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MARCO's "AETHER" *Pronounced "Ether"*
Healthcare & Radio in One Medium
The Medical Amateur Radio Council

131st
Edition
2000-2021



A non-profit Corporation, founded in 1966, privately supported for the public good and dedicated to the advancement of Medicine through Amateur Radio.

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MARCO callsign [WB5D](#), see us on [QRZ](#)

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Technology in Medicine

The health professions have experienced technologic innovations during our professional careers that have impacted the business and patient care aspects of the careers we are dedicated to. These changes can be daunting to deal with as the learning curve is often steep and the half-life of information reduces with each advance in information technology, and in computer components, the programmed brains of the innovations. It is a challenge to be a macro processor in the age of microprocessors! Each generation subsequent in innovation is native to the young. Technology for those of us in mature stages of our careers is more complex. We are challenged by a significant need for change and adaptation to the new normal. Ham radio has seen many of the same changes and we benefit from the familiarity with computer technology as we explore new radio horizons. This edition starts an ongoing dialogue on the subject. We hope members will continue with discussion in our Google Group and on our nets.

The technologies explored in this edition of the *Aether* are a sample of those undergirding evolution in medical research, surgical treatment and interventional care. The landscape of the health related fields has undergone rapid change in recent years with an ever connected world and what traditionalists may feel are intrusions from external sources originating in industry, and the marketplace.

The presentation here is intended to probe your interest and initiate a dialogue. The reader is offered a choice in what information you would like to pursue, in contrast to what you peruse. Links are provided to guide you online to more extensive material.

Feel free to write the editor at aether@marco-ltd.org with your feedback and suggestions for additional coverage of technology in upcoming online editions.

Technology in Medicine

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Join us for our Annual MARCO business meeting and banquet at HamVention in Xenia, OH, May 19-22 2022. President-elect Dr. Robert Conder, K4RLC, will receive the Presential gavels from President Dr. Bruce Small, KM2L. Look for the more details on page 12.

The recently designed Presidents plaque pictured above holds two gavels, one inscribed with the call signs of our Presidents from 1966-2011, and the other with those from 2012 to date. It will be presented for the first time in 2022.

Medical Technology—Interventional Radiology

According to the British Society of Interventional Radiologists

“A clinical doctor who performs image guided procedures, fully interprets the imaging required to guide and monitor response of those procedures, as well as provides the pre and post procedural care for those patients receiving imaged guided surgery procedures.”

"Interventional Radiology" (IR) refers to a range of techniques which rely on the use radiological image guidance (X-ray fluoroscopy, ultrasound, computed tomography [CT] or magnetic resonance imaging [MRI]) to precisely target therapy. Most IR treatments are minimally invasive alternatives to open and laparoscopic (keyhole) surgery. As many IR procedures start with passing a needle through the skin to the target it is sometimes called pinhole surgery! Check out the therapy links for more details.

[Detail —Range of Techniques](#)

[Video: What is Interventional Radiology ?](#)

Tumor Therapies

[Liver](#), [Kidney](#), [Lung](#), [Uterine fibroid embolization](#)

Kidney and Gallstone Disease

[Kidney](#), [Gall Stones](#), [Prostate artery embolization \(PAE\)](#)

Blood Vessel Disease

[Aneurysms](#), [Hemorrhage](#), [Pulmonary embolism](#), [Venus thrombosis DVT](#), [Varicose veins](#), [Peripheral arterial disease](#), [Lower Extremity Venous Insufficiency](#)

Orthopaedic

[Vertebral compression fractures](#)

Molecular Epidemiology

[Cindy Prins, PhD, MPH, ICI, CPH](#)

Keeping up with COVID-19: Tracking variants and modifying vaccines

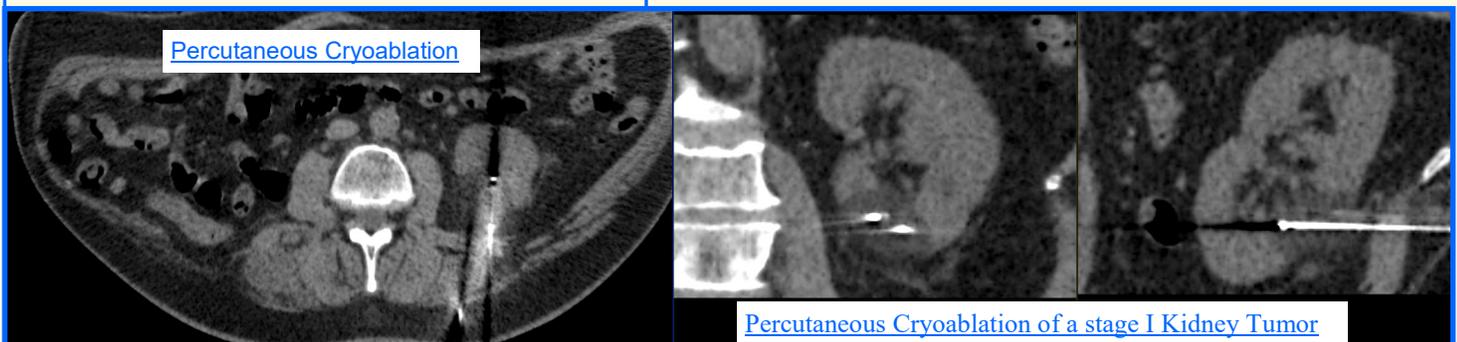
As the COVID-19 pandemic has progressed over the past 22 months, variants of the SARS-CoV-2 virus have become familiar to us by name. The current fourth wave of cases in the US is largely due to the Delta variant, which emerged first in India in late 2020 and then was identified in the US in March of 2021. This was preceded by the Alpha variant, which was originally identified in the United Kingdom. Both of these variants are associated with increased risk of transmission compared to other circulating variants. As we move into the second year of the pandemic, with vaccines not yet consistently available in all regions of the world, there is potential for additional variants to arise that may create new challenges in preventing cases of COVID-19... (continued on page 3).

