MARCO's "*AETHER*" *Pronounced "Ether"*
Medicine & Radio in One Medium
Official Publication of the Medical Amateur Radio Council

95th Edition
2000-2015

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Vol. XXXX, (50th year), Edition # 95 Since Year 2000), Oct. 2015 **P.O. Box 127, Indian Rocks Beach, FL., 33785-0127**

HEPATITIS C

HEPATITIS C, IS LIKE A HUMAN TERMITE, SILENT, PERSISTANT, LONG-ACTING, AND POTENTIALLY DEADLY, THAT AFFECTS ONE IN EVERY 50 AMERICANS.

Hepatitis C virus (HCV) infection is a major cause of chronic liver disease and cirrhosis. In the US, an estimated one in fifty Americans have Hep. C. mostly completely asymptomatic and mostly unknowingly.

It is predominantly transmitted through blood or body fluids. It can also be transmitted from mother to infant, through organ transplantation that occurred before July 1992, and through unprotected sex in HIV-infected men who have sex with men such as those in prisons. Dirty tattoos, needle sticks, unclean dental & medical instruments are other sources of the virus. It is NOT transmitted by casual contact such as hugging, kissing or sharing eating or cooking utensils. Neither is it transmitted through food or water. Any sexual contact where blood-to-blood transmission may occur may also pose transmission risk. I.V. drug use is the most important risk factor for HCV infection, accounting for about 60% of acute infections in the US. Since 1992 when universal screening was instituted for blood donors, blood transfusion has become a rare mode of transmission, with an estimated risk of one in 1 million units of blood transfused. The existence of hepatitis C (originally identifiable only as a type of non-A non-B hepatitis) was suggested in the 1970s and proven in 1989. Hepatitis C infects only humans and chimpanzees. It is one of five known hepatitis viruses: A, B,C,D, and E.

Hepatitis C is the leading reason for liver transplantation, though the virus usually recurs after transplantation. No vaccine is available.

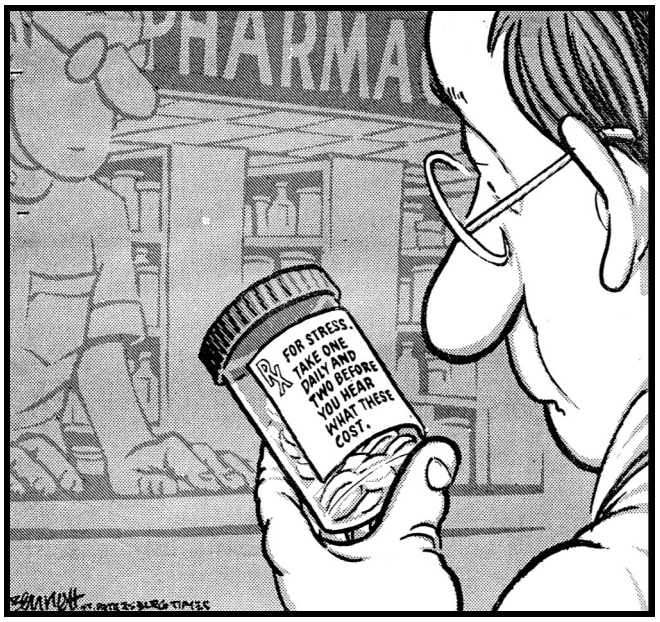
There are six known genotypes of HCV. The most common genotypes in the US, comprising 97% of all US HCV infections, are 1 (subtypes 1a and 1b), 2, and 3.

The mechanism of hepatocyte damage induced by HCV is not completely understood but may involve direct cell injury and a local immune-mediated mechanism that causes a chronic inflammatory state. Acute HCV infection progresses to chronic disease (detectable virus after six months) in 50% to 80% of patients and clears spontaneously in 20% to 50% of patients. Of persons with chronic disease, 20% will develop cirrhosis, end-stage liver disease, and/or hepatocellular carcinoma.

Screening and Diagnosis... The Centers for Disease Control recommend periodic HCV screening for all adults at high risk of infection and one-time screening in adults born between 1945 and 1965. Also annual screening for intravenous drug users and for men who are HIV seropositive and have unprotected sex with men.

An anti-HCV antibody test is recommended to screen for HCV infection (sensitivity of 95%, specificity of 99%) If the anti-HCV antibody test result is positive, current infection should be confirmed with a qualitative measurement of HCV RNA. If the anti-HCV antibody test result is negative in a patient who may have been exposed to HCV within the previous 6-months, HCV RNA should be measured every four to eight weeks for six months or follow-up anti-HCV antibody testing should be performed in 12 weeks. Patient with a positive

Continued on Page Two



$30,000 A TREATMENT !

DID YOU MISS GRAND ROUNDS?
If you did, you can listen on
http://www.reliastream.com/cast/start/tkeister
or http://67.213.213.143.8014/stream,
or http://67.213.213.143.8014
& notify warren.brown1924@gmail.com for Cat. II CME credit.

LATE BREAKING NEWS

What is your birthday? You will notice this on the Marco application blank on Page 12. Reason? A. So Marco can wish you a "*Happy Birthday"* when it arrives.

If you are a male doctor, you are 2.5 times likelier to be sued or have some kind of legal action taken against you, according to a study published in BMC Medicine.

ARRL membership is up past 167,200 and it is estimated there will be another 30,000 hams, 14% above last year, by year's end.

Beta-blockers increase longevity in Ovarian cancer? Use of Propranolol in ovarian cancer patients resulted in prolonging life four years longer on average than those who hadn't been prescribed the drug. The study of 1,425 patients at MD Anderson Cancer Clinic wasn't randomized and had limitations. The women were being treated for hypertension and cancer. Prospective studies are being planned.

WRITE TO US!
We welcome your comments. Mail to Marco, P.O. Box 127, Indian Rocks, FL, 33785. Email to Warren.brown1924@gmail.com Letters may be edited for brevity & clarity.

MARCO NET SCHEDULE

DAY	EASTERN	FREQ.	NET CONTROLS
Any Day	On the Hour	14.342	Hailing Frequency
Sunday	10:30 a.m. Eastern	14.140	CW Net, Chip, N5RTF
Sunday	11 a.m. Eastern	14.342	Warren, KD4GUA

(Alternate ***confidential*** Grand Rounds frequency— on or about 14.344 or as announced on the air.)

MARCO'S CW NET IS NOW CALLED THE *"Bob Morgan Memorial Net"*
Sundays, 10:30 am, 14.140 MHz

MARCO Grand Rounds is held Sunday at 11 a.m. Eastern Time; 10 a.m. Central; 9 a.m. Mountain, and 8 a.m. Pacific Coast time on 14.342. You qualify for one hour Category II CME credit with your check-in.

anti-HCV antibody test result but a negative HCV RNA test result are not considered to have HCV infection. Quantitative HCV RNA testing is recommended before initiating therapy to determine the baseline viral load, and testing for HCV genotype is recommended to help guide treatment decisions.

Acute HCV infection….causes acute symptoms in only 15% of cases. Acute refers to signs and symptoms that occur within six months of presumed exposure. An acute infection can be documented with a positive HCV RNA test result in the setting of a negative anti-HCV antibody test that subsequently sero-converts to a positive anti-HCV antibody test result over 8 to 12 weeks. Post exposure prophylaxis with antiviral therapy is not recommended for a patient with acute HCV infection. The American Association for the Study of Liver Diseases recommends either delaying treatment for a minimum of six months to monitor for spontaneous clearance of HCV RNA and then following treatment recommendations for chronic HCV infection, or treating the acute infection after monitoring HCV RNA for a minimum of 12 to 16 weeks to allow for spontaneous clearance. Decreased transmission is a potential but unproven benefit of treatment during acute HCV infection.

Chronic Infection... About 80% of those exposed develop a chronic infection. Worldwide, Hep C is the cause of 27% of cirrhosis cases and 25% of hepatocellular carcinoma. About 10-30% of those infected develop cirrhosis over 30 years.

Assessment of the degree of liver fibrosis and cirrhosis is necessary in patients with confirmed HCV infection to determine the urgency of treatment because the degree of liver fibrosis predicts disease progression and clinical outcomes. The Metavir scoring system grades fibrosis from 0 to 4, and treatment should be considered in patients with substantial fibrosis (score of 2 or greater).

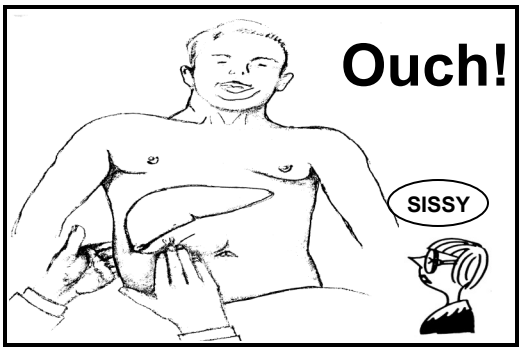
Liver biopsy is the preferred method to asses degree of fibrosis. However, noninvasive tests, such as direct biomarkers and liver elastography, may be used. Patients with chronic HCV infection should be assessed for hepatitis B and HIV infections, which may accelerate liver fibrosis.

