



The NAMSGlobal eNews

The National Association of Marine
Surveyors, Inc. (USA)
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NAMSGlobal eNews

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The President's Corner

Howdy,

The heat of summer has settled onto us here on the Gulf Coast — a bit early this year it seems. The good news, at least for now, is that this early heat is due to a stationary high-pressure ridge which also prevents tropical storm formation. The bad news is, that this early warmth could result in an earlier than usual rise of seawater temperature in the Gulf and increased hurricane activity later in the summer. There, I've said it. It's that time — the 2018 Hurricane Season.

Last year about this time, I asked if we were all ready for the onset of the 2017 hurricane season. Looking back, 2017 is ranked as the second most devastating hurricane season with Harvey, Irma, and Maria combined resulting in over a quarter-trillion dollar in damage. Three category 4 storms made landfall in the US. One storm, Harvey, resulted in accumulated record rainfall of over 60 inches and remained a tropical cyclone once over land for 117 hours. (Consider that our normally soggy weather here in Houston averages about 50 inches per year.) It was the most active hurricane season since 2005 when Cindy, Dennis, Katrina, Rita, Ophelia, and Wilma made landfall on the continental US. I know many, or perhaps most of you, do not live along the US East or Gulf coast, but I also know that many of you responded to the call once these events occurred. Tropical systems have historically caused more damage inland where they slow, drop their moisture and cause flooding. Just a reminder to be ready for the weather or other natural events that can affect your locale. I hope those of you affected by one of these systems have been able to recover.

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Planning for the 2019 National Conference continues and it looks like Portland, Oregon is a prime contender for the event in the early spring. If any of you have any topics or speakers which might be of interest to our attendees, let the National Office know.

Just a reminder that all NAMSGlobal Associate and CMS members must submit your recertification credits for the 2017 and 2018 biennium by 12/31/2018 to remain in good standing. A total of 24 hours or credits are required for recertification. The National Office is sending notifications to all members reminding them of this and advising each member how many credits already have on record. If you did not get a notification, please recheck your records or call the office to make sure you have the required number of credits, or a plan in place to complete them.

Remember, each time you sign a letter, report, or email and include the "NAMS-CMS" moniker, you are representing the professionalism that is NAMSGlobal.

Learn Something and Share Your Knowledge Every Day,

Gregon Gant, NAMS-CMS
President

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View from the Helm of the NAMSGlobal E-news

This issue of NAMSGlobal E-news will be my first one. After 13 years as editor, Greg Weeter has turned the editor's helm over to myself, and Contributing Editor Larry Riley. Greg has been very helpful with the transition, and a good sounding board.

Briefly, I started sailing offshore in 1972 crewing on boats in the Pacific. That turned into a stint selling sailboats back in Minnesota, and then on Lake Superior in Wisconsin. In 1982 a regional marine insurance agent gave me a list of boats to look at, and a three page form to fill out for him. It seemed there should be more to it than that, so I attended the 25th NAMS National Marine Conference in Ft. Lauderdale in 1985. There were a number of great people there, including Doug McNitt from NJ, who introduced me to ABYC and NFPA. I also met Mike Sulkowski on one of his trips through Bayfield, WI, and he sponsored me with NAMS once I began doing marine survey work full time. I've worked on the water both on yachts and commercial vessels, most recently on OSVs in the oil patch.

Contributing Editor Lawrence Riley will also be working with the newsletter, bringing in news and articles from other surveying disciplines. He has contributed an article for this edition of the newsletter.

It will be a pleasure working with NAMS and the newsletter, and a chance to give back, and learn a few things in the process.

See you on the waterfront,
Phil Peterson, NAMS-CMS

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Applicants/Members Change in Status

Applicant	Applying for	Region	Sponsored by
Tom Benton	CMS	Western Rivers	Roy Smith
Dana Collyer	CMS	New England	Neil Rosen
Dean Hostetler	CMS	New England	Neil Rosen
Stuart McFarland	Associate	North Pacific	Richard Blomquist
Daniel McKindsey	Associate	Western Rivers	Raymond Toth
William Morris	Associate	East Gulf	Jeffrey Millard
Jessie Page	Associate	East Gulf	Howard Held
George Pereira	CMS	West Gulf	Peter Klop

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Upcoming Educational Opportunities

ABYC Continuing Education, source: ABYC website

Sept. 18 – Sept. 20, 2018 Seward, AK
ABYC Marine Electrical Certification

This course is designed for the marine professional with at least 3 - 5 years' experience working with marine electrical system design, installation or repair and will provide the student with a comprehensive and focused look at the key ABYC Standards. The successful certification candidate should have some familiarity with ABYC Standards and Topics Covered listed below.