Percutaneous Thermal Ablation

Is the use of energy sources such as heat, cold, electric energy, and chemicals to destroy cancerous tissue within an affected organ. The procedure is less invasive than other treatment options as a needle is used to deliver the energy source to the tumor within the target organ using the assistance of Ultrasound, CT scan or X-ray guidance

Energy and Chemical Sources

- [Microwave Ablation \(MWA\)](#) (heat)
- [Radiofrequency Ablation \(RFA\)](#) (heat)
- [Percutaneous Irreversible Electroporation \(IRE\)](#), [\(NanoKnife\)](#), [\(NanoKnife in Cancer Treatment\)](#)
- [Cryoablation](#) (cold)
- [Percutaneous Ethanol Ablation \(PEI\)](#) (chemical)
- [Laser Thermal Ablation \(LTA\)](#)



[Genomics in Medicine](#)

Genomics is a branch of biotechnology concerned with applying the techniques of genetics and molecular biology to the genetic mapping and DNA sequencing of sets of genes or the complete [genomes](#). [Click here for applications in medicine.](#)

[CDC Genomics and Precision Health Blog](#)

Since 1997, the [CDC Office of Genomics and Precision Public Health](#) has been dedicated to integrating genomics into public health research, policy, and programs in ways that improve the health of all people. In this blog, they offer comments from a public health perspective on genomic and precision health research and programs conducted by CDC and other institutions around the world.

[Proteomics](#)

Proteomics is the study of proteomes, sets of proteins produced by organisms. This is very important in the diagnosis and treatment of oral diseases, where they can readily be collected for analysis.

[Advances in Proteomic Sciences in Dentistry](#)

[Use of Proteomics in Dentistry—2CE credits](#)

Molecular Epidemiology

(continued from page 2)...Variants of the virus result from errors in the viral replication process. SARS-CoV-2 contains RNA as its genetic material. As the RNA is copied inside an infected cell, mutations can be introduced if mistakes are made while adding the RNA bases to the new copy of the genome. Although Coronaviruses have a unique ability to proofread and correct their own replication errors, mutations still occur. Many mutations have no effect on the virus or may even have a negative effect on it, but some mutations may result in a change in key proteins that give a virus an advantage over other variants¹. The SARS-CoV-2 spike protein's receptor binding domain (RBD) is responsible for binding to ACE2 receptors on the outside of host cells in order to infect the cells. In the Delta variant, the mutations in the receptor binding domain region of the spike protein allow the variant to bind more efficiently, thus increasing its ability to infect cells². The spike protein RBD is also the target of SARS-CoV-2 vaccines, and significant changes in the spike protein of circulating variants could result in reduced effectiveness of vaccines that were developed based on an earlier version of the spike protein... (Continued on page 9).



Genomics

[COVID-19 Host Genetics Initiative. Mapping the human genetic architecture of COVID-19.](#)

Nature (2021). <https://doi.org/10.1038/s41586-021-03767-x>

The genetic makeup of an individual contributes to susceptibility and response to viral infection. Environmental, clinical and social factors play a role in exposure to SARS-CoV-2 and COVID-19 disease severity.

Host genetics were studied as another potential factor. By identifying host-specific genetic factors there may be an opportunity to determine biological mechanisms of therapeutic relevance and clarify causal relationships of modifiable environmental risk factors in infection and outcomes.

The designers of the study formed a global network of researchers to investigate the role of human genetics in SARS-CoV-2 infection and COVID-19

Modified mRNA Vaccine Boosters for SRAS-COV-2

Study is underway of safety for boosters designed to address variants of COVID-19 virus. [Click here for a recent study published Sept. 15, 2021](#)

[Interim Clinical Considerations for the Use of COVID-19 Vaccines Currently Approved or Authorized in the US, as of September 27, 2021](#)

[Wildfire Smoke Exposure and COVID-19](#)

COVID-19 Era Editions of the *Aether*

Links follow to the nine editions of the *Aether* in the era of COVID-19 to allow readers to review the historical development of our articles about this subject. These editions may be of interest to fellow amateur radio operators, friends, and family. Feel free to share the links with those of would benefit.

[April 2020](#), [June 2020](#), [August 2020](#), [October 2020](#),
[December 2020](#), [February 2021](#), [April 2021](#), [June 2021](#), [August 2021](#)

Medical Technology—Online content to pique your interest.



Robots in Medicine

Combining computer technology (hardware and programming), artificial intelligence, and mechanical devices is starting to yield results that would make Isaac Asimov proud.

Some basics follow and links are provided so you may explore this subject per your level of interest

Overall in medicine robots serve purposes beyond surgery. There are rehabilitation robots, assistive and therapeutic versions. According to [The American Society for Mechanical Engineers](#) some uses for robots in medicine are for the following purposes Use the link above to explore these categories in more detail

- Telepresence (remote treatment)
- Surgical Assistance (remote control, robotic surgical arms)
- Rehabilitation
- Medical Transportation
- Sanitation and Disinfection
- Robotic Prescription Dispensing

While the public perception may be that robotic surgery is autonomous, most systems are guided by surgeons. Robotic surgery is a high tech tool, with the potential to provide precise and predictable results toward improving patient outcomes.