Treatment…All patients with chronic HCV infection should be considered for treatment based on genotype, extent of fibrosis or cirrhosis, prior treatment, co-morbidities, and potential adverse effects. The goal of therapy is to reduce all-cause mortality and liver associated complications. Monitoring of treatment effectiveness is assessed by repeated measurement of HCV RNA. A **sustained viral response (SVR),** defined by the absence of HCV RNA on polymerase chain reaction testing 24 weeks after cessation of treatment is associated with a 99% chance of being HCV RNA negative during long-term follow up. SVR 12 weeks after treatment is a new primary end point in many recent drug trials. A small post hoc analysis of patients with HCV genotype 1 found that the SVR at 12 weeks has a 100% positive predictive value for SVR at 24 weeks.

Candidates for treatment are 18 years or older, are willing to adhere to treatment, and have elevated serum alanine transaminase levels and a Metavir score of 2 or more.

Therapy is complex and rapidly changing, and should be supervised by a physician experienced in treating HCV infection. Although interferon-based regimens have been the mainstay of treatment for HCV infection, new interferon-free regimens have recently been approved.

Ribavirin (RBV; Rebetol) inhibits viral RNA polymerase, thereby inhibiting protein synthesis. Because of risks of hemolytic



Determining liver size in touchy patient.

anemia and increases in heart attacks, the use of this drug has fallen off.

Pegylated interferon inhibits viral replication by antiviral, antiproliferative and immunomolulatory effects. There are two FDA-approved formulations: Peginterferon alfa-2a (Pegasys) and peginterferon alfa-2b (PEG-Intron). Interferon based therapy can cause serious adverse effects, including development or aggravation of life –threatening neuropsychiatric, autoimmune, ischemic, and infectious disorders. It's use is diminishing.

NS3-4A inhibitors Telaprevir (Incivek) and boceprevir (Victrelis) were approved in 2011 for the treatment of chronic HCV when used in combination with RBV and/or Pegylated interferon. These treatments have now all but been discontinued.

NS5B Inhibitors, Sofobuvir (Sovaldi) inhibits HCV viral assembly and RNA polymerase, thus inhibiting viral replication. It is effective for **all** HCV genotypes. The most commonly reported adverse events are headache, anemia, fatigue and nausea.

In Oct. 2014, the FDA approved the first combination pill containing l**edipasvir**/sofosbuvir (**Sovaldi**) known as "**Harvoni,"** which is taken once daily to treat chronic HCV genotype 1 infection. Ledipasvir is an NS5A inhibitor that acts in combination with sofosbuvir to interfere with viral replication. .

In Dec. 2014, the FDA approved **Viekira Pak** which consists of ombitasvir (NS5A inhibitor), paritaprevir (NS3-4A inhibitor, Abbott Labs) and ritonavir (HIV-1 protease inhibitor tablets co packaged with dasabuvir tablets (NS5Binhibotor) for adults with chronic HCV genotype 1 infection. These drugs work together to inhibit the growth of HCV and may be used with or without RBV. The cost of 12 weeks of Viekira Pak is similar to 12 weeks of sofosbuvir (**Savoldi)** and less than ledipasvir/sofosbuvir (**Harvoni**).

Monitoring... At every visit patients being treated for HCV infection should be assessed for adherence to therapy and adverse effects, monitored for new or worsening psychiatric illness, and screened for alcohol and substance abuse. Baseline tests include thyroid-stimulating hormone level if pegylated interferon will be used; complete blood count; creatinine level with glomerular filtration rate; aspartate and alanine transaminase levels; alkaline phosphatase levels; and pregnancy testing in women of childbearing age. Repeat tests at end of week 4. Quantitative HCV viral load is recommended at week 4 of treatment, and at 12 and 24 weeks after completing therapy.

Complications. In a 17-year cohort study of 214 patients with chronic HCV infection, the annual incidence of hepatocellu-

lar carcinoma was 3.9%; upper G.I. bleeding, .7% and encephalopathy, .1% The annual mortality rate in this cohort was 4%; hepatocellular carcinoma was the main cause of death in 44% of patients who died and was the first complication to develop in 27% of all patients. Patients with HCV-related cirrhosis should be assessed for cancer every 6 to 12 months using ultrasound and a-fetoprotein measurements. Patients with cirrhosis or advanced fibrosis should be screened for varicosities using upper endoscopy every one to two years.

Prevention. Alcohol consumption should be assessed and advised to abstain from alcohol. Vaccination against Hepatitis A and B is recommended.

TREATMENT REGIMENS FOR CHRONIC HEPATITIS C

Genotype	Recommendations	Cost estimate
1a*	Ledipasvir/sofosbuvir (Harvoni) for 12 weeks	$93,000
	Ombitasvir/paritaprevir/ritonavir plus dasabuvir (Viekira Pak) and weight-based RBV (Rebetol) for 12 weeks (no cirrhosis) or 24 weeks (cirrhosis)	12 weeks: $94,000 ($90,400 if generic RBV is used)
	Sofosbuvir (Sovaldi) plus simeprevir (Olysio) with or without weight-based RBV for 12 weeks (no cirrhosis) or 24 weeks (cirrhosis)	12 weeks with RBV: $156,000 ($152,400 if generic RBV is used)
		12 weeks without RBV: $152,000
1b*	Ledipasvir/sofosbuvir for 12 weeks	$93,000
	Ombitasvir/paritaprevir/ritonavir plus dasabuvir for 12 weeks (no cirrhosis) or with the addition of weight-based RBV for 24 weeks (cirrhosis)	12 weeks: $94,000 ($90,400 if generic RBV is used)
–	Sofosbuvir plus simeprevir for 12 weeks (no cirrhosis) or 24 weeks (cirrhosis)	12 weeks: $152,000
2	Sofosbuvir plus weight-based RBV for 12 weeks (no cirrhosis) or for 16 weeks (cirrhosis)	12 weeks: $86,000 ($82,400 if generic RBV is used)
3	Sofosbuvir plus weight-based RBV for 24 weeks	$86,000 ($82,400 if generic RBV is used)
4*	Ledipasvir/sofosbuvir for 12 weeks	$93,000
	Ombitasvir/paritaprevir/ritonavir plus dasabuvir and weight-based RBV for 12 weeks	$94,000 ($90,400 if generic RBV is used)
	Sofosbuvir plus weight-based RBV for 24 weeks	$188,000 ($180,800 if generic RBV is used)
5	Sofosbuvir plus pegylated interferon plus weight-based RBV for 12 weeks	$97,000 ($93,400 if generic RBV is used)
6	Ledipasvir/sofosbuvir for 12 weeks	$93,000

ARE LAWYERS GETTING DUMBER?

Excerpts from Natalie Kitroeff's article in Bloomberg's Newsweek,8/24/15

Last year's bar exam which went to 50,000 applicants in 49 states (*all except Wisconsin)* who paid an average of $120,000/3 years tuition and $800 to take the bar exam and the scores were down. In Idaho, bar pass rates dropped 15 % points, from 80% to 65%. In Delaware, Iowa, Minnesota, Oregon, Tennessee and Texas, scores dropped 9%. Panic swept the bottom half of American law schools.

In 2015 fewer people applied to law school than at any point in the last 30 years. Law schools are seeing enrollments plummet and have tried to keep their campuses alive by admitting students with worse credentials.

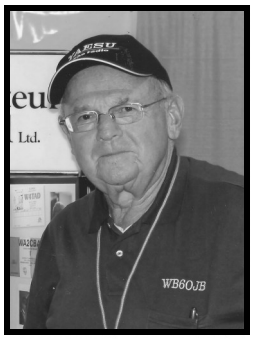
Since 2008, partner earnings at firms of all sizes have decreased 9% whereas the 354,000 solo practitioners, earning on average $49,000 in 2012 have declined 31% from $71,000 in 1988.

Even as business was tanking for a lot of lawyers, American law schools happily welcomed more students. In 1987 there wre 175 accredited law schools. By 2010 there were 200, and after steadily increasing for years, enrollment peaked at 52,000 that year. In 2014 enrollments reached their lowest level in 4 decades. In 2015 fewer people are expected to apply to law school than at any point in the past 15 years.

Almost every law school recently has lost students. Some schools are dropping their standards dramatically in the interest of stemming that tide. What does this mean to doctors of medicine?

MEDISHARE REPORT

Arnold Kalen, WB3OJB, Director.



The donations to the MediCare Fund (Aid to the Less Fortunate) since the MARCO meeting in Dayton in 2014 are as follows:

GOLD (Over $200 donated): *Linda & Bernie Krasowski.*
SILVER ($100-$200): *Warren Brown, Rowe & Jeff Wolf.*
BRONZE (under $100): *Elsa & Paul Small; Dr. Wertzl (?).*
Dr. Kalen donated $100 in July to honor Dr. Warren Brown's birthday. Mary Favaro AE4BX

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MEET—THE "DizzyFIX"

As presented on MARCO Grand Rounds, Aug. 29, 2015

The **DizzyFIX** is an FDA cleared home medical device available to assist in the treatment of Benign paroxysmal positional vertigo (BPPV) and its associated vertigo *(moving the head producing dizziness)*. The device itself is a head-worn representation of a semi-circular canal consisting of a baseball cap with a plastic semi-circular canal attached. The device is filled with fluid and a particle representing the otoconia (loose hard particles) associated with BPPV. The device works like a visual set of instructions and guides the user through the treatment maneuver for BPPV. It's like putting the ball in the right hole with a pin-ball machine. This maneuver is called the "particle repositioning maneuver" or **Epley maneuver.**

During the Grand Rounds discussion we asked for those who had suffered from this disorder and the response was more than expected. Understanding the Epley maneuver is similar to putting in writing the way to put on your coat—It is simple to do but difficult to describe. The DizzyFix makes all this easy. It was developed by and ENT physician who had BPPV and it works in 90% of cases. It is as safe as putting on a baseball cap. For more details contact *dizzyfix@clearwaterclinical.com*

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SILENT KEY: Sister Mary Emmanuel (*Mary Kathryne Goike)* KD5AQ, Lufkin Texas (1929-2015) on Aug. 20th 2015.

