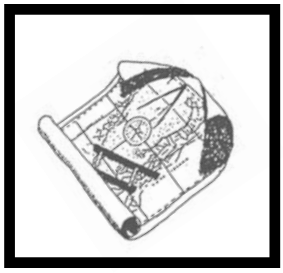
US Coast Guard Auxiliary Newsletter, South Lake Tahoe, Flotilla 11N -11-04



DIRECTION FINDER

Newsletter date: April, 2012 **Volume XLVI, Issue 04**

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The DIRECTION FINDER is published by the US Coast Guard Auxiliary, South Lake Tahoe CA. Flotilla 11-04. Submission of articles or subjects of interest, including photographs are welcomed and encouraged.
The editor reserves the right to make changes without altering the intended content. All submissions should be directed to the editor:
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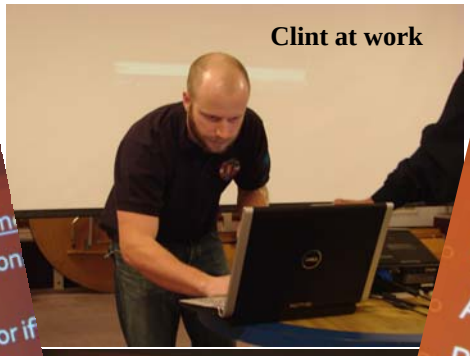
Zephyr Cove, NV 89448
Email: vbeelik@charter.net

STATION TAHOE & STATION MONTEREY ARE CO-WINNERS OF PHIFER AWARD

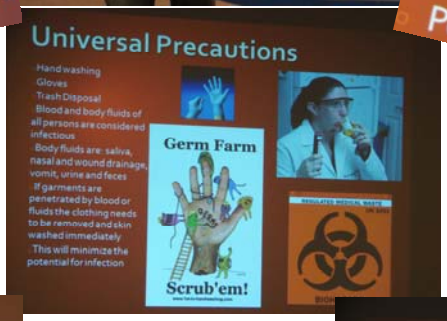
On Saturday at D-Train in Monterey, CA the *Phifer Award* was presented jointly to Station Tahoe and Station Monterey.
This is the first time this award has been awarded to two Stations in the same year.
Due to extreme travel difficulties, the Officer in Charge of Station Tahoe was unable to make it and Jack Leth of Flotilla 11-01 was asked to accept the award on behalf of the Station.
In the photo below DCDR Leon Borden and Jack Leth are accepting the award from Captain Cynthia Stowe, Sector San Francisco.

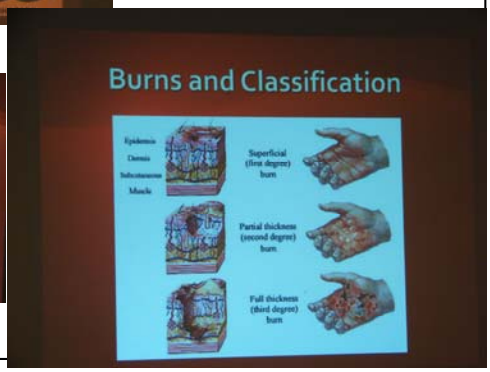
FLOTILLA 11-04 MEETING
FIRST AID REVISITED

The Members of Flotilla 11-04 who attended the March 20 Flotilla meeting were treated to an excellent review of basic first aid techniques. The seminar was presented by Clint Nichols a qualified Emergency Medical Technician (EMT) and is within week of earning a degree in "Fire Science". Flotilla 11-04 is lucky to have Clint as a new member of the Flotilla. A great power point presentation put together by Clint covered the symptoms and what to do for basic maladies and injuries such as Heart Attack, Stroke, Heat Exhaustion and Stroke, Fractures and Burns. More importantly he also pointed out WHAT NOT TO DO in each case.



Clint at work





TRIVIA QUESTION:

What Yacht Club is at the end of the world (Fin del Mundo)?