Medical Robotic Systems, Robot-assisted surgery

- [da Vinci Surgical Robotics](#) by Intuitive Surgical (many uses)
- [Ion](#) by Intuitive Surgical (Lung cancer)
- [Mako](#) by Stryker (orthopaedic and neurotechnology)
- [Navio](#) by Smith and Nephew (handheld robotics)
- [Monarch](#) by Auris Health (bronchoscopy and lung cancer)

Radiation Therapy ([RadioTherapy](#)) Technologies

Therapies using ionizing radiation, often to control or destroy malignant cells

[SRS—Stereotactic RadioSurgery](#)

[SBRT—Stereotactic Body Radiation Therapy](#)

[Cyberknife](#)

Robotic arm guided, provides an image guided linear accelerator source to project accuracy in sub-millimeters. This reduces side effects of radiation treatment.

[Gamma Knife](#)

A fine-beam technology designed to address pathology in brain tissue.

[Proton Therapy](#)

A technologically advanced modality to deliver radiation treatment to cancerous tumors. Cancer cells susceptibility to destruction by ionizing radiation at levels used in contrast to normal cells make this an attractive treatment, as protons deposit their full energy directly into the tumor

Other Technologies in Medicine

[CDC page for Nanomedicine](#)—Small scale makes for huge advances in medicine.

[NIH Division of Cancer Treatment & Diagnosis, Nanotechnology systems](#)

[Artificial Intelligence in Medicine: Applications, Implications, and Limitations](#)

[18 Healthcare Augmented Reality and Virtual Reality Companies to Watch](#)

[Virtual Reality in Medicine and Surgery](#)

[Advances in Healthcare Wearable Devices](#) (April 2021)

[3D Printing in Medicine and Healthcare—The Ultimate List in 2021](#)

[3D Bioprinting of Living Tissues](#)

[Medical Technology under development from the Wyss Institute at Harvard](#)

MARCO Nets

The Grand Rounds on the Air net on October 17th at 1500 UTC will be a continuation on the subject of our feature article today, Keeping up with COVID-19: Tracking variants and modifying vaccines. The net session will originate from W4DFU at the University of Florida with AA4FL as net control. [Dr. Cindy Prins](#), author of this article, will continue her dialogue and allow members to explore the subject through fielding questions during the net.

In addition to the at the mic discussion, we will use netlogger for verifying your login and it's AIM (instant message) feature for submitting real-time typed questions of the speaker. Please [download netlogger](#) in advance and check out the program. Contact Jay AA4FL through our Google Group, marco-ltd@googlegroups.com, with any questions. If you need to be added to our google group email Jay at his QRZ email address.

Good stuff!

Weekly MARCO Medical Grand Rounds Net

The Medical Amateur Radio Council Organization (MARCO) conducts weekly Grand Rounds on Sundays at 1500 UTC (summer months) and 1600 UTC (winter months) on 14.342 MHz. Physicians from many specialties, including naval flight surgeons, biomedical physicists, infectious disease specialists, trauma surgeons, dentists, and many others discuss informative, and timely medical topics. The Net has worldwide listenership and contributes to dissemination of medical and public health awareness. MARCO live streams the Grand Rounds net audio on their website at www.MARCOAudio.net.



Founded in 1966, MARCO's mission is to promote goodwill and fellowship among amateur radio operators who are professionals in the healing arts or who have an interest in medicine, dentistry, and allied fields. MARCO is open to all licensed amateur radio operators who are healthcare professionals or affiliated with the medical industry. MARCO participants may receive one hour of Category 2 CME credit per Grand Round presentation.

On-air network operation is an integral part of MARCO activities and is conducted for the purpose of discussing and exchanging medical and technical information and, whenever possible, to be a public service by passing emergency and priority traffic. All General class or higher (and their international equivalents) licensed amateurs are welcome to check in.

Weekly Net Category II CME—on the HF Bands

Medical Topic Discussions of Interest to all

Our Radio-Internet Coordinator Chip Keister, M.D., N5RTF, New Orleans, LA...[livestreams our net online](#). Check into our nets and earn CME. For times when propagation is poor when you would benefit from audio from another receiver, if you are away from your radio, in a skip zone, or unplugged due to thunderstorms, join the MARCO CW net and Grand Rounds by live [internet streaming audio](#). These are recorded to [listen in later to the online archive](#).

To Listen:

1. Use a browser to go to the following web page which has a player app and **links to the audio stream and archive**: www.marcoaudio.net.
2. The second way is to manually enter <http://marcoaudio.ddns.net:8011/stream> into a standard music player on computer, phone, or portable device **while the net is in progress**.

Feel free to share these links with anyone, MARCO member or not. No login or password is required. There is room for 100 listeners at a time. Comments are appreciated.

Chip N5RTF

MARCO DV NET

MARCO DV (Digital Voice) net that meets on Saturdays at 1500UTC. We have chosen to use the [QuadNet Array](#), an IRC or Internet Chat Facility that acts like a universal translator between difference digital modes and allows hams who identify by callsign to connect with other users of digital radios world-wide through interconnected reflectors and talk-groups. See their website for more details, including how to connect, within the <https://www.openquad.net/webpage>.