The new three day class format now includes an online learning component designed to provide preliminary coursework prior to the class. The online component for the ABYC Electrical Certification class covers various information from the course book. It also provides an overview of ABYC along with certification requirements and helpful hints to manage your certification.

The online learning component access will be sent by email two weeks prior to the course start date.

Sept. 25 – Sept. 27, 2018 Annapolis, MD
ABYC Marine Systems Certification

This four-day training event will focus two of the days on ABYC marine electrical standards and training, and two days on NMEA marine electronics standards and training. This will be the marine industry's premier training event specifically designed as a one-stop shop for boat builders, installers, technicians, marine mechanics and surveyors to get trained on ABYC and NMEA standards.

Oct. 1 – Oct. 3, 2018 Seward, AK ABYC Marine Electrical Certification

This course is designed for the marine professional with at least 3 - 5 years' experience working with marine electrical system design, installation or repair and will provide the student with a comprehensive and focused look at the key ABYC standards.

The new three day class format now includes an online learning component designed to provide preliminary coursework prior to the class. The online component for the ABYC Electrical Certification class covers various information from the course book. It also provides an overview of ABYC along with certification requirements and helpful hints to manage your certification.

Oct. 9 – Oct. 12 Seattle, WA ABYC/NMEA Combined training

This four-day training event will focus two of the days on ABYC marine electrical standards and training, and two days on NMEA marine electronics standards and training. This will be the marine industry's premier training event specifically designed as a one-stop shop for boat builders, installers, technicians, marine mechanics and surveyors to get trained on ABYC and NMEA standards.

Oct. 22 – Oct. 24, 2018 Gulf Shores, AL ABYC Marine Electrical Certification

This course is designed for the marine professional with at least 3 - 5 years' experience working with marine electrical system design, installation or repair and will provide the student with a comprehensive and focused look at the key ABYC standards.

The new three day class format now includes an online learning component designed to provide preliminary coursework prior to the class. The online component for the ABYC Electrical Certification class covers various information from the course book. It also provides an overview of ABYC along with certification requirements and helpful hints to manage your certification.

Nov. 6 – Nov. 9, 2018 Mystic, CT Marine Corrosion Certification

The Corrosion Certification class is designed and intended for those with a minimum of 3-5 years practical experience in the marine field. It is highly commended that certification candidates already have the ABYC Electrical

Certification before attempting the Corrosion Certification program. It is presumed by the course content that candidates have a reasonable understanding of basic concepts, such as, electrical grounding, electrical current flow, galvanic isolation, and basic marine electrical terminology.

Successful completers of this certification program and exam will have a good understanding of all of the various types of corrosion and be able to perform a thorough corrosion analysis on boats of all types.

Nov. 15, 2018 Annapolis, MD GPS Forensics

NASBLA, through their Boat Operations and Training Program, has developed this course designed to provide maritime law enforcement officers the foundational knowledge, skills and ability for recovering evidence from GPS devices and preparing it for courtroom presentation.

GPS devices are capable of storing large amounts of navigational data including maps, track lines, waypoints, routes, etc. This data can provide critical evidence in a courtroom. The GPS Forensics course will provide the skills necessary to extract that critical information while at the same time documenting and preserving the evidence. Legal considerations are also discussed along with preparations for a GPS forensic analysis and the elements of an effective GPS report.

Dec 3, 2018 East Greenwich, RI ABYC/NMEA Combined Training

This four-day training event will focus two of the days on ABYC marine electrical standards and training, and two days on NMEA marine electronics standards and training. This will be the marine industry's premier training event specifically designed as a one-stop shop for boat builders, installers, technicians, marine mechanics and surveyors to get trained on ABYC and NMEA standards.