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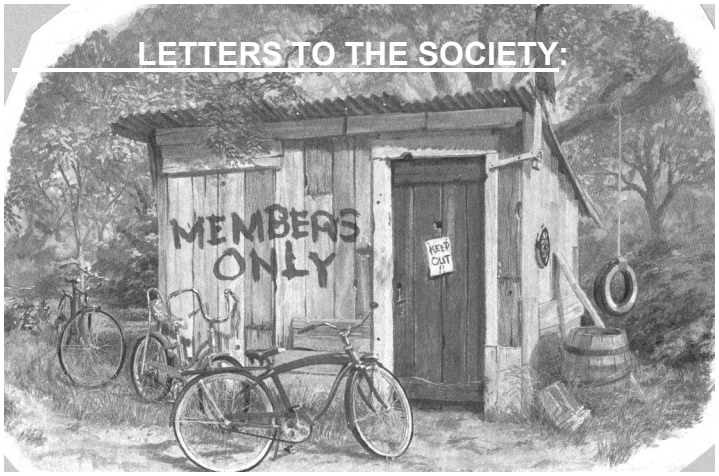
REASONS TO BE IMMUNIZED:

1. You are going back to college where meningitis is relatively common.
2. You work in the medical profession where you are exposed to all sorts of diseases.
3. You are sexually active with a number of partners.
4. You have asthma, heart, lung disease, diabetes or other chronic diseases. Or you smoke, or your immune system is compromised.
5. There is a flu epidemic or you are exposed to contagious diseases.
6. If you are planning a long trip you should be immunized preferably 6 months before you leave because you may need vaccines that are given in a series. Immunization usually take about two weeks to take effect.

THE CUTTING EDGE...a single dose of yellow fever vaccine provides long-lasting protection and is adequate for most travelers. This should be good for a lifetime. There is encouraging information indicating a vaccine for malaria has now been developed but is not available.



Kudos from: None *(only complaints.)*

From **Louis J. Lyell,** Jackson, MS…."On page 5 of the August Aether, you mention the first heart transplant being done by Dr Christian Barnard in South Africa in 1967. The first heart transplant was done by **Dr. James D. Hardy** at the University of Mississippi on January 23, 1964 only this time it was the heart of a chimpanzee named Bino that was transplanted into a human. The transplanted chimp heart sustained a blood pressure between 90-100 Hg for 90 minutes off CV bypasss, but the patient died in the O.R. from a combination of metabolic derangement and an undersized heart. This operation proved that it was feasible to perform a heart transplant in a human. Dr. Hardy also performed the first lung transplant between humans. Hardy died in 2003.

Arnold Kalan, WB6OJB, Pacific Palisades, CA. sends a photo of his wife Joan, who has recently returned from Borneo. Underneath the photo is the caption "*Home Land Security." (Arnold was in Mozambique, Africa in September and transmitted with the call sign C81AK from Beline, then it was off to Leopard Hills outside Kruger in S. Africa.")*

Harry Przekop WB9EDP "Had surgery for mucosal cyst on rt. Middle finger—took about 100 minutes not counting prep. Steel structures up by my building does not help signals. I can't wait to move and go to NW Illinois or southern Wisconsin, dream for now...have been doing some fencing (not building, dueling), love it!

Richard L. Taylor, M.D., Baltimore, MD writes: "I am sad to report that my brother, ***Dr. Ronald J. Taylor, W3RJT,*** passed away in early May. Please cancel his membership.

Jim Patterson W8LJZ, Detroit, writes: "Tried to check into (*Grand Rounds)* but heard nothing on frequency. My beam wire has been shot for months and also neėd a new rotor. Also got fast and loose with the lawn mower and cut cable to two-meter antenna on top of beam on tower Cutting it was a good thing as it too was shot inside so I am now sure the beam wire is in worse shape. I have had new rotor and wires for weeks but lift people slow to get job done but I know it will be done before the snow flies if I have to become a bird to do it. When I was younger I used to put up and take down tower/antennas myself by climbing. I am in good shape for it now but body is closing on 69. Kate (*XYZ)* goes nuts just thinking of my doing that."

Thaddeus Figlock W1HGY, Taunton, MA sends a post card from Charlotte Amalie, St. Thomas in the Caribbean. *"No medical liability insurance so cannot used "M.D." in correspondence.* (Must have read that male doctors are sued 2.5 X the rate of non-doctors!) . Thaddeus goes by "Ted" on the air.

Wayne Rosenfield in online request to squirt ice waster into his right ear before the Marco lecture reports: "I didn't know about this...I flushed my ears and was seasick all evening. (*Ice water test for acoustic neuroma.)*

Bruce Small KM2L and XYL will be off to South Africa in November.

NEWSENSE...Tantalizing News!

Originated by Columnist Walter Winchell

EDITOR'S NOTE: Walter Winchell began broadcasting in 1933 to an audience of 25 million people. The Winchell style was unmistakable. He talked rapidly at 197 words per minute..the voice was high-pitched and not pleasant to the ear; but it was distinctive. The staccato quality made every item compelling. He claimed he talked so fast because if he talked more slowly people would find out what he was saying...he began his radio program with a series of dots and dashes operating the key himself. Telegraphers throughout the country complained that what Winchell tapped out made no sense. He realized he hadn't the faintest knowledge of Morse code but he refused to have an experienced telegrapher provide the sound effects for him. He wrote like a man honking in a traffic jam.

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Beer-powered cars? New Zealand brewer DB Exports is converting yeast slurry, a byproduct of brewing, into ethanol, used in biofuels. The company asked scientist to create the 90% gasoline-10% beer slurry ethanol, which runs some New Zealand cars. The mix is seen as a candidate for a wider range of cars.

Can blood make the old young? A Stanford Univ. team rejuvenated older mice by injecting them with blood of younger ones. The researchers said that the young blood ramped up genes that help neural connections strengthen and weaken, part of learning and memory. Last October they launched a trial on humans. Results are expected at the end of this year.

Americans spent $90 per day in June 2015, down from $91 but matching June averages in '13 and '14. Spending usually increases from June to July.

To those running for office: Being a baritone might make it easier at the polls. Voters gravitate toward political candidate with deeper voices, Reason? Researchers attribute it to the "*caveman"*-like association between deep voices and physical strength, a trait linked to leadership.

Ad blocking is on the way... Between 10%-15% of Net users are believed to actively employ ad-blocking software online but the trend hasn't yet affected publishing profits. Some investors, however, are wary—Apple plans to include ad blocking in its iOS 9 release. It may lead to ads being placed on human derrieres.

Wouldn't it be great IF we could put ourselves in the dryer for ten minutes and come out wrinkle-free and three sizes smaller!

Why there are no Jewish (or Mediterranean stock-people) or Oriental alcoholics...because they lack the enzyme *alcohol-dehydrogenase* which breaks down alcohol With one alcoholic drink their faces get red; with two or more they get sick! Now a report from the *American Journal of Medical Genetics* suggests that people with blue eyes are significantly more likely to become alcoholics. Using a genetic database, a team of researchers examined samples from 1,263 people of European ancestry, including 992 diagnosed with alcohol dependence. Alcoholism was more prevalent among people with light eyes and the rate was about 80% higher among blue-eyed people. Intermarriage can mix these statistics up!

What next? According to "*The Week"* we're now vulnerable to a hack attack in the hospital. One hacker was appalled by how easy it was to break into the hospitals networks and assume control of their medical devices. Using "phishing techniques" he was able to take over sensor-driven surgical robots, morphine drips and even Bluetooth-connected defibrillators, which he could have used to administer lethal shocks to patients. Former Vice President Dick Cheney had the wireless capability of his own defibrillator disabled in 2007 to prevent terrorist from doing that to him.

Firstborns more overweight... Researchers in New Zealand examined data on 303,301 girls born between 1973-88. They concluded that firstborn girls are more likely to be overweight or obese in later life than second-born sisters. The findings correlate with earlier research on men. *(Best, not to be number ONE!)*

PINPOINTING THE ONSET OF METASTASIS

Within the oncology community, a debate is raging about two controversial topics. The first is over diagnosis. Some leading cancer experts say that zealous screening is finding ever-smaller abnormalities that are being labeled cancer or precancerous with little or no justification. Coupled to this is a more serious and potentially more destructive problem: over-diagnosis is leading to overtreatment. Some cancer patients being treated aggressively—with surgery, radiation, chemo and other treatments—all of which is unnecessary, expensive and can potentially bring lifelong side effects.

Many women with breast cancer make the dramatic decision to undergo treatment beyond a lumpectomy to diminish the risk of the cancer spreading once a tumor is removed. But in making the decision to perform additional procedures, women and their doctors are, in effect, betting that it's better to overtreat than to undertreat.

This isn't the "*it's better to be safe than sorry"* approach because it ignores an important statistic: only 35% of women with newly diagnosed breast cancer have a tumor that will ***actually*** metastasize. These patients with an aggressive tumor are good candidates for chemotherapy,. However, the majority of women with newly diagnosed breast cancer—approximately 65%—have tumors that are biologically ***incapable*** of metastasizing, rendering these extra measures unnecessary.

