

PRESIDENT'S COLUMN *by Hank- W4RIG.*

We are looking forward to a good turnout for the CAARA Christmas Party at Noon on Saturday, December 8 and hope you can make it. Please contact Bill Morris to let him know what you might bring to go with the turkey, ham, and



meat balls already on the menu. You have his invitation via the CAARA Member's Email list but in case you missed it, please contact him at merc2211@yahoo.com Great food, great fellowship and a good time will be had by all.

You have received your 2019 dues notice from Dick Ober. If you have not paid your dues, please do so before January 1, 2019, so we don't need to call you or contact you individually. Your cooperation is appreciated and thanks to those that have already paid their dues.

The following by-law change will be considered at the Member's Meeting in January:

Original copy:

Members in good standing may vote either in person, by a written proxy document, or nominate a human proxy by an instrument dated not more than six (6) months before the meeting named therein, which proxies shall be filed before being voted with the Clerk or other person responsible for recording the proceedings of the meeting.

Change To:

Members in good standing may vote on motions proposed and circulated by the Board either in person

or by a written (regular mail or electronic) Proxy Statements (Previously called instruments) dated not more than six (6) months before the meeting named therein. Proxies shall be filed with the clerk or other designated person as established by the Board of Directors, before being voted. Proxy statements shall be specific to the meeting named therein, and shall include the motions being voted upon as well as the proxy submitters vote on each motion. The proxy submitter shall have the ability offer an amendment to any motion, which shall be noted and discussed prior to the Vote. The proxy submitter who offers an amendment shall note in the proxy statement what action should be taken on the vote if the amendment is not accepted.

Thanks for your consideration and have a Happy Holiday Season.

INFORMATION DESK by Dean- KB1PGH

Well we will start off with some upcoming ARRL contests in December.We have the ARRL



160 Meter CW only contest from November 30 through December 2nd. Then the 10 meter SSB and CW context is on December 8 through the 9th.Last is the CW version of the rookie round up which is on December 16th.If you got your Tech license from 2016 onwards you can participate.So there are at least a couple of events to keep you on the air.For this months topic I will cover the hobby of scanning. This will coincide with my take on the Uniden BCD 325 P2 handheld scanner also in this newsletter. It's been a while since I have covered this topic but I thought I would bring it up again.Don't forget that if you own a HT it has a wide range of receive which should include the public safety frequency bands.Especially the more expensive 2 meter, 440 MHZ ones. If your going to monitor the local repeaters why not monitor your local public safety agencies at the same

CAARA Newsletter Cape Ann Amateur Radio Association 6 Stanwood Street Gloucester, MA 01930

CAARA Newsletter is a monthly publication of the Cape Ann Amateur Radio Association (CAARA).

It is the policy of the editor to publish all material submitted by the membership provided such material is in good taste, relevant to amateur radio and of interest to CAARA members, and space is available. Material is accepted on a first come, first serve basis. Articles and other materials may be submitted by internet to Jon at jpcrockport@gmail.com. If possible, material should be in Word format. Material may also be submitted as hard copy to Jon-K1TP or any Club Officer.

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Jon Cunningham- K1TP Editor Dean Burgess- KB1PGH Reporter

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Welcome to CAARA:

CAARA, an ARRL affiliated club, operates the 2 meter W1GLO repeater on 145.130 MHz with antennas located on the ATT cell tower in the Blackburn Industrial Complex in Gloucester Massachusetts. It has an average effective radius of 60 miles, and serves Eastern Massachusetts, Cape Cod, Rhode Island, Southern New Hampshire, and maritime mobile stations.

CAARA also operates the W1GLO repeater on 224.900 located at the CAARA clubhouse.

The former W1RK 443.700 repeater is now on the ATT cell tower in the Blackburn Industrial Complex with greatly enhanced performance.

The Association is one of the few amateur radio clubs that has its own clubhouse. Located at 6 Stanwood Street in Gloucester, it includes a permanent HF station with beam, vertical/wire antennas along with an operating 2 meter packet station as well as 2/440 meter voice and 220 MHz Transceivers.

Amateur radio exams are held once a month at 10:00 AM at the CAARA clubhouse by appointment. Anyone who is considering a new license or an upgrade, is welcome to test with us. **Pre-registration necessary.** Contact the head of our VE team Rick Maybury-WZ1B if you have any questions about monthly testing.