NOTE: ABYC classes fill up! The three upcoming classes through Sept. 10 are full.

AIMU Industry Events Schedule, source AIMU website.

Sept. 16 – Sept. 18, 2018 Houston Marine Insurance Seminar

No details announced yet.

Towing Vessel Inspection Bureau, source TVIB website:

Sept. 18 – Sept. 21, 2018 Annual Survey of Towing Vessels Course Paducah, KY

The four day Annual Survey of Towing Vessels course provides surveyors with the knowledge and skills required to perform Subchapter M surveys of towing vessels. Students who successfully complete this course will have an in-depth understanding of both internal survey programs and external survey programs, the reporting requirements of each, and is the appropriate course for those seeking certification from TVIB that will put them on the path to becoming an approved TPO Surveyor.

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NAMSWorthy Articles Of Interest

Training on OSHA Standards

**CAPT. Joe Derie, NAMS-CMS; AMS, SAMS; CMI
Co-Chair, Fishing Vessel Technical Committee, NAMS
Southwest Passage Marine Surveys, LLC**

The US Coast Guard has regulatory responsibility regarding safety aboard uninspected commercial vessels at all times. The Occupational Safety and Health Administration (OSHA) also has regulatory responsibility regarding safety aboard these vessels while they are in US waters (OSHA Instruction, Directive Number: CPL 02-01-04, effective date: 02/22/2010, Subject: OSHA Authority Over Vessels and Facilities on or Adjacent to U.S. Navigable Waters and the Outer Continental Shelf (OCS). Due to this memorandum, surveying uninspected commercial vessels should be done using the required standards of the USCG, general OSHA (29 CFR 1910), and if the vessel has a crane, OSHA (29 CFR 1919). To survey a vessel to OSHA Standards requires training in these standards.

Training on OSHA standards is readily available both in online courses or standard classroom training. Marine surveyors should take the OSHA 30 Hour General Industry Training Course. The 30-hour class is deemed more appropriate for supervisors or workers with some safety responsibility. Training opportunities can be found by googling “OSHA 30 Hour General Industry Training.” Online courseware offered at several prices from various sources. Online courses are geared so that the student can stop and resume his studies throughout the course. I choose an online course with advertised a free study guide which turned out to be a large telephone book size document that contained all the OSHA 29 CFR 1910 standards. This has been an invaluable source document for looking up OSHA standards and was helpful while taking the course.

Successful completion of the course comes with a certificate documenting 30-hours of training and CEUs. Be prepared to spend 30 hours on any online course because OSHA requires the student to have 30 hours of training and there is no way to fast forward through the course. Be prepared for quizzes

throughout and tests at the end of each chapter whether you take an online or classroom course.

When choosing courses do not confuse the OSHA 30 Hour General Industry Training Course with the OSHA 30 Hour Construction Industry Training Course. The former covers OSHA 29 CFR 1910 which are the standards uninspected commercial vessels are required to meet. The latter covers 29 CFR 1926 Safety and Health Regulations for Construction, which is applicable to uninspected commercial vessels in only two areas. 29 CFR 1926.605(b) Access to barges, and 29 CFR 1926.1437(a) Floating cranes/derricks and land cranes/derricks on barges.

As always, I hope anyone who wants to discuss this column or has questions about Commercial Fishing Vessels will contact me at 503-236-6818.

A Refresher on API Gravity
Submitted by Lawrence Riley, NAMS-CMS
Contributing NAMS Newsletter Editor
Texas Maritime Associates

API gravity From Wikipedia, the free encyclopedia

The American Petroleum Institute gravity, or API gravity, is a measure of how heavy or light a petroleum liquid is compared to water. If its API gravity is greater than 10, it is lighter and floats on water; if less than 10, it is heavier and sinks. API gravity is thus an inverse measure of the relative density of a petroleum liquid and the density of water, but it is used to compare the relative densities of petroleum liquids. For example, if one petroleum liquid floats on another and is therefore less dense, it has a greater API gravity. Although mathematically, API gravity has no units (see the formula below), it is nevertheless referred to as being in "degrees". API gravity is gradated in degrees on a hydrometer instrument. The API scale was designed so that most values would fall between 10 and 70 API gravity degrees.