The dilemma of overtreatment has been well-summarized by the CMO of the American Cancer Society, "*I am confident that somewhere between 10% and 30% of women with localized invasive breast cancer would be just fine if we just watched them. But I cannot look into a patient's eyes and say, 'You're one of the 10% to 30% that should not be treated."*

Boston based MetaStat Inc., is aiming to provide more clarity for patients and oncologists when deciding what's next after a tumor is removed. The company has developed new tests to analyze whether a specific individual's cancer has metastatic potential, *MetaSite Breast* and *MenaCalc.* These tests are intended to potentially allow clinicians to customize cancer treatment decisions by identifying and differentiating high-risk patients who need aggressive therapy and by possible sparing low-risk patients from the harmful side effects and expense of additional treatment.

MetaStat's researchers have identified the important predictive role of the ***Mena protein***. Mena is found in the developing embryo where it is an important actor in the developing nervous system among other functions. It facilitates and organizes formation, extension and navigation of growing nerve fibers through tissue to link with other neurons, forming the proper circuits needed for a functional nervous system. Its expression decreases from embryonic to adult life. However, in metastatic cancer cells, high levels of the Mena protein accumulate and influence a number of intracellular signaling programs. Mena facilitates a dangerous process whereby tumor cells send out a well-organized protuberance that invades surrounding tissue and pulls the remainder of the cell behind it. Mena modulates the strength and direction of this invasive process and steers the migrating cancer cell in the direction of blood vessels though its ability to modulate the metastasis cell's response to chemical signals that attract it to blood vessels.

Mena is present in cancer cells in more than one form. MetaStat has identified the most dangerous isoform of Mena that it has named ***Mena*** *inv(Mena invasive).* Mena, on the other hand, is the Mena isoform that seems to exert a much more positive influence on the cell's behavior, reducing the ability of cells to break away from the tumor and invade and migrate toward blood vessels.

MetaStat's key discovery is that it can predict the metastatic potential of a cancer cell by measuring the relative levels of Mena *inv* and Mena *11A.* As the relative levels of Mena *inv* rise and Mena *11A* fall, the cancer cell transitions to a more metastatic shape and behavior. These metatasis-promoting behavior changes include increased migratory behavior, changes in shape, loss of adhesion to neighboring cells and up to 100 fold greater sensitivity to the chemical attractant that lures metastatic cells to blood vessels.

The company's MetaSite Breast test is performed on tissue from a biopsy and can identify where metastasis begins in the body. For this to happen, three types of cells must self-assemble in a structure called the "MetaSite": one type of cell that lines blood vessels; a type of immune cell; and a tumor cell that expresses the Mena protein. MetaStat Breast can identify these cells by a staining process. MetaState has shown in clinical studies that the density of MetaSites is linked to metastatic risk. Performing the test readily fits into the current diagnostic paradigm and require no additional surgical procedures.

MetaStat's other test, MenaCalc, measures metastatic risk in breast, prostate, lung and colorectal cancers. The MenaCalc assay requires very little tissue and can be performed on cells from a needle biopsy or fine needle aspiration, allowing oncologists to begin treatment starting from patients' initial visit. **MetaStat expects to initially commercialize the MenaCalc assay for breast cancer, followed by assay for prostate cancer and adenocarcinoma of the lung.**

With the advent of tests for cancer, patients that can determine the likelihood of metastasis, the outlook for cancer diagnostics appears brighter on several fronts. Oncologists will be equipped to offer their cancer patients a much more informed set of options, involving less uncertainty and a better understanding of what additional treatments, if any, are worthwhile. Patients, in turn, can look forward to more personalized care reflecting their individual cancer, and will be assured that they are avoiding unnecessary procedures that can take a toll on the body. Overall, by reducing the rate of unneeded treatments, the cost of caner care—which currently stands at more than $100 billion in the US annually—may fall; a win-win for everyone involved**. BRING ON THE FUTURE.**

(Information for the above was taken from "R&D 100." www.rdmag.com/articles/2015/06/pinpointing-onset-metastasis7et_rid-45508778&location=top)

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CHOCOLATE LOVERS TAKE NOTICE…..

Chocolate lovers have new evidence to back up the assertion that it's good for the heart. Earlier studies found that chocolate reduces the risk of heart problems in at-risk patients. A new Düsseldorf University report says two separate studies have now shown that chocolate also cuts risk of heart disease in healthy, low-risk individuals. There is no mention of "dark" or "light" chocolate. *(There was no mention of the correlation between thiobromine found in chocolate & caffeine, both xanthines drugs, causing irregular heart rhythms—latest is— believe it or not—no correlation! Hard to believe?*

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GLOBAL LIFE EXPECTANCY RISES

A new study found that global life expectancy rose 6.2 years, from 65.3 years in 1990 to 71.5 years in 2013. The study by an international group led by the Univ. of Washington's global health research center, said that for the U.S., the average for men was 76.3 years and 81.4 years for women in '13.

Japan was among those with the highest life expectancy (80.1 years for men, 86.4 for women); Lesotho was among the lowest (45.6 years for men and 51.2 for women.)

WHY NOT SEND A HAM FRIEND A MEMBERSHIP IN MARCO

NOT RESTRICTED TO MEDICS. ANY HAM WHO IS A POTENTIAL PATIENT IS ELIGIBLE.

Keep MARCO vibrating!

THE SKY-ROCKING COST OF IMMUNIZATIONS

As presented on Marco Grand Rounds of the Air, Aug, 2015

Vaccination prices have gone from single digits to sometimes triple digits in the last two decades, creating dilemma for doctor and their patients as well as straining public health budgets. Some doctors have stopped offering immunizations because they say they cannot afford to buy these potentially lifesaving preventive treatments that insurers often reimburse poorly, sometimes even at a loss.

Childhood immunizations are so vital that the Affordable Care Act mandates their coverage at no out-of-pocket cost and they are generally required for school entry. Once a loss leader for manufacturers, because they are often more expensive to produce than conventional drugs, vaccines now can be very profitable.

Old vaccines have been reformulated with higher costs. New ones have entered the market at once-unthinkable prices. Together, since 1986, they have pushed up the average cost to fully vaccinate a child with private insurance to the age of 18 to $2,192 from $100,. Even with deep discounts, the costs for the federal government, which buys half of all vaccines for the nation's children, have increased 15-fold during that period. The most expensive shot for young children is Prevnar 13, which prevents diseases caused by pneumococcal bacteria, from ear infections to pneumonia.

Like many vaccines, Prevnar requires multiple jabs. Each shot is priced at $136, and most states require children to get four doses before entering day care or preschool. Pfizer, the sole manufacturer, had revenues of nearly $4 billion from its Prevnar vaccine line last year, about double what it made from high-profile drugs like Lipitor and Viagra, which now face generic competitors.

An analyst said no vaccine had ever been such a big seller. "It's *expensive in part because it's a very effective vaccine*," he said. "*And also because they're exploiting their monopoly."*

That does not sit well with many doctors. Even though the vaccine has not changed, the price of the current version, Prevnar 13 (it protects against 13 strains) has gone up an average of 6% each year since it was approved by the FDA in 2010.

You have to make back your investment and pay your shareholders, but at what point do you say, "*Look, you've had your steak, gravy and potatoes and this is enough?"*

To deal with the rising prices, some doctors, who say they lose money on every vaccination, reserve their shots for longstanding patients. A survey of family doctors, who along with pediatricians are among the lowest-earning physicians, found that about one-third were considering giving up immunizations because of the expense. Another survey found that 40% do not offer at least some required childhood immunizations.

That is why one mother had to call 10 pediatricians in April before she found one that would vaccinate her son who is entering kindergarten this fall. The family's usual doctors do not offer vaccinations, and referred her to local pharmacies (which do not vaccinate children) or the city health clinic. "*I was like, Where should I go? They say vaccine are covered, but that isn't really true if doctors aren't giving them."*

To many pediatricians, not providing vaccines is as unthinkable as a baker not selling bread. Before they became widely available in the mid 20th century, tens of thousands of children died from polio, whooping cough and diphtheria. They work by stimulating the body to develop immunity to a particular disease. The process involves injecting a molecule under the skin that mimics the virus or bacteria to prime the immune system to attack the real thing when it arrives. Vaccines can contain a fragment of the pathogen or a weakened version that can teach the immune system to recognize a germ, without itself causing the disease.

A rough estimate of present prices follow:

Yellow Fever $85; Tetanus/Diphtheria $28; Typhoid, oral, $67; Typhoid, injection $70; Hepatitis A $75 each (2 in series); Hepatitis B $65 each (3 in a series); Twinrix (HepA/B combo) $115 each (3 in a series); Polio $38; Meningitis—Menactra (between ages 11 and 55 $115; Measles/Mumps/ Rubella $45; Rabies Pre-Exposure-3 doses $400;Vaccine Administration, established clients $25. Flu $16; Papillovirus $128-$163; Chickenpox (Varivax) $83-$101; Pneumococcal 23 $44-$72; PLUS administration charges.

6 WILLIAMSBURG, VA. AREA HAMS IT UP

Submitted by Bowles Pender, Williamsburg, VA.