Monthly member meetings are held on the second Saturday of each month at noon.

Each Sunday evening at 9:00 PM, the club operates a 2 meter net on 145.130. This is an open and informal net which disseminates club news and prepares operators for emergency communications work. All are invited to check into the net as club membership is not a requirement. time.You can also monitor aircraft and the marine boating frequencies.Monitoring your local police and fire should be the first step if your a disaster prepper or into amateur radio



emergency communications. It's a wise move to be aware of what is going on in your community. If you only have repeater frequencies stored in your HT your are missing the full potential of the radio. Of course you can always buy a handheld or base scanner as well.Ham Radio Outlet sells them as well as Universal radio or a local company called Scanner Master. You can also find all the public safety frequencies on www.radioreference.com . Just remember to keep your options open in amateur radio and keep in mind that there's a lot more out there to listen to other than dead FM 2 meter repeaters. There are two brands you can buy.Either the Whistler brand or the Uniden Brand.I've always had good luck with Uniden. You can buy new scanners at either Ham Radio Outlet, Universal Radio or ScannerMaster. I've been listening to scanners since I was a teenager. My father was a Fire Chief so it wasn't much of a stretch.For all the younger people reading this in the "Olden Days" scanners only had about 10 to 20 channels in them and you had to go to Radioshack to buy "Crystals" which were encased in a dime size metal case with two posts that actually had a tuned crystal inside which matched the frequency that you were trying to listen to. That was in the 70's and early 80's.Then you got the digital readouts.Back then you could hack scanners to listen out of band.When cellphones first came out they were all analog signals and you could actually listen to them on scanners with a add on device that they sold. You also could listen in on cordless phone calls and baby monitors.Can you believe that? Oh, by the way, here's a story for you and a lesson. I sometimes by ham equipment from HRO with a money order. Well a month ago I sent a money order into Ham Radio Outlet in Salem New Hampshire for a new scanner.Now usually I track stuff I send through the postal service but this time I did not since I figured how can they possibly screw up getting a envelope from Gloucester to Salem New Hampshire? Well they did.Now mind you I had a stamp on it and a return address on the back and I mailed it from the post office.So a week and a half went by and the envelope did not get to HRO.So I had to file a inquiry claim for the postal money order and I would not get a refund for 60 days. Well 3 weeks later to the day I sent the envelope it magically arrived at Salem New Hampshire HRO. So

beware if you send a check or money order to purchase things through the U S Mail.Always spend the extra bucks to priority mail so they can at least track it.Unbelievable.73 and have a Merry Christmas and a Happy New Year!

A look at the Uniden BCD 325 P2 Handheld digital Scanner

Well it had been over 20 years since I had purchased a new scanner so I went ahead and purchased the Uniden 325 P2 Digital handheld scanner. What pushed me to buy it was Rockport Police Department going over to APCO P 25 digital mode on their transmissions which make them encrypted so the analog scanners can't receive them. It is starting to happen where local police and fire departments are going digital. The city of Gloucester Police Department is spending 3 million to upgrade their radios so I wonder if they are going digital too in the future-we shall see?So back to the scanner.

The BCD 325 P2 handheld scanner feels very lightweight me. It to definitely is not built as sturdy as lets say one of Yaesu my handhelds. I`m not even sure that the 325 P2 could survive a hard drop. So if you get one of these be prepared to baby it a bit. The



display is basic but it has very nice orange backlighting. The audio from the speaker is loud and crisp. The knob works both volume and squelch via pressing the function button. This scanner has a lot of features such as "Service Search" where you can scan the air, railroad or marine frequencies just to name a few. This scanner also has a "Close Call" feature which lets you know of any transmissions in your locale. It also can receive all the weather channels and their "SAME" transmissions. This is a "Trunktracker 5" scanner which allows you to scan trunked systems such as the Mass State Police. The scanner either takes 2 alkaline AA batteries for power or you can use the two rechargeable AA batteries which

comes with it. The scanner has a battery charger built into it. You can recharge the batteries with the supplied USB cable. You can also use the USB cable for standalone power as well. So don't even think about programming the BCD 325 P2 scanner VIA the keypad. The best bet is to get the Butel ARC XT programming software to program it. If you get that software you can sign up for frequency downloads directly to this scanner VIA www.radioreference.com .You'll have to sign up and pay a few bucks but it saves so much time. So for the little I have used it everything works as it should and I could hear the digitized Rockport PD frequency loud and clear.I would recommend getting this scanner if your in the market for a new one. This is a very advanced scanner with a lot of features and capability but just be forewarned of the lightweight build quality and the programming learning curve. You can buy the Uniden 325P2 from Ham Radio Outlet or Universal Radio. The scanner currently costs \$389.00 at HRO with free shipping, it's \$20.00 cheaper at Universal Radio but you have to pay shipping so it comes out the same.

