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DEEP BRAIN STIMULATON

.A NEUROSURGICAL PROCEDURE INVOLVING THE IMPLANTATION OF A MEDICAL DEVICE (*"BRAIN PACEMAKER")* WHICH SENDS ELECTRICAL IMPULSES TO ALLEVIATE TREMORS.

Deep brain stimulation (DBS) has provided therapeutic benefits for otherwise treatment resistant movement and affective disorders such as Parkinson's disease, essential tremor, dystonia, chronic pain, major depression and obsessive-compulsive disorders.

Despite the long history of DBS, (20 years+) its underlying principles and mechanisms are still not clear—we simply don't know how it works! **But it works!**

The FDA approved DBS as a treatment for essential tremor in 1997, for Parkinson's in 2002, dystonia in 2003 and obsessive-compulsive disorders in 2009. DBS is also used in research to treat chronic pain and depression although neither of these applications have yet been FDA-approved. While DBS has proven effective for some, potential for serious complications and side effects exists.

The deep brain stimulation system consists of three components: the implanted pulse generator (IPG), the lead, and the extension. The IPG is a battery-powered neurostimulator (*Medtronics, Boston Scientific*) encased in a titanium housing, which sends electrical pulses to the brain to interfere with neural activity at the target site. The lead is a coiled wire insulated in polyurethane with four platinum iridium electrodes and is placed in one or two different nuclei of the brain. The lead is connected to the IPG by the extension, an insulated wire that runs below the skin, from the head, down the side of the neck, behind the ear to the IPG, which is placed subcutaneously below the clavicle or, in some cases the abdomen. The IPG can be calibrated by a neurologist, nurse or trained tech to optimize symptoms suppression and control side-effects.

All three components are surgically implanted **inside** the body. Lead implantation may take place under local or with the patient under general anesthesia . A hole about 14 mm in diameter is drilled in the skull and the probe electrode is inserted stereotactically (*head encased to prevent movement).* During the awake procedure with local, feedback from the patient is used to determine optimal placement of the PERMANENT ELECTRODE. During the asleep procedure, intraoperative MRI guidance is used for direct visualization of brain tissue and device. The installation of the pulse generator and extension leads occurs under general anesthesia. The right side of the brain is stimulated to address symptoms on the left side of the body and vice versa.

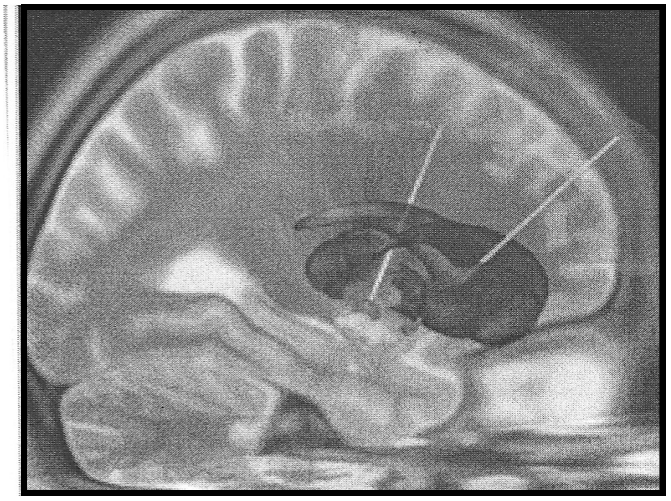
Parkinson's disease...is a disease whose primary symptoms are tremor, rigidity, bradykinesia, and postural instability. DBS does not cure Parkinson's, but it can help manage some of its symptoms and subsequently improve the patient's quality of life. At present, the procedure is used only for patients who have true Parkinson's, i.e., (*those that respond to l-dopa medication and have three of the four symptoms of tremor, rigidity, bradykinesia and postural instability*.) It is best utilized when the patient's response to l-dopa by mouth disintegrates usually after two years of use..

Traditionally, the two most common sites for electrode placement are the subthalamic nucleus and the globus pallidus interna.

Other clinical applications: Results of DBS in dystonia patients (frozen unusual attitudes), essential tremor, epileptic seizures resistant to medications, narcolepsy, psychomotor seizures, Tourette's syndrome and obsessive-compulsive disorder have been favorable.

While DBS is helpful for some, there is also the potential for neuropsychiatric side -effects, including difficulty with speech, apathy, hallucinations, compulsive gambling, hyper sexuality, depression in a relatively low 5%. However, these may be temporary and related to correct placement and calibration of the stimulator and so are potentially revisable.

Continued on Page Two



DBS electrodes in the subthalamic nucleus
(Actually hear Dr. Deborah Boland's talk on "Deep Brain Stimulation" by going to www.mpmcme.org—click on "Archives," and select that discussion.

DID YOU MISS GRAND ROUNDS?
If you did, you can listen on access address
http://50.97.94.44/stream
The Archive page address is:
http://50.97.94.44:2199/start/tkeister
& notify warren.brown1924@gmail.com for Cat. II CME credit.

NEED CATEGORY I CME?
Go to www.mpmcme.org enter; go to "medical surgical archives" and a list will pop up...pick the lecture you want (includes mandatory ones) & when completed take the simple test and submit it to"Lee" for accreditation. When your medical license is up for renewal, notify Lee & she will submit the papers required. Tell her you affiliated with the hospital through MARCO and Dr. Warren Brown. *(Tnx to Morton Plant Hospital, Clearwater, Florida an associate of the Univsity.of South Florida medical school.)*

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.

HAPPY HOLIDAYS from the MARCO Board of `Directors to all HAM members. Another happy year awaits your talents. Let's brighten up the air waves with waves of good will and happiness.

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.

Because the brain can shift slightly during surgery, there is the possibility that the electrodes can become displaced or dislodged. This may cause more profound complications such as personality change, but electrode misplacement is relatively easy to identify using CT. There may be complications of surgery, such as bleeding within the brain. After surgery, swelling of the brain tissue, mild disorientation, and sleepiness are normal. After 2-5 weeks, there is a follow-up to remove sutures, turn on the neurostimulator and program it. As with all surgery there is the risk of infection and bleeding during and after surgery. The foreign object placed may be rejected by the body or calcification of the implant might take place.

Thus far there have been over 100,000 patients treated with DPS over a span of 20 years. The stimulation is not turned off at night—it has been found it works better when used continuously. The battery is recharged nightly and medication may be continued (*Sinemet, Parlodel, ReQuip, Symmetrel, Mirapex, Eldepril, Exelon).*

Since this is a relatively new procedure, long-term results are not available past 10-years—in the meantime there has been no loss of effect from the DPS but there has been extenuation of effects from normal aging. In other words, the DPS keeps working but the body keeps deteriorating.

There are 421 hospitals in the US utilizing DBS, It is utilized when the patient loses the effect of l-dopa and is almost unable to eat, dress, speak, and write. To qualify for treatment the patient must be an otherwise healthy medically and mentally stable person who has had a progressive deterioration of quality of life.

Normal sequence of activities: 1st week: Implantation of one electrode. 2nd week: Implantation of second electrode; 3rd week: Insertion of battery. 4th week: Programming of voltage, frequency, pulse width and contacts begins. 8th week: Check programming for effect. Then recheck every 3 months, similar to a heart pacemaker checkup.

Prior to insertion the average patient has 27% good motility; after insertion the patient improves to 75%. At 7 years only 12% undergo lead revision.

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YOUR NEW "OTHER SELF"

Your new other self awaits you! What's that mean? Entrusting your money to a bank once seemed strange and risky. Similarly, entrusting all of your data to a company and letting its algorithms build a detailed model of you from it might seem to be an odd or even dangerous idea, but we'll all soon take it for granted.

A decade from now, your personal model will be more indispensable than your smartphone, and the company that provides it may well be the world's first trillion -dollar business. So it is time to start getting acquainted with our digital alter egos—and what they'll mean for our lives.

Today, several different companies gather information about you and use machine-learning algorithms—computer programs that build models from data—to predict what you may want to buy and figure out how to sell stuff to you. The problem is that a model of you derived from fragments of your data—Google's model based on your searches, Amazon's from your purchases and so on—can only ever have a very limited understanding of who you are and what you want. A single model assembled from all the data you've ever produced would be much more accurate. The more data, the better the model. For privacy reasons, you'd want the data and the model under your control, not a third party's.

To solve this problem, we need a new kind of company that is to your data like your bank is to your money—storing it, keeping it safe and investing on your behalf. For a subscription fee, such a firm would record your every interaction with the digital world, build and maintain a 360-degree model of you, and use it to negotiate with other people's models.

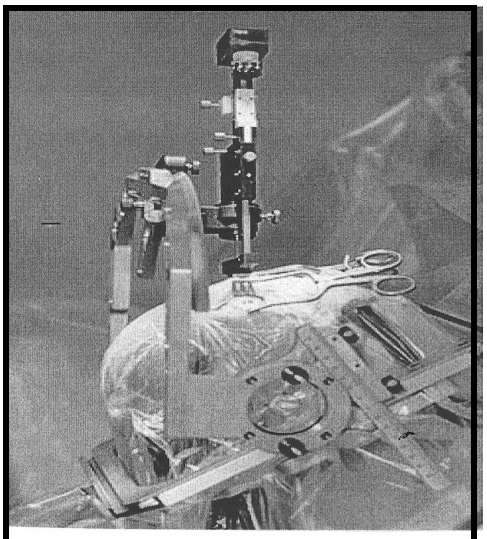
No major technical obstacles would prevent doing this: The main requirement would be routing your interactions through what's called a proxy server. If all your interactions with the digital world—through your smartphone, desktop computer or any other device—pass through a "middleman" computer in the cloud enroute to their destination, the middleman can record them all.

