Marine Weight Schedule - User Manual

Introduction

Marine Weight Schedule is a plugin for Rhino 3D designed to generate - from a vessel's 3D model - a bill of masses/inertias, as well as a Bill Of Materials. It take in account points, curves, surfaces, solids and blocks, and use the parameters from the layers names to apply the unitary/lineic/surfacic/volumic masses, with a margin percentage applied.

A command is also provided to generate an hydrostatic report at a given height interval (based on Rhino hydrostatics features)

Both reports will be generated as excel files (.xlsx) based on a customizable template, but microsoft excel doesn't need to be installed on the computer.

Plugin installation

Overview

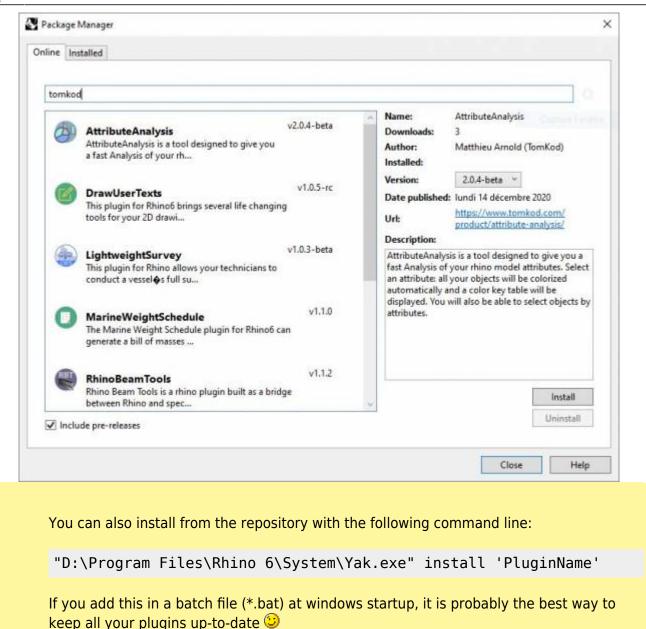
The plugin installer can be downloaded at: https://www.tomkod.com/product/marine-weight-schedule/ A free trial is included, and yearly licenses can be purchased on the aforementioned page. *Marine Weight Schedule* works for Rhino 6¹⁾ and Rhino7²⁾.

Yak

Our plugins are also compatible with <u>Yak</u>, Rhino's new package manager³⁾, which is basically an application store for Rhino. You just need to call Rhino's command **PackageManager**:

Last

update: 2021/01/22 start:plugins:marineweightschedule:mws-usermanual https://wiki.tomkod.com/doku.php?id=start:plugins:marineweightschedule:mws-usermanual&rev=1611309171 10:52





C:\WINDOWS\system32\cmd.exe	_		\times	
C:\>"C:\Program Files\Rhino 6\System\Yak.exe" Downloading PluginName(X.X.X) Downloaded PluginName(X.X.X) Installing PluginName(X.X.X) Successfully installed PluginName(X.X.X)	install	PluginName		^
C:\>				~

License activation

Prerequisites

The free evaluation can be used once per computer, and requires network access to www.license.tomkod.com The license activation requires network access to www.tomkod.com

Please check your firewall in case of failure.

Activation form

The activation window automatically shows up when the plugin is loading and a valid license or trial is not registered. If you want to see, change or remove your license while the plugin is already loaded, you can use the Rhino commands **PluginName_License**.

Activation status is always visible on the upper right corner of the form, if the icon is green your plugin will be enabled:

Plugin Status	
Enabled - license is valid	\sim

Trial Tab

This first tab is dedicated to the trial requests. Your trial status is displayed, and the button is disabled if a trial is not available for your computer (Your trial has already been activated, or the server is unreachable)

TomKod license activation - Tal	ole 3.x	?	×
Tom Kod >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	Plugin Status Enabled - license is valid	0)
Free Tital License Commercial Lice	nse Details		
Computer ID:	12-19		
1.00			
Requ	ist Free evaluation (*)		
Regut Status: Accepted (End dat			

Commercial Tab

This tab's two main buttons let you Check-out (Activate) or Check-in (Desactivate) your license from

our license server.