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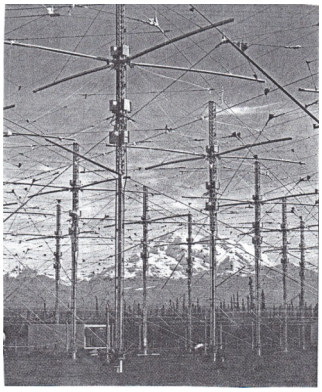


Last year, sixth graders from Berkeley Middle School spoke to an astronaut on the International Space Station for five minutes. The contact, however brief, captivated a gymnasium full of students. **And it was made possible by amateur radio.**

The organization behind this space contact, Williamsburg Area Amateur Radio Club. The community is invited to "***Field Day***," the nation's largest amateur radio on-air event. Club members will set up equipment in Toano's Little Creek Reservoir park and contact thousands of other amateur radio operators throughout the World.

"*It's something that people of all ages can participate in*," club member Ed Kelley said of amateur or "ham" radio.

It's also something people may not know, much about, said former club president Bill Conkling.

Amateur radio operators, once licensed by the FCC, use radio frequencies designated for amateurs.

"*There's all different levels of interest and reasons for interest,"* said Kelley, from emergency to everyday communications.

In emergency situations, amateur radio provides critical communications, transmitting despite loss of power, phones or Internet.

Otherwise, amateur radio provides the ability to contact people from around the world.

Amateurs experiment with a lot of new ideas in communications. The Williamsburg Area Amateur Radio Club alone has about 60 active members. Local operators offer communications support for sporting events, county and city governments, the Red Cross, hospitals and neighborhood Citizen Emergency Response Teams among others.

About 20 members will attend the Field Day, an annual event sponsored by the American Radio Relay League. Field Day is a trial run for emergency communications skills.

Simulating primitive conditions through the use of emergency power supplies, local operators will contact other operators throughout the US and Canada, testing and practicing their techniques.

The club will set up three stations, including two primary stations for Morse code and voice transmissions.

The third station will exist for new and non licensed operators to make contacts with the help of a licensed operator.

"*We'll put you on the air*," said one member, anyone who wants to try. Everyone is welcome to participate, observe, meet and converse with club members and to see the resources amateur radio offers at Field Day.

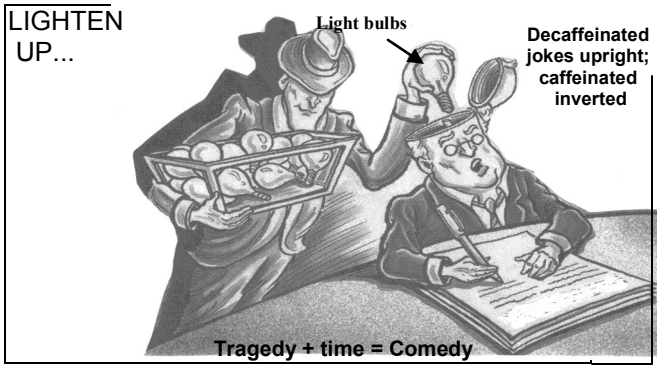
"*A lot of people don't see the need, but there is a need. Not to mention , it's fun*!"

(Information for above was taken from a fine article by Heather Bridges which appeared in the Virginia Gazette of June 24, 2015.)

IMMUNIZATIONS FOR ADULTS

Flu every October-November; **Tetanus, diphtheria, pertussis** every 10 years; **Shingles** 1 dose for those 60 years or older; **Pneumococcal,** PCV13, one dose with a booster at age 65; PPSV23 1 to 2 doses at age 19 booster at age 65; **Meningococcal, 1 or 2 disease age 19;** Measles, Mumps, Rubella, 1 or 2 doses age 21; **Human papillomavirus,** for women, 3 doses starting at age 19 through age 26; for men, 3 doses age 19-21 or 3 doses ages 22-16. **Chickenpox (***Varicella) 2 doses after age 20;* **Hepatitis A** 2 doses after age 20; **Hepatitis B,** 3 doses after age 20; **Hib (**Hemophilis Influenza type b, varies, consult doctor.

LIGHTEN UP...



TRUE STORY... Last January on a bitterly cold winter's day, a North Dakota State Trooper on patrol came upon a motorcyclist who was stalled by the roadside. The biker was swathed in heavy protective clothing and wearing a full-face helmet to protect the face from the cold weather. "*What's the matter?* Asked the Trooper. "Carburetor's frozen," was the terse reply. "*Pee on it. That'll thaw it out.*" "I can't," said the biker." "*OK, watch me closely and I'll show you*" The Trooper unzipped and promptly warmed the carburetor as promised. Moments later the bike started and the rider drove off, waving. A few days later, the local State Troopers' office received a note of thanks from the father of the motorcyclist. It began, "***On behalf of my daughter Jill...***"

A fellow injured his arm and went to the E.R. *"What's the problem?"* asked the doctor. "Not only does my arm hurt but I hear voices coming out of it," replied the patient. The doctor put his stethoscope on the man's forearm and heard a voice say, "Hey, doc! Can you loan me $10, I really need it!" He put the stethoscope just above the elbow and heard another voice say, "I need $20, doc, can you help me out?" "What do you make of that?" asked the patient. *"Well,"* the doctor replied, "*It appears your arm is broke in two places."*

(Tip of the hat to Max Holland W4MEA)

By the time an American child reaches the age of 18, that child will have seen approximately 40,000 murders on television.

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The wit of Phyllis Diller…"*Whatever you may look like, marry a man your own age. As your beauty fades, so will his eyesight "* "Cleaning your house while your kids are still growing up is like shoveling the walk before it stops snowing." "*The reason women don't play football is because 11 of them would never wear the same outfit in public."* Burt Reynolds once asked me out….I was in his room!" *"I asked the waiter if this milk was fresh? He said, "Lady, three hours ago, it was grass."*

****

A Man doing market research knocked on a door and was greeted by a young woman with three small children running around at her feet. He said, "**I'm doing some research for Vaseline. Have you ever used our product?"** She said, "*Yes, my husband and I use it all the time."* **"And do you mind me asking, what do you use it for?** *"We use it for sex."* The researcher was a little taken aback. **"Usually people lie to me and say that they use it on a child's bicycle chain or to help with a gate hinge. But, in fact, I know that most people do use it for sex. I admire your for your honesty. Since you've been frank so far, can you tell me exactly how you use it for sex?"** The woman said, "*I don't mind telling you at all, my husband and I put it on the door knob and it keeps the kids out."*

****

Old age is when it takes longer to rest that to get tired.

A drunk was wandering around the parking lot of a bar, bumping into every car and the rubbing the roofs of the cars. The manager came out of the bar and stops the guy. "What the heck are you doing?" he asks. "I'm looking for my car, and I can't find it." "So how does feeling the roof help you?" he asked the drunk. "Well, the drunk replied, "My car has two blue lights and a siren on the roof.

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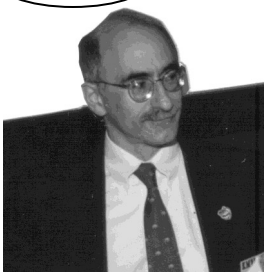
A SAILOR in the South Seas wrecks his boat and wakes up on the beach and looks around—the sand looks bluish red—the trees bluish red—the sky bluish red...He thinks and says to himself, "***I think I have been marooned!***"

Hello, I'm Bruce



MEMORIES OF YEARS AGO IN MARCO

Our History Book

Bruce Small, KM2L

Marco Historian

25 YEARS AGO IN MARCO

The October 1990 issue of the Marco NL announced that the Charitable Fund was henceforth renamed the Medical Resources Commission. Interested Marco members were invited to join Smitty W6JZU, Bu KC2ZA, dick W8QP and Ken GJ0KKB on 15 meters to help plan the work of the commission.

The Third Annual Eastern Mini-meeting was held in Norristown, PA with 34 Marco members in attendance.

Ed WA3TVG. Newsletter Editor, bestowed orchids on Ed Weston W4UVS after the Oak Ridge Museum opened a room featuring his photos from the early 1940s. Robin NN3L was also singled out for praise for his tireless efforts in locating and obtaining a suitable display for Marco. So, now you know how long we have owned the unit we use at Dayton.

20 YEARS AGO IN MARCO

In the October 1995 Marco NL Smitty described our provision of medical support to a DXpedition to Easter Island and Salay Gomez, led by Bob Schmeider KK6EK.

Chairmanship of MediShare International was assumed by Bud, KE2DT (*the sax player.)*

Dave KC6HOY invited other west coat members to join him in a 75 meter Marco net.

15 YEARS AGO IN MARCO

In the October 2000 issue of the Marco NL Warren KD4GUA answered the question "*Is this patient safe to fly*?" He stated that if the patient can walk a city block, climb a flight of stairs and smell normal, they were okay to fly.

President Bruce KM2L wondered why Marco did not attract a higher percentage of eligible members. Gene WB3FTJ and Judy N3MBW, Directors of MediShare International, reported on the successful completion of the Malawi project, helping to equip Queen Elizabeth Hospital and the rural Montfort Hospital.

10 YEARS AGO IN MARCO

In the October 2005 Marco NL, Chip N5RTF reported from post-Katrina New Orleans, and thanked everyone for their prayers and good wishes.

Warren KD4gua addressed the question of Vitamin B-12 supplementation in the elderly, and came down in favor of it.

Bill N5QF related his experiences practicing dentistry in the Alaskan wilderness.

