

## Our Feature Presentation

In this issue, we would like to introduce our Vice President, Roger Burger.

First of all, getting any information out of him is like pulling teeth. He is not one who likes to talk about himself. I did, however, find out just enough information to make this interesting.

Roger spent his childhood as a "Military Dependant". His father was in the Air Force and they lived in places ranging from Crosby, North Dakota, to Tokyo, Japan.

When they finally settled, it was in Gulfport, Mississippi and Roger attended Gulfport East H.S. After graduating, he went on to Mississippi State University and earned a Bachelor's degree in Marine Engineering.

It was here in Mississippi that Roger's life would forever change for the better. Early in his college career, he met a young woman named Sheila and by 1977, he wisely decided he could not live without her and they married.

From 1979 to 1983, Roger worked for McDermott Incorporated in New Orleans as a Naval Architect on projects such as Union Oil Company of California's "Cerveza" and "Ligera" platforms.

He was transferred to Houston in 1983 to Hudson Engineering (a McDermott company) and worked as a Naval Architect from 1983 to 1985. In 1985, he was promoted to Senior Naval Architect and worked on projects such as the Shell "BOXER" Platform, BP Exploration's "SNAPPER" Platform and Shell Oil's compliant tower "POPEYE".

In September of 1991, Roger joined us to provide client training and support.

*cont'd. on page 2*



## OSCAR II and ISAAC Killed in Internet Explosion

OSCAR II, 10 years old, and ISAAC, 15 years old, were finally laid to rest in July of 1997. They were both victims of the Internet explosion a few years ago, but held on until it was no longer possible. They leave behind their their younger "brother", MOSES. MOSES made a statement to the shareholders of the company last week stating that he would take over the family business in place of his brothers and would continue to offer all the capabilities that they did, just in a slightly different manner. Here is an excerpt of his statement:

"From 1989 until this release, there have been three of us: MOSES, OSCAR II, and ISAAC. This has served us well, but with the use of the Internet, it has become quite a burden to keep all of us updated. As a result, we now have only a single program, MOSES. If you have a license for one of the recently deceased programs, you will get a MOSES with at least the same capabilities you currently enjoy. Most of you will get more capabilities. The only change you should notice is that you:

- a. run a new program name and
- b. the main menu may have some new commands available."

MOSES went on to say how deeply saddened he was by his brothers' death, but that he knew his capabilities were superior to theirs. "It's survival of the fittest," MOSES said, "and the older programs just couldn't keep up." He knew that they had been suffering, and feels that this was for the best. Upon their deaths, a new brochure was released describing the new pricing for the MOSES product.

We hope to make this transition as painless as possible for our clients, and should you need any additional information, please feel free to call or e-mail us at any time.

## What's New in the News

- Our Feature Presentation: Vice President Roger Burger
- Death at Ultramarine
- Present and Future Releases: Rev. 5.06 and Rev. 5.07
- Frequently Asked Questions
- Ultramarine Information: How to reach us
- Recent Projects using Ultramarine software
- Events at Ultramarine
- Welcome New Users

However, there is nothing his job doesn't include. Like all the engineers here at Ultramarine, Roger wears several different "hats". On any given day, he is a Naval Architect, an offshore analyst, a trainer and a teacher, a marketing representative or is trying his hand at structural engineering. He has also been known to answer the phones a time or two!

But no matter what his current title is at work, the one he is most proud of is "Dad". Roger and Sheila have two children, Jessica, 16, and Justin, 12.

Jessica is a sophomore at Taylor High School in Katy, Texas and recently got her driver's license! (You may want to stay

off Katy area roads for a couple of months) She is in the High School Band and plays the clarinet. Band takes up most of her time, but she usually will make room in her schedule for other important things like pet sitting and volunteering at a veterinarian office in Katy.

Justin is in the 6th grade at Beck Junior High in Katy and likes to play basketball and the saxophone. His main interests are building and programming robots, skateboarding, mountain biking and tormenting his sister.

We hope you have enjoyed this insight to Roger and his family. We at Ultramarine appreciate his hard work and effort and wanted to take this opportunity to tell him.

## Releases... Present and Future

The release of MOSES 5.06 came after the publication of our last newsletter, and MOSES 5.07 is due up soon, so we wanted to give you some information on both the present release, 5.06, and the next release, 5.07, all at the same time!

REV 5.06 was a minor one with respect to changes in the programs themselves, but a major one with respect to the documentation. Since we started with the business of using a "web browser" to access our documentation, we have tried several different approaches. The entire structure of the release directory has been changed to accommodate the new document structure which is built around the concept of the MOSES HELP DESK. Here, we have general categories with links to the specifics. Many of these things were around in the last release, but in different places. Now, there is a unified structure.

- The old "Tutorial" is gone. Parts of it remain as "How To CopeWith MOSES", but the remainder is replaced with a new section "How to Do" which also contains the old sample problems.

- The old "Frequently Asked Questions" has been greatly expanded and now has a list for easy browsing.

- There is a new section, "How MOSES Deals With". This is really the theoretical basis of MOSES by general category.

