



The Transponder



The monthly newsletter of the [Hughes Amateur Radio Club, W6HA](http://W6HA.com)
- An ARRL affiliated club -

December 11, 2020 Repeater 445.620 – PL 127.3 Web Site: <http://W6HA.com> Vol. XLVII, No. 12

***** CLUB MEETING O-T-A (MOTA)*****

Where: The club’s Repeater, and Zoom (See E-mail for ID & PW)

Location: Repeater location – “High Above LAX”

Meeting Notice: Date: Tuesday, December 15, 2020
Time: Pre-Meeting: Gather, Exchange Greetings
Meeting Call to Order: 12 to 1 PM
On-Air Roll Call (Sign-In), 11:45

Featured Presentation:

W6HA Field Day 2020 Results

By Mike, N6MDV

Hughes Amateur Radio Club

2020 Recap and 2021 Going Forward

By Howard, KE6MAK

Up Coming Events:

February, last two Saturdays, Technician Class - Tentative

June 26, 27 – Field Day 2021

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Lunch: You are on your own, but my recommendation: Order some pizza, delivered, from the club’s supplier – Tower Pizza on Lincoln Blvd – 310-410-0986, say Hughes ARC or me, (Dale) sent you.

Nets on the Club’s Repeater: (See Last page for details)

Wednesday Evenings at 7:30 PM – Hughes ARC members net, (then Simplex @ 146.55)

Thursdays about Noon (12:05 PM) Raytheon & other Emergency Communication Teams (ECT)

Other nets: See last page

Transponder Deadline for Submittal of Articles: Wednesday, before next meeting

This program is not sponsored by the El Segundo Public Library.

Club News:**Presidents Corner****Club Equipment Inventory**

Our Club Station Master, Mike, N6MHD, acting as Quartermaster, is compiling a list of all club equipment that was distributed around to various members when we lost our storage container last year. Members are Emailing their lists of material they have stored in their garages to W6HAstationManager@w6ha.com Many have completed this task already, but some may not heard of the effort at this point.

Contests for December -January**ARRL 10-Meter Contest is this Weekend**

The 2020 [ARRL 10-Meter Contest](#) is just ahead, December 12 - 13. Whether you're new to the hobby or a seasoned operator, this event offers something for radio amateurs of all experience levels, from Technician to Amateur Extra.

If you're a recently licensed ham or a Technician-class licensee who wants to get their first taste of HF contesting, remember that Technicians have CW privileges from 28.0 to 28.3 MHz and SSB phone privileges from 28.3 to 28.5 MHz.

This contest relies in part on winter E-skip, so propagation may favor higher activity during daylight hours. Be on the lookout for unexpected band openings and favorable propagation. Many operators have noticed improved conditions in recent months.

The contest runs from 0000 UTC on December 12 and concludes at 2359 UTC on December 13. Contest logs are due by 2359 UTC on December 20. [Complete rules and more information](#) are on the ARRL website.

Radio Amateurs of Canada**RAC Winter Contest**

0000 – 2359 UTC - December 19, 2020

In December each year, Radio Amateurs of Canada sponsors the RAC Canada Winter Contest. Amateurs all over the world are invited to participate.

Object: All stations, worldwide, contact other stations for 2 points per QSO, unless it's a Canadian station, then 10 points, and if it's an RAC official station, 20 points (14, all with suffix 'RAC.' There is also, a multiplier for each Canadian Province (13). Modes: CW & phone (SSB, FM, AM, etc.) Rules and more info click link above.

ARRL North American QSO Party

CW – Jan. 9, 1800 to Jan. 10, 0559 UTC

Exchange: Name, State/DC/Province/Country,

Rules: <http://www.ncjweb.com/naqp/>

SSB - Jan. 16, 1800 to Jan. 17, 0559 UTC

The North American QSO Parties are favorites of beginners and seasoned operators alike. The NAQPs are low-power only (no amplifiers allowed) which makes for a lot more breathing room on the bands. Small stations can generate very effective “runs” in the NAQP contests. Multipliers count once per-band, which makes for an exciting format, as multipliers can be “moved” from band to band. The NAQPs allow stations from all parts of North America to be in the running for the top spots. The 12 hour format allows participants to do some great contesting, yet still have time for other activities during the weekend. Participants can enter in the single op or multi-op categories and also have the opportunity to combine up to five separate single op scores into a team score.

ARRL, January VHF Contest

January 16, 1900 UTC to January 18, 0359 UTC;

CW, ph, Dig; Exchange;; 4-character grid square

Contest Objective: For amateurs in the US and Canada (and their possessions) to work as many amateur stations in as many different 2 degrees x 1 degree Maidenhead grid squares as possible using authorized frequencies above 50 MHz. Stations outside the US & Canada (and their possessions) may only work stations in the US (and its possessions) and Canada.