Answer: Page 8

HOW TO SAVE FUEL

With fuel prices inching up every month it is important that we look at how we can save fuel while we are on patrol or voyaging in a boat.
There is no one "magic bullet" to make the dollars in your wallet stretch longer. Fuel saving are made up of many small step effort.
The largest saver of course is: SLOWING DOWN. It is a little known fact that even a small reduction in speed can make for a dramatic reduction in fuel consumption.
In the book "Sailing Theory and Practice" by C.A. Marchaj has a nice diagram illustrating a resistance curve for displacement hulls at various speeds. The curve begins with a gradual slope until a speed of around 1.10 or 1.15 times the square root of the waterline length. At that point, the hull speed of the vessel, the curve becomes a skyrocket, shooting up at a very steep angle. This indicates that ever-larger increases in power are required to make ever-smaller gains in speed. The last 25 percent increase in speed requires a huge increase in horsepower and therefore fuel consumption. In other words, that 49-foot waterline boat will require a lot of horsepower to go its hull speed of 9.4 knots, but slow it down around 25 percent, or to 7 knots, and you'll save a lot of fuel.
A rough rule of thumb is that reducing your top speed by about 25 percent will cut your fuel consumption to around half it's maximum, or less. Maybe it's time that boat owners started thinking in terms of miles per gallon as we do when driving on land. A 25 percent decrease from maximum hull speed will yield approximately a 50 percent increase in miles per gallon. But, the benefit begins to taper off as you slow down more. So, to save fuel: DECREASE YOUR SPEED BY 25% OF MAXIMUM SPEED!
MAINTAIN YOUR BOAT.
Slowing down is the big fuel saver, but there are many things that can be done to gain a little here and there. The obvious ones are to make sure your boat bottom is clean, the air cleaner is clean, and the oil has been changed on schedule.
Most marine engine specialists seem to agree that it is <u>not</u> a good idea to add anything to your engine oil — buy a good quality oil and change it per the manufacturer's recommendations.
PLAN YOUR TRIP
Another example of saving fuel is careful voyage planning to maximize the use of favorable currents and to minimize running time. Consult your tide table and current predictions. Currents, speed and direction, will vary considerably in places like the San Francisco Bay or Puget Sound. Just ask any sailor that raced on San Francisco bay. A few hundred feet in position can make a big difference in current speed. Computer models predicting the currents around the clock are available.
Ocean currents can be strong, take the Gulf stream as an example. Currents along the coast of Mexico can be tricky resulting not only loss of speed but can set your boat on the rocks or on the beach. Consult charts like the "Pilot Chart of the North Pacific" to obtain ocean currents and prevailing wind predictions.
Check the weather and wind forecasts. Winds along the Pacific Coast are very predictable. Plan your voyage in calm winds or try to get a fair breeze. A nice breeze on your back and following seas will greatly increase your cruising range and save fuel.

HOW MUCH FUEL DO YOU NEED?

In planning a voyage with your boat one has to consider the amount of fuel one should take-on before casting off.

Once the capacity of your fuel tanks have been determined it is important to devise a method of measuring the quantity of fuel remaining in your tanks. Commercial fuel gauges are mostly inaccurate and I found that a simple home made calibrated "dipstick" will give you accurate measurement of the fuel remaining in your tank.

Once the total fuel capacity has been determined, a decision has to be made of how much fuel should serve as a "reserve". Most people agree that 20% of the total fuel capacity should be kept as a reserve. You do not want to suck your fuel tank dry since the bottom is full of nasty residue that can clog up your filters.

How much fuel does one need to cover a certain distance?

This of course depends on the type of boat and the speed at which you are intending to cruise.

Most manufacturers will give you data about the rate of fuel consumption GPH (gallons per hour) for a particular engine as a function of throttle setting i.e. RPM (Revolutions Per Minute).

Assuming smooth water, clean bottom and no current.

These ideal conditions of course never exist. It is important that the owner of a vessel collects fuel consumption data and uses this empirical data in conjunction with expected foul currents in the calculation of fuel planning.