Special COVID-19 Information Net



A medical information net on COVID-19—following NIMS protocols—will be held at 0030 UTC Thursdays on 7.222 MHz, hosted by Biomedical Physicist and Infectious Disease Specialist, Professor Harry J. Przekop (WB9EDP), assisted by Dr. Jerry Ziperstein (N4TSC).

This special net has a worldwide listenership and will be live-streamed at www.MARCOAudio.net and archived on the website for anytime access. You do not have to be a medical professional to participate.

MARCO CW NET

The Bob Morgan Memorial Net

Our CW net is held every Sunday one half hour before the *Grand Rounds on the Air* net, at 09:30 central time, currently 1530 UTC, on 14.140 MHz. Net control is Chip N5RTF. The net is named after the late MARCO member Dr. Bob Morgan, VE3OQM.

At times in the in the past the net was on the same frequency as the *Grand Rounds on the Air* in an effort to hold the frequency for the voice net to be in the clear at the top of the hour. The net today means so much more to MARCO...

You are invited to participate. With radio license issuance in the US dropping the morse code requirement there are many members who have not had experience with CW. Our net is a great way to gain CW proficiency.

There are many advantages to learning morse code, a yes-brainer. There is increasing evidence that not only GM plasticity but also changes in white matter are important in the context of learning processes, see <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5526915/>.

Use CW through the MARCO net to keep those neural connections intact and resist the aging process! Links to other sources follow. Add to the discussion by posting to the MARCO google group: marco-ltd@googlegroups.com

[ARRL resources for Morse Code](#)

[Morse Code Instruction Learning, YouTube Options](#)

WRITE TO US!
 We welcome your comments.
 Email to
aether@marco-ltd.org

Letters and articles may be edited for brevity & clarity.

Unedited member article submissions made available through links, and linked online material are not the opinions of MARCO. Graphics selected are the choice of the editor and not of MARCO-ltd.

MARCO NET SCHEDULE

DAY	TIME	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
Wednesday *	7:30 p.m Eastern	7.222	Harry WB9EDP

MARCO'S CW NET IS NOW CALLED THE "Bob Morgan Memorial Net"
 Sundays, 14:30 UTC, 14.140 MHz

Page 6

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. * The Wednesday net is a member led discussion net held during the COVID-19 crisis. *

Hurricane Ida and COVID-19

MARCO member Chip, N5RTF, is no stranger to hurricanes. New Orleans had a large "water event" storm, Hurricane Katrina in 2005, with extensive damage from flooding, substantial loss of life, and hardship. Chip was a MARCO annual meeting banquet speaker in the years following providing us insight on the mental health effects of the storm on the population, as seen through the eyes of a psychiatrist.

The MARCO DV net prior to Hurricane Ida was recorded on [August 28, 2021](#) by Chip N5RTF from his targeted area of the gulf coast. Click on the date to listen to the dialogue and use the slider to reach the hurricane discussion at the 50-58 min mark, that anticipated effect of the upcoming storm on Louisiana, New Orleans, and the impact on COVID-19 infections.

The MARCO DV net post Hurricane Ida was held on [September 4, 2021](#). Listen for Chip at the 20-25, and 44-47 minute mark, Chip was able to report on damage from the storm, having just gotten his power and internet service back the evening before, one of the first. Feel free to listen to the recording (click on date). In summary Chip reported the storm was a "wind event" with the area holding up well as the levees had no issues. However, the entire electrical distribution went down when the main transmission lines fell into the Mississippi river. After the storm gasoline was hard to come by and the brutal heat of the gulf coast was making life miserable without gas for generators.

In this and subsequent nets Chip when asked about contrasting the two storms from a medical perspective that time will tell. Mental health issues arise sometime after an event, three months or later. COVID-19 concerns had been suppressed as the hurricane occupied the public sphere. As New Orleans cools down later in the fall the opposite effect as northern cities occurs, people in the gulf coast move outside to areas with better ventilation,



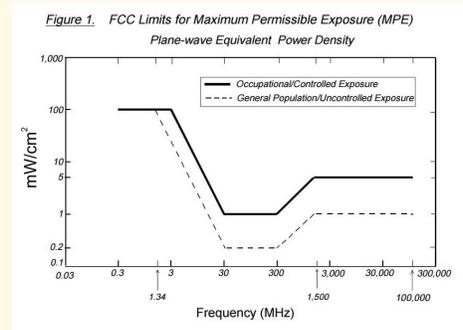
[RF Media Exposure](#)

"It's like deja vu all over again" as mentioned on page seven. RF's assumed effect on medical technology can impact operating a ham radio station.

A Central Florida woman has confronted her home owners association in a matter she feels puts her health at risk. A Type 1 Diabetic. A consultant concurred that her neighbor's ham radio transmissions may be interfering with the ability of her insulin pump to provide accurate dosing.

[Press coverage--story](#)

[RF Exposure calculator](#)



She wants the Florida Commission on Human Relations to make a determination whether the community's board and management is doing enough to protect her and others with medical devices.

This August 2021 situation is addressed on the [Website of the ARRL](#).

Wireless Medical Devices

The US FDA has a webpage current as of September 2018 that discusses medical devices with wireless RF communication such as Wi-Fi, Bluetooth, or cellular phone integration. The FCC and FDA have a [joint statement](#) dating to 2010 on these devices. The FDA has [published guidance](#) for industry and drug administrative staff.

MEMORIES OF YEARS AGO IN MARCO

Our History Book

Twenty Five years ago in MARCO—October 1996

[Click on for the full edition](#)



The

MARCO

NEWSLETTER

Official Publication of the Medical Amateur Radio Council, Ltd.