TomKod license	e activation - Table	e 3.x		? ×
FomKod Softwares for user		Plugin Status Enabled - lic	ense is valid	
Free Trial License	Commercial Licens	e Details		
Email	1	e.com		
Product key				
Activ	ate (Check-Out)		Desactivate (C	heck-in)
Status: Dis	abled			
Enable floa	ating licenses (Affe	cts every Tor	nKod plugins)	
Use a license ce	etificate			
	native method for o void network activa			

When the checkbox "Enable floating licenses" is checked, every TomKod's plugin will try to deactivate the license automatically when closing (Making it available for another of your computers)

Finally, a license certificate (*.TkLic) can be selected at the bottom of this tab. It allows to activate a license offline, but the license won't be floating anymore. If you need one, contact us at https://www.tomkod.com/contact/

Toolbar

The toolbars for Rhino are always included in your plugins installation directory, or can be downloaded here.

You just have to drag/drop the file "Tomkod.rui" to a rhino window to install them.



Features and commands

MWS_About

This command can be used only from the command line prompt. It displays the plugin's current revision and license status.

5/16

About			3
MarineWeightSchedule - v1.1.0.0			
Commercial Name: Marine Weigth Schedule 1.x Update Status: Marine Weigth Schedule 1.x: Your current version (1.1.0.0) is an er Editor: TomKod Copyright: Copyright ©Ship-ST 2020	arly release ca	inclidate. Latest stable	version: 1.0.9
License status			
Commercial license: Enabled - Successfully activated. 0 out of 1 activations rema Trial status: Ended	ining		
Computer ID: TomKodDevComputerUniqueID			
the second s			
CHANGELOG:			
v1.1.0 (21 dec. 2020)			
Added: Keywords for vik package			
9 available commands			
HydrostaticReport			
MWS_License			
MWS_About			
ProjectWeightReport			
GBlock_GetList			
Gblock_Select GBlock_SelectNextMissingData			
GBlock SetData			
GBlock_ReadData			
	Copy All	Save As-	Close
-	Cobà Ea	Terryon	7446

MWS_License

This command can be used only from the command line prompt. It displays the plugin's activation form.

See license_activation.

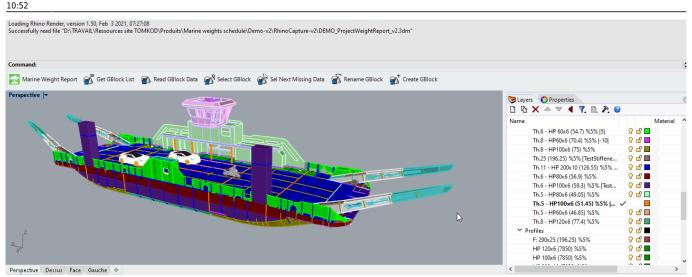
ProjectWeightReport

Computes the whole model masses, <u>as well as a Bill Of Materials</u>⁴⁾ and generates an excel report.

Walkthrough

For each layer⁵, the command will retrieve the *Mass*, *Margin* and *Vertical offset* values from the layer name⁶, then:

- For each rhino object, the actual mass and gravity center will be computed, using the layer values. The layer's *Mass* will be used differently, depending on the object's type: ponctual mass for Points, lineic mass for curves, surfacic mass for surfaces⁷⁾, and volumic mass for closed polysurfaces.
- 2. At the same time, the Bill-of-Materials will be created internally.
- 3. An excel report will be created.



Model preparation

The fondamental idea of this plugin is to match data from the model's objects and their layer. For this reason, each layer should contain only one specific material. *For example:*

- The layer **Deck1:SectionB:Nuts** could contain only points, and the layer's (mass) information would be used as a ponctual mass for each nut.
- The layer **Deck1:SectionB:plates** could contain only surfaces, and the layer's (mass) information would be used as a surfacic mass for each plate.

Layers naming convention

The document's layers should follow the following naming convention:

LayerName (Mass) %Margin% |VerticalOffset|

where:

- Mass will be the ponctual/lineic/surfacic/volumic mass
- Margin (optional) will be the percentage to add to the object's mass.
- VerticalOffset (optional) will be the the vertical offset to apply to the layer's masses

Second Se	
D B 🗙 🛆 🔻 🖣 🏹 🗎 🎘 🥹	
Name	
✓ Float	✓ ■
✓ Plates	♀ ◻ ■
Th.8 - HP60x6 (70.4) %5% -10	V 🗗 🗖
Th.8 - HP100x6 (75) %5%	V 🗗 🗖
Th.25 (196.25) %5% [TestStiffenerRef1 s=14]	V 🗗 🗖
Th.5 - HP100x6 (51.45) %5% [20]	V 🗗 🗖
✓ Profiles	V 🗗 🛛
HP 100x6 (7850) %5%	V 🗗 🗖
F: 150x11 (86.35) %5%	V 🗗 🗖
F: 180x11 (86.35) %5%	V 🗗 🗖
✓ Equipments	V 🗗 🗖
Rescue Boats (180) [500]	

Particular case for Stiffeners

A specific naming convention has been added to properly count the stiffeners in the Bill-of-Materials, to consider the scenarii explained below.