WX1AW at ARRL Headquarters will be SKYWARN Recognition Day Bonus Station

SKYWARN[™] Recognition Day (SRD) 2018 takes place on Saturday, December 1, from 0000 until 2400 UTC, and Maxim Memorial Station W1AW will be active as bonus station WX1AW, the call sign of The HQ Doods Recreational Deployment Team. Developed in 1999 by the National Weather Service (NWS) and ARRL, SRD celebrates the contributions that SKYWARN volunteers make to the NWS mission of protecting life and property. During SKYWARN Recognition Day, many special event stations will be on the air from NWS offices, contacting radio amateurs around the world.

The object of SRD is for all amateur stations to exchange contact information with as many National Weather Service stations as possible on 80, 40, 20, 15, 10, 6, and 2 meters, plus 70 centimeters. Contacts via repeaters are permitted. Stations should exchange call sign, signal report, and location, plus a quick description of the weather at your location (e.g., sunny, partly cloudy, windy, rainy, etc). EchoLink and IRLP nodes, including the Voice over Internet Protocol Weather Net (VoIP-WX), are expected to be active as well. "Amateur Radio operators comprise a large percentage of the SKYWARN volunteers across the country," the NWS announcement said. "Amateur Radio operators also provide vital communication between the NWS and emergency management if normal communications become inoperative."

W1AW Station Manager Joe Carcia, NJ1Q, said WX1AW will be active on 40 and 20 meters using SSB and possibly CW, and will monitor local VHF and UHF repeaters. WX1AW will also monitor W1AW IRLP Node 4292, and Carcia asked IRLP users to limit transmissions to the basic exchange to avoid congestion on the node.

WX1AW counts as a Bonus Station during SKYWARN Recognition Day, and contacts will be uploaded to LoTW after the event. QSL via QRZ.com include an S.A.S.E.

WX4NHC at the National Hurricane Center also will be on the air for SRD, 1300 – 1700 UTC for its 20th year of SRD participation.

Event certificates are electronic and printable from the main website at the conclusion of SRD. Submit SRD log summaries using the online submission form.

California Radio Amateur Receives Notice of Unlicensed Operation from FCC

The FCC Enforcement Bureau on November 7 issued a Notice of Unlicensed Operation (NoUO) to Technician licensee Daryl Thomas, KE6MWS, of Carmichael, California, for allegedly operating an unlicensed FM radio station.

On October 10, 2018, an Enforcement Bureau agent from the FCC's San Francisco Office responded to a complaint of an unlicensed FM station operating on 95.7 MHz in Carmichael. The agent confirmed by directionfinding techniques that a signal on 95.7 MHz was emanating from a residence, and Thomas subsequently admitted that he was the operator of this station, the FCC said in the NoThe agent measured the field strength of the signal found that it exceeded the maximum permitted level of 250 μ V per meter at 3 meters, established under Part 15.

The Notice cautioned Thomas that operation of radio transmitting equipment without a valid radio station authorization, or in violation of the Commission's RF radiation limits, constitutes a violation of the federal laws cited above and could subject the operator to severe penalties, including, but not limited to, substantial monetary fines, in rem seizure of the offending radio equipment, and criminal sanctions including imprisonment.

"Unlicensed operation of this radio station must be discontinued immediately and must not resume," the Notice warned.



This was Howard Hughes with a radio control model of the famous Spruce Goose aircraft he built....

The Hughes H-4 Hercules (also known as the Spruce Goose; registration NX37602) is a prototype strategic airlift flying boat designed and built by the Hughes Aircraft Company. Intended as a transatlantic flight transport for use during World War II, it was not completed in time to be used in the war. The aircraft made only one brief flight on November 2, 1947, and the project never advanced beyond the single example produced. Built from wood because of wartime restrictions on the use of aluminum and concerns about weight, it was nicknamed by critics the Spruce Goose,

although it was made almost entirely of birch. The Hercules is the largest flying boat ever built, and it has the largest wingspan of any aircraft that has ever flown. The aircraft remains in good condition. After being displayed to the public for almost 11 years in Long Beach, California from 1980 to 1991, it is now displayed at the Evergreen Aviation & Space Museum in McMinnville, Oregon, United States.