Harry, WB9EDP educated readers of the basics of radiation therapy

****

DOUBLE YOUR MONEY WITH THE RULE OF 72

Investments earning: 1% will double in value in 72 years. For example: An investment earning 10% will double in 72 years and a 5% return will take 14.4 years to double

In dividing an interest rate into 72, you can quickly tell how many years it will take to double in value. The result takes compounding into account.

THE FINGERNAIL TEST FOR 2-WAY MIRRORS

When we visit bathrooms, hotel rooms, health clubs etc., many of us are unaware that the seemingly ordinary mirror hanging on the wall may actually be a 2-way mirror.

To determine do this simple test: Place the tip of your fingernail against the reflective surface and if there is a GAP between your fingernail and the image of the nail, then it is a **genuine** mirror. If your fingernail directly touches the image of your nail then it is a 2-way mirror. Remember, "***No space, leave the place.***"

CME RANKINGS, Sept. 9, 2015

BOB CURRIER MARCO GRAND ROUNDS OF THE AIR. (Corrections to Marco)

14.342, Sundays, 11 am Eastern, One Hour Cat. II CME

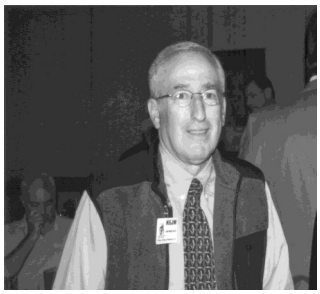
CALL	HRS.	NAME	QTH
KD4gua	33	Warren	Largo, FL
KC9CS	33	Bill	Largo, FL
NU4DO	33	Norm	Largo, FL
N2JBA	33	Ed	Amenia, NY
N6DMV	30	Paul	Torrance, CA
N6NYJ	30	Art	Beverly Hills, CA
KNOS	30	Dave	Virginia
N9RIV	29	Bill	Danville, IL
W5AN	29	Bud	Lafayette, LA
N5RTF	29	Chip	New Orleans, LA
KM2L	29	Bruce	Clarence, NY
W3PAT	28	Marv	Prosperity, SC
KD5BQK	27	Bernie	El Paso, TX
WB6OJB	26	Arnold	Pac.Palisades, CA
N4TSC	26	Jerry	Boca Raton, FL
W1BEW	26	Bobbie	Tennessee
WB9EDP	26	Harry	Chicago, IL
KK1Y	25	Art	Seminole, FL
N2OJD	24	Mark	Sidney, Ohio
N4MKT	24	Larry	The Cottages, FL
WB1FFi	22	Barry	Syracuse, NY
KE5SZA	22	John	Marietta, OK
K6JW	22	Jeff	Palos Verdes, CA
W8LJZ	21	Jim	Detroit, MI
W3MXJ	21	Joe	New Orleans, LA
K9CIV	20	Rich	Knox, IN
W4DAN	20	Danny	Cleveland, TN
W1HGY	19	Ted	Massachusetts
K9YZM	18	Mike	Crystal Lake, IL
KE5BQK	18	Linda	El Paso, TX
K4JWA	17	Jim	W. Virginia
W4MEA	16	Max	Hixson, TN
K0FS	16	Fred	St. Louis, MO
KD8IPW	16	Mary	W. Virginia
N0ARN	14	Carl	Colorado
N9GOC	14	Pat	Champagne, IL
K4RLC	13	Bob	Raleigh, NC
WA1EXE	12	Mark	Cape Cod, Mass.
AE4BX	12	Mary	Myrtle Beach, SC
W9HIR	11	Bill	Berwyn, IL
W1RDJ	11	Doug	Cape Cod, Mass.
W0RPH	11	Tom	Denver, CO.
N4DOV	11	David	Ft. Lauderdale, FL
WA3QWA	10	Mark	Chesapeake, VA
W8EYE	10	Darryl	New Phila. Ohio
W9JPN	10	Wally	Champagne, IL
N7NLN	9	Mort	Grand Canyon, AZ
KE3XB	9	John	Nashville, TN
WB5BHB	6	John	Vancleve, MS.

YEAR	TOTAL CHECK-INS	AVERAGE PER SUNDAY
1998	694	14.46
1999	766	15.95
2000	1,035	20.29
2001	1153	22.60
2002	1383	26.15
2003	1489	28.63
2004	1534	29.50
2005	1517	29.17
2006	1531 (one extra Sunday)	28.89
2007	1591 (one extra Sunday)	30.02
2008	1524 (Only 46 nets)	33.14
2009	1533 (46 nets)	33.32
2010	1591 (44 nets)	36.22
2011	1514 (44 nets)	34.41
2012	1602 (44 nets)	36.41
2013*	1400 (44 nets) (New Freq)	31.82 (Year of Terrorist)
2014	1756 (47 nets)	37.36
2015	1163 (34 nets)	34.21

Record number of stations checked-in was 51, on Feb. 24, 2013

*This was the year we had to change frequency due to the terrorist, thus losing a lot of stations in the freq. shift.

THE PRESIDENT SAYS:



Jeff Wolf, K6JW

In the August 2015 issue *Aether* there was an anonymously written article entitled "*A Doctor's Lament."* The article pretty much bemoans the current medical practice environment, naming insurance companies, lawyers, and the government, as well as electronic health records, as underlying current physician discontent.

My aim is not to argue with the unnamed author's opinions but, rather to try and add a bit of perspective that, I believe has been largely ignored, and it is that there is plenty of blame to go around for the current unhappiness of physicians as well as that of just about everyone else in the health care "system." Incentives are misaligned, with everyone trying to get their piece of the pie; hospitals, clinics, individual doctors, and even patients all have competing agenda and there is little to no coordination in trying to resolve the conflicts.

I have written about this in other publications, but what I'd like to do here is tell a simple story of how physicians in the community where I once practiced helped to sow the seeds of their own unhappiness. You may draw your own conclusions.

In 1984, I had been in the private practice of ob/gyn for seven years. I had two associates for coverage (*not partners*), and my practice was healthy, with a nice referral base., the largest portion of which came from several of the younger internists in the largest medical group in the community. In the fall of that year, Blue Cross invaded the city and wanted to contract with an internal medicine group which it would empower to subcontract for specialty care. This was the first wave of what would become a managed care avalanche. The medical community was understandably concerned, and meetings were held to figure out how to respond to the challenge.

Two things happened. Younger physicians, concerned over their future, wanted to approach Blue Cross for individual contracts. This, at the time, was a nonstarter. The second thing that happened was that the large primary group with physicians in it who were referring to me suddenly announced that it had been selected for the Prudent Buyer contract. That group then signed a flurry of contracts for specialty care with physicians who were cronies of the senior members of the primary care group. My associates and I were not offered a contract and, like all the other MDs were left out in the cold, and were now facing the loss of a substantial number of patients. I, for example, would no longer be able to see any Blue Cross patients who were signed onto Prudent Buyer.

Blue Cross had pursued a strategy of divide and conquer, and the medical community had fallen into the trap. The wedge that had been driven into the community was huge and it opened up a scramble for contracts as other plans now inserted themselves into the breach. Any sense of physicians unity in the face of the challenge was nonexistent as everyone fell in it for him/her/self. Some of us thought—and pleaded—that if the community would only stick together, the storm could be weathered, but within months the situation was moot as contract after contract was signed by frightened and competitive physicians. Seeing the handwriting on the wall, I sold my practice to my two associates and rechanneled my career in a different direction.

The point of this is that one cannot point a finger at easy targets to come up with simplistic explanations for how we got where we are. We—insurance companies seeking to maximize profits, patients who want every test and therapy regardless of cost and efficacy, hospitals trying to fill beds, medical groups looking to cut better contracts and gain the upper hand over insurance companies, and individual physicians trying to maximize their incomes—all have played a role in the development of our sorry situation. And it's simply too easy to blame the government for current woes. It's important to remember that what is usually called "*Obamacare*" originated as a Republican plan, and that neither party has actually come up with a solution of providing affordable, high quality health care for everyone that will also pass the opposition's political muster.

So, remember the famous words of Pogo: "We have met the enemy, and they are us." yes, and that means ALL of us.

9 AN EXCITING READ: WHEN BRAIN & BODY PART

A friend of mine, Chris, in his 50s woke up one morning, got off the bed, stood up, stretched, turned around and got the fright of his life.

"The shock was electric—because I was still lying in the bed sleeping, and it was very clearly me lying there sleeping, my first thought was that I had died." Of course, Chris hadn't died. He was having what is called a **doppelganger experience.** He found himself inhabiting an illusory body while his real physical body was lying in bed. He says he's not clear how long the feeling lasted. Eventually "*there was this enormous sucking sensation,"* said Chris, making a long, drawn-out slurping sound, "*I felt like I was dragged, almost thrown, back into the bed, smack into myself."* ***He woke up screaming***!

Doppelgangers are the stuff of literature, found in unsettling stories by Edgar Allan Poe . Modern scientists call the doppelganger effect an autoscopic phenomenon in which a person may hallucinate that they are seeing and even interacting with another "*me*"—a visual double.

Probably the most widely experienced and best-known form of these autoscopic phenomena is the out-of-body experience, in which people often report leaving their physical body and looking on at it from above.

Unnerving as they can be, out-of-body experiences, *doppelganger phenomena* are probably our best window onto the way our brain constructs our sense of self, starting with the bodily self. Having a bodily self means several things. At its most fundamental, it anchors you in a body that feels like it is yours. You also feel that your body occupies a certain volume in physical space and that you are within that volume looking out with a perspective that feels like your own.