HARC Net News:

Hello Everybody,

We had a busy net this past Wednesday on the repeater side as well as a good number of folks who joined in the simplex net with follow on discussion. Also Thanks to Dale Birmingham for a fun Trivia Question about the Pioneer space probe!

Hoping to 'see' you again this coming Wednesday at 7:30 pm on the HARC Repeater.

And how did we fare last week?

RPTR	SMPX	Operator	Name
X	X	KN6CCW	ORLANDO
X	X	N6IET	RICK
X	X	K6LDG	JON
X	X	KM6HVK	BILL
X	X	N6MVD	MIKE
X	X	K6PNJ	PHIL
X	X	WB6MMQ	DALE
X	X	KK6MFL	ALICE
X		WA6SET	TOM
X		KM6RWQ	KEVIN
X	X	KV6R	TIM
X	X	KM6PFI	JON
X	X	KK6TDU	SCOTT
	X	N6MHD	MIKE
X	X	KE6MAK	HOWARD
14	12		
Total Participants:			15

73, Howard KE6MAK

For Sale: by former Club President Chuck, KN6H, Tower and Antennas – For Free

- Tristao 60' 3-section guyed crank up tower
- KT-34A 4-section triband beam, 10/15/20 meters
- CDE Ham III Rotor
- TRK80 Tower Raising Fixture
- Telex HyGain V-2 2-meter vertical

All construction was covered by Torrance City Permit. Everything in very good physical and electrical shape.

I also have a ham who will take it down, deliver to a new location, and set it up. It is available free if the new owner will arrange all the work with this fellow.

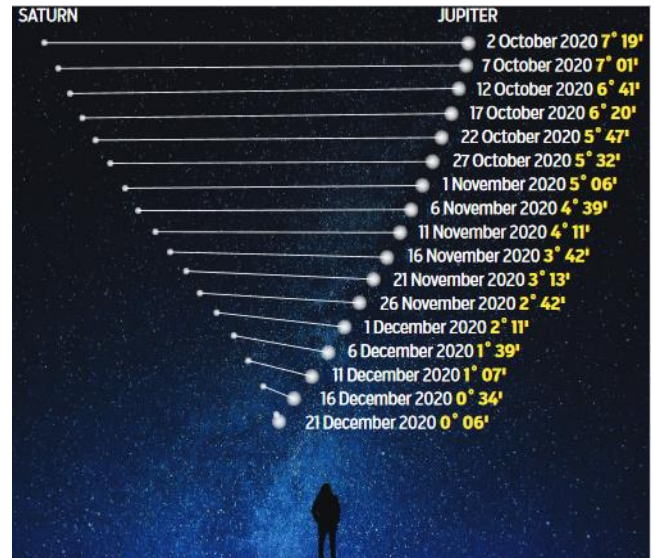
Contact Chuck KN6H (310) 325-3184 home (310) 528-7163 Cell CLobb2@aol.com

Rare 'Christmas Star' will appear in the sky for 1st time in 800 years on Dec 21

By Scott Stump

Four days before Christmas, the sky will offer a sight that hasn't been seen since the Middle Ages and may have inspired one of the Bible's most famous stories.

The two largest planets in the solar system, Jupiter and Saturn, will be so close to one another in the sky on Dec. 21 that they will appear to be fused into a single point of light.



The last time this is believed to have been witnessed was in the year 1226, according to Michael Shanahan, the director of the Liberty Science Center Planetarium in New Jersey.

"The interesting thing about these long cycles in astronomy is that they come back at very different epochs of human history," Shanahan told TODAY. "The event that happened in the Middle Ages in 1226 occurred before dawn, so there was about an hour and a half before the sun rose to see it."

The last time astronomers believe it was possibly visible was in 1623, but it occurred right at sunset and Shanahan said there is no record of anyone having noticed it because the two planets were lost in the light of the setting sun.

There also has been speculation that the conjunction of the planets formed the "Christmas Star" or Star of Bethlehem that the three wise men in the Nativity story in the Bible were thought to have seen that inspired them to ultimately travel to Bethlehem for the birth of Jesus.

"One possibility is that these two planets did join together in 7 B.C., about a year before the earliest possible time of the birth of Jesus, so that it could've been a conjunction of the two planets," Shanahan said. "If the wise men were, as we think, in fact astrologers, that could've been a thing they saw in 7 B.C. and said, 'Oh, there's a big event happening, let's go to Bethlehem and check it out.'"

Alignments between Jupiter and Saturn occur about every 20 years, but normally they are no closer than the width of two full moons. On Dec. 21, they will appear — emphasis on *appear*, as the planets are still millions of miles away from each other — just a tenth of a degree apart, which is about the thickness of a dime held at arm's length, according to NASA.