Operational history

Hughes returned to California during a break in the Senate hearings to run taxi tests on the H-4. On November 2, 1947, the taxi tests began with Hughes at the controls. His crew included Dave Grant as copilot, two flight engineers, Don Smith and Joe Petrali, 16 mechanics, and two other flight crew. The H-4 also carried seven invited guests from the press corps and an additional seven industry representatives. Thirty-six were on board.

Four reporters left to file stories after the first two taxi runs while the remaining press stayed for the final test run of the day.[22] After picking up speed on the channel facing Cabrillo Beach the Hercules lifted off, remaining airborne for 26 seconds at 70 ft (21 m) off the water at a speed of 135 miles per hour (217 km/h) for about one mile (1.6 km). At this altitude the aircraft still experienced ground effect. The brief flight proved to detractors that Hughes' (now unneeded) masterpiece was flight-worthy-thus vindicating the use of government funds. The Spruce Goose, however, never flew again. Its lifting capacity and ceiling were never tested. A full-time crew of 300 workers, all sworn to secrecy, maintained the aircraft in flying condition in a climate-controlled hangar. The company reduced the crew to 50 workers in 1962 and then disbanded it after Hughes' death in 1976.

Ownership of the H-4 was disputed by the U.S. government, which had contracted for its construction. In the mid-1970s, an agreement was reached whereby the Smithsonian Institution's National Air and Space Museum would receive the Hughes H-1 Racer and section of the H-4's wing, the Summa Corporation would pay \$700,000 and receive ownership of the H-4, the U.S. government would cede any rights, and the aircraft would be protected "from commercial exploitation."

Creosote by Curt- AA3JE

So far, things were going good. Running the stove during the day, I was able to heat at a rate of 30-40 degree days. So if it was 32 degrees outside (it is) it was 72



degrees in the house and I was toasty. So I felt really proud of myself.

To those who know me, and my history, this is a real danger sign.

Now I have smoke, fire, and CO detectors in the house, but they are a waste of money. For I have a wife, (SHE WHO MUST BE OBEYED).

If anything ever happens to me, SHE can get a job with the EPA. She is an order of magnitude better than any canary. She can smell one spritz of carb cleaner 30 yards away, upwind! And SHE can detect smoke better than Smoky the Bear.

For example, last week.....

"ARE YOUR SINUSES GIVING YOU TROUBLE?"

"Not at all, dear."

"YOU DON'T SMELL SMOKE?"

This is a family ritual. Held just after I have gone to bed. It means I get up, pull on my robe, and inspect the whole house for electrical faults, smoldering trash, stove problems, and itinerant homeless people barbecuing on the porch. So I make the rounds, everything seemed OK. The guys on the porch were eating take out. No problem there.

Next night.

"MY SINUSES ARE REALLY BAD. ARE YOU SURE THE STOVE IS OK?"

So I go down, open the stove to check, and a cloud of smoke billows out and sets off the fire alarm.

"WHAT ARE YOU DOING NOW!!!!!" SHE said from the porch.

"Small technical problem, not to worry!"

So I close the stove, open the doors, set up the fans, reset the smoke alarm and retrieve the family from the porch. The next morning I climb up on the roof, and as I suspected, the spark arrestor on the chimney is plugged solid. After a short and frightening slide on the icy pre-dawn metal roof, I get the thing off, and scrape a quart of creosote and soot out of it.

So I called the chimney guys.

"My spark screen is plugged up with soot."

"Oh, sorry to hear that. We generally recommend scraping it out. Doesn't draft when it's plugged up. Fill your house right full of smoke."

I was worried my molars would explode I was grinding my teeth so hard. But I was asking for help, so I held my temper.

"I already did that. Any idea why it plugged up?"

"Let me check your file."

I had no idea that the local stove and chimney shop kept a file on me. Probably a good idea. I am already well known at the local fire department.

"Ah, here is the problem. You have a 35 year old Reliant Stove. How do you load that thing?"

"Light it, cram it full of wood, close the door, repeat as needed."

