载的重量保持不变。这个命令也可以简写为：

CONTENTS (CARGO1.C) @ 70F

The command:

命令：

CONTENTS (CARGO1.C) *, 35 API60

keeps the temperature the same while setting a new API gravity at 60°F and adjusting the weight in the tank accordingly. If the "API" keyword is used instead, the temperature changes to 60°F while setting the API gravity to the value given. The similar command:

保持温度不变，采用 60°F 时新的 API 比重，相应的也改变了舱室装载的重量。如果使用关键词"API"，则 API 比重设定为给定值且温度改为 60°F。相似的命令：

CONTENTS (CARGO1.C) 35 API

keeps the temperature the same while setting the API gravity to the value given (regardless of whether "API" or "API60" is used).

保持温度不变，设定 API 比重为给定值（无论使用"API"或"API60"作用一样）。

This follows the format used aboard tankers and other petroleum product carriers where Gross and Net volume is a concern. Gross volume refers to the actual volume in the tank. Net volume refers to the volume which would be in the tank if it were at 60°F (15.6°C). Gross and Net volume are available using the LOAD STATUS command.

这种设置方式使得油船或者其他油类装载运输的船舶关注毛体积和准体积。毛体积指舱室内真实的装载体积。准体积指当舱室温度为 60°F (15.6°C)时，舱室的装载体积。毛体积和准体积可以通过命令 LOAD STATUS 来实现。

The expansion of oil as a function of its temperature is carried out according to API standard 2540, table 45B for specific gravities above 0.653. This is a "generalized product" standard covering petroleum products (except crude oil) having specific gravities between 0.653 and 1.075. Between specific gravities 0.500 and 0.653 the expansion function is for liquid petroleum gas (LPG). For petroleum names starting with "ASPHAL" or "ASPEMU", temperature expansion is according to Asphalt Manual Series No. 6 Tables 4-1 and 4-3.

石油物质膨胀和温度的关系参照 API 标准 2540，表 45B（比重大于 0.653）。这是广泛意义上的石油物质（排除原油）比重，位于 0.653 和 1.075 之间。比重位于 0.500 和 0.653 之间的膨胀系数适用于液化石油气体(LPG)。以"ASPHAL"或"ASPEMU"开头的石油物质，温度膨胀系数参考 Asphalt 系列手册 No. 6 表 4-1 和 4-3。

If the contents description is "unknown" or "oil @ t," the contents column in Load Editor will show a density value rather than the contents name, so the density and temperature (if any) can be set directly in Load Editor.

如果舱容物质描述为"unknown" 或"oil @ t"，装载编辑器中的 contents 列会显示密度值而不是舱容物质描述，这使得密度和温度可以在装载编辑器中直接设置。

Using Kilograms per Cubic Meter

使用千克每立方米

The density of tank contents may be specified in kilograms per cubic meter either at the current temperature or (if the tank contents are a petroleum product) at 15°C. For example,

舱容物质的密度可以采用千克每立方米设定，采用当前温度或 15°C（如果舱容物质为石油物质）例如：

CONTENTS (FO3.P) = 875 DEN

sets the density of the contents of the tank to 875 kilograms per cubic meter.

设定舱容物质的密度为 875 千克每立方米。

Further, if contents description is of the form "OIL @ t" where t is the current temperature, the density may be given at 15°C rather than the current temperature. For example,

另外，如果舱容物质描述采用"OIL @ t"的形式设定，t 为当前温度，密度可以按照 15°C 时的密度给定而不是当前的温度。例如：

CONTENTS (FO3.P) = "OIL @ 40C", 875 DEN15

sets the density of the contents to a value such that if the temperature were lowered to 15°C, the density would be 875 kilograms per cubic meter.

设定舱容物质密度为当温度低于 15°C 时，密度是 875 千克每立方米。

Note that DEN units are exactly 1000 times standard specific gravity.

注意：DEN 单位是标准比重的 1000 倍。

Keeping Level Contents

保持舱容物质液面：

Normally, the contents of a tank is considered to be a perfect liquid, the surface of which remains parallel to the surface of the external waterplane. But when a tank's type is set to FROZEN (see the TYPE command), the surface remains fixed at the heel and trim angles current at the time the TYPE command or last LOAD command was issued.

正常情况下，舱容物质被认为是纯液体，舱室内的液面和船舶外的水面保持平行。但是当舱室的类型改为 FROZEN 后（参看命令 TYPE），舱室液面将在运行命令 TYPE 或最后运行命令 LOAD 时船舶浮态下被锁定。

If it is desired that the surface within a FROZEN tank always be at zero heel and trim, regardless of the current trim and heel angles when the load is set, the contents description may end with an exclamation point. For example,

如果要使 FROZEN 舱室的舱内液面始终保持为船舶正浮时的液面，不受船舶浮态影响，可以通过舱容物质描述结尾加惊叹号！来实现。例如：

TANK HOLD1

CONTENTS "FISH!", 0.75

will cause the surface of HOLD1 to remain level and automatically change its type to FROZEN. Similarly, changing a frozen tank whose contents description ends in "!" to one without the "!" automatically changes its type to INTACT. Setting TYPE INTACT for a flooded tank ending in "!" freezes with zero heel and trim.

