

Spreading our wings

Ultramarine Europe takes flight

Logic tells us that the best way to please a customer is to wait on them, not make them wait for us. At Ultramarine, we figured the best way to accommodate is to be there at the time when you need us. Since this is often difficult to do halfway across the world, we have opened a new office in France. Now there will be help provided at the hours most convenient to you. Our contact person there is Mr. Yvan Leipold. Yvan and Ray have worked together for many years, however Yvan recently became an employee of Ultramarine.

The goals we have for Ultramarine Europe are quite simple. We want to provide a better service to our clients by having a liaison in their area of the world. The seven hour time difference may not seem like much, but it can impede the progress of an overseas client by one whole day. In the standards of our fast paced world and in Ultramarine's standards, this is not acceptable. By establishing an office in France, our business hours are effectively changed from 8 to 15 hours a day and we are able to provide longer hours of technical support for our clients with questions.

Our expectations for Ultramarine Europe are quite high. Our success in Europe will now be largely dependent on Yvan's capabilities as a consultant. He has specialized in oceanography, hydrodynamics and structural design and was responsible for internal training on MOSES code at Bouygues. He has proven his capabilities to us by the extensive working knowledge he has of our software. We are quite confident that he will not only meet but also surpass the expectations of our European associates and clientele.

You can learn more about Yvan in our "New staff at Ultramarine" article in this issue.

Quality Assurance

Our commitment to you

We have had a comprehensive quality assurance program at Ultramarine for over eight years. Each new user is sent a document describing the program as well as presenting comparisons of our solutions with other companies.

Recently, we have been surprised that quite a few users are unaware of both the document and our quality assurance efforts.

To ameliorate this lack of communication, we have re-written the document and will be sending it along with the next release. If you have any questions, comments or criticisms, please let us know.

In the News...

New staff at Ultramarine- The people you need to know and the interesting places you can find them.

Recent Projects - Our latest success stories using MOSES.

Back to the drawing board - New revisions to MOSES coming out this fall.

Questions? - You may find the answers right here.

And even more...

New Staff at Ultramarine

In keeping with our efforts to provide superior user support and services, we have recently increased the size of our staff. We would like you to join us in welcoming **Ms. Georgina Maldonado-Aguirre** to our Houston office and **Mr. Yvan Leipold** to our Paris office.

Georgina joined our Houston office in December of 1993. She has her B.S. in Mechanical Engineering from the Massachusetts Institute of Technology and her M.S. in Ocean Engineering from Texas A&M University. She has several years experience

running our software while at Texas A&M and during summer employment at Mobil Research and Development in Dallas, Texas.

Yvan has helped staff our European office since March of this year. He received his Masters degree in Ocean Engineering from the University of Miami and has worked for Bouygues Offshore in France for six years. With many years experience in the offshore industry and with extensive knowledge of Ultramarine software, Yvan is available to provide support *et language familiar* to our local Parisian and other European clients.

Recent Projects using Ultramarine software

- Shell Offshore Company's Auger TLP - Installed in 1993, Shell used **MOSES** to evaluate various transportation scenarios of the hull from Italy. Transportation fatigue was also analyzed. McDermott Incorporated also used **MOSES** to study the mating of the TLP deck with the hull.
- British Petroleum Exploration's Viosca Knoll 989 platform - Installed in October of 1994, BPX's 1300' water depth structure is the world's second largest single piece installation. McDermott Incorporated performed the fabrication of the jacket and was responsible for loadout onto the H851 launch barge. Hudson Engineering performed loadout ballasting studies using **MOSES**, including on site computations during the loadout operation with a laptop PC. Heeremac was responsible for the installation and used Ultramarine software for the transportation and launch analyses.
- Elf Congo N'Kossa Project - The French companies Bouygues Offshore and ETPM have been using **MOSES** extensively for installation studies of two jackets, including loadout, transportation with spectral fatigue, and launch and mating of the jackets with a template. The lowering of these templates and the transportation of various equipment modules, including barge flexibility, has also been studied.
- Chevron's Kokongo Development Project - **MOSES** was used to analyze the installation of two jackets, a flare tripod and several deck sections for this project, located offshore Cabinda, Africa, in water depths ranging from 343 to 387 feet. With fabrication in Brazil, the transportation analyses for the jackets included structural code checks and spectral fatigue. These structures were successfully installed by Saipem in summer 1994.
- Shell Nelson Project - A transportation analysis was performed for the 1600 metric ton topside structure for this project. Barge flexibility simulations were performed by AMEC Engineering in the U.K. using **MOSES**.
- Enserch Garden Banks 388 Floating Production Platform - Aker Omega used **MOSES** in the design of modifications for conversion of an existing semi-submersible drilling rig.