Those particular cases only impact how materials will be counted in the Bill-of-Material tab. <u>The weight report results</u> won't be impacted.

• Implicit stiffeners

There are some cases where you don't want/need to create an actual geometry for your structure stiffeners, for example when you are at the early stage of your project. *Implicit stiffeners* let you count the required stiffener lengths relative to the layer's metal sheet's areas.



In the Bill-of-Material, this would create two outputs: an area for the surfaces in "*MyLayerName*", and a length for their stiffeners.



For example:

Th.6 (56.9) %5% [HP80x6 s=49.05] 🛛 🖓 🖆 🔳

• Stiffeners defined as curves in the model

Last update: 2021/01/22 start:plugins:marineweightschedule:mws-usermanual https://wiki.tomkod.com/doku.php?id=start:plugins:marineweightschedule:mws-usermanual&rev=1611309171 10:52

Two kind of curves-defined stiffeners can be used:

• Folded plates

LAYERNAME: W:120x6 BF60

This will be counted as one surface, Thickness 6, width=120+60. Thus the result in the Bill-ofmaterials will be:

	i	'Th.6 plate Area' = length x (120+60)
--	---	---------------------------------------

• Profile with flat plate

```
W:120x6 F:80x8
```

This will count as one surface, Thickness 6, width=120, plus one profile 80×8

In this case, the command will output an area for the plate, and a length for the profile:

'Th.6 plate Area' = length x 120

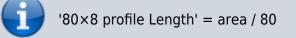
'80×8 profile length ' =length

• Stiffeners defined as surfaces in the model

In some cases, you might want to represent your stiffeners as a 3D surface in the model, but count them as lineic outputs in the Bill-of-Materials because they are technically profiles.

LAYERNAME: F:80x8

This would output:



As for the weight estimate, the layer's optional %Tolerance% will be considered:

LAYERNAME: F:80x8 |34.1| (87.2) %3.4%

This would output:



'80×8 profile Length' = (area / 80) + (area / 80) * 3.4/100

Particular case for Blocks

By default, rhino[®] blocks⁸⁾ are ignored by the command. However we provide several commands to transform blocks into GBlocks, which are considered in the reports as ponctual masses.

See gblock_setdata

When the command will process GBlocks, their layer properties will be ignored, and the Gblock's internal definition will be used instead (Name, gravity center, mass).

Output

When the whole model has been processed, an excel⁹⁾ report is generated, and the user is invited to pick a name and location for the resulting file. Bill of masses main sheet:

Betrence: DEMO_ProjectVeightReport.3dm Item Mass (kg) Xg (mm) Yg (mm) Zg (mm) Izz (kg.mm') Izg (kg.mm')	K =		В	С	D	E	F	G	Н
Customer : St update: 05/01/2021 [15:13] Reference: DEMO_ProjectWeightReport.3dm Item Masses (kg) Xg (mm) Yg (mm) Zg (mm) Kg.mm') (kg.mm') (kg.mm') (kg.mm') turnio Masses 256 -62 -821 1773 475653947 (Suboce 4.6 f) 7.878E-10 Interview Masses 256 -62 -821 1773 4766539407 (Suboce 4.6 f) 7.878E-10 Interview Masses 256 -62 -821 1773 4756539407 (Suboce 4.6 f) 7.878E-10 Interview Masses 258 -62 -821 12212 22583947 (Suboce 4.6 f) 7.878E-10 Interview Masses 268 0 <th< th=""><th>V</th><th></th><th></th><th></th><th></th><th></th><th></th><th>1</th><th></th></th<>	V							1	
ast update: 05/01/2021 [15:13] Beitetence: DEMO_ProjectWeightReport.3dm item Mass (kg) Xg (mm) Yg (mm) Zg (mm) kg,mm) kg,mm) kg,mm outmio Masses 65623 19 150 2211 232283307 3.012E-13 2.56986F.10 onclual Masses 0		Softwares for us	ers, by users						
Item Mass (kg) Xg (mm) Yg (mm) Zg (mm) Izz Iyg Iyg <thiyg< th=""> <thiyg< th=""> Iyg</thiyg<></thiyg<>	Last update					Guar	onior .		
$\begin{array}{ c c c c c } \hline \begin{tabular}{ c c c } \hline \begin{tabular}{ c c c } \hline \begin{tabular}{ c c c } \hline & & & & & & & & & & & & & & & & & & $		Reference :	DEMO_Project	tWeightRepor	t.3dm				
Volumie Masses 256 -62 -9211 1739 476559817 0.000264.6 7.878E-10 Surfacie Masses 69823 -19 100 0							M	asses Inerti	as
Surface Masses 69623 -19 90 2211 2322883907 3.0123E-13 2.5896E-10 <	lt	em	Mass (kg)	Xg (mm)	Yg (mm)	Zg (mm)			
Ineio Masses 0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Ponctual Masses 2611 2125 -93 3408 1856596633 2.1869E-11 Total 72489 58 138 2252 1.116E-10 3.04E-13 3.3532E-11 New point's coordinates : X* 0 18* 380 262 010 791 19* 305 068 174 810 657 12* 338 945 050 974 Z= 0 2* 0 2* 338 945 050 974 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 338 945 050 974 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 3* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0 2* 0									
Total 72483 58 138 2252 1,116E+10 3,014E+13 3,3532E+11 Huggens Theorem New point's coordinates : New point's coordinates : Y+ New heritia									
Huggens Theorem New point's coordinates : New Inertia Y= 0 Y= 0 Z= 0	Ponctual Mas	ses	2611	2125	-93	3408	18519817,8	1566596693	2,1869E+11
Huggens Theorem New point's coordinates : New Inertia Y= 0 Y= 0 Z= 0									
New point's coordinates: New point's coordinates: New hertia New point's coordinates: Ite: 300 26 2010 791 Y= 0 Ite: 300 508 174 810 857 Z= 0 Ite: 306 945 050 974	Total		72489	58	138	2252	1,116E+10	3,014E+13	3,3532E+11
New point's coordinates: New point's coordinates: New hertia New point's coordinates: Ite: 300 26 2010 791 Y= 0 Ite: 300 508 174 810 857 Z= 0 Ite: 306 945 050 974									
New point's coordinates: New joint's coordinates: New mettia Y=0 Inr. 390.262.010.791 Y=0 Inr. 390.262.010.791 Z=0 Inr. 390.262.010.791 L=30.6945.050.974 Inr. 390.262.010.791				Huyge	ens Theorer	n			
Y= 0 y= 30 508 174 810 857 Z= 0 Z= 338 945 050 974	Nev			8					
		Z=	0		IZ=	336 945 050	974		
								8	-
								1	
Results Volumes Surfaces Curves Points BillOfMaterials		Result	s Volum		rfaces	Curves	Points	1	laterials

Bill of masses detailed sheets for Volumes, surfaces, curves and points:

	A	в	С	D	E	F	G	н	10	J	К	L	M	N	0	
	TomKod >			BOJECT : ssa	· / :	5	1									
2=		L					2									
	Softwares for users, by users			SUMMARY	r-reu		2									
_		<u></u>		Customer :	8											
Last	update: 18/02/2021 (13:49)															
	Reference :	; DEMO_Projec	tWeightRepor	t v2.3dm												
		10. 0 7 90 is		1												
-	Constant and a	10 0750 M	F YOLUMIC	170 												
		10 0750 M	74 74	170 					¥	olumes iner	tia	M	lasses inert	ia		
	Item	10 0750 M	F YOLUMIC Yolumic mass	C MASSES	Mass (kg)	Xg (mm)	Yg (mm)	Zg (mm)		olumes iner Iyy (mm*)		M Izz (kg.mm²)	lasses inert Iyy (kg.mm²)	tia Izz (kg.mm²)		
	item Bi-Metal	BILL C	F VOLUMIC Volumic	C MASSES	Mass (kg) 2	Xg (mm) -214	Yg (mm) -5261	Zg (mm) 2958				İzz	iyy	Izz		
	175-1786)	BILL C Volume (mm²)	Volumic Mass (kg/m²)	MASSES Margins	0000000000000000	0.707/00/00	12.6500000.00	An and a state of the second	lzz (mm*)	lyy (mm*)	lzz (mm*)	l zz (kg.mm²)	lyy (kg.mm²)	lzz (kg.mm²)		
	Bi-Metal Steel::Profiles::Round Ø20 Float::Profiles::HP 120x6	BILL C Yolume (mm*) 4.13E+07 2696208 1.45E+07	Volumic mass (kg/m ³) 53 7850 7850	0.0% 5.0%	2 22 120	-214 -165 0	-5261 4874 0	2958 4150 1691	Izz (mm*) 8.23E+12 1.25E+12 1.81E+14	Iss (mm*) 1.96E+15 1.93E+12 2.65E+15	Izz (mm*) 1.97E+15 1.75E+12 2.83E+15	Izz (kg.mm*) 4.36E+05 1.03E+07 1.49E+09	igg (kg.mm*) 1.04E+08 1.59E+07 2.19E+10	Izz (kg.mm ³) 1.04E+08 1.44E+07 2.33E+10		
	Bi-Metal Steel::Profiles::Round Ø20	BILL C Yolume (mm*) 4.13E+07 2696208 1.45E+07 1.15E+07	Volumic mass (kg/m ³) 53 7850 7850 7850 7850	Margins 0.0% 5.0% 5.0%	2 22 120 95	-214 -165	-5261 4874 0 -469	2958 4150 1691 1758	Izz (mm*) 8.23E+12 1.25E+12 1.81E+14 6.96E+13	lyy (mm*) 1.96E+15 1.93E+12 2.65E+15 8.70E+14	Izz (mm*) 1.97E+15 1.75E+12 2.83E+15 9.34E+14	Izz (kg.mm ²) 4.36E+05 1.03E+07 1.49E+09 5.74E+08	igg (kg.mm ²) 1.04E+08 1.59E+07 2.19E+10 7.17E+09	Izz (kg.mm ²) 1.04E+08 1.44E+07 2.33E+10 7.70E+09		
	Bi-Metal Steel::Profiles::Hound Ø20 Float::Profiles::HP 120x6 Float::Profiles::HP 100x6 Float::Profiles::HP 200x10	BILL C Volume (mm ³) 4.13E+07 2896208 1.45E+07 1.15E+07 2.51E+07	Yolumic mass (kg/m*) 53 7850 7850 7850 7850 7850 7850	0.0% 5.0%	2 22 120 95 207	-214 -165 0	-5261 4874 0 -469 -807	2958 4150 1691 1758 1407	8.23E+12 1.25E+12 1.81E+14 6.96E+13 7.60E+13	199 (mm*) 1.96E+15 1.93E+12 2.65E+15 8.70E+14 3.00E+15	Izz (mm*) 1.97E+15 1.75E+12 2.83E+15 9.34E+14 3.06E+15	Izz (kg.mm ²) 4.36E+05 1.03E+07 1.49E+09 5.74E+08 6.27E+08	igg (kg.mm ³) 1.04E+08 1.59E+07 2.19E+10 7.17E+09 2.48E+10	Izz (kg.mm*) 1.04E+08 1.44E+07 2.33E+10 7.70E+09 2.52E+10		
	Bi-Metal Steel::Profiles::Round Ø20 Float::Profiles::HP 120x6 Float::Profiles::HP 100x6	BILL C Yolume (mm*) 4.13E+07 2696208 1.45E+07 1.15E+07	Volumic mass (kg/m ³) 53 7850 7850 7850 7850	Margins 0.0% 5.0% 5.0%	2 22 120 95	-214 -165 0 -296	-5261 4874 0 -469	2958 4150 1691 1758	Izz (mm*) 8.23E+12 1.25E+12 1.81E+14 6.96E+13	lyy (mm*) 1.96E+15 1.93E+12 2.65E+15 8.70E+14	Izz (mm*) 1.97E+15 1.75E+12 2.83E+15 9.34E+14	Izz (kg.mm ²) 4.36E+05 1.03E+07 1.49E+09 5.74E+08	igg (kg.mm ²) 1.04E+08 1.59E+07 2.19E+10 7.17E+09	Izz (kg.mm ²) 1.04E+08 1.44E+07 2.33E+10 7.70E+09		