"Oh, Oh no! You must not do that! You will plug up the spark screen with creosote!"

He seemed unaware that I had already found that out.

"What should I do?"

"Those old Reliant stoves have a thermostatic damper that shuts off the air when the stove gets too hot. At that point you stop burning and start smoking. Plug up the screen in a week! What you should be doing is to adjust the air feed so it is open until the stove reaches maximum temperature. You light the fire, then you feed wood a few logs at a time, so you keep the stove <u>below</u> maximum, so it's always got air. The modern stoves have a secondary air bleed, but you don't."

"So keep the fire low by just adding a few logs at a time?"

"You ever run a stove before?"

"Er....."

"Thought so. Keep an eye on the screen every week. If it plugs up again, we need to come scrape out your flue."

"Thanks"

"We'll stop by to take a peek next week. Remember! A few logs at a time, so the damper stays open. Otherwise you will be up there every month scraping that thing out, at least until the chimney fire. You want to see a nice clean flow of hot air out the flue, not lay down a smoke screen."

"Wonderful."

"Glad to be of help. Do you wish to schedule your chimney cleaning for next spring?"

SHE was in the living room and heard the conversation.

"DID HE TELL YOU WHAT TO DO?" SHE asked.

"Yes, Dear."

"YOU KNOW, YOUR LIFE WOULD BE EASIER IF YOU ASKED PEOPLE HOW TO DO THINGS BEFORE YOU SCREW UP."

Out of the mouths of wives.



PUBLIC SERVICE ROAD RACES

Sunday, December 2nd YUKANRUN - Merrython - Gloucester, MA

Why should you participate in race events?

It helps the club financially, we receive a donation for each race. You are using amateur radio to provide a needed public service to ensure the safety and smooth running of a public event in local communities.

I would but I do not have a radio.

No excuse, we have loaner radio's available with a mag mount that will work in your car just by just plugging it into the cigarette lighter socket. We have loaner hand held radios as well!

I don't have transportation.

No excuse, we will pick you up and drop you off at your house.

I do not have the time to spare for a whole race.

Well, you can commit to a time slot, for just two hours. We will bend over backwards to get you to participate.



Things that go bump in the night By Curt- AA3JE

When you buy a house, you pay for a home inspection. It is vitally important to go around after the guy, in person, and find out what he does not inspect. This is because they NEVER inspect the things that will actually fail in the first six months.

I've already spoken about the wood stove whose flue was completely choked with a carbon-creosote mass.

Yep, home inspection guy didn't even look.

So I was suspicious. I checked everything, had the oil furnace inspected, had the septic inspected, all that. In summer. Nice, warm, lots of daylight summer.

So, while sitting comfortably one winter evening, things got dark. Confident, I waited for the emergency generator to kick in.

No kicking.

"IT'S PRETTY DARK IN HERE!" said SHE WHO MUST BE OBEYED.

SHE has an infallible gift for putting her finger on the problem. Solutions? No! Problems? Yes!

Now, being a resourceful guy, I whipped out my phone, used it to find the flashlight, and was about to go out and diagnose the problem, when SHE spoke again.

"WHERE ARE YOU GOING WITH MY FLASHLIGHT? AND WILL MY IPAD STILL WORK? AND WHY IS THE TV NOT WORKING?"

Reluctantly, I turned over the one flashlight I could find, determined the emergency lamps had exactly zero oil in them, and proceeded out to the garage by cell phone light.

The big panel (2 foot by 3 foot) was completely dark. The generator was silent.

Now I KNOW about emergency generators, especially self-starting ones. If they don't work, the problem is almost always a dead battery. Painful memories of the past.....

So I needed jumper cables. I knew where they were...... I went to the truck, only to find three empty soda cans and a discarded "Happy meal" wrapper where the cables should be.

Flashback to summer.

"THIS SEAT WONT GO ALL THE WAY BACK."

"The emergency gear is behind the seat."

"I'M NOT GOING IF THIS SEAT WON'T GO BACK!"



I had put the jumper cables in the garage. Somewhere. In the dark.

I knew where the emergency gasoline lantern was, but filling a pressure lantern, lighting it, and getting it going in the heavily falling snow was not attractive. Filling it and lighting it in the garage was even less so. Sometimes the flames from that thing reach the roof.