But as Chris's experience shows, there are times—albeit rare—*when we aren't anchored in our physical body,* suggesting that there is something malleable about the way our brains construct our bodily selves.

Take the rubber-hand illusion—written up in the journal Nature in 1998—in which an experimenter strokes a subjects real hand with a brush while simultaneously stroking a rubber phony hand. The subject can see only the rubber hand, not the real hand, which is obscured by a screen.

In most people, something crazy happens within a couple of minutes: instead of feeling the touch of the brush on the real hand, you begin to feel the touch at the location of the rubber hand. It is as if your brain takes ownership of the rubber hand.

So what is happening here? The brain has to make sense of conflicting information: sensations of brush strokes on the real hand and the sight of a rubber hand being stroked. So the brain, in effect, decides that the eyes don't lie: The rubber hand must be the source of the sensations, and so the brain proceeds to embody the inanimate hand.

To create a sense of embodiment, the brain relies on incoming sensations—both from the outside and from inside the body—to construct maps of the body and body parts. We perceive these maps as our bodily selves (the "*homunculus*" the physical representation of the body in the brain.)

Over the past decade, two teams—one in Switzerland and one in Sweden have demonstrated full-body versions of the rubber-hand illusion. Just as our brain can take "ownership" of a rubber hand, it can also be fooled—using more elaborate experimental setups—into taking ownership of a mannequin's body or even a virtual body.

These experiments show us that, to create the bodily self, the brain has to integrate various sensations—such as touch, vision and many other types of internal and external information. There is no one place in the brain where this integration happens. Rather, researchers have identified a whole host of regions that are involved. **The various illusion arise when the brain is fed conflicting information and tries to make sense of it.**

One can even fool the brain into embodying empty space. For example, in the rubber-hand illusion. If the experimenter takes the rubber hand away and instead moves the brush in the air in a manner suggestive of having a hand there while simultaneously stoking the hidden real hand, some people will soon start feeling touch in empty space. (*Try it!)*

What we are showing is that nothing is really leaving the body during an out-of-body experience. The bodily self is something that is constructed by the brain moment by moment. The bodily self turns out to be the basis for our greater sense of self, which involve more complex aspects including the narrative self (the stories we tell others etc.) Our sense of self arises from a complex interaction among brain, body, mind and culture—and in the full –blown selves we are, all aspects of the self interact with and influence one another. But it all begins with the body.

(Information for the above was taken from Anil Ananthaswamy's fine article in the Aug. 29th edition of the Wall Street Journal.)

LYME DISEASE

As presented on Marco Grand Rounds, July 26, 2015

Lyme disease is a bacterial infection primarily transmitted by deer ticks (*Ixodes scapularis)*. These tiny arachnids are typically found in wooded and grassy areas especially in the northeast US and western Wisconsin from May through September. as well as more than sixty other countries. It was first diagnosed in Old Lyme, CT in 1975, thus the name. Host is the deer—the more prolific the deer population the more Lyme disease. The tick gets the bacteria from white-footed mouse and rodents and then uses the deer, who is not involved physically, as a preferred host before transmitting it to humans. **Not all ticks are infected**.

It is estimated that over 300,000 people are diagnosed with Lyme in the US every year. It is caused by a spirochete—a corkscrew-shaped gram-negative bacterium called *Borrelia burgdorferi.* Lyme is called the *Great Imitator,* because it symptoms mimic many other diseases. It can affect any organ of the body. It is often misdiagnosed with *chronic fatigue syndrome, Fibromaylgia, multiple sclerosis,* and various psychiatric illnesses, including depression and memory loss.

People get Lyme from the bite of the nymphal, or immature, form of the tick. Nymphs are about the size of a poppy seed. Because they are so tiny and their bite is painless, **many people do not even realize they have been bitten.** Once a tick has attached, if undisturbed it may feed for several days, the longer it stays attached, the most likely it will successfully transmit the bacteria into the blood stream. It usually takes tick attachment of 36-48 hours before the infection spreads….If pregnant women are infected, they sometime pass Lyme disease to their unborn children and, while not common, stillbirth has occurred.

Symptoms of early Lyme disease may present as a flu-like illness (*fever, chills, sweats, muscle aches, fatigue, nausea, and joint pain, especially knee pain*). Some patients have a rash or Bell's palsy (facial drooping). However although a rash shaped like a bull's-eye is considered characteristic of Lyme disease, many people develop a different kind of Lyme rash or none at all. Estimates of patients who develop a Lyme rash vary, ranging from about 30% to 80%. About 7% of those infected are completely asymptomatic.

If Lyme is not diagnosed and treated early, it may become late-stage or chronic. This may also occur when early treatment is inadequate.

In order for the CDC to recognized Lyme cases for surveillance purposes, there must be "*objective"* findings, such as positive blood tests, Bell's palsy or joint swelling (even though Lyme blood tests are unreliable and the CDC's accepted "objective" indicators are not common). Erythema migrans rash is usually found in 70% of cases ; arthritis in 31%, Bell's palsy in 9%; Radiculoneuropathy in 4%; Meningitis/Encephalitis in 1% and cardiac involvement in 8%. (*AV block with reduced ejection fractions)*.

Most of the time the rash is an ordinary painless , non-itching red area; however if it is a "*bull's-eye*" shape with a darker edge, it is a definite sign of Lyme and needs immediate treatment. The rash starts a few days or even several weeks after the bite and then expands over a period of days to several inches across, with a central clearing area. Untreated, it can last for weeks before fading, or it may fade and recur. The rash may have an irregular shape, blistering or a scabby appearance. Some rashes look like spider bites, ringworm, or cellulites. Unfortunately, diagnostic testing is unreliable in the early stages of infection, often giving false negatives. Treatment should not be delayed pending a positive test result if the suspicion of Lyme disease is high. Giving a single dose of doxycycline with the finding of tick bites is advocated by some.

Chronic Lyme Disease. If Lyme disease is not diagnosed and treated early, the spirochetes spread and go into hiding in different parts of the body. Months later, patients may develop problems with the brain and nervous system, muscles and joints, heart and circulation, digestion, reproductive system, and skin. Symptoms may disappear even without treatment and different symptoms may appear at different times.

Untreated or under treated Lyme can cause some to develop severe symptoms that are hard to resolve. This may be called post-treatment Lyme disease or chronic Lyme disease. It is estimated that about 15% of people fall into this category. Even with treatment consisting of the new guidelines about 16-39% fall into the treatment failure category. Although death does not usually result there have been 23 deaths in 2014, three of which were sudden cardiac deaths related to Lyme carditis. The quality of life is much worse than most chronic diseases and may be compared to symptoms as severe as chronic heart failure. Over 40% of patients with chronic Lyme reported that they currently are unable to work because of the disease and some 24% report that have received disability at some point in their illness.

Diagnosis is clinical plus the ELISA (enzyme-linked immunosorbent assay) and the Western blot test for antibodies. The CDC recommends that doctors first order an ELISA to screen for the disease and then partially confirm the disease with the Western blot. Sero-conversion usually takes at least four weeks. Positive IgG titers may represent previous infection. Three other tests that may be used to diagnose Lyme are polymerase chain reaction (PCR), antigen detection and culture testing. Culture is the "*gold standard*" for identifying bacteria but the organism is difficult to grow. The lab takes a sample of blood or other fluid from the patient and attempts to culture Lyme spirochetes in a special medium. The CDC recommends that patients use "*FDA-approved*" tests at approved labs.

Treatment: No single antibiotic or combination of antibiotics appears to be capable of completely eradicating the infection, and treatment failures or relapse are reported with all current regimens. Antibiotics used include, Doxycline (*over 8 years of age*), Amoxicillin, Cephuroxime and Zithromycin. Treatment usually lasts two to three weeks.

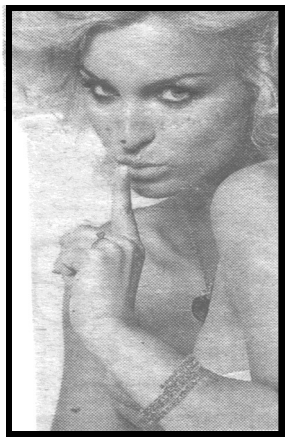
Prevention: Use of Deet spray and wearing long trousers helps and avoiding high-deer areas in the summer.

Do dogs get Lyme disease? Dogs and cats show several different forms of the disease, but by far, the most common symptoms are a high fever, lameness, swelling in the joints, swollen lymph nodes, lethargy and loss of appetite. There is usually no rash. Some dogs have developed severe progressive kidney disease. There is a Lyme disease vaccine for dogs and a "tick collar" available (*Amitraz, Fipronil*. *Permethrin*) along with shampoos, sprays, and spot ons. Treatment is with antibiotics.

Animals are generally not viewed as a direct source of Lyme or co-infections. However, cats may directly infect humans with bartonella (formally classified as "Rickettsiae.") through scratching or biting Studies in some parts of the US show that up to 80% of stray cats are infected with Bartonella, a disease transmitted by fleas, ticks causing cat-scratch disease.

ASHLEY MADISON (Online dating) HACKED !

The Ashley Madison online dating site for married people, was hacked in July and personnel information about more than 30 million registered users was leaked. Therapists who say they have clients who worry their spouse may find out they used the site to cheat now wonder what to do.



As the Ashley Madison hack has shown, the internet is the modern version of the proverbial lipstick on the collar.