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HAM BAND ACTIVITY SHOWS LITTLE IMPROVEMENT

The headline on last months Newsletter stated, "We're Searching For a New Home". In that article, it told of an experiment to move to 3.8705 for the Sunday, Monday, Wednesday and Friday evening nets. Since this move, there continues to be little or no participation. Sometimes two or three MARCO members will connect, and call for additional members for fifteen or twenty minutes, before signing off. More evenings however, there will be no one on the air. President Ira has called for another meeting of the east coast activists, to announce a permanent location for this net, but until it is held, and any changes made, we will continue to list this

INSIDE

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 W8BXO Hospitalized
Page 11: Welcome New Members
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4X1AA SILENT KEY

Milton H Gordon, M.D., 4X1AA, died August 20th, while traveling on a bus to visit his daughter. His wife Natalie tells us it appeared as if he died quietly during a nap.

Ten years ago in MARCO—October 2011

[Click for the full edition](#)

MARCO's "AETHER" Pronounced "Ether"
Medicine & Radio in One Medium

Official Publication of the Medical Amateur Radio Council

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Marco Blogsite: marco-Ltd.blogspot.com

Marco Blogsite: marco-Ltd.blogspot.com
"listserve": http://googlegroups.com



A non-profit Corporation, founded in 1965, privately supported for the public good and dedicated to the advancement of Medicine through Amateur Radio.

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2000-2011

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P.O. Box 127, Indian Rocks Beach, FL., 33785-0127

SIX-FOOT WINGSPAN PLANE FLIES ATLANTIC

THE 11-LB. PLANE FLIES 1,882 MILES FROM NEWFOUNDLAND & REACHES IRELAND IN 38+ HOURS AVERAGING 50 MPH. RADIO-CONTROLLED, USING GPS FOR NAVIGATION, IT FLEW AT 1,000 FEET, BURNING ONLY ONE GALLON OF FUEL.

On a clear Saturday evening on August 9th, 2003, Maynard Hill stood on a hillside on Cape Spear, Newfoundland, started the motor on his model airplane and heaved it into a light wind.

Thirty-eight hours and nearly 1,900 miles later, the plane was brought down in Ireland by team-member Dave Brown near the monument that marks the historic landing spot of John A. Loock and Arthur Brown, the two RAF officers who had flown the same route in 1919.

Just as the Wright brothers made several long trips from Dayton, Ohio to the Outer Banks of North Carolina to prepare for their epic flight in 1903, Maynard Hill traveled for three years from Maryland to the coast of Newfoundland. Back in Maryland during the winter and spring of 2002, Hill constructed 21 fuselages and 12 wings. Nearly blind at age 75, he added red dye to his glue to compensate



The late Maynard Hill (1926-June 2011) shows off three of his record-setting planes. The successful model now rests in the National Model Aviation Museum in Muncie, Indiana. A similar model was donated to the Smithsonian Air & Space Museum in Washington D.C.

- The lead article was about poor conditions presenting an issue for MARCO nets, including *The Grand Rounds on the Air*. The messages for today are Yogiisms, "It's like *deja vu all over again*", and with improving HF conditions and a digital mode option today "It ain't over, till it's over"
- President Ira Wexler reminded MARCO members that on-the-air medical advice that members provided is a personal volunteer effort, not that of the organization.
- The president also detailed MARCO members in support of DXpeditions. Current 2021 member Mike McGirr, K9AJ, was noted as the medical director for the 1997 Heard Island DXpedition, as a volunteer on an individual basis.
- There was an article about headphone neuralgia, worthy of using the link to read. The reader can decide if industrial changes have been made to counter the issue, especially in young people who wear in the ear headphones in the Bluetooth generation.
- The MARCO listserv had ample activity and discussion. Threads of interest were included in this edition.

- The *Aether* was already at edition 71 of the new millennium, and in the 35th year as a MARCO publication (previously called *The MARCO Newsletter*).
- The editor was KD4GUA—Warren Brown. His feature article was about new technologies allowing an unmanned plane to fly from Newfoundland to Ireland using less than a gallon of fuel.
- An article was included about a new technology of using genetically modified T-cells to treat leukemia, reporting cases with clear success for the first time.
- There was an article about pacemakers and ham radio. Our current MARCO president answered an inquiry about the subject at the time, an issue that resonates today with the ARRL being responsive to a current day issue regarding a Florida ham, a neighbor, and the homeowners association. You can view the 2021 situation on page six of this month's *Aether*.
- An article "Is Salt Really bad for You?" Was included, and so was one about the salt deposits under Detroit. Historical information about the value of salt was also included.

GREETINGS FROM YOUR PRESIDENT

October 2021



Situational awareness. It is the ability to sense what is taking place in your environment, and to understand how your actions affect others and how their actions, in turn, affect you. It can be an essential skill when driving a car, when walking along the street, or in a crowd of people. It is also a valuable asset in ham radio.

Many of you are DXers, and some are contest operators. When calling a DX station in a pileup, it is very important to understand that station's operating plan, and to respond accordingly. Is the station working split? How does he tune through the pileup? Does he sign his call after every contact, or every several contacts? Can you discern a pattern? Is he working stations by numbers or by geographic areas? Is he responding to calls from your part of the world? Situational awareness helps you to get the contact with a minimum of time spent and interference with others. As an example, years ago I came across a DX station on CW that I really wanted to contact. He was working "up," and the pileup was both enormous and unruly. Suddenly, instead of sending his call and UP, he sent DN 1. Immediately, I tuned 1 Khz below his frequency, and snagged the QSO on the first call. The other half-dozen stations who were actually paying attention were similarly rewarded. Situational awareness!