To calculate the cruising range of a vessel for a given amount of fuel one has to calculate the fuel efficiency of the engine for each throttle setting (RPM).

The fuel efficiency (FE) is defined as the rate of fuel used per a given distance such as a nautical mile i.e. (M/G) miles/gallon. Same as we use with automobiles/

To obtain the FE for each throttle setting one has to divide the expected speed of the vessel M/HR by the expected fuel consumption G/HR.

$$FE = (M/HR)/(G/HR)$$
$$FE = (M/HR) \times (HR/G)$$

$$FE = M/G$$

Once we know the FE we can than calculate the expected cruising range for a given amount of fuel.

As an Example:
Total Fuel capacity: 200 gallons
Fuel Reserve (20%) = 40 gallons
Available fuel: 160 gallons

At a throttle setting of 2,500 RPM the speed is 8 knots and the fuel consumption is 1.5 g/hr.

The Fuel Efficiency FE = 8/1.5 = 5.33 miles/gallon

With 160 gallons available the maximum cruising range can be calculated:

Cruising Range = 160 X 5.33

Cruising Range = 852 miles

Of course if heavy seas and a foul current reduces the speed let us say to 6 knots. Than the FE = 6/1.5= 4miles per gallon and the max. cruising range will be reduced to 160 x 4 = 640 miles.

Example2:

We are planning a round trip to Catalina Island from Marina Del Rey at a distance of 40 miles each way plus 10 miles of fun cruising at the island. The total distance is 90 miles
How much fuel do we need?
Range: 90 miles
FE as calculated above = 5.33miles/gallon
Fuel needed = 90/5.33 = 17 gallons plus a reserve.
Using the 1/3 rule for reserve we need 6 gallons for reserve

So the total fuel needed for this cruise is a minimum of 23 gallons

LET THERE BE LIGHT!

By: Vic Beelik

The importance of light was recognized by the earliest thinkers. In the Bible itself, God's first command in creating the universe was: "Let there be light"!

Light is all around us. During the day the sun sends light our way and at night we just turn on various sources of light to help us navigate our world in the dark. Light sources range from a simple candle light to electric bulbs, fluorescent lights, neon lights, light emitting diodes, lasers and arc lamps and of course th stars and the sun.
In short, we take light for granted, but do we ever ask ourselves?

WHAT IS LIGHT?

Consider the candle flame as a source of light. The flame can be seen from any direction. So light can be visualized as streaming from its source in all directions. The same is true for the sun. These sources radiate light in a straight line and its straightness and ultimate thinness can be referred to as a *light ray*. A *light beam* may be viewed as a collection of infinite number of light rays. OK, we have a light ray but what is it?

Isac Newton believed that a light ray is merely the path of light *particles*. His contemporary Dutch scientist, Christian Huygens, on the other hand maintained that light is a *wave* motion having a wavelength.
In 1666 Newton showed by experiment that pure white sunlight is made up of bands of colors ranging from violet to red. Scientist tried to explain this but without much success.
Years later, Young and Helmholtz showed that *interference* patterns created by light entering two slits had to be caused by light waves. So light must be made up of waves?
Late in the 1800s Maxwell mathematically proved that light was a propagation of electromagnetic waves.

(Cont'd on next page)

The spectrum of this radiation goes from the very short wavelength of the gamma rays to the rather long radio waves. Today we know that different colors in the visible part of the spectrum have different wavelengths. Ranging from the short, 3800 Angstroms(Å) in the violet, to the long 7600 Angstroms in the red (one Å is equal to 10-9 meters). Maxwell calculated the speed of light to be 186,282 miles per second which was later verified by Albert Michelson.

So was Huygens right after all? Light was a wave?
Not quite!

Albert Einstein, at the turn of the twentieth century, successfully argued that light is made up of "photons", particle like "packets" or "quanta" of energy. Photons striking different material will generate free electrons and cause electric current to flow. As an example, today's digital cameras work on this principle. Photons are focused by the camera lens onto detector (charge coupled device, CCD) which creates an electronic image.
Or take the human eye. The lens focuses the photons in the visible light onto the receptors in the retina which respond to the energy in photons and create electrical impulses which in turn are transmitted by the optic nerve to the brain.

