Note: You can keep this document window open to reference as you work in the GLM Configuration wizard.

Steps to Configure a new GLM
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1. If a cost estimate is desired, email CSI the planned configuration including number of vessels, sistership information, and expected modules.
2. Use the GLM maker wizard to configure and test a GLM.
3. Use the wizard to create a PACKAGE.ZIP which contains the files defining the GLM.
4. Email CSI the PACKAGE.ZIP, the vessel name and any sistership information.
5. CSI will compile the received configuration package into a securely coded GLM, emailing the configurer a download link. An invoice is created at this time.
6. Repeat steps 3-6 for a period of up to 12 months from the date of invoice. After this period, updates will be subject to a time laddered update fee.

Preliminary process
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1. If you haven't already, please review the information on GLM at our website: http://www.ghsport.com/glm/index.htm, which will answer many of your initial questions.

2. Configuration involves entering various setup parameters in to a series of wizard driven dialogs. GLM will be acting as an electronic T&S book the initial and pre-defined conditions should match those listed in the original T&S. To reproduce conditions from the T&S book, it is recommended the configurer create these by selecting the test button in GLM Maker when prompted upon exit. All matching condition data can be input from the GLM during testing and saved by selecting the button, Condition Files\Save.

 3. Understand the GLM pricing structure and liaise with GHS customer support, and your client, to determine the system necessary. GLM pricing is based on the selected modules which are (order not specific):

GLM Base License
- LS - Longitudinal Strengths;
- SI - Sensor Interface; - Send and Receive data from several communication protocols including tank gauging, draft sensors and crane position sensors
  - per sensor charge applicable.
- CR - Crane System; - For complex cranes with moveable sail geometry; With or without lifting tables and also stingers.
  - per crane charge applicable.
- MB - Multi-Body;   - This is used for TUG/BARGE combinations and heavy-lifting - appending geometry to another.
- GLM Voyage Worksheet; - for Tankers or barges loading and off-loading during transit
- Anchor System; - Model pull forces of anchors on vessel
  - per anchor charge is applicable.
- GLM Tank Property Tables System
  - per tank charge is applicable.

Note: There is also a price reduction for identical sister vessels (same GF, different name and configuration allowed) and near sister vessels (same displacer components, different name and configuration allowed).

With the initial purchase, configuration and software updates are available free of charge for 12 months, after which time there is a charge for updating, based on the number of years since the original purchase. Many of our customers update their GLM's every 3 years to take advantage of the 75% discount offered for this time period.

Configuration of the GLM
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1. If you have gotten this far (to the main menu of the GLM_Maker wizard) it will already have helped you make or select a new directory and copy the Geometry File to it. Most buttons, checkboxes, radio buttons etc., will have short tool-tips available which describe their function, simply hover your mouse over an item until the tool-tip appears.

2. In the main GLM_Maker menu, press CFG (Configuration basics).   The first item to setup on this page is the Title which is the vessel name and possibly IMO number if applicable.

3. In the Light Ship section, click "Edit File" to enter the light ship information in the form of GHS commands. Or if you have a single light ship point weight (no distributed weight curve) you may use the "Dialog".

In most cases you will be using "Edit File" which brings up an edit session with the file LTSHIP.CFG. It must contain the GHS commands defining light ship. If you have these commands in another run file, simply copy and paste them here. Initially there will be remarks present as a guide. Place the appropriate commands in the file after the remarks.

If your GLM is to include a complex crane (CR module req'd) and the existing lightship weight curve includes the crane, these crane items, eg. boom, house, hook etc, will need to be deducted from lightship by including them as negative added weight items.

When finished with this, save the LTSHIP.CFG file and close its editor.

4. Similarly, in the Configuration basics dialog box, set your Draft locations. The "Dialog" is convenient here, but you can edit the DRLOC.CFG file directly if you like.

"Keel characteristics" has two purposes:

A) to set the keel thickness if you want to use keel drafts rather than baseline drafts;
B) to set IMO Roll parameters if this GLM will be computing Severe Wind and Roll stability directly. These settings are independent of the DRLOC.CFG file.

5. Similarly, ADD commands for weights not included with Light Ship should go into the ADDWT.CFG file using "Edit File" in the Weight items section.

"Categories" sets up a system for managing large numbers of added weights. It also allows alternate files of weight items to become part of the GLM system whereby the operator can bring in weights from these files to replace those in a given category. Most GLMs will not need to use this.