The companies that now offer to consolidate all your data somewhere in the cloud are forerunners of tomorrow's personal databanks. Once a firm has your data in one place, it can create a complete model of you using one of the major machine-learning techniques: inducing rules, mimicking the way neurons in the brain learn, simulating evolution, probabilistically weighing the evidence for different hypotheses or reasoning by analogy. They you can go to town with your model, which you'd own and control like you do your money, rather than letting companies such as Apple, Google and Facebook fight for control of it.

Here's a future suggestion for Linkedin: *"Find me a job."* When you click it. Your digital model would "interview" instantly for all the open positions that match your specifications, interacting at high speed with human-resources departments' recruiting models. Linkedin could then return a list of the most promising jobs for you.

Eventually, your model will be like your best friend, but with infinitely more patience. You might not like some of its answers, but that would be all the more reason to ponder them. Your model—your digital half—might even help you become a better person.

(For further information, read Pedro Domingos fine article in the Nov. 14th edition of the Wall Street Journal entitled "Life with your Digital Model.")



Insertion of electrodes during surgery using a stereotactic frame.

23andMe RELAUNCHES GENE TEST

Oct. 22, 2015...**23andMe Inc.** said it is relaunching its direct-to-consumer genetic test two years after the FDA ordered it to stop marketing health-related information from the test without agency approval.

The closely held Mountain View, CA., company said it now has FDA clearance to sell a test that it says can tell consumers whether they carry a genetic variant for one of 36 rare diseases that could be passed on to their offspring. The company also will provide data on certain "*wellness*" traits, such as a predisposition to lactose intolerance.

The relaunch follows the FDA's decision in February to approve the test for a genetic variant for one rare disease known as "*Bloom Syndrome*." With the FDA's approval, the company has included other conditions, such as cystic fibrosis and sickle cell anemia.

But 23andMe isn't yet allowed to provide information about a person's risk of developing a serious illness such as Alzheimer's or breast cancer, or to indicate whether they may have adverse reactions to certain drugs. The company had previously provided that information to customers before the FDA ordered it stopped.

The test which previously cost $99, will be priced at $199.

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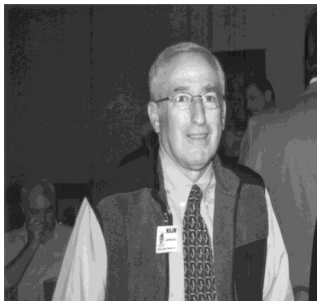

PRESIDENT'S COLUMN

Jeff Wolf, K6JW, President Marco

Back in my pre-med days I was a pretty competitive guy but, as I've grown older, I've become much less so. As a DX chaser, I do use on air contests, but only to build my band-mode totals and, if lucky, to work "ATNOs" — All Time New Ones.

The one exception to my competition aversion is Field Day. Well, okay, FD is not supposed to be a competition, but we all know that *de facto* it is one as we strive to maximize our contact numbers and claim as many bonus points as we can. For years, I've participated in my local club's FD event and, for more than 15 years, I chaired the event for the club. This year, though, I decided to do something completely different.

In April, at the International DX Convention in Visalia, I ordered an Elecraft KX3, and I decided to use it for a home, emergency-powered QRP run on FD. The setup was simple: KX3 running from a 12-volt sealed lead acid battery and two antennas. The first antenna was an Outbacker three section mobile vertical mounted on a tripod in my front yard with two radials for 20 meters and two for 15 meters. The second antenna was my StepiR DB-18E, preset before the event to the middle of the 40 meter CW band. (*Since the SteppIR requires the use of 110 volts AC, I had to do all setting prior to the event to avoid busting my 1E class entry.)*

Running all CW at less than 5 watts, I made a total of 143 contacts, working 40 states plus Canada. I placed first in the LAX section for 1E QRP operation and 55th in the country overall out of some 300 entrants in the class. Best of all, I had a ball doing it and was only on the air for about 10 hours out of the 24 hour event.

My point in relating this is not to brag about my little achievement but, rather to illustrate that it's easy to set up a simple station running very low power that will work well. As MARCO members, we should be aware of this since we never know when we might be called upon to set up an emergency station under less than ideal circumstances. My experience taught me to have everything I need to run a small station within easy access for quick setup.

Rowie and I recently spent ten days in Cuba on a "*People-to-People*" cultural exchange trip through the Grand Circle Foundation. It was a wonderful experience that added much perspective to our understanding of Cuban history and the events of the last fifty-plus years there. There's no room in this column for an extended discussion what we experienced, but let me just say that things are changing there rapidly. Public access to the internet has opened many eyes to the greater world, and economic hardship since the collapse of the Soviet Union has forced greater dependence upon currency inflow related to foreign tourism from such countries as England, Spain, Israel. and nations in Asia. The U.S. has been late to the table and continues to enforce the embargo, but one suspects that the rate of U.S. engagement is on the brink of rapid increase. Many goods and much currency are already flowing into the country legally from Cuban Americans and Cubans going back and forth on legally issued visas. And, of course, there is always the black market, active and thriving. Finally, we found the Cuban people to be warm, friendly, and eager to engage with us as we freely traveled about.

Well, it seems that we're well into another holiday season, I hope you all get whatever your heart desires this year, and that your shack will continue to be active through the coming year. Happy holidays and a happy and healthy new year's wish from Rowie and me to you and yours.

73 Jeff K6JW.

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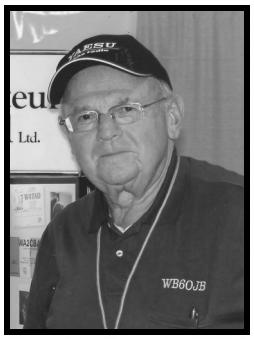
MARCO MINUTES... Static electricity was the first kind of electricity to be discovered. The conservation of charge states that electric charge is neither created nor destroyed. The total amount of electric charge in the universe remains constant. Electromagnetism is the relationship between electricity and magnetism. Electric currents can produce magnetic fields and magnetic fields can produce electric currents.

MEDISHARE REPORT

Arnold Kalen, WB3OJB, Director.



MEDISHARE donated funds to **Shoulder to Shoulder Dental Clinic,** in Honduras which served 974 children, ages 5 to 14 during the past year & supplied dental care to 2,983 indigent adults.

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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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ARNOLD, WB6OJB's, TRIP TO MOZAMBIQUE….

Mozambique sounded exotic to my wife Joan and I, we decided to pursue going there for our next DxHoliday. We have had such a good time on other DxHolidays. Palau was our first, followed for a week, two years in a row in Swaziland, Lesotha and Botswana.

I contacted Andre VonWyn, NJ0F, who had organized my past holidays in Africa. Andre is originally from South Africa and has traveled extensively throughout the continent. He had not operated from Mozambique for many years so he thought it would be a good idea. We started to work on the project in 2013. We were originally to go to Mozambique in 2014 but my aortic valve needed an emergency replacement. That was followed by a ruptured diverticulum, two abdominal surgeries and a temporary colostomy for 4-months.

Andre contacted the Mozambique equivalent of our FCC and obtained my license, CB1AK in 2013, so that was not a problem. He then contacted the lodge where we were scheduled to stay—Tenda Tora, in Beline, Mozambique. They were kind enough to credit what we had paid in 2014 (*with a little extra, HiHi*).

Next we contracted our travel agent at Travelstore, and they arranged our flights and our stay in Leopard Hills, South Africa. Leopard Hills Game reserve is just outside the boundaries of Kruger National Park and has been our safari destination for 12 years.

We left for San Francisco on Aug. 19th. After a short layover at Frankfurt we were off to Mapute, Mozambique. Andre and his XYL, Magda, met us at the airport and after clearing immigration (*which always is a lengthy process in Africa)* we were on our way to the lodge, a 4-hour ride through the worst traffic.

The coaxial cables were lost in transit but did arrive at the same time we did. Andre, Magda and their son A J. (*NOCDX) and 6 or 7 locals put up the antennas that evening while I sat on the porch and "*supervised*." The equipment consisted of an ICOM 7410 transceiver with an ACOM 600S amplifier. The antenna was a K4KIO 5 band Hex beam at about 25 feet. I used a Heil headset with foot pedals.

Mozambigue contact.

The lodge didn't look much like the internet web site but it was more than adequate for the radio.

Over the next 7 and 1/2 days, I had 1,239 contacts from every continent except the Antarctic. Propagation was mostly poor and it seemed like every QSO was difficult. (**Continued on page 9.**)

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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Those who have performed autopsies can relate to crushing elderly coronary arteries with a hemostat only to have the specimen crumble into a calcium-laden powder described as "hardening of the arteries." Yet for years some physicians have been advocating taking large doses of calcium in the elderly to build stronger bones and prevent osteoporosis. **NOW,** a report from the University of Auckland, New Zealand, states that *"Calcium supplements don't appear to help strengthen older bones."* It found on meta-analysis that dietary calcium intake doesn't prevent bone fractures in people over 50, though it does slightly increase the risk of kidney stones and heart attacks.