Photons do not have mass and thus can reach the speed of light.

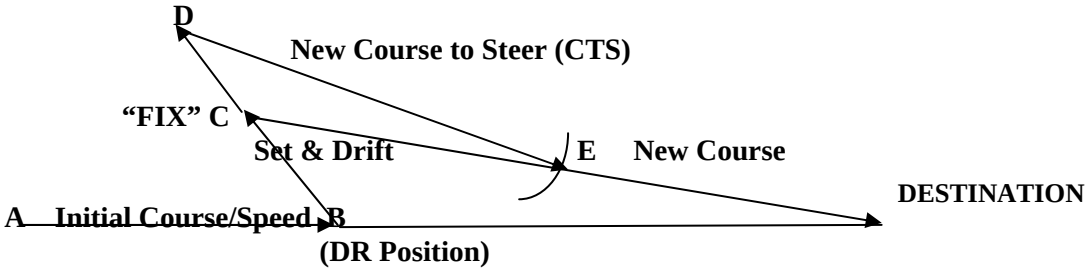
So is light made up of waves or particle like packets of energy called "photons"?
Well … both; light has a "dual like" personality:
It exhibits both wave-like and particle-like properties. Scientists today use these properties as needed until a new theory develops one day.

I guess Newton and Huygens are still scratching their heads.

Photo by:
Vic Beelik

REMEMBER——"CURRENT SAILING"?

If there is a current in the waters you are sailing, it will affect your progress through the water. What is a current? Most navigation books will define a current as the sum of *any* or all outside forces that will affect your vessel's intended course through the water.
The key word here is: *ANY*.
Let's list some of these so you get the idea: horizontal motion of water (such as tidal currents, ocean currents such as the "gulf stream"), wind affect on the vessel (it can increase or decrease your speed or the wind will push the vessel sideways), helmsman introduced steering error, error in log, or excessively fouled bottom.
The *actual current* can be determined by comparing a vessels actual position (FIX) to its DR (Dead Reckoning) position.
Current is measured and expressed as SET (direction toward which it flows) and DRIFT is its speed.
So how do we compensate for the current?
We need to calculate the Course to Steer (CTS) to compensate for the current. To do this we need to know four values: The Desired Course, the Set (direction) and Drift (speed) of the current and the boat's speed through the water.



Point "A" is the starting point of your voyage with a given Course toward your destination at a given speed. After a given time you notice that a current is setting you north westerly of your intended course.
You plot your DR position "B" at the time you establish a FIX giving your actual position at "C". Noting the distance and direction from "B" to "C" alows you to calculate the SET and DRIFT of the current.
For example, if the time between A and B is 18 minutes (0.3 hrs) and the distance between B and C is 0.4 nautical miles the DRIFT= Distance/time = 0.4/0.3 = 1.3knots
Now you know the SET and DRIFT of the current you can plot your course so that the new Course to Steer (CTS) will compensate for the current and you will reach your destination. Assuming of course that the Set and DRIFT will not change.
First plot your new course from the current position C to your DESTINATION,
Extend your current vector BC for an hour (1.3 knt) CD (this is known as the one hour vector method) take a drafting compass (or a pair of dividers) draw an arc, point D as the origin and the speed of your boat for one hour as the radius. The intersection of the NEW COURSE and the arc is the point E.
The direction given by D to E is the new CTS. Note that the distance C to E is your SOG and COG
You might say that the marvelous computer chip in your GPS does this calculation continuously so why bother plotting it on your chart?
One can visualize the route better by plotting and solving this current problem graphically on your chart. Danger points might be in your way that the GPS does not register.

TRIVIA ANSWER:

“Club Naval de Yates Micalvi” in Puerto Williams, Chile
Position: Lat 54°56.5’S / Long: 67°37’W

The bridge in the foreground, leads to the rusted hull of an old supply ship “Micalvi” which serves as the yacht cub open to all sailors who use Puerto Williams (Chile) as the rest stop before heading for Cape Horn or sail to Antarctica.