So I searched by cell phone light, and amazingly, I found them. JUMPER CABLES! So I nestled the truck up to the generator, and opened the generator shroud. Yep, battery was right there, on cables long enough to pull it right out.

I opened the hood of the truck. No battery. At least no battery where I expected it to be, right up front by the radiator, (for easy access). Some idiot at Chevy had decided that putting the battery up by the firewall, under a plastic shroud, was just the thing to make a sexy engine bay.

Back to dark garage, find special TORX screwdriver, remove shroud, only to find that you had to PULL the battery to get to the positive terminal. Or use a tiny post on top. So I clipped on the ¼ inch post, and looked for a ground. No ground in the engine compartment. Mostly plastic or well painted metal.

Finally finding a ground, I jumped the generator, and it kicked right on. So I pulled off the jumpers, and it died. Re-connected, and it ran again. So now I had to find a tarp, and cover the truck's engine bay, and leave it connected, as the generator battery was so dead it would not charge.

I went back inside.

"TOOK YOU LONG ENOUGH. THE INTERNET IS FOULED UP. FIX IT!"

So I re-booted the modem, re-booted the TV, got them all working, and laid down.

"WHAT WAS WRONG?"

"Dead battery in the generator. I'll get a new one tomorrow."

"YOU DIDN'T REPLACE THE BATTERY? DON'T YOU REMEMBER THE LAST TIME?"

I did. In detail. I even remembered that the special, very sexy battery for that generator cost \$200. In a store 50 miles away.

Helpful hint. When a battery says, "60 month warranty", replace it at 61 months. Yes, I know it is still good, but it ain't worth it.

So check everything the damn home inspector don't look at.

Excuse me. I gotta go plow some snow.

NASA InSight lander arrives on Martian surface to learn what lies beneath

Mars has just received its newest robotic resident. NASA's Interior Exploration using Seismic Investigations, Geodesy and Heat Transport (InSight) lander successfully touched down on the Red Planet after an almost seven-month, 300-million-mile (458-million-kilometer) journey from Earth.

InSight's two-year mission will be to study the deep interior of Mars to learn how all celestial bodies with rocky surfaces, including Earth and the Moon, formed.

InSight launched from Vandenberg Air Force Base in California May 5. The lander touched down Monday, Nov. 26, near Mars' equator on the western side of a flat, smooth expanse of lava called Elysium Planitia, with a signal affirming a completed landing sequence at approximately noon PST (3 p.m. EST).

"Today, we successfully landed on Mars for the eighth time in human history," said NASA Administrator Jim Bridenstine. "InSight will study the interior of Mars, and will teach us valuable science as we prepare to send astronauts to the Moon and later to Mars. This accomplishment represents the ingenuity of America and our international partners and it serves as a testament to the dedication and perseverance of our team. The best of NASA is yet to come, and it is coming soon."

The landing signal was relayed to NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California, via one of NASA's two small experimental Mars Cube One (MarCO) CubeSats, which launched on the same rocket as InSight and followed the lander to Mars. They are the first CubeSats sent into deep space. After successfully carrying out a number of communications and in-flight navigation experiments, the twin MarCOs were set in position to receive transmissions during InSight's entry, descent and landing.

From Fast to Slow

"We hit the Martian atmosphere at 12,300 mph (19,800 kilometers per hour), and the whole sequence to touching down on the surface took only six-and-a-half minutes," said InSight project manager Tom Hoffman at JPL. "During that short span of time, InSight had to autonomously perform dozens of operations and do them flawlessly — and by all indications that is exactly what our spacecraft did."

Confirmation of a successful touchdown is not the end of the challenges of landing on the Red Planet. InSight's surface-operations phase began a minute after touchdown. One of its first tasks is to deploy its two decagonal solar arrays, which will provide power. That process begins 16 minutes after landing and takes another 16 minutes to complete.

The InSight team expects a confirmation later Monday that the spacecraft's solar panels successfully deployed. Verification will come from NASA's Odyssey spacecraft, currently orbiting Mars. That signal is expected to reach InSight's mission control at JPL about five-and-a-half hours after landing.

"We are solar powered, so getting the arrays out and operating is a big deal," said Hoffman. "With the arrays providing the energy we need to start the cool science operations, we are well on our way to thoroughly investigate what's inside of Mars for the very first time."