The same principles apply to net operations such as MARCO Grand Rounds. In this case we are in a cooperative situation rather than a competitive one, so the aim is to help one another check in to the net efficiently and proceed to the discussion. How do we accomplish that? By paying attention to what the net control station is doing. If he is taking check-ins by geographic area, then keep quiet until your area is called. If he is copying an area well, then don't offer "help." If he asks for a relay, make sure that you have the correct information before jumping in. Don't talk over the NCS or over one another – that slows everybody down. It also helps to remember that some net participants are listening via streaming audio, which introduces a delay in their responses. Allow enough time for their comments!

If we keep our wits about us, we can make Grand Rounds, or any other net, a more rewarding experience.

73,

Bruce, KM2L

MARCO OFFICERS, 2021-2022

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Historian: Michaline Przekop, KC9ARP

Molecular Epidemiology

Continued from page 3

Because of the potential for new variants to spread more efficiently or cause immune escape, molecular epidemiology is a critical tool for surveillance of circulating SARS-CoV-2 variants. Whole genome sequencing can be carried out rapidly and relatively inexpensively on SARS-CoV-2 isolates and can help scientists understand which variants are currently circulating and respond to the emergence of new variants of interest or concern. The online GISAID Initiative was started in 2008 to provide open access to influenza data³. During the COVID-19 pandemic it has become a major source of publicly available SARS-CoV-2 genomes, with over 3.8 million sequences shared by more than 340 countries as of this writing. The phenotypic behavior of variants with genotypes of interest can be monitored to understand at a population level how these mutations contribute to transmission, severity of illness, and immune escape to inform prevention efforts, including potential revisions to the spike protein sequences used in SAR-CoV-2 vaccines.

The COVID-19 pandemic has featured the first US FDA approval of mRNA vaccines. Although the research underpinning these vaccines has a long history, the widespread use of the technology is new. These vaccines are relatively simple, containing a lipid nanoparticle that is used to transport a mRNA of interest, in this case, a sequence that codes for the SARS CoV-2 spike protein, to the cell. The lipid nanoparticle fuses to the cell membrane and delivers the mRNA to the cytosol. The mRNA then undergoes translation to produce spike protein that is presented on the surface of the cell or released from the cell when it dies and is then recognized by the immune system as foreign.

The simplicity of this vaccine system means that it is relatively quick and easy to replace the spike mRNA sequences in response to major changes in circulating variants that are detected by molecular epidemiology. Both Pfizer-BioNTech and Moderna are currently testing vaccine candidates against SARS-CoV-2 variants of concern, including the Beta and Delta variants, in clinical trials^{5,6}. Moderna is also testing a combination flu and COVID-19 vaccine.

Footnote—Online Resource—SAR-CoV-2 and Molecular Epidemiology

1. <https://www.nature.com/articles/s41579-021-00573-0>
2. <https://www.nature.com/articles/d41586-021-02039-y>
3. <https://www.gisaid.org/>
4. <https://www.gisaid.org/index.php?id=208>; accessed 9/29/2021, 11:42 am
5. <https://investors.modernatx.com/news-releases/news-release-details/moderna-announces-significant-advances-across-industry-leading>
6. <https://www.pfizer.com/science/coronavirus/vaccine/emerging-variants>

Epidemiology Online

[Digital Epidemiology: What is it, and Where is it Going?](#) Salathé, M. Digital epidemiology: what is it, and where is it going?. *Life Sci Soc Policy* **14**, 1 (2018). <https://doi.org/10.1186/s40504-017-0065-7>

[Fighting Pandemics with Digital Epidemiology](#), *EClinical Medicine* by the Lancet, Published: August 25, 2020, DOI: <https://doi.org/10.1016/j.eclinm.2020.100512>

[The Coding Capacity of SARS-Co-2](#), Finkel, Y., Mizrahi, O., Nachshon, A. *et al.* The coding capacity of SARS-CoV-2. *Nature* 589, 125–130 (2021). <https://doi.org/10.1038/s41586-020-2739-1>

[Rapid implementation of mobile technology for real-time epidemiology of COVID-19](#), *SCIENCE* Jun 2020, Vol 368, Issue 6497, pp. 1362-1367

[Mobile Phone Data for Informing Public Health Actions Across the COVID-19 Pandemic Life Cycle](#), *SCIENCE ADVANCES*, 5 Jun 2020, Vol 6, Issue 23, DOI: [10.1126/sciadv.abc0764](https://doi.org/10.1126/sciadv.abc0764)

[Epidemiology and Surveillance](#)

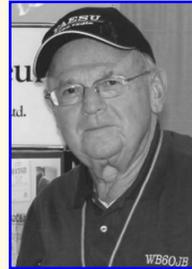
[International Network for Epidemiology in Policy](#)

[Principles of Epidemiology in Public Health Practice, Third Edition: An Introduction](#), a course by the CDC.

[Epidemiology Section of the American Public Health Association](#)



MediShare International News **Arnold Kalan, WB6OJB, Director**



The charitable arm of MARCO is still alive despite the pandemic. We are looking for donations, big or small, to fund our next project. Exude some [HamsCare](#) and contact me at my qrz email address with leads for new potential MARCO MediShare projects.

Projects we have offered assistance with in the past have been to organizations that are in need of a means of communication for medical clinics in third world countries. All donations are completely tax deductible and you will receive a note of thanks together with some wonderful MARCO seals that look very nice on QSL cards.