In a recent survey, 44% said their marriage dissolved afterwards. This compares with the 68% who said it dissolved after a third party told them about their partner's infidelity. Of those caught in the act, 83% said the relationship dissolved and 88% said it dissolved after their partner confronted them.

According to published reports, about 1 in 6 married men in the U.S. were on Ashley Madison. This seems shocking, and the percentage of profiles that were fake is unknown. Reliable statistics are scarce. It is estimated that about 20% of men and 14% of women who have ever been married have had extramarital sex. About 15% of men and 11% of women who said they'd had an extramarital affair confessed to their spouse about it on their own. Experts said that the disclosing an affair in a sincere, respectful and honest manner may actually help improve a marriage. (WSJ….,9/8/15)

"SIMPLE COURAGE"

A TRUE STORY OF PERIL ON THE SEA

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BACKGROUND: At a recent Marco meeting in Myrtle Beach, SC., Wayne Rosenfield, K1WDR came to the Aether News Editor with a wonderful story of the heroism by a ham operator named Capt. Kurt Carlsen W2ZXM of the "*Flying Enterprise,*" a ship caught in a hurricane in the North Atlantic in 1951. Ironically, the News Editor, at the time, was a Navy medical officer aboard the USNS General Leroy Eltinge that stood by to possibly rescue passengers aboard that very ship. On top of that, the News Editor's "Elmer" was a South African ham, Olliver Pierce WU4i, who at that time was corresponding by radio with Carlsen. Below, is this wonderful story, *"Simple Courage,"* written by Frank Delaney, ISBN 1-4000-6524-0, available at Amazon.com

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In late December 1951, Capt. Kurt Carlsen, 37, had run into a hurricane off the South English coast aboard his cargo vessel *Flying Enterprise.* The Captain ordered "abandon ship" and a line was passed from a rescue lifeboat and passengers and crew were ordered to jump into the raging waters with lifelines attached, but the Captain remained on board. Prior, by the time she was ready to return to New York from Hamburg, *Flying Enterprise* was loaded with consignments of which have contributed to the half century of questions hanging over her—*just why did Flying Enterprise become a mystery ship and why did her Captain refuse to leave his ship.* The ship left Hamburg on Dec. 21, 1951 for New York and the unexpected. A storm soon arose and in the midst of the storm the *Flying Enterprise* snapped open amidships and was quickly strapped and cemented back in place. Meanwhile the storm raged….a huge wave finally sent the ship listing 25 degrees on the left side….and the crew and passengers prepared to abandon ship—but not the Captain……

Carlsen had put a life jacket on the one dog aboard, a child's life jacket that had been worn by his daughter Karen during boat drill on a voyage with her father. The crew dumped the dog overboard and then the crew members jumped. As one fellow hit the water, his hat came off, and from beneath it fluttered a billow of currency notes. He tried to reach them. At the same time, the deck-maintenance man, Yan Sang jumped, and as he did, the oiler Jose Marti, in tears from fright, was pushed from the deck above by his well-meaning colleagues. Yan Sang, with limited skills in English, gave image-filled evidence:

I see other ordinary seaman. He near me jump over guard rail. He can't swim, jump into seas. He make noise and cry and everything. I can't save. I take one hand and start to swim. I see something out there coming, one dog hollering, little dog from passenger. Little dog come at me. So I catch the dog and I want to try to take dog too. At that time I had two hands can't move no more. Start to go down. I think too bad, I can't help it no more. I let go of the dog. Man I let go and then start swimming with hand. I let go do. Dog go down, finish, gone."

Essentially, Yan Sang saw that Marti couldn't swim, went to save him, and took Marti's hand in the water. He also tried to save the dog and almost went down himself. A few feet away from him, Mr. Bunjakowki, now torn between his money and the little life-jacketed dog, let go of the lingering self-protective instincts he still felt and the sea smashed him against the hull of the ship that had been taking him to a new life.

From the deck above, Ross Thomas watched Mr. Bunjakowski. " I said to him, 'Swim away from the ship.' He was swimming, I could see his hand moving and the dog was going along also. The last I seen of him where he was, he turned by the stern of the ship there and the lifeboat was off probably, That is where something happened. I don't know if it was his heart or drowned or what."

Out in the *Greely* lifeboat, Robert Husband swung in and picked up all four passengers, who, he found, due to exhaustion "were unable to help themselves at all. One man as we approached him was lying on his back with his eyes open giving the appearance of being dead. We hauled him on board and at that time I feel certain he was dead. " This was Mr. Bunjakowski.

Husband and his crew also saw the dog, who was trying desperately to keep his head above water. But the weight of the life jacket kept pulling him this way and that, and soon the dog vanished. At the time I saw him we had our hands full pulling men out of the water and were unable to save this dog."

Carlsen never took his eyes off Husband's rescue efforts, and Husband became aware of the captain's vigilance. When he had the four men in the boat, three safe, one dead or dying, Husband waved to Carlsen and began to point toward *Flying Enterprise's* stern; he seemed to be advising this as the point of optimum safety for anyone trying to jump clear.

The young naval officer had confirmed Carlsen's own instincts. Given how the weather had come up again so severely, and given his fresh experience of people having jumped from the boat deck rail, and now confirmed in his judgment by this evidently competent rescuer, Carlsen changed his mind and sent all his crewmen and the two remaining passenger to the stern of the ship. To get there, each person still on board had to crawl some sixty yards on his hand and knees.

Three more men jumped: Husband picked them up and took them to *Greely* where cargo nets had been lowered. Each of the seven *Flying Enterprise* jumpers now in Husband's boat was hauled aboard *Greely* by means of a line passed over their heads and fastened under their armpits. On board they were taken straight to the ship's hospital where doctors and nurses had been standing by. Nikolai Bunjakowski was unconscious on arrival and was certified dead shortly afterward.

His first journey safely completed, Husband pulled away from *Greely*—and immediately found himself in a swell so great that he rose level with the troopship's decks. The time now was a quarter to two. The rescue operation had begun at half past eight that morning, and the majority of people still had to be taken off *Flying Enterprise*—28, not counting Carlsen and including two passengers: Curt Muller, husband and father, and the elderly Frederic Niederburing. As Husband headed toward *Flying Enterprise,* he had to circumnavigate *Westfal Larsen,* which had come between *Greely* and Carlsen to pick up her own lifeboat crew.

Alongside the crippled freighter again, Husband made "three or four passes" and picked up ten men, one man at a time. He missed one Balthazar Gavilian, but he followed him in the water until *Westfal Larsen* picked him up safely. Husband went back to his own ship, unloaded his ten survivors, and came back for more. And now there were seventeen.

That is how the *Flying Enterprise* passenger-and-crew rescue operation concluded: through the expertise of a young seaman working hand in hand with a captain who perceived that expertise. No further serious incidents occurred. One man, the oiler, was picked up by the German ship *Arian.* David Greene, the radio officer, was in the last boat—as was Richard Cosaro from the Black Gang, who had been among those offering to stay until a tug could be found.

"*The captain said, 'No, get off the ship. That's an order,'"* Cosaro recalled. *"*We asked him, *"*What about yourself?*"* He said*, "I'll make my decision when you are all safe in the water." "*Well, more of the crew had already jumped back aft. I was in the last group to leave the ship. There were about 14 of us at the time, and when we were in the lifeboat, we kept waving to the captain, saying "*Come on, Captain! Come on!"* And he didn't say anything. ***(Why did the Captain refuse to leave his ship??)***

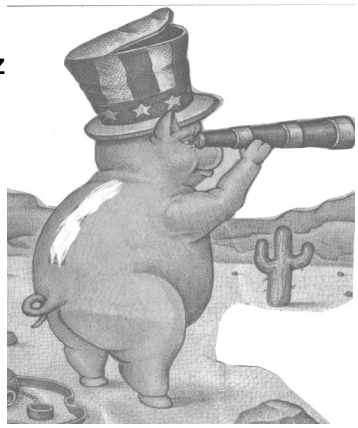
The *Greely* lifeboat disappeared into the spray and reached the mother ship in safety, leaving Carlsen behind, alone. *"To windward of the Enterprise,"* reported Husband, "*I saw the captain standing on the boat deck aft and we all waved to him. "* Husband got all his remaining survivors up onto the decks of *Greely* with no accidents in the transfer.

Back on board *Greely,* "at this time being covered from head to foot with black oil along with everyone else, Second Officer Husband discussed with his captain the wisdom of trying to recover *Greely's* foundered lifeboat from So*uthland.* Capt. Olsen decided against it and stood *Greely* by. *Flying Enterprise* lay 700 yard distant, the closest Olsen had ever dared come to her.

Alone now, with dusk closing in and the sea still bombarding him, Carlsen wrestled his way back to the radio shack, shining his flashlight. In order to ascertain that all his crew and passengers had indeed been rescued, he had one more task: a "*round-robin*" of calls to each participating ship. The radio batteries had almost died, In the listing of the ship, the battery acid had drained out. He had just enough power to build the roll call. All 50 on board except him had been transferred to other ships.

NEW FACES* for MARCO & RENEWALS, as of Sept. 15, '15

Alexander, Kurt WB9USA
Brinley, Jr., Floyd K3EVC
DelBalso, Angelo WA2NNZ
Gerber, Mark WH7W
Haley, Frank VE6KF
Kennedy, John N2LW
Lieberman, L W4JMA
Levine, Gordon WB6JVP
Mesh, Joe W8SS
Nachbar, Gary K2HVR
Sosinski, Carl N8APD
Spencer, Jr., Jim* KD8YDD



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