InSight will begin to collect science data within the first week after landing, though the teams will focus mainly on preparing to set InSight's instruments on the Martian ground. At least two days after touchdown, the engineering team will begin to deploy InSight's 5.9-foot-long (1.8-meter-long) robotic arm so that it can take images of the landscape.

"Landing was thrilling, but I'm looking forward to the drilling," said InSight principal investigator Bruce Banerdt of JPL. "When the first images come down, our engineering and science teams will hit the ground running, beginning to plan where to deploy our science instruments. Within two or three months, the arm will deploy the mission's main science instruments, the Seismic Experiment for Interior Structure (SEIS) and Heat Flow and Physical Properties Package (HP 3) instruments."

InSight will operate on the surface for one Martian year, plus 40 Martian days, or sols, until Nov. 24, 2020. The mission objectives of the two small MarCOs which relayed InSight's telemetry was completed after their Martian flyby.

"That's one giant leap for our intrepid, briefcase-sized robotic explorers," said Joel Krajewski, MarCOproject manager at JPL. "I think CubeSats have a big future beyond Earth's orbit, and the MarCO team is happy to trailblaze the way."

With InSight's landing at Elysium Planitia, NASA has successfully soft-landed a vehicle on the Red Planet eight times.

"Every Mars landing is daunting, but now with InSight safely on the surface we get to do a unique kind of science on Mars," said JPL director Michael Watkins. "The experimental MarCO CubeSats have also opened a new door to smaller planetary spacecraft. The success of these two unique missions is a tribute to the hundreds of talented engineers and scientists who put their genius and labor into making this a great day."

JPL manages InSight for NASA's Science Mission Directorate. InSight is part of NASA's Discovery Program, managed by the agency's Marshall Space Flight Center in Huntsville, Alabama. The MarCO CubeSats were built and managed by JPL. Lockheed Martin Space in Denver built the InSight spacecraft, including its cruise stage and lander, and supports spacecraft operations for the mission.

A number of European partners, including France's Centre National d'Études Spatiales (CNES) and the German Aerospace Center (DLR), are supporting the InSight mission. CNES, and the Institut de Physique du Globe de Paris (IPGP), provided the SEIS instrument, with significant contributions from the Max Planck Institute for Solar System Research (MPS) in Germany, the Swiss Institute of Technology (ETH) in Switzerland, Imperial College and Oxford University in the United Kingdom, and JPL. DLR provided the HP3 instrument, with significant contributions from the Space Research Center (CBK) of the Polish Academy of Sciences and Astronika in Poland. Spain's Centro de Astrobiología (CAB) supplied the wind sensors

For more information about InSight, visit:

https://www.nasa.gov/insight/



W1AW 2018/2019 Winter Operating Schedule

QST de W1AW

ARRL Bulletin 17 ARLB017 From ARRL Headquarters Newington CT November 6, 2018 To all radio amateurs

SB QST ARL ARLB017

ARLB017 W1AW 2018/2019 Winter Operating Schedule

Morning Schedule:

Time Mode Days

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1400 UTC (9 AM EST) CWs Wed, Fri

1400 UTC (9 AM EST) CWf Tue, Thu

Daily Visitor Operating Hours:

1500 UTC to 1700 UTC - (10 AM to 12 PM EST)

1800 UTC to 2045 UTC - (1 PM to 3:45 PM EST)

(Station closed 1700 to 1800 UTC (12 PM to 1 PM EST))

Afternoon/Evening Schedule:

2100 UTC (4 PM EST) CWf Mon, Wed, Fri

2100 " " CWs Tue, Thu

2200 " (5 PM EST) CWb Daily

2300 " (6 PM EST) DIGITAL Daily

0000 " (7 PM EST) CWs Mon, Wed, Fri

0000 " " CWf Tue, Thu

0100 " (8 PM EST) CWb Daily

0200 " (9 PM EST) DIGITAL Daily

0245 " (9:45 PM EST) VOICE Daily

0300 " (10 PM EST) CWf Mon, Wed, Fri



0300 " " CWs Tue, Thu

0400 " (11 PM EST) CWb Daily

Frequencies (MHz)