Are taller people more susceptible to cancer? According to a study in Sweden that examined data from 5.5 mil people, for every 4 inches of height, the cancer risk for women rose by 18%, while the cancer risk for men rose by 11%. One explanation is that taller people have more cells in their bodies that might become cancerous.

California okays right to die... California's governor signed into law a physician-assisted suicide measure, making it the 5th state to allow the procedure. The law is similar to Oregon's which permits a doctor to prescribe medication to end a patient's life if two doctors agree that the person has just 6 months to live and is mentally competent. The law, which takes effect January 1, makes it a felony to pressure someone to end his or her life.

Children born in the summer tend to be healthier as adults than their peers, according to study by a Univ. of Cambridge team involving nearly 500,000 in the U.K. Researchers noted that expectant mothers often received more sunlight, which means more vitamin D, in the summer. The findings align with similar earlier studies but more research is needed.

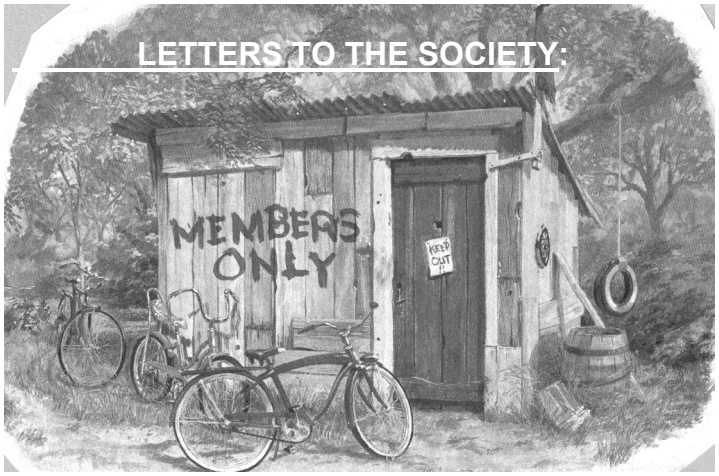
Can't qualify in the military…. Roughly a third of young US adults are unable to serve in the military because they are overweight, a report from the *Mission-Readiness* said. Overweightness and other health issues have kept 69% of Minnesota's young adults from serving, the report said. The group urged more community infrastructure to encourage walking, healthier school meals and a minimum 1 hour of school phys-ed daily. A separate news report said 73% of Texas' young adults couldn't serve.

Good news... The death-rate has fallen almost 42% between 1969 and 2013. Death rates from strokes plunged 77% and those from heart disease dropped 67.5% while cancer fatalities fell 18%. Death rates from COPD almost doubled where tobacco is finally taking its toll. Cancer is about to take over as the #1 killer in the US as cardio-vascular deaths are drooping to #2.

Why don't we see "*acute appendicitis"* any more? Two reasons: Number 1—we stopped taking tonsils out, the first defense against infection and second because of antibiotics preventing tonsillitis. *(The appendix is the second line of defense against oral infection and Peyer's patches in the large bowel the third.)*

Hacking your own car... Last July, a wired reporter recounted how, in a test, a friendly hacker remotely hacked his car computer, causing it to run off the road with him in it. Various agencies are addressing the potential problem of unfriendly hackers doing the same thing to drivers. The Library of Congress, which is in charge of the U.S. Copyright Office, clarified one aspect of regulation: It crated an exemption to the Digital Millennium Copyright Act that lets car owners tinker with software in their own cars.

Most sleepwalkers don't feel pain even when they sustain severe injuries while somnambulating, including running into doors etc. 79% of those studied who suffered a pervious sleepwalking injury including a person who jumped out of a 3rd-floor window—felt no pain until later.



LETTERS TO THE SOCIETY:

Kudos from: None

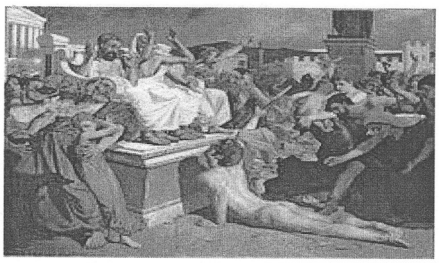
From Malin Dollinger KO6MD, Rancho Palos Verdes, CA: (**In reference to Grand Rounds discussion on "Blood Tests to Diagnose Cancer.")** "I'm an oncologist and should point out that the CEA is not a very valid screening test for cancer, since it is usually positive only when the cancer is fairly advanced; also other cancers especially GI malignancies develop an elevated CEA . It's commonly used to follow the response to treatment, where the CEA should fall...The really fascinating new tests that you mentioned are changing the character of cancer diagnosis and practice, and especially treatment. For example the (initially), specific antibody treatments for melanoma with a specific gene profile were discovered to work on lung cancer with the same genetic profile. So the emphasis on treatment selection now is the gene profile, not the site or origin of the cancer as had been historically the way things have been done until 2015."

The discussion of "When does exercise become dangerous" on MARCO's Grand Rounds of the Air Nov. 15th brought the membership to life! **Bob Condor K4RLC, Raleigh, NC**. Writes: There are the studies of teen athletes with some type of cardiomyopathy or other cardiac anomalies—is there a cardiologist in the house? As someone who works with K-12 sport concussions, I have been reading the debate about the need for a EKG with sport physicals, but it seems that this is not helpful. Last year in one of our local Half-Marathons, two adult men died toward the finish line—both in their 30's. One had a history of intense and vigorous athletic participation without any previous cardiac symptoms. As a former full marathon runner, I wonder if there is a self-selection between half and full marathon runners...eg, the full marathon runners have greater CV fitness in addition to a good musculoskeletal network."

Arnold Kalan WB6OJB, Pacific Palisades, CA states: I started running at age 41, weighing close to 300 lbs. Started because I heard that a friend my age just died of a heart attack. I used to play football against him in high school. Between 1976 and 1994, I ran 50 races over 255 miles, about 25 marathons, many half marathons and at least 1 10K every weekend. Until then I had been working out at a gym and playing handball. My current weight is 210 and at age 80, I'm still walking 6 days a week, at least 4 miles. ***It it wasn't for the running I'd be long gone. It saved my life. "***

Chip Keister, N5RTF, New Orleans: Legend has it that Pheidippides, the first person to run a marathon, died at the finish line—you would think that would discourage imitation!

Wayne Rosenfield replied to Chip, "*That was after the battle, still in full armor.* (Chip submitted a copy of a painting showing a near-naked Pheidippides collapsing in front of his leader as he gave the word of the Greek victory over Persia at the Battle of Marathon.)



Chuck Nohava N8GMB, Ohio: "Life is dangerous but someday mankind will mature and eliminate boxing, football, ice hockey and other barbaric gladiator-type so-called sports….extreme sports are very dangerous and have nothing to do with health, but America and the world is addicted to them, sadly."

GAUCHER DISEASE

As presented on Grand Rounds, Oct. 17, 2015, by Marco's
Dr. Wayne E. Rosenfield Ph.D., K1WDR

Gaucher Disease is the most common of a group of diseases known as "Lysosomal Storage Disorders. It occurs in all ethnic groups, at a frequency of approximately 1 in 20,000 live births.

These are a group of disorders that affect specific enzymes which normally break down materials for reuse in the cells. If the enzymes are missing or don't work properly the materials can build up and become toxic or produce an array of possible symptoms.

Gaurcher is named for Phillippe Gaucher MD, the physician who first described it in 1882.

Gaurcher disease, also known as glucocerebrosidase deficiency, occurs when a lipid called glucocerebroside accumulates in the bone marrow, lungs, spleen, liver and sometimes the brain.

Although Gaucher can affect anyone of any heritage, Gaucher Type 1 is the most common inherited genetic disorder affecting Ashkenazi Jews, meaning those of Eastern European ancestry. One recent article suggested that all Ashkenazi Jews are not more distant from each other than thirtieth cousins. Despite the increased incidence in one population, Gaucher can affect anyone without regard to ethnicity, age or gender.

Gaucher is an inborn error of metabolism. Inborn metabolic disorders are those conditions resulting from a specific malfunction in one or more of the body's many individual chemical processes. Although there are at least 34 mutations known to cause Gaucher, there are 4 genetic mutations which account for 95% of the Gaucher disease in the Ashkenazi Jewish population, and 50% of the Gaucher Disesese in the general population.

Symptoms: The symptoms that undiagnosed or untreated persons may exhibit are most commonly: Anemia, fatigue, easy bruising & bleeding, thrombocytopenia, nosebleeds, osteoporosis, bone pain, easily broken bones, avascular necroses, especially of the femoral or humeral heads, swollen abdomens due to enlarged liver or spleen, & Erilenmeyer Flask pattern of long bones.

The bone pain may be excruciating and unremitting. These symptoms can, be indicative of many other factors unrelated to Gaucher. Accordingly, it is not uncommon within the Gaucher community to hear of a period of 10 or 15 years or more from the time of the first observation of one of these symptoms and a diagnosis of Gaucher. Very often the symptoms are evident in childhood. But there are multiple reports of individuals being first diagnosed in adulthood as the result of dangerous bleeding giving birth or during treatment following an accidental injury, or of discovery of an abnormal lab result, such as anemia or low platelets. There are even reports of person who are first identified later in life, never having experienced troublesome manifestations of the disorder for 7 or 8 decades.