1. History of development

The U.S. National Bureau of Standards in 1916 accepted the Baumé scale, developed in France in 1768, as the U.S. standard for measuring the specific gravity of liquids less dense than water. Investigation by the U.S. National Academy of Sciences found major errors in salinity and temperature controls that had caused serious variations in published values. Hydrometers in the U.S. had been manufactured and distributed widely with a modulus of 141.5 instead of the Baumé scale modulus of 140. The scale was so firmly established that by 1921 the remedy implemented by the American Petroleum Institute was to create the API Gravity scale, recognizing the scale that was actually being used.

2. API gravity formulas

The formula to obtain API gravity of petroleum liquids, from relative density (RD), is:

$$\text{API gravity} = 141.5 / \text{RD} - 131.5$$

Conversely, the relative density of petroleum liquids can be derived from the API gravity value as

$$\text{RD at } 60^\circ = 141.5 / (\text{API gravity} + 131.5)$$

Thus, a heavy oil with a relative density of 1.0 (i.e., with the same density as pure water at 60 F) would have an API gravity of:

$$141.5/1.0 - 131.5 = 10.0^\circ \text{ API}$$

3. Using API gravity to calculate barrels of crude oil per metric ton

In the oil industry, quantities of crude oil are often measured in metric tons. One can calculate the approximate number of barrels per metric ton for a given crude oil based on its API gravity:

$$\text{barrels of crude oil per metric ton} = 1 / \left(\frac{141.5}{(\text{API gravity} + 131.5)} \right) \times 0.159$$

So, for example, a metric ton of West Texas Intermediate (39.6° API) would contain about 7.6 barrels.

4. Measurement of API gravity from its density

To derive the API gravity from the density, the density is first measured using either the hydrometer, detailed in ASTM D1298 or with the oscillating U-tube method detailed in ASTM D4052. Density adjustments at different temperatures, corrections for soda-lime glass expansion and contraction and meniscus corrections for opaque oils are detailed in the Petroleum Measurement Tables, details of usage specified in ASTM D1250. The relative density is then calculated from the formula below and the API gravity calculated from the first formula above.

$$\text{RD oil} = \rho_{\text{oil}} / \rho_{\text{H}_2\text{O}}$$

When converting between density and relative density, it is important to use the correct density of water, according to the standard conditions used when the measurement was made. The official density of water at 60°F according to the 2008 edition of ASTM D1250 is 999.016 kg/m³. The 1980 value is 999.012 kg/m³. In some cases the standard conditions may be 15°C (59°F) and not 60°F (15.56°C), in which case a different value for the water density would be appropriate (see standard conditions for temperature and pressure).

5. Direct Measurement of API gravity (Hydrometer method)

There are advantages to field testing and on-board conversion of measured volumes to volume correction. This method is detailed in ASTM D287.

6. Classifications or grades

Generally speaking, oil with an API gravity between 40 and 45 commands the highest prices. Above 45 degrees the molecular chains become shorter and less valuable to refineries.

Crude oil is classified as light, medium or heavy, according to its measured API gravity.

Light crude oil is defined as having an API gravity higher than 31.1°API (less than 870 kg/m³)

Medium oil is defined as having an API gravity between 22.3°API and 31.1°API (870 to 920 kg/m³)

Heavy crude oil is defined as having an API gravity below 22.3°API (920 to 1000 kg/m³)

Extra heavy oil is defined with API gravity below 10.0°API (greater than 1000 kg/m³)

Not all parties use the same grading. The United States Geological Survey uses slightly different definitions.

Crude oil with API gravity less than 10°API is referred to as extra heavy oil or bitumen. Bitumen derived from the oil sands deposits in the Alberta, Canada area has an API gravity of around 8°API. It can be diluted with lighter hydrocarbons to produce diluted bitumen, having an API gravity of lower than 22.3 API, or further "upgraded" to an API gravity of 31°API to 33°API as synthetic crude.

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4. Be sure to include your full name, contact information (address, telephone number, and email address - to be used only by the editors), and a short bio in the body of the email.

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