The two planets will appear close in the sky for this whole month, NASA astronomer Henry Throop told TODAY in an email.

"For people who see it a few times during the period, it is a great chance to see the motions of the planets," Throop said. "You can imagine Jupiter and Saturn as runners on a track. Jupiter is moving faster, and looking from one night to the next, people will be able to see Jupiter approaching and passing Saturn in their paths around the sun."

Shanahan had some tips for the best way to view the rare planetary alignment on Dec. 21, which is the winter solstice, meaning it's the shortest day of the year in terms of sunlight in the Northern Hemisphere.

Make sure you have a view to the southwest unobstructed by trees or buildings for a little over an hour after sunset.

You don't want to miss it, as Jupiter and Saturn will not appear this close in the sky again until 2080.

Fall 2020 Technician Licensing Class

This Fall's Zoom Technician Class was attended by 27 to 30 people, some from out of state. Ten, or so, of them have reported receiving their licenses, as of last week, even though the planned testing session at King Harbor Yacht Club was cancelled due to the increasing infection rate of the Covid-19 virus.

In response to a survey, sent out to the students, they all would recommend the class, and said they learned a lot about Amateur Radio, however only the Safety section received a perfect score in understanding. There is always room for improvement.

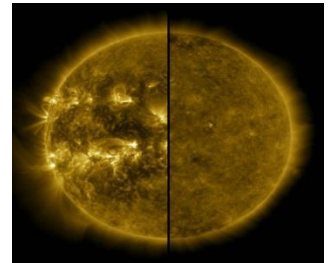
The next class is scheduled for the last two Saturdays in February. Congratulations to our instructors and Class Coordinator Mike, N6MDV, for a job well done.

Solar Cycle 25 is here

Posted by [Eleanor Imster](#) in Space | **September 16, 2020**

The sun has passed from one of its 11-year activity cycles into another. Scientists predict the new cycle – Solar Cycle 25 – will be about as calm as the previous one.

This split image shows the difference between an active sun during solar maximum (on the left, captured in April 2014)



and a quiet sun during solar minimum (on the right, captured in December 2019). That marks the beginning of Solar Cycle 25, and the sun's activity will once again ramp up until solar maximum, predicted for 2025. Image via [NASA](#)/ Solar Dynamics Observatory (SDO).

Scientists use sunspots to track solar cycle progress; the dark blotches on the sun are associated with solar activity, often as the origins for giant explosions – such as solar flares or coronal mass ejections – which can spew light, energy, and solar material into space. Learn more in the video, below.

U-Tube Video - [How to Track The Solar Cycle](#)

Bottom line: On September 15, 2020, scientists announced that a new solar cycle – Solar Cycle 25 – has begun.

Lunch Kitty Financials – for Feb., 2020

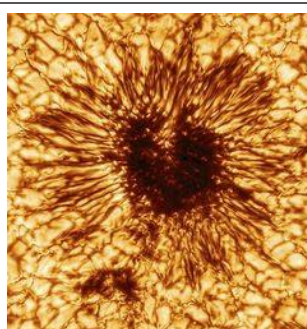
Attendance: 21

	Starting Lunch Kitty:	\$ 150.75
Expenses:	Pizza(1) & Salads	\$102.00
	Drinks: Soda: 8 @ 0.375 =	\$3.00
	Water 2 @ 0.25 =	\$0.50
	Food Total:	\$105.50 \$ 45.25
Income:	Lunch:	\$108.75 \$154.00
	<u>Room Rent-To General Funds:</u>	<u>\$00.00 \$154.00</u>
	Starting - Kitty for Mar 17, 2019 Mtg:	\$154.00
	<u>[Gain of \$3.25 - \$20.00 for room rent = Loss of 16.75]</u>	

ARRL Letter - Expects of Possible Interest

First Solar Image from Hawaii Observatory Shows Sunspot Close-Up

The world's largest solar observatory, National Science Foundation (NSF) Daniel K. Inouye Solar Telescope in Hawaii, [has released](#) its first image of a sunspot, capturing the phenomenon in striking detail. The image, taken last January, is among the first solar images of the new Solar Cycle 25. The telescope's 4-meter primary mirror will give the best views of the sun from Earth throughout Solar Cycle 25. The image was released along with the first of a series of Inouye-related articles featured in the *Solar Physics* journal. As radio amateurs know, sunspots and other solar activity can affect HF radio propagation, among other things, and they are where coronal mass ejections (CMEs) and solar flares originate. The Inouye telescope is in its final stages of construction.



The first sunspot image taken on January 28, 2020 by the NSF's Inouye Solar Telescope's Wave Front Correction context viewer. The sunspot is sculpted by a convergence of intense magnetic fields and hot gas boiling up from below.