CW: 1.8025 3.5815 7.0475 14.0475 18.0975 21.0675 28.0675 50.350 147.555 DIGITAL: - 3.5975 7.095 14.095 18.1025 21.095 28.095 50.350 147.555 VOICE: 1.855 3.990 7.290 14.290 18.160 21.390 28.590 50.350 147.555 Notes: CWs = Morse Code practice (slow) = 5, 7.5, 10, 13 and 15 WPMCWf = Morse Code practice (fast) = 35, 30, 25, 20, 15, 13 and 10 WPM CWb = Morse Code Bulletins = 18 WPM CW frequencies include code practices, Qualifying Runs and CW bulletins. DIGITAL = BAUDOT (45.45 baud), BPSK31 and MFSK16 in a revolving schedule. Code practice texts are from QST, and the source of each practice is given at the beginning of each practice and at the beginning of alternate speeds. On Tuesdays and Fridays at 2330 UTC (6:30 PM EST), Keplerian Elements for active amateur satellites are sent on the regular digital frequencies. A DX bulletin replaces or is added to the regular bulletins between 0100 UTC (8 PM EST) Thursdays and 0100 UTC (8 PM EST) Fridays. Audio from W1AW's CW code practices, CW/digital bulletins and phone bulletin is available using EchoLink via the W1AW Conference Server named "W1AWBDCT." The monthly W1AW Qualifying Runs are presented here as well. The audio is sent in real-time and runs concurrently with W1AW's regular transmission schedule.

Club Activities





My first homebuilt radio

INTERESTING THINGS TO DO

1. Making a Crystal Diode Radio Receiver.

Materials required:

Piece wood, 1/2" x 41/2" x 41/2"
Piece wood, 1/2" x 1" x 31/2"
Spool wire, enamel-covered, No. 24
Piece spring brass, 3/8" x 43/8", 26 gage
Piece tubing, brass, 1/4" outside diameter (OD), 3/4" long
Spring clips, Fahnestock, 3/4" long
Wood screws, RH, steel, 3/8"-6
Wood screw, RH, steel, 11/4"-6
Washer, brass, No. 6
Crystal diode, germanium

Drill a small hole partly through the small wood block $\frac{1}{4}$ " from one end and insert one end of the spool of wire in the hole to hold it in place. Wind 100 turns of wire on the block and accure the other end of the wire by thilling a small hole through the edge of the wood block and passing the wire through it. Shellac or lacquer three sides of the completed coil, but do not he quer the side on which the slider is to bear. Glue the coil to the wood blace.



♦ 44. Crystal Diode Radio Receiver

Lay out and drill the piece of spring brass as shown on Drawing 45 and bend it to the shape shown to serve as the contact lever. Secure the contact lever to the wood base with the piece of brass tubing, washer, and long wood screw so that the pointed end will make an arc across the flat side of the

I have been developing a curriculum/class for the local Cub Scouts and plan to launch the class after Christmas. It will be a hands on class wiring up series and parallel circuits, building a crystal radio (above), and wiring a tone oscillator for CW. It will be fun!

It will lead up to a course for the Boy Scouts to earn a Merit Badge in communication which involves ham radio and direction finding.



coil. Bear down slightly on the pointed end of the contact lever and move it back and forth across the coil several times to remove the enamel covering from the wire and to permit the lever to make contact with the wire. Secure the Fahnestock clips to the wood base with wood screws and make the connections shown on the drawing. Connect the crystal diode between the antenna clip and one of the phone clips, as shown on the drawing.

Connect a pair of headphones and antenna and ground leads to the proper clips and you should be able to tune in a nearby broadcasting station by moving the contact lever across the coil. A ground connection is usually made by attaching a piece of copper wire to a water pipe and connecting the other end to the "ground" connection on the receiver. The best length of antenna can be determined by trial. A long antenna will permit the receiver to pick up more stations, but they will be difficult to separate. Choose a length for the antenna that will permit you to receive the largest number of radio stations with little or no interference between them.

2. Capacitor-Tuned Crystal Receiver.

Materials required:

- 1 Piece wood, 3" x 5"
- 1 Variable capacitor, .000365 µf
- 1 Spool magnet wire, enamel-covered, No. 28
- 1 Cardboard form, 1" diameter, 3" long
- 1 Crystal detector, cat whisker type
- 1 Crystal
- 4 Fahnestock clips

Drill four $\frac{1}{16}$ " holes about $\frac{1}{4}$ " apart and $\frac{1}{4}$ " from one end of the tubing, as shown on Drawing 47. Drill another $\frac{1}{16}$ " hole $\frac{1}{2}$ " from the same end of the tubing and insert one end of the magnet wire through the hole and out