Frequently Asked Questions

Q.: Why is AISC set as the default code check for structural analysis rather than API?

A.: This is mainly historical and is changed in the upcoming revision Rev. 5.01. Users can change the default by adding &REP_SEL-CODE API to their ultra.cus file.

Q.: How can I get a beam wind force when I specified head wind only?

A.: You specified X, Y and Z values for area on the #AREA command. The #AREA command defines a plane on which the environment acts using these values. The force normal to this plane is then calculated by the program. To truly separate the different planes when describing cargo, use one #AREA command for each plane.

Q.: Please clarify how #LSET works.

A.: #LSET is a user defined force. These forces can be applied to either load groups or beams. When &APPLY -FORCE is used to apply the load set, the forces are immedi-

ately applied to any beams. To get the forces on a load group, the load group must also be applied. Conversely, the force will not be applied to either beams or load groups unless &APPLY -FORCE is used.

Q.: Why do I get a substantial roll response in head seas?

A.: This can happen for a variety of reasons, including an asymmetric hull description, or RAOs for a point off the centerline of the vessel. Gyroscopic coupling, or the cross products of the roll and pitch inertia is another reason.

Q.: How can I get zero for the allowable punching shear?

A.: In some cases with high chord stress, Qf can become negative. When this happens, vpa is set to zero.

Q.: What is "Mom AMF" in the beam check summary output?

A.: This is the bending moment modifier, in a slightly more usable format:

$$\text{Mom AMF} = 1/[\text{Cm}/(1-\text{fa}/\text{F}'\text{ey})]$$

is now simulated better and because of better numerical algorithms used in computing the inverse Fourier transform of the damping.

- You can now linearize viscous forces spectrally in the frequency domain.

- Hydrostatics are no longer computed using stations and offsets. Everything (except strip theory) is based on a panel model of the body surface. This results in better accuracy for the hydrostatic computations.

- We can "rationalize" the way in which loads are mapped to the structure for stress analysis.

- Instead of "response operators", we consider "frequency response". While you can still get response operators, you can now get frequency response of the system to combine wind, wave and nonlinear wave force spectra.

Back to the Drawing Board

MOSES 5.1 Revisions

At Ultramarine, we are always looking for ways to make things simpler. With our upcoming revisions to MOSES, we have done just that. The following features will make their debut in Revision 5.01 which is due out this fall.

Most of the change is directly related to the way in which viscous damping is treated, but not entirely. We have given a great deal of consideration to these changes and feel that the new results are superior to the old ones. Here are some sneak previews:

- Time domain simulations will change because the time variation of the drift force

- One can now input a model completely in MEDIT without doing an INMODEL.
- The size required for a hydrodynamic database (root.hyd) has been dramatically reduced since we now store pressures instead of forces, added mass and damping matrices.
- We have made it easier to alter the mean drift force for a body.
- No Morison contributions are included when importing a hydrodynamic data base. They are now recomputed whenever they are needed.
- We have provided the user with a mechanism for defining exactly how to compute viscous roll damping coefficients for multi-hulled vessels.
- The manner in which launch ways are handled during a nonlinear stress analysis has been changed. We now consider the length and stiffness of the tilt beam.

These are some of the changes you have asked for and in keeping our promise to present only first class, state of the art material to you, Ultramarine has gladly obliged. These changes will also be reflected in our OSCAR II and ISAAC products as applicable.

Helpful Numbers

The following are the phone numbers for our offices in the United States and France:

Houston

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

France

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

More to Come...

Work is well under way on incorporating the capability of "structural dynamics" during a simulation into **MOSES**. With this new feature, you will be able to consider the effect of flexibility *during* a launch or tow, not only at the stress analysis stage. Also, you will be able to consider the modes of vibration during any fatigue or stress analysis. We are hopeful this will be ready by summer 1995.

Let Us Know!

We feel that an important part of a newsletter is client input. In the future, we would like to write about things you feel are important. It may be a new section that needs to be added or other information that would be of interest to you.

Please send any questions you have for our "Frequently Asked Questions" section to us in Houston, attention: Jennifer.

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