The course of the disorder is quite variable, and cannot be predicted based upon current knowledge. Persons with the same genotype, for example, the homeoallelic n370s mutation which is most common in the Ashkenazi population, may have very different constellations of the known symptoms. And the symptoms among people with the same genotype may have very different severities. There has been some suggestion that person with mixed mutations, meaning one n370s allele with one of the other mutations, have a more severe course to their disease.

Prevalence & Transmission: The carrier rate for the mutations which cause Gaucher may be as high as 1 in 10 Jewish people of Eastern European ancestry, and 1 in 200 of the general population. Gaucher is transmitted as an autosomal recessive. That is, the disorder occurs equally among males and females. Both parents must carry a mutation for the glucocerebrosidase gene for the child to have the disease. If both parents each carry one mutation for the glucocerebrosidase gene, then there is a 1 in 4 chance that the child will have Gaucher. Following the rules of classical Mendel inheritance, there is also a 1 in 4 chance that the child will neither have Gaucher nor be a carrier. And there is a 2 in 4 chance, or 50% probability, that the child will be a carrier but will not manifest symptoms of the disorder.

If one of the parents has the double recessive, meaning that he or she has Gaucher, then the possibility of having an affected offspring depends upon the status of the other parent. If the other parent does not possess a mutated glucocerebrosidease gene, then all children will be carriers, known as obligate carriers, but cannot have the disorder. But if one partner has Gaucher, the double recessive, and the other parent is a carrier, then the chance of having an affected child is 50% and each child will be a carrier.

Diagnosis: A blood test used for diagnosis measures the level of glucocerebrosidase activity in leukocytes or fibroblasts. Individuals who are affected with Gaucher will have very low levels of enzyme activity. Diagnoses are also performed by bone marrow aspiration for identification of macrophages engorged with glucocerebroside, which is the unmetabolized lipid. This substance is taken up by the macrophages and lysosomes where it is kept indefinitely, eventually causing the problems identified as Gaucher Disease. This storage of lipid, causing problems, is why Gaucher is descried, appropriately enough, as a lipid storage disorder.

Diagnostic testing at the present time is far less intrusive than bone marrow aspiration, and the results are far more reliable. Gaucher can be diagnosed early through the reliable blood test.. Carrier status can be detected through blood or saliva. There is a test kit available for sending a sample for assessment, and diagnosis is based upon identification of the known mutations of the glucocerebersidease gene.

There are four common mutations of the gene. DNA analysis for these four mutations detects up to 95% of the mutation associated with Gaucher in the Ashkenazi Jewish population, and about 50% of the mutations in the majority of the population. DNA analyses is used in combination with the enzyme assay test to diagnose Gaucher and is helpful in defining the subtype. Genetic mutation analysis can highlight the genetic mutations usually associated with Gaucher and aids in classifying which type of Gaucher a person has. Neither disease type nor severity of disease is defined by enzyme assay alone.

Only Type I Gaucher Disease has been descried to this point. Types 2 and 3 have all of the characteristics of Type I, with the addition of neurological problems.

Variants of the Disorder: Type 1 Gaucher has been the variant of the disorder that has been long considered to be unrelated to any neurological manifestations,. Recent research has found a statistical relationship between the n370s mutation, which includes those with Type 1 and the on-affected carriers of the mutation, and the development of Parkinson's Disease. This association was first recognized in the clinic, where Parkinsonism was noted, albeit rarely, in patients with Gaucher and more frequently in relatives who were obligate carriers. Subsequently, findings from large studies showed that patients with Parkinson's Disease and associated Lewy body disorders had an increased frequency of glucocerebrosidase mutations when compared with control individuals. Patients with Gaucher mutation Parkinsonism exhibit varying Parkinsonian phenotypes but tend to have an earlier age of onset and more associated cognitive changes than patients with Parkinsonism without glucocerebrosidease mutations. There are some hypothesized mechanisms to explain these observations that are the subject of ongoing research.

There is also a lengthy paper from the Univ. of Utah hypothesizing a link between certain desirable cognitive characteristics and mutations for several lipid storage disorders. That paper suggests an hypothesis for explaining why a mutation may propagate within a population. The Parkinsonism observations are the subject of ongoing study and leads to much interest into the relationship of the glucocerebrosidase mutations to neurological processes.

There are other forms of Gaucher which, in addition to the liver, spleen and bone complications characteristic of Type 1 Gaucher, do result in serious neurological symptoms. **Type 2** Gaucher, called the acute naturopathic form, is characterized by brainstem abnormalities and is usually fatal during the first three years of life. Type 2 Gaucher shows no ethnic predilection, and occurs rarely, with an incidence of 1 in 100,000 live births.

Type 3 Gaucher, the **chronic naturopathic form**, also shows no ethnic predilection, and is estimated to occur in 1 in 50,000 live births. The neurological symptoms of Type 3 are slowly progressive and appear later in childhood than the symptoms of Type 2. Neuralgic symptoms of Type 3 include incoordination, mental deterioration and myoclonic seizures.

There is a sub classification of Type 3, called Norbottnian Gaucher Disease, named for the region in Sweden where it has been identified. The slowly progressive neurological symptoms of Norbottnian may not occur until early adulthood.

Treatment: In 1991 the FDA approved **alglucerase**, the first enzyme replacement therapy for Gaucher. It was an *intravenous infusion* of the missing enzyme extracted from human placental tissue. The molecule was modified to include mannose, for which the membrane of lysosomes is receptive.

In 1994, i**miglucerase** was approved, which is grown in a Chinese hamster ovary cell line, followed in 2010 by **velaglucerase alfa**, grown in human fibroblasts. Additionally, a third enzyme replacement therapy, **taliglucerase alfa**, was approved in 2012. Taliglucerase is grown from a carrot root cell line.

Since 1994, more than 5,000 phenotypically and genotypically diverse Gaucher Diseases patients have been treated with imiglucerease with an extensive observation record of efficacy and safety. Since 2010, other enzyme therapies for Gaucher, velaglucerase alfa and taliglucerase, were also approved. Randomized and observational trials comprising a few hundred treatment-naïve and "switch" patients suggest that during the initial 1-3 years of treatment, velagluucerase alfa and taliglucerase are arguably safe and of comparable efficacy to imiglucerase for reversing disease manifestations.

The current treatments for Gaucher Disease are not effective for the neurological symptoms of Types 2 and 3.

Another treatment modality, known as substrate inhibition therapy, attempts to reduce the amount of the lipid that would ultimately need to be stored. This modality attempts to treat markers of the disorder by reducing storage of the troublesome end-product, rather than by metabolizing the end-product directly. There are two FDA-approved drugs for this purpose, **eliglustat** and the more recent **mighistat**. The treatment experience with substrate inhibition is more limited than that of enzyme replacement therapy.

Dr Rosenfield's new book, "GREAT NECESSITIES: A GAUCHER MEMOIR" is available through Amazon.com, price,: $11.95.

BLOOD TEST FOR EARLY CANCER DETECTION

As presented on MARCO Grand Rounds of the Air, Oct. 4, 2015

Scientists have long dreamed of spotting cancers with a simple blood test in people who are asymptomatic. We have all used the CBC to pick up leukemia's or the CEA test to identify potential colon cancers along with PSAs, BRCa-1 & BRCa2s for breast cancer. Now, new tumor marker tests are becoming available.

Tumor marker tests measure the presence, levels, or activity of specific proteins *(antigens)* or gene fragments in tissue, blood, or other bodily fluids that **may** be signs of cancer . A tumor that has a greater than normal level of a tumor marker may respond to treatment with a drug that targets that marker. For example, cancer cells that have a high level of the HER2/neu gene or protein may respond to treatment with a drug that targets the HER2/neu protein. Tumor markers are used for *screening*—such as the PSA test for prostate cancer; *Monitoring* and *Diagnosis.*

One company says the day of the new tumor marker is here—though it has yet to convince regulators. Pathway Genomics began marketing a blood test in mid-September that it says can detect DNA fragments linked to 10 common cancers in otherwise healthy people. Consumers can order the test directly from the company's website by consulting with Pathway physicians and completing a questionnaire.

But many cancer experts—and competitors—say the Pathway test is far from scientifically proven and could cause unnecessary harm. "This test is essentially telling you, "You've got cancer!" But it can't be linked to a particular site in the body or tell you whether the cancer may be problematic **now or in the future**." says a member of the American Cancer Society.

The FDA has raised concerns too. The agency sent a letter to Pathway's CEO saying: "We believe you are offering a high risk test that has not received adequate clinical validation and may harm the public health."

The agency gave Pathway 15 days to respond. Pathway said in a statement, "We are carefully considering the concern of the FDA as stated and we will be responding to that letter."

Pathway officials say the company's test is designed for people who are at high risk for cancer due to family history, an inherited genetic mutation or exposure to known carcinogens, such as years of heavy smoking. They also say it isn't meant to diagnose cancer, but as a screening test to indicate where're more tests are warranted.

Pathway, a privately held diagnostics company based in San Diego, also says its test, called *Cancerintercept Detect*, should be classified as a lab developed test that it contends requires no FDA approval (Beyond this case, the agency says it does have authority over the rapidly growing field.)

Other biotech firms are also racing to develop tests that can look for fragments of abnormal DNA shed by cancer cells into blood, urine, saliva and other body fluids. Most such "*liquid biopsies*" are being used in patients already diagnosed with cancer. They can help doctors assess whether a treatment is working or if a tumor has metastasized, without subjecting patients to extensive imaging or more surgery.