6. If there are any initial tank settings (contents or loads) that you want to build into the GLM, edit the TANKS.CFG file via the "Edit File" button in the Tank settings area. Any tank loads included here will be included in the initial condition upon GLM startup. You may also put FSM method settings here (which cannot be changed by the GLM operator). If any tank names have been changed or tanks deleted, make sure the information going into TANKS.CFG reflects this.

Note: If there are any error messages at the close of one of these edit sessions, go back and make corrections.

7. Enter any CRTPT commands for Critical Points not carried in the Geometry File using "Edit File" in the Critical points section. In GLMs which depend entirely on the max VCG curves for stability information, Critical Points to mark downflooding openings are not necessary.

8. The Max VCG run section is where you put the maximum VCG information. It is not recommended that you put normal MAXVCG commands directly in this file since they may take a long time to run.

If a max VCG "data base" already exists in a SAVE file from another GHS run, it is most convenient to simply "copy and paste" that max VCG information. For example,

```
  MAXVCG DATA TI "IMO Res A.749"
  MAXVCG DATA TR  0
  MAXVCG DATA VO  .51680E+05  .10336E+06  .15504E+06  .20672E+06  .25840E+06
  MAXVCG DATA LC -158.0639 -157.8173 -157.5299 -156.8294 -155.2505
  MAXVCG DATA VC  19.66385  26.42179  28.63989  26.26485  25.67022
  WRITE (MAXVCG) MAXVCG.DAT
```

In the above example, only zero trim is represented. This will require the vessel to be near zero trim before max VCG information will appear in the GLM. In the Options/LE/Others menu, checking "No extrapolation of MaxVCG data" will require the trim to be exactly zero, which seldom will be achieved. It is usually better to include a range of trims or LCG values in your normal MAXVCG run(s) to cover all operating conditions of the vessel.

Warning: Do not edit the MAXVCG DATA commands (such as those shown above) or attempt to create them by hand. These are special commands intended for the machine to read efficiently and should only be obtained from files written by GHS using the SAVE or WRITE command.

Be sure to include a

```
  WRITE (MAXVCG) MAXVCG.DAT
```

command. This writes the Max VCG information onto the MAXVCG.DAT file which is where

the GLM will expect to find it.

If you have maximum VCG data from an external source, use the "External data" button.

9. At this point you have completed a minimal GLM configuration. Go back to the main menu and press Finished. It will ask you whether you want to test the GLM. If you answer Yes, it will bring up GLM in the current directory. The current directory is your working directory for configuring the GLM and it will not have the executables, the documentation files, the coded Geometry file and the Key file that are involved in a complete stand-alone GLM. It will be accessing the executable files and key file from your GHS program directory.
However it will be sufficient for testing.

10. The GLM can be configured with preset stability evaluation criteria in addition to maximum allowable VCG curves. Options for stability criteria are set by selecting Options\Stability. Stability evaluation can be triggered by an on-screen button (Options\Buttons\Stability) and/or when a condition report is generated.

GLM can be configured to assess direct damage cases. The damage stability criterion should be set in Options\Stability, then the damage cases set forth in Options\Special Applications\Flooding Sets. Finally, choose the desired buttons in Options\Buttons\Stability & Special Buttons.

11. If the GLM incorporates Longitudinal Strength, select Options from the main GLM_Maker menu, then press LS (Longitudinal Strength) and check the "Include LS" box. Also set the other LS options as appropriate.

12. Complex cranes. See the Crane tutorial, available online, for details on configuring cranes. http://www.ghsport.com/support/TrainingBook-Crane.pdf

13. If a vessel has multiple operating modes which require different evaluation criteria, these can be configured as well. The condition reports include only the stability and strength evaluations applicable to the current operating mode. First select the desired modes in Options\Modes, then enable the mode buttons to allow the operator to select the current mode in Options\Buttons\Mode.

14. Check the LE (Load Editor options) for other settings that may be desirable.

15. Likewise, set any special Condition Graphics parameters in the CG section.

16. Review the various GLM options necessary to match the existing T&S book. These can be reviewed and setup as necessary by selecting the OPTIONS button. Many features also require a button to be setup or selected for inclusion in GLM by selecting OPTIONS → BUTTONS.

17. There are many other options which can be discovered by browsing through the wizard's many dialog boxes.