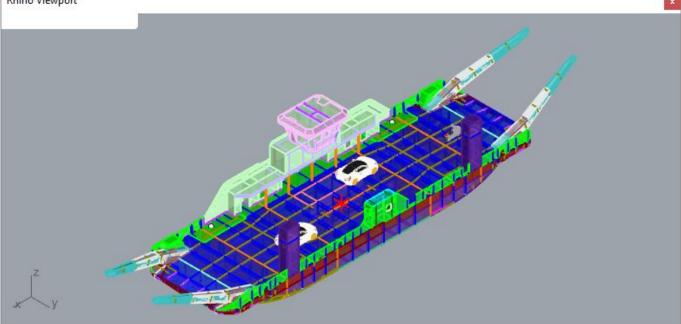
	Α	В	С	D	E	F	G	н	1	J	К	L	м	N
	TomKod >		P	ROJECT : XX	(1							
1	Softwares for users, by users		MASS	SUMMAR	Y-re0		1							
1			1	Customer :			1							
1	Last update: 05/01/2021 (15:13)						12							
ſ	Beference :	DEMO_Proje	ctWeightReport	t.3dm										
1														
Ī		BILL	OF PONCTU	JAL MASS	ES									
			14a	199	198	39	92		F	oints inerti	ia	1	Masses ine	rtia
	ltem	Points quantity	Ponctual mass (kg)	Margins	Mass (kg)	Xg (mm)	Yg (mm)	Zg (mm)	lzz (mm²)	lyy (mm²)	lzz (mm³)	lzz (kg.mm²)	lyy (kg.mm²)	lzz (kg.mm²)
T	Equipments # Tesla model R	2	2300	0,0%	4600	2291	294	3416	5810375	63113833	68924208	13363861587	145161816500	158525678088
	Equipments # MissingData - Bike Harley	1	0	0,0%	0	0	0	0	0	0	0	0	0	0
	Equipments::Rescue Boats	2	180	0,0%	360	0	-5041	3308	0	2,72E+08	2,72E+08	0,00E+00	4,89E+10	4,89E+10
					4960	2124,514	-93,28	3408,451				2,29E+10	1,96E+11	2,1869E+11
5	Results Volu	L C	urfaces	Curves	Points	pillof	Materials	(÷						

Bill of materials:

14		A		в	С	D	E	F	G	Н	
1							PROJECT :				
23		TomKod ><						2010 St			
	S S	oftwares for users, by	users			MA	SS SUMMA				
4							Customer				
5	Last update:	18/02/2021 (13:49)									
6		B	eference : DE	MO_Proj	ectWeightl	Report_v2.3dm					
7											
8			A15	BI	LL OF M	ATERIALS	210	122			
9											
10	LAMINATED P	LATES									
11											
12	F: 100x11		2	2994979.1	mm³						
13	F: 100x8		35	538524.77	mm³						
14	F: 120x11		50	90566.62	mm³						
15	F: 150x11			511497.29							
38	Th.6			03378740							
40	Th.8			255121521	mm³						
44											
45	EXTRUDED PF	ROFILES									
46								1			2
47	100x10			045.2844							
48	60x6			000.91597				1			2
49	80x10			3421.4513							
50	80x6		2	6671.4546	mm			1			-2
54											
55	OTHERS						_	1			-2
56		S4 11 1		202							
57	Equipments # E	Bike Harley		1							-1 -10
	Equipments # T	esia model R		1				_			- F
59	Bescue Boats	T and the		1		The second second	1 margaret				
	F	Results	Volumes	Su	faces	Curves	Points	Billo	OfMaterials	(+)	1

A custom ViewPort is created with the gravity center displayed:

Rhino Viewport



Options

No option available.

Customization

The excel report template "PWE_Model.xlsx" can be modified in the plugin's install directory, usually:

%AppData%\McNeel\Rhinoceros\7.0\Plug-ins\Marine Weight Schedule for RH6-RH7 (dac6da37-23fc-4ad6-9b46-33a2cad9e13b)\VersionNumber (Adapt Rhino's version if needed, as well as the plugin's version)

It is recommended to edit only the texts values and the logos, while keeping the document general layout.

HydrostaticReport

Computes an hydrostatic analysis at different heights and generates an excel report.

Walkthrough

The hull's surface or polysurface is selected as input. Once validated, Rhino's hydrostatic culculation is runned at various heights as defined in options, and an excel report is generated.

Last

update: 2021/01/22 start:plugins:marineweightschedule:mws-usermanual https://wiki.tomkod.com/doku.php?id=start:plugins:marineweightschedule:mws-usermanual&rev=1611309171 10:52