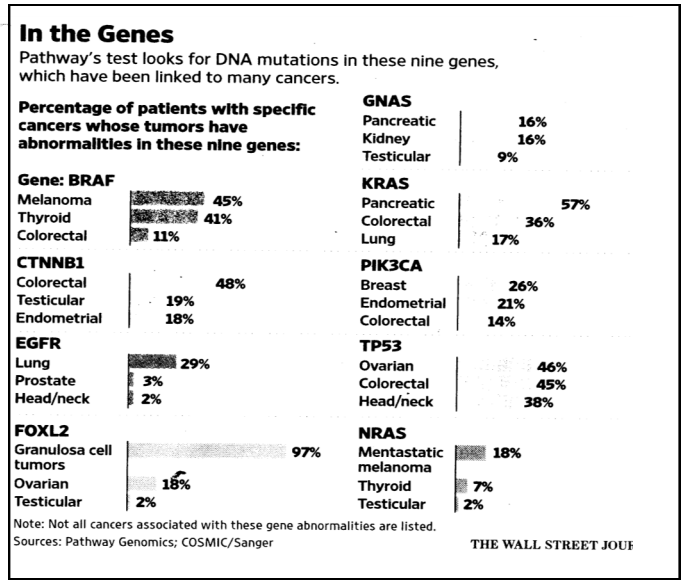
Using liquid biopsies to detect cancers before they cause symptoms is more controversial—in part because it's unclear what the results mean. There is growing recognition is the medical community that not all cancers are destined to be deadly. Cancers diagnosed early are easier to treat than those found later and larger, but they are also more likely not to have required treatment at all.

Pathway executives hope that doctors will make the test—which they call "*a cancer stethoscope*"—part of routine checkups for high-risk patients. Pathway offers a subscription plan for repeat users.: four tests a year for $299 each or $499 for an annual test, compared with $699 for a single test.

CancerIntercept Detect scans the patient's blood sample, looking for the absence or presence of 96 different mutations in nine specific genes that have been associated with several common cancers.

Still, it's unclear what finding those mutations means. The tests can't distinguish which kind of cancer the abnormal DNA came from. Mutations in the KRAS gene, for example, are found in 57% of pancreatic cancers, 36% of colon cancers and in smaller amounts in lung, endometrial, ovarian and other cancers, according to published research.

What's more, the presence of such mutations does not necessarily indicate cancer. They could be associated with benign conditions, or a temporary error in cell replication that the body's immune system gets rid of before it causes problems. And a negative test doesn't insure that the patient is



cancer-free.

Pathway officials say that's why the company insists on sending the result to patient's physicians, who can interpret the results. "If the test finds abnormal DNA, the next step is to perform an imaging study and look hard to find a lesion. Treating anybody on the basis of this test alone is not recommended."

But some cancer doctors say they would be stumped by such test results. "If it's not an obvious cancer, do we order a full body CT scan? Where do we even start to look?" asks the American Cancer Society's Dr Lichtenfeld.

Interpreting the results is also challenging because there is little published data to evaluate how the test performs with large groups of people. Pathway cites external research showing that the mutation it checks for are present in varying percentages of people with cancer, but there are no large studies showing how often those mutations are found in the general population, and how often they eventually correlate with a cancer diagnosis.

Pathway officials say they have done internal studies on those questions that haven't yet been published. "No test is 100% sensitive or 100% specific. You are always going to have false positive and false negatives.

The FDA's letter to Pathway CEO Jim Plante said it was unclear how the research the company cites "is adequate to support the expansive claims."

Pathway received a similar letter from the FDA in 2010 when it planned to market genetic test kits directly to consumer through Walgreen's drugstores, saying the kits required marketing approval from the Agency. The company says that since 2010 , the lab tests it performs have been ordered and reviewed by a qualified healthcare provider.

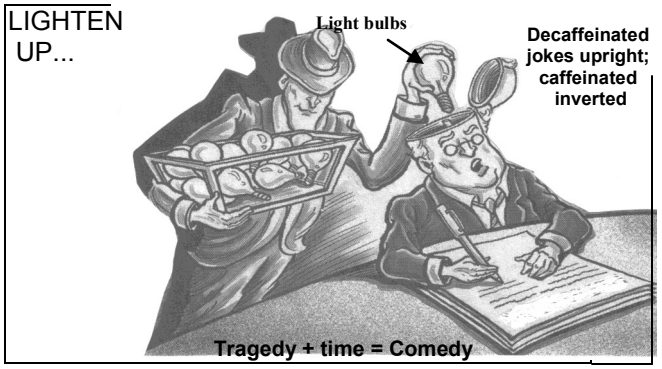
Cancer experts, academic researches and biotech firms hold-out great hope that sampling tumor fragments in body fluids can help understand and treat cancer.

The technology is advancing rapidly. A company called Trovagene Inc. has developed a urine-based test that allows doctors to track how lung cancers respond to treatment. A new blood test from Personal Genome Diagnostic can detect a specific mutation that predicts whether a pancreatic cancer is likely to respond to treatment.

"There's a lot of excitement around what kinds of questions we can answer with this technology that we couldn't answer before," say Luis Diaz, a physician and cancer researcher at Johns Hopkins who founded Personal Genome diagnostics. "Now we have to do the heavy lifting to prove that it's safe and effective and will make a difference in peoples lives."

(Information for above was taken from Melinda Beck's fine article, "*Blood Test for Early Cancer Detection Sparks Debate,*" that appeared in the Wall Street Journal on Sept. 29, 2015.)

LIGHTEN UP...



LITTLE LARRY FIGHTER PILOT...A teacher asks the kids in her 3d grade class: *"What do you want to be when you grow up?"* Little Larry says: "I wanna start out as a Fighter Pilot, then be a billionaire, go to the most expensive clubs, find me the finest girl friend, give her a Farrari worth over a million bucks, an apartment in Copacabana, a mansion in Paris, a jet to travel throughout Europe, an infinite Visa Card and all the while loving her like a loose screen door in a hurricane." The teacher, shocked and not knowing what to do with this horrible response from little Larry, decides not to acknowledge what he said and simply tries to continue with the lesson. "*And how about you, Sarah?"* She replied, "I wanna be Larry's girl friend!"

A blonde, a brunette and a red head are discussing their pregnancies. "I'm going to have a boy, because I was on top," quipped the brunette. "I'm going to have girl because I was on the bottom," said the red head. "What about you blonde?" "I think I am going to have puppies."

Tired of constantly being broke and stuck in an unhappy marriage, a young husband decided to solve both problems by taking out a large insurance policy on his wife with himself as the beneficiary and then arranging to have her eliminated. A friend of a friend put him in touch with a nefarious dark-side underworld figure who went by the name of "*Artie."* Artie explained to the husband that his going price was $10,000. The husband said he was willing to pay that amount but that he wouldn't have any cash until he could collect his wife's insurance money. Artie insisted on being paid at least something up front so the man opened his walled displaying a single dollar bill. Artie sighed, rolled his eyes and reluctantly agreed to accept the dollar as down payment for the dirty deed. A few days later, Artie followed the man's wife to the local Costco Supermarket. There he surprised her in the produce department and proceeded to strangle her with his gloved hands. As the poor unsuspecting woman drew her last breath and slumped to the floor, the manager of the produce department stumbled unexpectedly onto the murder scene. Unwilling to leave any living witnesses behind, ol' Artie had no choice but to strangle the produce manager as well However, unknown to Artie the entire proceedings were captured by the hidden cameras and observed by the shop's security guard who immediately called the police. Artie was caught and arrested before he could even leave the premises. Under intense questioning at the police station, Artie revealed the whole sordid plan, including the unusual financial arrangements with the hapless husband who was also quickly arrested. The next day in the newspaper, the headline declared:"**ARTIE CHOKES 2 FOR $1.00@ COSTCO!**

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An Italian Mama comes to visit her son Tony for dinner. He lives with a female roommate, Maria. During the course of the meal, his mother couldn't help but notice how pretty Tony's roommate is. She began to wonder if there was more between Tony and his roommate than met the eye. Reading his mom's thoughts, Tony volunteered, "I know what you are thinking, but I assure you, Maria and I are just roommates." A week later Maria came to Tony saying, "*Ever since your mother came to dinner, I've been unable to find the silver sugar bowl, you don't suppose she took it, do you?"* "Well, I doubt it, but I'll email her just to be sure" He wrote: Dear Mama, I'm not saying that you "*did*" take the sugar bowl, I'm not saying that you "*did not*" take it. But the fact remains that it has been missing ever since you were here for dinner." Tony then received a response which read: Dear Son: I'm not saying that you "*do*" sleep with Maria, and I'm not saying that you "*do not*" sleep with her. But the if she was sleeping in her OWN bed, she would have found the sugar bowl by now!"

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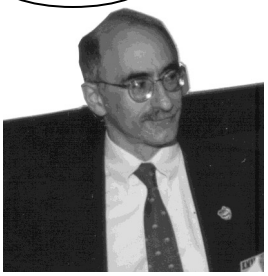
****

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 Nov-Dec. 1990 MARCO Newsletter was printed on festive green paper. The lead article dealt with the issue of medical waivers from code proficiency testing for disabled amateurs. The FCC issued a Notice of Proposed Rulemaking for waiving code test requirements after King Hussein, JY1, intervened on behalf of **Tom McMillen, WB3HGW**, who was an epileptic. All medical providers, and MARCO members in particular, were encouraged to file their comments with the FCC.