- The links to all of the documentation are here: the online reference manual, manuals for printing, the verification manual, etc. Also, there is a section for "Miscellaneous Technical Information".

### For the moment, Rev 5.07 has been a minor release.

- Since WINDOWS has a problem with the suffix ".com", we have changed the suffix of the Command Input file from ".com" to ".cif" and the name of the Command Output File from ".oco" to ".cof". One can still use .com (or .comi), but all of the

files we supply will have the new suffix.

- New values were added TITLE, SUBTITLE, and FIG\_NUM to the string function &D\_SET and the option -FIG\_NUM of &DEVICE has been extended. The first of these things allow you to get the title and subtitle and the last two get you the next figure number to be plotted, or to set it.

- A new option -STATISTICS has been added to the SET\_VAR command in the Disposition Menu. This gives you access to the statistics of a column of data.

- Some of the seriously out of date (not in the documentation for over three years) values for reports in &STATUS and NAMES (both command and string function) have been removed.

- Also the "interface commands": &X, &P, and &C have been changed to !, +P, -P, and !C.

- The -LOAD option on the &CONVERT command has been changed. Now, instead of either YES or NO, one has more control over the way the loads are converted.

### New with Compartments for 5.07

With REV 5.02 we began adding sophistication to the way in which MOSES can deal with compartments. Some of these changes had unintended consequences. What we did with this release was to add changes which remedy most of the hardships we induced and also added a bit more sophistication.

The -SIMPLE method for filling compartments has been radically altered. What we had before was directly take from the PRINCIPLES OF NAVAL ARCHITECTURE. Some of our users did not like this and also, it really was not a good way of approximating the situation. In essence, what we used to do was "add something" to the CG. This resulted in several bad things. First, it puts the mass of the tank at an unreasonable position. Second, there is only one correction, so that either the longitudinal or trans-

verse GM will automatically be wrong. Finally, when applied blindly, it does not give good results for the force on the body. Now, we have a new system: We compute a "GM reduction" for both the longitudinal and transverse GMs and reduce the GMs accordingly. We also use the GM reductions to find an approximation to the CG location as the body moves and apply the force at the new location. Here, we are not moving the CG vertically, but horizontally. This new scheme yields essentially the same results as the "exact ones" (computed via -SLOSH) not only for CG, but for force and CG location.

The -FROZEN method of filling tanks has also been changed. In the past, it used the same method of computing the CG as -SIMPLE, but it was not corrected. Now, it simply uses the CG in existence when it is frozen. If you change the percentage full in a -FROZEN tank, the correct one will be computed and used with no correction later.

We have added three new &STATUS value compartments: CG\_COMPARTMENT reports the name, method filled, weight, percentage full, sounding, CG, and GM corrections for a tank. S\_COMPARTMENT reports the name and the ends of the sounding tube. V\_COMPARTMENT reports the name, fill type, valve location, valve normal, friction factor, and valve area. The &STATUS B\_W report has also been changed. The CGs are no longer corrected, the percentage full and sounding have been added for compartments, and if the weight does not equal the buoyancy, the GMs are not reported. This last change was made because GM, as traditionally defined, is only useful when the weight equals the buoyancy.

Now, the flow of water into and out of a tank is considered in the frequency domain. To properly account for all of these extra features, one can now specify the direction of the valve discharge. In the past, we neglected the contribution of the flow in computing the force. In Rev. 5.07, we consider it.

# Frequently Asked Questions

**Q: If I use the command FR\_POINT &BODY(CG DECK) will I get the RAOs of the motion of the DECK cg in its current position?**

**A:** Maybe. The FR\_POINT does yield the RAOs of a point about its mean position. These RAOs are represented in the body coordinate system. If, however, you have more than one body the syntax you described may give the results for the “wrong” body. The documentation of FR\_POINT warns you that if you use the syntax above, MOSES will use the “current body”. This may not be the body you want unless you explicitly use the command &DESCRIBE BODY DECK immediately before FR\_POINT. It is easier to use FR\_POINT \*DECKCG where the point \*DECKCG has been defined to have the location of the CG. Also, I am not quite sure what you mean by “in the correct position”. The way MOSES views life, points are “particles” attached to bodies, not locations. Thus, the RAOs you get are the RAOs of a fixed particle of a body - regardless of the location of the particle. I am afraid that you are confusing the representation of the RAOs with the location of the point. As stated above, the RAOs are represented in the body system, i.e., a heave is perpendicular to the “deck” not the waterplane.

**Q: Why do we get a transient phase in the wave profile out of a regular wave?**

**A:** The transient you noticed for a regular wave is the result of the default setting &PARAM -RAMP 20 in your moses.cus file. This controls the time interval over which the sea will be linearly ramped from zero to its full value, which in this case is 20 seconds.

**Q: I was looking at the hydrostatic coefficients generated from ISAAC and noticed that the moment to cause trim by 0.01 degree uses BML (instead of GML) in the computation. This is the same whether or not I give a value for KG. Does this approximation continue on when calculating the righting arms and using the allowable KG macros?**

**A:** No. Using BML in the moment to change trim calculation is conservative and steeped in history. Since we do not know the value of KG when the CFORM command is issued, we do not know the GML, therefore BML is the next best thing. This only occurs in the calculation of moment to change trim and is not used elsewhere in the program.