4	A	В	C	D	E	F	G	Н	1	J	К	L
1 2	in.							1		CASE : xxx	6	
3	MSW								Hyd	rostatique	-rev0	
1.	~~~~	•								Customer:		
	Last upd	ate: 09/10/20)18 (18:40)								-	
5			Reference :	HULL.3dm								
1												
	-04	and a second second										
3	Density:	1.025										
	Density: TE (mm)	Hull Volume	Displaceme nt (Kg)	LCB (m)	TCB (m)	VCB (m)	Wet Surface (m²)	Lwi (m)	Bwl (m)	Floating Surface (m²)	LCF (m)	TCF (m)
		Hull		LCB (m) 0	TCB (m)	VCB (m)		Lwl (m)	Bwl (m) 0		LCF (m)	TCF (m)
,	TE (mm)	Hull Volume (m3)	nt (Kg)	LCD (m)		CEREMON!	Surface (m²)	IS ALL ALL ALL ALL ALL ALL ALL ALL ALL AL	Constant and a	Surface (m ²)	10.00000000	0
0	TE (mm)	Hull Volume (m3) 0	nt (Kg) 0	0	0	0	Surface (m²) 0	0	0	Surface (m²) 0	0	0 -1,7745E-14
9 0 1 2	TE (mm) 0 400	Hull Volume (m3) 0 104,716	nt (Kg) 0 107333,9	0 6,6647E-09	0 4,4018E-15	0 0,211786	Surface (m²) 0 309,518	0 28,931	0	Surface (m ²) 0 300,97	0 2,6666E-09	0 -1,7745E-14 2,6562E-09
0 1 2 3	TE (mm) 0 400 800	Hull Volume (m3) 0 104,716 234,389	nt (Kg) 0 107333,9 240248,725	0 6,6647E-09 -4,4117E-08	0 4,4018E-15 2,0758E-09	0 0,211786 0,42879	Surface (m²) 0 309,518 368,815	0 28,931 32,3866	0 11,0001 11,2	Surface (m ³) 0 300,97 341,889	0 2,6666E-09 -1,6783E-08	0 -1,7745E-14 2,6562E-09 5,4739E-09
9 9 10 11 12 13 14	TE (mm) 0 400 800 1200	Hull Volume (m3) 0 104,716 234,389 377,207	nt (Kg) 0 107333,9 240248,725 386637,175	0 6,6647E-09 -4,4117E-08 -1,2697E-07	0 4,4018E-15 2,0758E-09 3,7393E-09	0 0,211786 0,42879 0,646117	Surface (m ³) 0 309,518 368,815 422,516	0 28,931 32,3866 35,3723	0 11,0001 11,2 11,2	Surface (m ²) 0 300,97 341,889 371,786	0 2,6666E-09 -1,6783E-08 -4,1417E-08	0 -1,7745E-14 2,6562E-09 5,4739E-09 9,1985E-09
0 1 2 3 4	TE (mm) 0 400 800 1200 1600	Hull Volume (m3) 0 104,716 234,389 377,207 531,539	nt (Kg) 0 107333.9 240248,725 386637,175 544827,475	0 6,6647E-09 -4,4117E-08 -1,2697E-07 -1,3983E-07	0 4,4018E-15 2,0758E-09 3,7393E-09 6,3871E-09	0 0,211786 0,42879 0,646117 0,865704	Surface (m ²) 0 309,518 368,815 422,516 476,361	0 28,931 32,3866 35,3723 38,3579	0 11,0001 11,2 11,2 11,2	Surface (m ²) 0 300,97 341,889 371,786 399,569	0 2,6666E-09 -1,6783E-08 -4,1417E-08 -2,5545E-08	1998) 1999)

Options

TEMin	Minimum height (mm)
TEmax	Maximum height (mm)
Delta	Distance between two tested height (mm)
Density	Water Density
AutoMinMax	Detect TEMin and TEmax values from geometry (Only available when a geometry is selected)

Customization

The excel report template "Hydro_Model.xlsx" can be modified in the plugin's install directory, usually:

%AppData%\McNeel\Rhinoceros\7.0\Plug-ins\Marine Weight Schedule for RH6-RH7 (dac6da37-23fc-4ad6-9b46-33a2cad9e13b)\VersionNumber (Adapt Rhino's version if needed, as well as the plugin's version)

It is recommended to edit only the texts values and the logos, while keeping the document general layout.

GBlock_SetData

Adds gravity center and mass informations to a block. GBlocks are considered by the command *ProjectWeightReport*, which makes them extremely useful for your equipements.

i

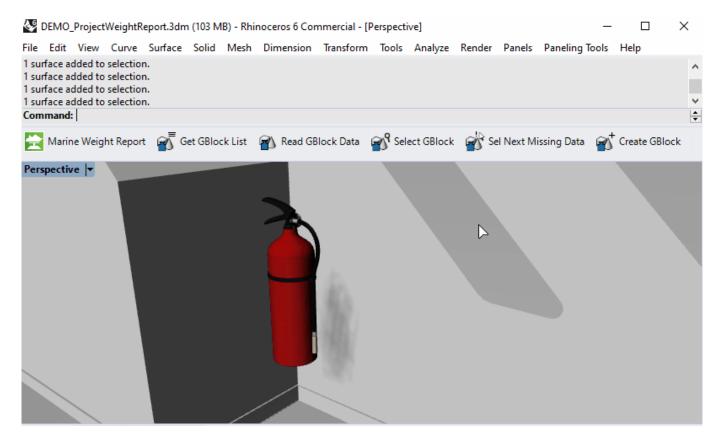
When using this command on an existing GBlock, its gravity center, mass information and name will be overriden.