Bud Talbott, KC2ZA invited all members to join Grand Rounds of the Air on Sundays at 10 am. EST on 14.308 MHz. **Bob Currier** WB5D was presiding.

MARCO member **Gary Stoller N2JOH** described his recent visit to Malpasillo, Nicaragua. He found the dental clinic there to be severely lacking in necessary supplies and requested collaboration with other MARCO members in the dental profession. Gary had also met a young electronics tech there who was interested in becoming an amateur radio operator.

20 YEARS AGO IN MARCO

The birth of MARCO's Website was announced in the Dec. 1995 issue of the Newsletter. Back in those days we were hosted by the University of Buffalo. Initial content included a membership roster and email addresses, excerpts from the MARCO Manual, a MediShare report, and 4X2AA's review of the biological effects of electromagnetic radiation.

Bob Currier, WB5D reminisced about past antennas, ranging from the long wires he would trail behind his B-17 to the 20-meter loop he used to contact MARCO when summering in northern Michigan.

In the wake of the Oklahoma City bombing, **Chip Keister N5RTF** proposed a mid-day lunch net of amateur radio-equipped hospitals.

We lost two stalwart members, **Harold Gilbert K6KK** and **Bud Talbott KC2ZA.** We welcomed new members **Enrico KH0BX, Rosemarie KA4RWB, Judy N3MBW, Kenneth KC5HTL, Robert N1RMW** and **Guy W3RJA.**

15 YEARS AGO IN MARCO

In the Dec. 2000 MARCO Newsletter, Editor **Warren Brown KD4GUA** explored the question, "What is Palliative Care?"

We gained a new DX member, **Andrew Soper ZS2FJA** while losing former Director **Eldon Snow**.

President Bruce Small, KM2L told of his near brush with fame as an almost member of the DXpedition to Kingman Reef. All systems were go except for approval from the XYL. That hurdle was never cleared.

As of Sept. 1, 2000, all US Hams are required to perform station analysis to ensure that they meet FCC standards for exposure to radio frequency energy.

The issue contained a reprint of an un-attributed newspaper article about **Gene WB3FTJ** and **Judy N3MBW Hoenig** and their charitable work as Chairpersons of MediShare. **Alfred Greenwald, WA2CBA** recounted his recent visit to India for the first time in 28 years. He enjoyed it so much that he promised to return again in another 28 years. **Bob Morgan VE3OQM** reported that due to fears of mad cow diseases, Canada was banning blood donations from persons who had lived in the UK or France for six months or more.

10 YEARS AGO IN MARCO

MediShare Chairman **Bill Stenberg N5Q** furnished a brief report of our new project, to help a hospital in Sri Lanka acquire and set up a VHF communications system. Arnold Kalan, WB6OJB reported on his 14th trip to Africa, this time to Zambia. Harry Przeko WB9EDP contributed a discussion of the basics of radiation therapy.

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

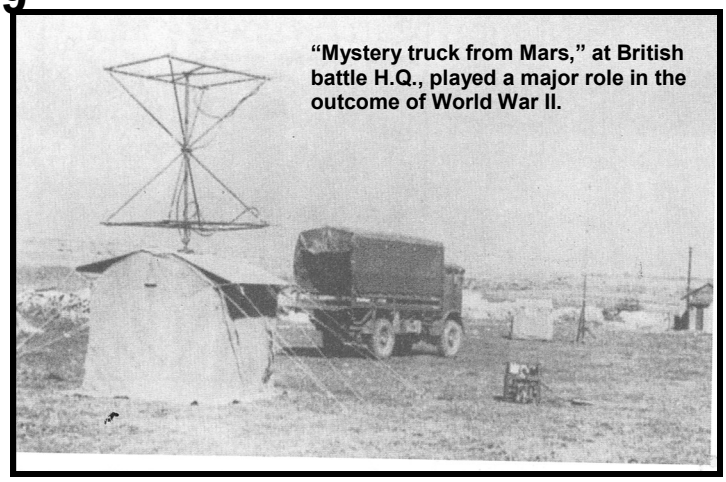
CALL	HRS.	NAME	QTH
KD4GUA	42	Warren	Largo, FL
NU4DO	42	Norm	Largo, FL
KC9CS	41	Bill	Largo, FL
N2JBA	41	Ed	Amenia, NY
KNOS	38	Dave	Virginia
N6DMV	37	Paul	Torrance, CA
W6NYJ	37	Art	Beverly Hills, CA
N9RIV	37	Bill	Danville, IL
W5AN	37	Bud	Lafayette, LA
N5RTF	37	Chip	New Orleans, LA
KM2L	37	Bruce	Clarence, NY
W3PAT	36	Marvin	Posterity, SC
WB6OJB	34	Arnold	Pac.Pal., CA
N4TSC	34	Jerry	Boca Raton, FL
WB9EDP	34	Harry	Chicago, IL
W1BEW	33	Bobbie	Maryville, TN
KK1Y	33	Art	Seminole, FL
KD5QHV	31	Bernie	El Paso, TX
N4MKT	31	Larry	The Villages, FL
WB1FFI	30	Barry	Syracuse, NY
KE5SZA	29	John	Marietta, OK
W3MXJ	29	Joe	New Orleans, LA
K6JW	28	Jeff	Palos Verdes, CA
W8LJZ	28	Jim	Detroit, MI
W4DAN	27	Danny	Cleveland, TN
N2OJD	26	Mark	Sidney, Ohio
K9CIV	25	Rich	Knox, IN
W1HGY	23	Ted	Massachusetts
KB5BQK	21	Linda	El Paso, TX.
N9GOC	21	Pat	Champagne, IL
K9YZM	20	Mike	Crystal Lake, IL
K4JWA	20	Jim	W. Virginia
W4MEA	20	Max	Hixon, TN
WA1EXE	20	Mark	Cape Cod, Mass.
K0FS	19	Fred	St. Louis, MO
KD8IPW	18	Mary	W. Virginia
N0ARN	18	Carl	Colorado
WA3QWA	17	Mark	Chesapeake, VA
K4RLC	15	Bob	Raleigh, NC
AE4BX	14	Mary	Myrtle Beach, SC
WORPH	14	Tom	Denver, CO
W9JPN	14	Wally	Champagne, IL
N4DOV	13	David	Ft. Lauderdale, FL
W8EYE	13	Darryl	New Phila., Ohio
W9HIR	12	Bill	Berwyn, IL
W1RDJ	12	Doug	Cape Cod, Mass.
KE3EB	10	John	Arrington, TN
WB5BHB	7	John	Vancleve, MS
N4TX	7	Doc	Mississippi

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	1481 (43 nets)	34.44

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 MYSTERY TRUCK FROM MARS



"Mystery truck from Mars," at British battle H.Q., played a major role in the outcome of World War II.

Late in September 1940, the British code breakers at Bletchley Park decrypted a chilling message and rushed it to Prime Minister Churchill. It stated that Benito Mussolini, the bombastic dictator of Italy who had declared war on Great Britain three months earlier, had assembled a three-hundred-thousand-man army in Libya, North Africa, and that it was preparing a massive offensive.

Under Marshal Graziani, the Italian force's objectives were the British naval base at Alexandria, Egypt, the capital of Cairo and the Suez Canal,. Graziani would be confronted by only 36,000 ill-equipped and largely untrained British solders scattered thought-out Egypt and called "*the Army of the Nile."*

Control of the 3,000-mile Mediterranean Sea, whose entrance at Gibraltar was crucial to Great Britain.

At the time, Churchill received the decrypt, the Battle of Britain was still raging, and the entire world thought that the prime minister would need every soldier in the Home Army. However, thanks to Ultra, Churchill was privy to a German secret: **Hitler had canceled Sea Lion, a looming invasion of England.** So, two divisions of British troops and their tanks sailed for North Africa to reinforce the Army of the Nile.

As soon as the new troops arrived in Egypt amid great secrecy, Archibald Wavell, one of Britain's most highly regarded generals and C.O. in the Middle East, began infiltrating them westward at night to edge into positions opposite Marshal Graziani's force. Although the British would be outnumbered eight to one in the looming battle, Lt. Gen. Richard O'Connor, leader of what was called the Western Desert Force, would have one enormous advantage: Ultra.

Because of the extreme fluidity of desert fighting the front was usually only a line on military maps—and the omnipresence of German and Italian radio intelligence eavesdroppers, Winston Churchill and his intelligence officers had decided that none of the generals in the forward fighting would be allowed to, possess, or even know about Ultra.

At Middle East H.Q. near Cairo, only Gen. Wavell and his intelligence chief, Brigadier Francis de Guingand, were allowed to read Ultra decrypts. These two officers received their information from Bletchley Park by way of a newly formed Special Liaison Unit (SLU).

This top-secret detachment consisted of RAF offices of proven discretion, and radio technicians and cipher experts from the Royal Signal Corps. Their task was to provide a continual flow of details on the enemy's command structure; tactical plans; and the strength, location, and morale of opposing units, often down to battalion and company levels. Although pleasant to those not in the know, these men were tight-lipped and casually aloof as thou they wanted to avoid conversation.

Shrouded in a thick cloak of intrigue, the SLU operatives and their curious-looking truck with a twenty-six foot antenna protruding skyward from the roof were a constant topic of interest and speculation. The vehicle was always parked just outside Gen. Wavell's H.Q.