会使舱室 HOLD1 内的液面为正浮状态，并且自动将舱室类型改为 FROZEN。同样的，将舱容物质描述的惊叹号！去掉会自动将舱室的类型改为 INTACT。将舱容物质描述以惊叹号！结尾的浸水舱室（TYPE FLOOD）设置为 TYPE INTACT，则舱室内液面为正浮状态，并且自动将舱室类型改为 FROZEN。

Solid fill materials such as foam with extremely low densities (less than 0.1 spgr) are supported only for the FROZEN tank type. Any attempts to change such low density tanks using LOAD or TYPE commands are ignored (except TYPE can change if native type is FROZEN). Thus the correct sequence to set 99% load of FOAM contents with spgr 0.03 would be: LOAD 0.99 | TYPE FR | CONT FOAM, 0.03. To revert to normal, the CONTENTS command would need to be issued first.

密度极低的舱容物质例如泡沫（比重小于 0.1）只适合 FROZEN 舱室类型。任何使用命令 LOAD 或 TYPE 来改变这类低密度舱室都会被忽略（除非舱室初始的类型是 FROZEN）。所以正确定义

装载舱室到 99%比重为 0.03 泡沫物质的顺序为: LOAD 0.99 | TYPE FR | CONT FOAM, 0.03。
如恢复到正常, 要首先使用命令 CONTENTS。

Display Output

显示输出

Display mode is activated when no parameters beyond (tank) are given. For example,

当除舱室外无任何参数给定时, 显示模式会被激活。例如:

```
CONTENTS(ENG*)
```

lists the contents of all tanks whose names begin with "ENG".

显示舱室名称以 ENG 开头的的所有舱室的舱容物质。

This output is shown on the screen only. For output to printer or disk, STATUS TANKS shows specific gravities for all loaded tanks; the TC command displays contents descriptions as well as specific gravities; and the LOAD STATUS command shows the API value and temperature of contents which use the "oil @ t" form.

这种输出只是屏幕显示。如需打印输出, 命令 STATUS TANKS 会显示所有舱室的舱容物质比重。命令 TC 会显示舱容物质描述和比重, 命令 LOAD STATUS 会显示 API 值和使用"oil @ t"格式的温度值。

Nondisplay Output

无显示输出

none.

无

Examples

样例

Showing the contents of all tanks:

显示所有舱室的舱容物质:

```
CONTENTS(*)
```

Changing the contents of all tanks beginning with "BAL" to fresh water:

将所有名称以 BAL 开头的舱室的舱容物质改为淡水:

```
CONTENTS(BAL*) FW
```

Using a different specific gravity for fuel oil:

给燃油设定一个新的比重:

```
CONTENTS FO, .949
```

Specifying both description and density:

设定舱容物质描述和密度:

CONTENTS "BUNKER C", 1.002

[Setting the contents to match the outside water environment:](#)

设定舱容物质为外界环境水域:

CONTENTS SEA

[Changing and restoring the specific gravity:](#)

恢复初始比重:

CONTENTS *, SEA

.....

CONTENTS *

[Updating the specific gravities of all tanks to agree with the current list:](#)

更新所有舱容物质比重使其和舱容物质列表一致。

CONTENTS(*) *

[Setting all cargo tanks to unknown so the specific gravity can be set for each individual tank in Load Editor.](#)

设定名称以 cargo 开头的所有舱室的舱容物质为 unknown，用于在装载编辑器中可以设定每一个舱室的比重:

CONTENTS(Cargo*) "unknown", 1.025

[Setting all cargo tanks to 90°F with an API gravity at 60°F of 25:](#)

设定名称以 cargo 开头的所有舱室的温度为 90°F，舱容物质密度为 60°F 时的 API 比重为 25:

CONTENTS(Cargo*) "oil @ 90F", 25 API60

[Setting all petroleum tanks to 20°C:](#)

设定所有石油物质舱室温度为 20°C:

CONTENTS(*) @ 20C

[Defining a new "PETRO" alternate petroleum substance with spgr 0.90 at 70°F:](#)

定义新的石油物质 PETRO，当温度为 70°F，比重为 0.90:

TANKS OFF | CONTENTS "PETRO @ 70F", 0.90

[Deleting KEROSENE from the contents list:](#)

从舱容物质列表中删除舱容物质 KEROSENE:

TANKS OFF | CONTENTS KEROSENE, 0