Take this opportunity to send a donation in recognition of a member's exemplary service to MARCO or in memory of a member's loss, and assist MARCO's way of helping the less fortunate worldwide. For more details about MARCO's Project MediShare and the types of projects it [supports click here](#).



The \$700 donation from sales of equipment received in July has been enhanced with an additional \$300, for a total of \$1000 toward the MARCO scholarship fund, through the sales of equipment donated by Dr. John C. York KE5V through MARCO members Bernie Krasowski KD5QHV and Linda Krasowski, KE5QBK

MARCO is a 501 (3)(c) organization and MediShare International is a project of MARCO. [Click here to donate online](#) made mail checks out to MARCO and place in memo portion the purpose of the donation. Send your donation to MARCO c/o Secretary Jay Garlitz, PO Box 1333, Hawthorne, FL 32640

Thank you , Stay Well & God Bless,

Arnold

Arnold (Doc) Kalan, M.D., WB6OJB

The Secretary's Keyboard Korner

secretary@marco-ltd.org



A contributor to this edition of the *Aether* is [Dr. Cindy Prins](#) of the University of Florida. As an epidemiologist at a major educational institution she is often asked to make presentations. In a US state impacted greatly by high infectivity levels of COVID-19, this includes filling the demand for public information during the pandemic, offering interviews for print media and making an appearance on CNN. Her father is a silent key from Saint Augustine Florida, Gerald Prins, AB4SR.

The newer Technologies addressing medical needs has its place in all the health care professions. You observe technological changes as a patient every time you enter any office where health care is rendered, if you even have to make an in-person visit.

My personal experience with the cutting age technology was in digital dental offices, dating back to 1987, digital records at least in terms of the business office, and starting in the treatment rooms in 1998. I served for years as a beta tester of practice management software starting in the age of Microsoft DOS and Bulletin Board systems (BBS) for file distribution (pre-internet). Employee fears included perceived health issues from sitting near the computers and monitors. By 2002 my office was well ahead of the curve being mostly paper and film free. To gain experience dental students rotated through our office in a Univ. FL College of Dentistry course I taught on the digital dental office.

Change comes slow and in today's world the above mentioned instances are merely a faint memory. Some of my writing as a contributing editor to the Florida Dental Association's publication, and a national magazine article quoting me are linked below, which you might find interesting for a chuckle. How technology has changed!

[Top Ten Reasons For Computers CIRCA 1998](#)

[Technology Predictions for Dentistry for 2010, CIRCA 1998](#)

[Dentists and Y2K, CIRCA 1999](#)

[Digital X-Rays Smile Magazine, Summer 2007](#)

To provide feedback on this issue of the *Aether* contact the editors of both the print and online editions at aether@marco-ltd.org.

73, Jay AA4FL

MARCO Member Communication

There are many ways that MARCO's BOD and members keep in touch and stay informed:

- Our Website, www.marco-ltd.org
- Our on-the-air nets as listed within this edition of the *Aether*.
- [Through printed and electronic versions of the *Aether* Newsletter](#)
- Radio QSO's
- [Our Google Group Listserv](#)
- Through emails
- [Facebook Posts](#)
- [Twitter](#)
- [Mailchimp](#) email campaigns
- Using distribution email addresses in the format @marco-ltd.org as seen within this edition (i.e. secretary)
- Zoom sessions of the board of directors that are open to members
- Annual live business Meetings with social events
- Hamfest presence
- Committee projects

Do not miss out - make sure to contact the secretary with changes of mailing and email address. To join our google group or update addresses send an email to secretary@marco-ltd.org

Online editions of the *Aether* can be printed by the reader for use at home but linked information available through clicks within the online document will not be available. Note in using the online edition you have control of the size of the text and images, being able to zoom in for more comfortable and informative reading.

The next edition of *the Aether* in December 2021 will be in print and produced by long-term editor Warren Brown. My next online edition will be in February 2022.

MARCO Membership News June 2021—September 2021

New Members

W2SGT—Ken Chang, Valley Cottage, NY (2 year)
 AE0JY—Steve Mariash, Saint Joseph, MN (2 year)
 KC0OI, Thomas Peyla, Wabasha, MN (2 year)
 2I0HXX—Andrew Ferguson, Portadown, N. Ireland
 KO4RCH—Ben Davis, Fairfax, VA

Renewals

KC5ZZX—Kip Martin, Claremore, OK (5 year)
 K8WEH—William Hablitzel, Stout, OH (5 year)
 K1UAT—Larry Grayhills—Palm City, FL

MARCO Annual Meeting HamVention 2022

Xenia, OH May 19-22
 Adjacent to Wright State University
 Near Wright-Patterson Air Force base and the
 National Museum of the United States Air Force
 and Aerospace Museum

It is time for eyeball QSO's!

Hotel: Wingate by Wyndham
 3055 Presidential Dr.
 Fairborn, OH 45324
 (937) 912-9350

Twelve 2-Queen bed and eight King rooms
 are available in our room block. Ask for the
 "Medical Amateur" group.