"*I say, old fellow*," a Tommy (British soldier) would inquire of an SLU officer. "*pray tell, what is that absolutely weird-looking lorry (truck), and what are all you chaps doing*?"

"Haven't you heard the latest?" the other might mock good-naturedly. "**That bloody lorry was shipped in from Mars**. **It's Winnie's secret weapon."**

The bewildered outsiders would have been even more mystified had they known the code name of the unit's base in England—Station X—the Ultra center at Bletchley Park. The truck was in radio contact with Station X on a round-the-clock basis.

RAF officers, sworn to secrecy under pain of a long prison sentence for violation of security, perused each message that came in from Station X. Each decrypt was marked with a symbol from Z to ZZZZZ, designating the degree of importance. The more Zs, the greater the significance.

After each message arrived, an officer would clasp the decrypt in one hand and slip out of the truck. He lifted one of his flying boots and glanced at the sole, then repeated the process with the other boot. He could not risk the off chance that bits and pieces of Ultra materials in the wireless truck had stuck to the bottoms. These scraps might shake loose and be found by unauthorized people.

Reaching Gen. Wavell's office, the RAF officer would enter and hand him the decoded message from Station X. As the SLU man stood by , Wavell would read the signal, then hand it back to the courier.

None of the British brass were permitted to retain copies of SLU signals. In accordance with standard procedure, the RAF man returned to his truck with the secret message and burned it. Nor could the generals or their top aides take notes, which might carelessly go astray and find their way into hostile hands.

If the contents in an Ultra message would be of importance to Gen. O'Connor's battle planning or during the actual fighting, Wavell would acquaint him with the hot intelligence in a letter sent by a courier. The message did not reveal the source, but O'Connor was instructed by a separate memo t destroy the first message by fire after reading.

On occasion, Brigadier de Guingand would personally call on O'Connor and give him the Ultra intelligence, again without disclosing the source. These procedures were the only ones available at the time, but they carried the danger that O'Connor might reject the information from the unknown (to him) source, believing that his own local intelligence was more accurate and up-to-date.

On Dec. 9, 1940, Gen. O'Connor struck. He held the gargantuan advantage of knowing Marshal Graziani's troop positions and those of his supporting forces, such as artillery. Taken by total surprise and racked by low morale, the Italians were soon fleeing westward in disarray. The *Desert Rats*, as the British fighting men now proudly called themselves , advanced 650 miles westward into Libya.

By Feb. 7, 1941, the Western Desert Force had taken 130,000 prisoners and destroyed or captured 400 tanks and 1,290 guns. British losses were 506 dead and 1,400 wounded. It had been a colossal triumph for O'Connor's soldiers—and for the mystery truck from Mars, which had kept him informed of Graziani's plans in advance.

(Ham radio operators in England, meanwhile, were deferred from military service but wore military uniforms and were utilized to monitor & read incoming Nazi CW on distinct frequencies.)

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ARNOLD IN MOZAMBIQUE

(Continued from Page 3.)

Most signals were 5/5 and the pile-ups were a steady drone. I called CQ North America several times each day and had few contacts until the final night when conditions improved and I worked about 50 US and Canadian stations. I was able to contact Danny, W4DAN for a short QSO.

While I was on the radio Andre, Magda, AJ, and Joan would explore the surroundings. We had internet most of the time and Andre would spot me on the Dx summit, which was a big help. I was usually on the air from 8 am to about 9:30 pm when the bands closed. ..

We pulled the antennae down early the morning of Aug. 29th and Andre packed everything away in the car. Then back to Maputo and our flight to Joburg.

Despite the poor propagation I feel that the DxHoliday was a huge success and as of now, were planning a return trip in 2016. However, Andre had mentioned Madagascar. We'll see.

60-METER BAND— LOVE IT, HATE IT, AND BE CONFUSED BY IT!

By Danny Centers, W4DAN

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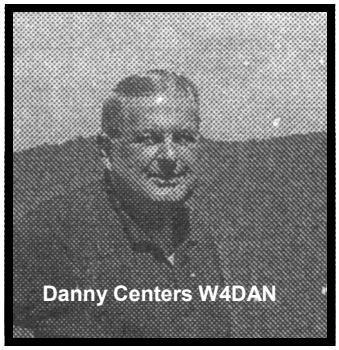

In 2003 when the FCC authorized Amateur Radio operation on the 60-meter band with maximum 50 watt ERP power restrictions and upper sideband only mode, I read the regulations, and was very reluctant to give it a try. My first thought was that if I wanted to operated on a channelized band, I would join those on the Citizen's Band where the FCC pays no attention to regulation violations by users on those frequencies. Curiosity eventually caused this cat to listen to the activity on the 5 MHz band. The next thing I knew, I was "*on channel*" and involved in an upper sideband QSO. After a while, I lost interest due to the fact that CW and QRO were not permitted.

In 2012, the FCC authorized digital modes and allowed operation of up to 100 watts ERP. With the new regulations, retractions, and confusing rules about frequency settings for the different modes of operation, I decided that this cat was still not curious enough to give CW a go on 5 MHz at that time.

With the passing of three years, the waning of propagation, and the cat ready to prowl, I decided to venture back, and give the "*channels*" another try. I, luckily, happened to have a very good and informative USB QSO with Ken, KB9GKG in Kokomo, Indiana very soon after getting back on the band. He and I had a lot to talk about, including our childhood days in the hills of Kentucky. With his encouragement, I programmed memories on my transceiver for the five CW frequencies. My first four 60 meter CW contacts were with stations in Arizona, California, Minnesota, and Hungary. This great recent experience prompted the idea of passing along the following basic information, just in case you wish to jump into the sand box.

The FCC regulations require that the assigned frequencies for the 60-meter band must be used in a channelized manner without varying from the prescribed center frequency channels. In other words, set the correct transmit frequency, and do not vary it with the VFO. If you wish to "*tune in*" the received station, use the "received incremental tuning (RIT), or the receive "*clarifier*" adjustments.

The specified channel center frequencies are: CH1: 5332.0 kHz; CH2: 5348.0 kHz; CH3: 5358.5 kHz; CH4: 5373.0 kHz; CH5: 5405.0 kHz. These frequencies should only correspond to your transceiver frequency readout if you are going to operate CW.

Most of you will probably begin your 60-meter operation on USB. If so, your radio tuning display must indicate the suppressed carrier frequencies as indicated below when operating USB mode: Ch.1: 5330.5 kHz; Ch. 2: 5346.5 kHz; Ch. 3: 5357.0 kHz; Ch. 4: 5371.5 kHz; Ch. 5: 5403.5 kHz.

As strange as it may seem, these same *suppressed carrier frequencies* should be used when operating PSK31 and PACTOR III in the upper sideband mode. Even though the regulations require that PSK31 and PACTOR III must operate on the channel center frequencies, the easiest way to do this is to operate the transceiver in the upper sideband mode on one of the suppressed carrier frequencies. Other digital modes, though not prohibited, are required to emit a signal of less than 60 Hz wide. This is too narrow for amateur RTTY signals, therefore , RTTY cannot legally be operated on this band regardless of the last FCC regulations stating that digital signals are allowed on this band.

If you feel that this operating summary is complicated, consider the following regulations, restrictions, and suggestions as set forth by the FCC, ARRL, and EMMCOM:

...Power must be restricted to less than 100 watts ERP or less, relative to a half-wave dipole.
...Check your transceiver operating manual to see if your radio display shows the actual channel center frequency when operating CW.
...Keep in mind that amateurs are secondary users of the band. Cease operations if you hear a non-amateur transmission on the channel.
...Keep transmissions short, and break often to listen for other signals.
...Split-channel operation should be avoided, though not prohibited.
...Keep in mind that Channel 5 is considered the international Dx frequency, therefore, domestic QSOs should be kept to a minimum on this channel.
...Do not operate LSB mode.
...Use the lowest power necessary for communications.
...Avoid long QSOs during peak evening hours.
...Dead carrier zero beat is not permitted.
...Use courtesy and be very considerate of others using the band.
...SSB signal bandwidth must be less than 2.8 kHz. If at all possible, set your transmit bandwidth to 2.5. kHz.
...CW signal bandwidth must be less than 1.5 kHz.
...Digital signal bandwidth must be less than 60 Hz. This is confusing because PSK31 and PACTOR are transmitted with the transceiver set at USSB which is only restricted to 2.8 kHz. Keep in mind that RTTY signals are wider than 60 Hz.
...Read the FCC regulations. Do not rely solely on this article or other publications for correct information. There is much more information available from the FCC, ARRL, EMMCOM, and other sources concerning this subject that cannot be covered here because of space restrictions.

I hope to follow-up with another article highlighting antennas, power usage, international considerations, and other topics about the 60-meter band to possibly point out mistakes, and to contribute corrections. I definitely don't claim to be an expert on the 5 MHz band.

73 **Danny, W4DAN, Cleveland, TN**.

FROM KRISTALLNACHT TO AMERICA

By John H. Lang, appearing in the Wall St. Jounal, Nov. 9, 2015

Monday, Nov. 9, marks the anniversary of *Kristallnacht* in 1938, when Nazi hordes ran wild throughout Berlin. Jewish houses of worship were desecrated and then set afire. Thousands of Jews were rounded up, some beaten to death, others sent to concentration camps. Jewish-owned businesses and homes were looted.