This is the only way to edit a GBlock name or data.

13/16

Walkthrough

- 1. Start the command
- 2. Pick a rhino block¹⁰⁾ in the model
- 3. Pick the GBlock's gravity center
- 4. Enter the GBlock's mass
- 5. Enter the GBlock's name (By default, Rhino's block name is used)
- 6. Click OK or press Enter



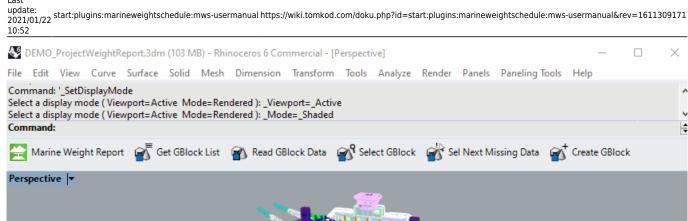
GBlock_GetList

Lists every existing GBlock names and masses to the command line.

Walkthrough

- 1. Start the command
- 2. A windows is shown with details about every blocks instances in the model

Last



GBlock_ReadData

Reads a GBlock data.

Walkthrough

- 1. Select a GBlock
- 2. The data is shown in the command line:

```
Command: _GBlock_ReadData
Please select a block instance
extinguisher: 3,6 kg (-9960,813,-5131,802,3834,316)
Command:
```

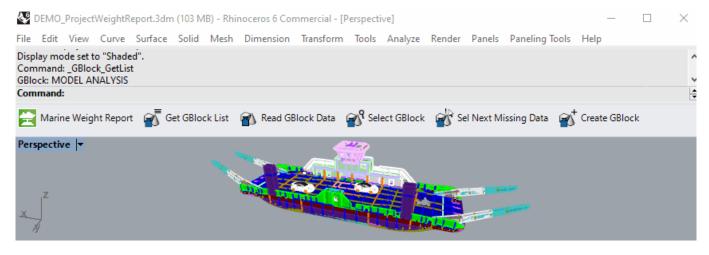
Gblock Select

Select a block by their GBlock Name. (From a list of available GBlock names)

Walkthrough

- 1. Launch the command
- 2. Pick a GBlock name from the list
- 3. Every instances of this GBlock will be selected in the model

15/16

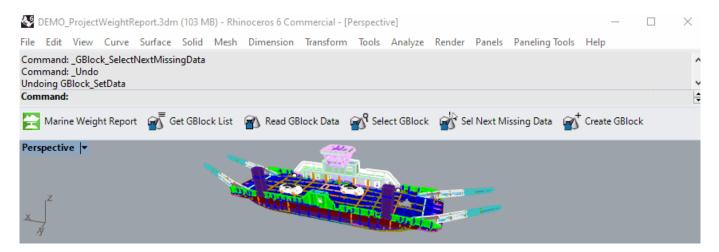


GBlock_SelectNextMissingData

Selects the next block in the document wich is not a GBlock (gravity center and mass are undefined)

Walkthrough

- 1. Launch the command
- 2. The commands loops between the non-GBlocks instances in the model. (Press escap to leave)

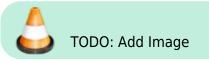


GBlock_Rename

Renames a GBlock definition (Every instances will be renamed)

Walkthrough

- 1. Launch the command
- 2. Pick a Gblock from the list
- 3. Enter a new name for the GBlock



1)

Rhino6.15 or later

Tested up to Rhino 7.1

Rhino 6 or later only, with graphic user interface for Rhino7 only

v1.0.4 and later versions

The whole model or worksession will be used

6)

3)

4)

Read "Model preparation" below 7)

To avoid errors, openened polysurfaces won't be allowed

instances references

.xlsx

10)

9)

Instance reference

From: https://wiki.tomkod.com/ - TomKod knowledge base

Permanent link: https://wiki.tomkod.com/doku.php?id=start:plugins:marineweightschedule:mws-usermanual&rev=161130917

Last update: 2021/01/22 10:52