Cost \$129 per night plus tax,
 reserve by 4/27/2022

TH night May 19 arrival, meet and greet
 FR morning business meeting at hotel
 FR afternoon HamVention
 SAT during the day HamVention
 SAT night MARCO Banquet
 SUN HamVention and depart (May 22)

Questions? secretary@marco-ltd.org

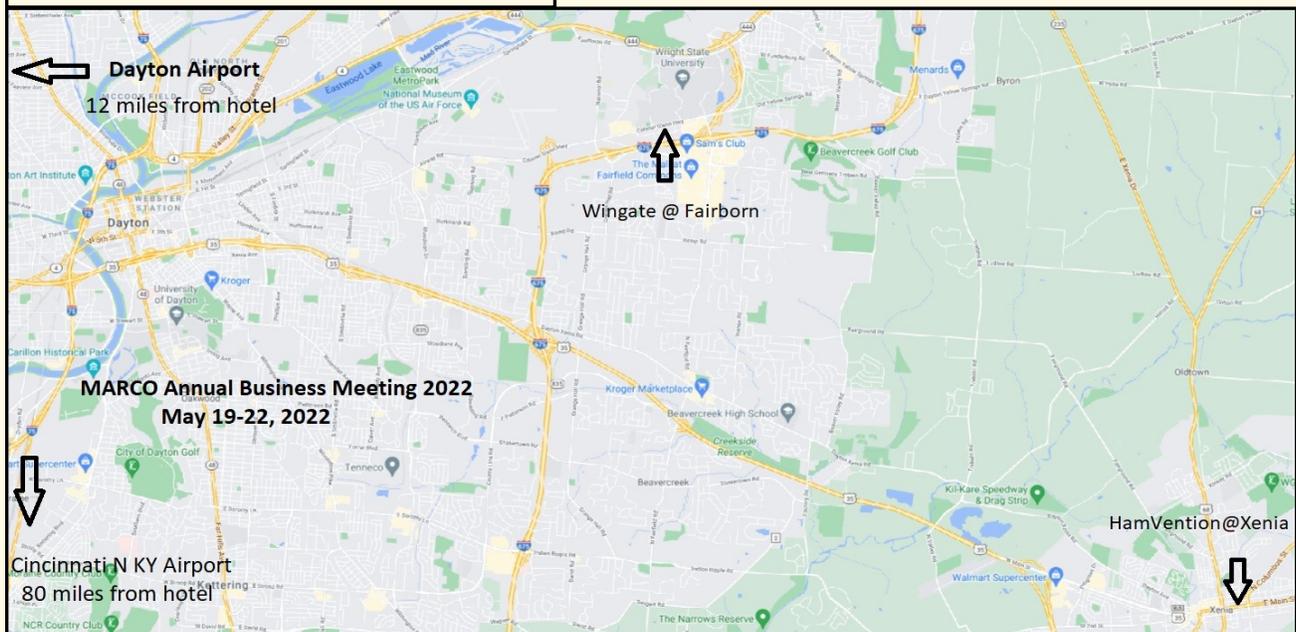
How are Dues Structured and Processed?

We have a unified dues structure in order to make tracking and processing payment of membership dues more manageable for our volunteer staffed organization. as reflected in the verbiage on following page within the membership application. There are three options for dues for all members. **One year memberships are \$25, two years \$45, and 5 years \$100, your preference of term.**

Renewal of dues are based on January 1st. New members who apply during the year will have their first year dues prorated based on a one year membership. Those applying after July 1st receive the two year membership prorated for 1 year and the appropriate number of months.

There are still two categories of membership that impart basically the same level of member benefits. In brief regular members are those members who have backgrounds in the healing arts while associate members are those who do not but have an interest in the healing arts. [See our by-laws for full details.](#) When membership applications are submitted the membership committee assigns the membership type based on the information provided in the application. .

Email membership@marco-ltd.org with any questions or comments



January 2022 MARCO Billing
Your help is needed!

Without your assistance MARCO members with January 2022 renewal dates will receive their invoices by email during December 2021.

The default billing term is two years for \$45. You have an easy and convenient way to choose a renewal term you prefer, as follows.

Without your assistance of paying dues online in October and November your volunteer secretary, treasurer, and webmaster are burdened with excessive time addressing renewals and dues. With today's technology there is a better way, and you benefit by being proactive by choosing your membership of a one, two or five year renewal, and keeping your contact information current. [Click here to see a list of which members are up for renewal.](#)

Go online and use of the membership application form. Using the pull down list select a \$25 one year membership or a \$100 five year membership. In the comment field type renewal. The membership committee will be notified and you will receive an billing statement by email which you can pay online.

<https://marco-ltd.org/join-marco-amateur-radio/>

If you do not have email and need to pay by mail use the printed form on this page. For questions secretary Jay Garlitz AA4FL contact info as listed, or by email to secretary@marco-ltd.org



This is the 131st edition of The Aether (2000-2021) since Warren KD4GUA became editor, and the fifth online only edition by Jay AA4FL

MEDICAL AMATEUR RADIO COUNCIL, LTD.
New Membership Application & Renewals

Best method process application online
<https://marco-ltd.org/join-marco-amateur-radio/>

Once you fill out the online form it will be reviewed by the membership committee. Upon approval you will be invoiced by email with a link to pay online through PayPal. If you desire to pay by check mail the application address below and we will invoice you.

Check your preference:

- One year membership \$25 (USD); prorated to year end
- Two year membership \$45 (USD); prorated, (the default billing for renewal)
- 5 year membership \$100 (USD); prorated

Name: _____

Address: _____

Health Related Career (if appropriate)

Call Sign: _____ Type License: _____

Phone: _____

email: _____

Birthday _____ (Year optional.) Member ARRL: Y / N

Written applications for membership should be sent to
 Membership Committee
 c/o Secretary Jay Garlitz
 PO Box 1333
 Hawthorne, FL 32640, USA