I will never forget seeing the unimaginable horror of the night and the following day 77 years ago. By luck, my parents were not in Berlin. I was at my grandmother's. Through the window I cold see my beautiful synagogue engulfed in flames as desperate screams rose from the street below. Each knock on our apartment door brought terror, followed by incredible relief.

The next morning as I wandered through my neighborhood, I saw shards of plate glass everywhere, as every Jewish-owned shop had been looted and painted with vile Jew-hating slogans. Uniformed Nazis and their sympathizers were having fun as they surveyed their brutality. One group looked at a large stain on the street that was said to be the blood of a Jew. Even now I can hear their laughter.

At that moment, I was an 8-year old who had suddenly turned 18. My every thought turned to survival. When my parents returned, I told my father that I would never live to see my ninth birthday. He took my hand and told me that he would always protect me and that nothing would happen to our famiy—because he had been a decorated frontline soldier during the 1918 War.

Though reports of *Kristallnacht*—called the night of broken glass-were circulated world-wide but there was no forceful reaction by the world powers, although the U.S. ambassador to Berlin was recalled to Washington for consultations. In retrospect this became a rehearsal for the holocaust to come. Although my parents already had applied to immigrate to the U.S., they were informed by the Embassy in Berlin that our quota number would not be reached for several years. There was no escape.

After I got into a fight with a member of the Hitler Youth, I sensed a new level of desperation by my parents. It was then that England, with an act of Parliament, threw a lifeline to Germany's Jews, agreeing to admit 10,000 unaccompanied children. It was an acct of kindness and humanity that I will never forget. Parents had to make agonizing decisions to send their children to safety and possibly never see them again. The Kinder transport trains started in Dec. 1938 and continued to the start of WW II on Sept. 1, 1939. Farewells were filled with hugs and tears as children separated from their parents. In retrospect we could see how at that moment, all such parents became supreme heroes.

I will never know how my parents secured a spot on one of the early Kinder-transport trains for me, but I left Berlin in Jan. 1939. Toward the end of 1940, much earlier, than I would have believed, the American Embassy in London informed me that my quota number had been reached and I could now proceed to the U.S. I left London with its nightly heavy bombing and its brave resolute citizens. The North Atlantic voyage was perilous, and we never knew whether we might be torpedoed . My parents ultimately escaped Germany too, but not without trauma.

After nearly 75 yeas in the US, I still am stirred by the thought of American. freedom—so precious and thrilling that I cannot imagine life without it.

As I recall my past and revel in my American freedom, I think of my favorite film, "*Casablanca*". A couple celebrating at Rick's café as they prepare to depart for the U.S.. raised their glasses in a toast. They jointly say: "***To America,***" and so do I..

"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 sent a message to his ship's owner, Hans Isbrandtsen, in New York: "*All passengers and crew now saved as far as I know STOP I will remain until tug Oceaan arrives please notify wife."* Then, for the time being, soaked to the skin and exhausted, he ceased talking to the world.

All Carlsen's shipboard norms had disappeared. With alarming kicks and heaves, his freighter continued to wallow. The severe tilting meant that he couldn't walk anywhere, couldn't get dry, couldn't feel safe, couldn't assume anything. Fore and aft of him stretched this long, desperate ship, a huge, helpless metal whale that sometimes bucked up from the bow, and sometimes rolled hard at the stern. Nothing in her movements allowed any prediction of any kind; she could go down at any moment or she could settle like a floating plank if the sea grew calm.

In the meantime, she could hurt him with a sudden lurch; she could knock him unconscious. Or she could trap him in her innards by slamming a door shut behind him and then take him down in a sucking dive, and only his stripped bones would be found—and then only if the ship was ever found. He was the last man standing in a wintry, violent and inundated prison, and he was master of nothing that he surveyed. And the elements that had first begun to attack *Flying Enterprise* continued their wrecking. Winds tore up and down and in and out, waves surged across the decks and poured down stairways, along corridors, into cabins.

But Carlsen had formed his strategy, a tough-minded, stubborn intent: "*I will remain*." If he stayed on board and took charge of a tow, he would not lose his ship and he might even recover some cargo He had been convinced—if he needed convincing—by Isbrandtsen's cable telling him that the tug had been chartered: "*….on way to you, 700 miles distant noon today."*

Both men understood what was needed: a vessel robust enough to broach those seas in that weather and assured enough to tow a loaded, listing ship a distance of several hundred miles. The leading towage and tugs company in northwestern Europe was, and still is, L. Smit, out of Rotterdam, with representatives all over the world. Isbrandtsen knew L. Smit well. When he contacted his nearest tugboat experts, the New York office of the Salvage Association, he would have assumed that Smit would be the company of choice in these seas.

Sure enough, Isbrandtsen was told that one of the Smit vessels, *Oceaan,* had overheard *Flying Enterprise's* Mayday. It had already acted on the emergency call—tugboats hunt for opportunity— and was even now steaming to Carlsen's aid. That was how Isbandtsen knew about *Oceaan* while the passengers and crew were still aboard.

Carlsen had had a double stroke of luck. First, and of the utmost importance, he was lucky to be getting a tug at all. The waters of northwestern Europe had other, richer pickings that weekend; few tugs might want to take on a ship that seemed about to sink and whose cargo was almost certainly somewhat compromised. Second, *Oceaan* should get to him on Monday—giving the sea less time to wreak total havoc.

This excellent news intensified Carlsen's sense of purpose. He was exhausted, he was soaked to the skin; he was chilled numb, but he went to work. To begin with, he needed a secure communications system. He would need it for the towing—and , more crucially, he had better be no more than a radio signal away if he felt the ship going down. Once he could easily talk to the outside world, he could start to rebuild his own strength. Towing was hard work for the towed as well as the tug, and he hadn't slept a full night or eaten a hot meal for 72 hours, not since the night before the ship's fracture.

It was in Carlsen's nature to draw on every competence in his repertoire all the time. His merchant seaman training had included radio officer certification. After the post rescue roll call of survivors, he knew that all David Greene's power supplies—the main batteries, the emergencies, and the reliable auxiliaries—had now, finally expired. The backup of the backup of the backup was gone.

Carlsen went back to this cabin, where he opened up his own source: ***the transmitter on his ham shortwave.*** He kept it spread all along the bulkhead across from his bunk. The moment he looked at it, he knew that it, too, had died. All its battery acid had spilled in the storm. W3ZXM/MM was off the air.

But he had on board a small shortwave set as a gift for his father, Martin, who had recently built a small cabin cruiser. Carlsen had specifically brought the apparatus on this trip so that he could set it to the European coastal frequencies that his father would need in the waters off Denmark.

This transmitter worked by voice, not telegraphy key. A virtual radiotelephone, it had dry batteries, and thus no acid to spill. Not only that, but if the battery ran down, he knew that he could probably hook it up to the old Zundap scooter aboard and recharge it by running the motorbike's engine.

Carlsen set up the little radio. The power worked, but it needed a local antenna. So he ran a simple wire out on deck. He tested the rig, and the startled radio room crew on the *Greely,* still standing by, said they heard him perfectly.

In tiny exchanges across half a mile of ocean, they worked out a system. *Greely* would become Carlsen's mailbox for the world. They would receive and transmit all his messages and until the tug arrived Carlsen would call through to them every two hours—except, he said during the night when he was asleep. His amiable matter-of-factness about sleeping astounded the *Greely's* radio crew, especially when they looked across the sea at the slumped old ship on which he was proposing to get a night's rest. They concealed their astonishments, noted his general cheerfulness, and bade him good night.

On the C-B freighters, the captain lived in two rooms: an outer office and a bedroom, near the wheel house, not far from the radio shack. Everyone who sailed with Carlsen knew his clinical sense of order. He inspected the crew cabins once a week, and his visit was always preceded by a mad scramble to tidy up—the seamen knew how scathingly he disliked chaos. Now, though, the storm had trashed his own space. The drawers in his bulkhead cabinets had fallen out; his possessions lay strewn.

Also, his rooms sat on the starboard side, which had become the highest part of the ship; if he suddenly had to jump, he couldn't go off over that rail-he'd simply be slammed back against the side of the freighter. Given the condition of the vessel and the continuing rage of the weather, he might need swift egress should *Flying Enterprise* suddenly decide—especially at night—that she had had enough. \

He counted his requirements—safe haven, speedy escape, and a means to communicate. To keep the little shortwave apparatus dry he would make his own cabin the radio room—but he would sleep in the radio shack, which lay on the port side and therefore nearest the water. And it had a door to the outside world, through which he could drop straight into the sea.

(Continued next edition.)

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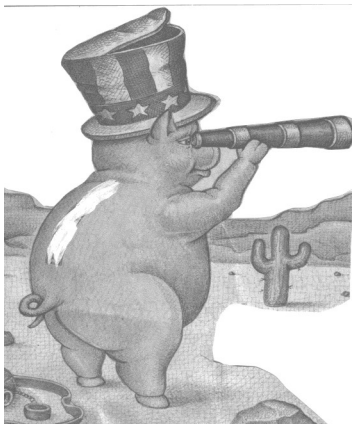
NEW FACES* for MARCO & RENEWALS, as of Nov. 4 '15

Barrett, Aaron KC7RJA*
Dubin, Stephen, W3UEC
Goldfarb, David K3ENT*
Pavel, Forest, K4FTP
Powell, Louis*
Rizvi, Asif, W4EMD*



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December 2015

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