**Q: We get the message that we cannot get more than 8 points out of the &INTEREST REPORT. Is there any way to increase that number of points? 8 points is really not enough.**

**A:** The 8 point limitation stems from the amount of real estate we have available on a page for the report. If you need more, loop over the commands providing the information you want, changing the interest points in each step.

**Q: I have a body, composed entirely of tubular members. When I compute frequency domain results for this body, I get all zeros for the added mass, damping, and exciting forces. How can this be?**

**A:** There are three reasons that you can receive a report of all zeros:

- The body is not in the water.

- You are looking at the wrong report. There are two reports which give the information you described. One of these is obtained in the HYDRODYNAMICS Menu, the other in the FREQUENCY RESPONSE Menu. The one from HYDRODYNAMICS reports results only for panels. You have no panels, hence these should be zero. The report you get in the FREQUENCY RESPONSE menu will contain results for both panels and Morison’s elements.

- You asked for the results to be reported before they were computed. Hydrodynamic forces due to Morison’s equation are computed when they are needed. Hence, there are no hydrodynamic forces on your body until after the first RAO of SRESPONSE command is issued.

**Q: We are running a 1200s (20 min) time simulation duration, in the &parameter command. We want to use the option -prob DURATION 10800, thinking that it will extrapolate extreme values to an equivalent run of 10800s duration (3 hrs). Is it really what this option is doing? If yes what is the law of probability it is using to extrapolate? If not, what is it doing?**

**A:** As stated in the MOSES Reference Manual, &parameter -probability STAT PDATA controls the statistics which will be defined when computing the statistics of quantities in an irregular sea. The default is for STAT to refer to the MAXIMUM, and PDATA is 3.72 which provides the 1/1000 highest response, based on a Rayleigh distribution. This is the statistical multiplier the root mean square will be multiplied by to obtain a maximum. When DURATION is used for STAT, the time specified is used to determine the statistical multiplier.

**Q: When performing a launch analysis I get skidway reactions from the laup\_std command. Also, I do &instate -event T followed by &status f\_lway. The two results are different, which one is correct?**

**A:** The skidway reactions from laup\_std, which is really a macro using lwforce under prcpst, are the correct ones to use. The &instate -event T command induces a constraint calculation that is different from the one used for lwforce. If you need skidway reactions for times other than those computed, you can use the -events option on lwforce, or the set\_var command in the Disposition Menu.

**Q: Is Ultramarine’s software approved by the ABS?**

**A:** As far as we know, organizations such as Lloyds, ABS, U.S. Coast Guard and DNV do not approve software. They approve calculations and designs that use a variety of software, but not the software itself. The only organization we are aware of that does this is the Norwegian Maritime Directorate, NMD, and they approve mooring and stability only. We do know that our software has been used on numerous projects throughout the years, with the designs and calculations approved by various certification authorities. If you have a specific need for software approved by ABS, please let us know.

## Ultramarine, inc.

Phone: 1-713-975-8146  
Fax: 1-713-975-8179  
Modem: 1-713-975-8184  
login: outsider

## Internet Info.

web site: <http://www.ultramarine.com>  
ftp site: <ftp://www.ultramarine.com/pub>  
e-mail: "first name"@ultramarine.com  
i.e.: ray@ultramarine.com

## Ultramarine, Europe

Phone: 33-1-34-83-03-77  
Fax: 33-1-30-46-21-10  
Modem: 33-1-34-83-07-42  
login: outsider

## Recent Projects Using MOSES

- Dynamic Launch Analysis of a Roll-On/Roll-Off passenger vessel launched from a shipyard for Halter Marine.
- Mooring of a BOS 355 alongside a tanker in the install position for Mobil in Equatorial Guinea.

- Barnett & Casbarian used MOSES to analyze the mooring system of the H-851 launch barge during hull loadout of the URSA TLP.
- Installation and mating analysis for the Kwang Ahn Bridge in Pusan, South Korea. This analysis was for one section of the bridge and included loadout, transportation, and mating/mooring.

## Events at Ultramarine

We have a couple of special announcements for this issue of Ultra.news.

Yvan Leipold, who works in our Paris office, was married this summer. He and his bride, Fatiha, exchanged wedding vows in the CHATEAU of ARGERONNE, on the 28th of June. We would like to wish them congratulations and a lifetime of happiness together.

Georgina Maldonado-Aguirre, who started working here in December of 1993, has accepted a job offer at Barnett & Casbarian, Inc. here in Houston. We wish her lots of luck in her new job!!

## Welcome New Users and Thanks for Upgrading!

BORGEN-ECKEY  
Oslo, Norway



David Kilgore  
Kentwood, LA.



Aker Maritime  
Houston, Tx.



Friede & Goldman  
New Orleans, LA.



SASP Offshore  
Engineering  
Italy



Barnett &  
Casbarian  
Houston, Tx.



Ocean Design  
Associates  
Houston, Tx.



Templeton &  
Associates  
Houston, Tx.



MGM Group  
Leederville,  
Australia