Cape Horn is only 60 miles south, as the crow flies across saw-toothed mountains of Navarino Island, serving as a great backdrop to Puerto Williams, which is the southern most populated village in the world.

The bridge of the “Micalvi” has been converted to a cozy bar where many sea stories are told that get bigger and bolder after a few “Pisco Sours”. Your editor had the pleasure of having a “few” in that bar.

ODDS AND ENDS:

COURSES TO BE OFFERED ON-LINE WEBINAR:

There was a demonstration of this at N-Train and appears to work well. Anyone wanting to take AUXSEA or future offerings should contact the providers as shown in the invite attached.
District 8 is offering AUXSEA via Go2Meeting. Interested students should register with the instructors using the attached forms.
The present plan is to offer AUXSEA, AUXPAT (17 April) and then AUXWEA (probably 17 May).
Contact: Ralph Tomlinson csr@isunet.net for more information.

TO REGISTER:

Now is the time to take AUXSEA. Ralph and Suzanne Tomlinson from 8WR Div 33 will conduct the class via the Internet utilizing webinars and a virtual classroom. The webinars will be led by two instructors making use of video, live audio/chat, cameras and other presentation materials. Each webinar will last approximately 90 minutes. The virtual classroom is a secure interactive website that will allow students to post questions and discuss problems, obtain helpful links and ancillary material, and get communication from the instructors.
Additional information will be sent to you when you register.
This Webinar is held every week on Tuesday and Thursday, from:
Feb 23, 2012 to Apr 3, 2012 7:30 PM - 9:00 PM CDT
Register Now at:
https://www1.gotomeeting.com/register/837602625
Once registered you will receive an email confirming your registration with information you need to join the Webinar.
System Requirements PC-based attendees Required: Windows® 7, Vista, XP or 2003 Server
Macintosh®-based attendees Required: Mac OS® X 10.5 or newer
COMO Mike Maddox DS0-MT
mikelmaddox@aol.com

SUPs (paddle boarders) and PFDs

The "paddle board" sport is growing at a phenomenal rate and many experienced or beginner paddle boarders go a couple miles offshore in a hurry.
Most paddle boarders ignore the CG requirement to carry a PFD. Kids under 12 must wear one.
The US Coast Guard on Lake Tahoe will be enforcing the "Carry PFD" law this year.
Any paddle boarder not carrying a PFD anyone without a life jacket will not only be cited but their "voyage will be terminated".
Any "event" that allows competitors to compete without a PFDs will be subject to fines up to $7000 and the cancellation of their marine permit.

THOUGHT OF THE MONTH:

Success is to be measured not so much by position one has reached in life as by the obstacles one has overcome. (Booker T. Washington (1856-1915)

Flotilla 11-04 Officers
Year 2012

Jim Snell	FC
Stu Harrington	VFC
Stu Harrington	IPFC

Staff Officers (FSO):

Vic Beelik	CM
Bruce Cole	FN
Victor Beelik	VE
Jim Snell	MA
Victor Beelik	PB
Stu Harrington	MT
Mort Meiers	PE
Jim Snell	OP
Jim Snell	CS
Vic Beelik	PS
Dale Herman	SR
Brian Williams	PA
Jim Snell	IS
Stu Harrington	PV
Bruce Cole	NS
Stu Harrington	MS

Flotilla 11-04 Meeting
Tuesday April 17, 2012
1900 hours
WYC ROOM
Tahoe Keys Marina

Program: TBD

SIERRA DIVISION WEBSITES

SIERRA DIV:	www.sierracgaux.org
FLOTILLA 11-01	www.northtahoecgaux.com
FLOTILLA 11-03	www.renocgaux.org
FLOTILLA 11-04	http://www.sltcgaux.org
FLOTILLA 11-05	http://www.flotilla11-05.d11nr.info

Department of Homeland Security

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