"While the start of telescope operations has been slightly delayed due to the impacts of the COVID-19 global pandemic, this image represents an early preview of the unprecedented capabilities that the facility will bring to bear on our understanding of the sun," said David Boboltz, NSF Inouye Solar Telescope Program Director. Solar Cycle 25 is predicted to peak in mid-2025.

"With this solar cycle just beginning, we also enter the era of the Inouye Solar Telescope," said Matt Mountain, President of the Association of Universities for Research in Astronomy (AURA), the organization that manages the National Solar Observatory and the Inouye Solar Telescope. "We can now point the world's most advanced solar telescope at the sun to capture and share incredibly

detailed images and add to our scientific insights about the sun's activity."

During the peak of Solar Cycle 24, 120 sunspots were tracked. Some 115 sunspots are predicted for the peak of Solar Cycle 25.

The new image encompasses an area on the sun's surface of some 10,000 miles across -- just a tiny part of the sun, but large enough to fit Earth inside, the Inouye Solar Telescope said in its statement. Read [more](#). -- *Thanks to the National Solar Observatory and news media reports.*

Transatlantic Tests Mark 99th Anniversary 12/09/2020

On December 11, 1921, radio history was made when the signal from amateur station 1BCG in Greenwich, Connecticut, was heard in Ardrossan, Scotland, marking the first successful transatlantic radio transmission using shortwave frequencies. Between 1921 and 1924, radio amateurs experimented with transmitting across the Atlantic. Sponsored by ARRL, these Transatlantic Tests aimed to prove that shorter wavelength frequencies could propagate long distances using transmitters running less than 1 kW. The initial run of the Transatlantic Tests was a failure. For the second Transatlantic Tests, ARRL dispatched receiver designer Paul Godley, 2ZE, considered one of the best of operators the day, to Europe to listen for participating stations. His nine-tube receiver employed the latest superheterodyne technology, which he modified for the frequencies used.

In one of those historical coincidences, during his voyage to England, Godley met **Harold Beverage**, who convinced him to use a specially designed, highly sensitive, and directional 1,300-foot antenna, referred to as the Beverage Antenna.



During a pre-event dinner arranged by his British hosts, Godley also met wireless pioneer Guglielmo Marconi, who asked him to remind US amateurs that "I, too, am but an amateur."

Over the course of the test period, more than two dozen stations were heard between 230 and 235 meters, roughly 1.3 MHz in what is now the AM broadcast band. Some utilized spark-gap transmitters, others employed vacuum-tube CW transmitters. The one heard most consistently was a CW transmitter operated by six members of the Radio Club Of America — Ernest Amy, 2VK; Edwin Armstrong; George Burghard, 2SS; **Minton Cronkhite**, 1BCG; John Grinan, NJ2PZ, and Walker Inman, 2BGM. From 1BCG, they transmitted their message at 2152 UTC (then GMT) on December 11, 1921:

"No.1 de 1BCG. W-12 [Words 12], New York, Date 11/12-21, To Paul Godley, Ardrossan, Scotland, Hearty Congratulations, Burghard, Inman, Grinan, Armstrong, Amy, Cronkhite"

Reporting on the accomplishment, ARRL Secretary Kenneth B. Warner, 1EH, declared, "Excelsior!" The designation "test" evolved to "contest." Inaugural contests include Field Day in 1934, the International Test in 1927, Sweepstakes in 1930, and the ARRL DX contest in 1932. — *Thanks to Clark Burgard, N1BCG, and Mike Marinaro, WN1M*

Launch Window for AMSAT's RadFxCubeSat-2 / Fox-1E CubeSat Opens on December 19

The launch that will carry AMSAT's RadFxCubeSat-2/Fox-1E CubeSat into orbit could come as early as this month. Virgin Orbit has announced that the launch window for its LauncherOne Launch Demo 2 mission, which will carry the AMSAT spacecraft into orbit, opens on December 19. RadFxCubeSat-2 is the fifth and final Fox-1 satellite built by AMSAT.



Like RadFxCubeSat/Fox-1B (now AMSAT-OSCAR 91) the RadFxCubeSat-2/Fox-1E CubeSat is a partnership opportunity between Vanderbilt University and

AMSAT and will carry a similar radiation effects experiment, studying new FinFET technology.

The RadFxCubeSat-2 spacecraft bus is built on the Fox-1 series, but Fox-1E features a linear transponder upgrade to replace the standard FM transponder in the Fox-1A - Fox-1D projects. In addition, the uplink and downlink bands are reversed from the previous Fox satellites in a mode V/u (J) configuration using a 2-meter uplink and 70-centimeter downlink.

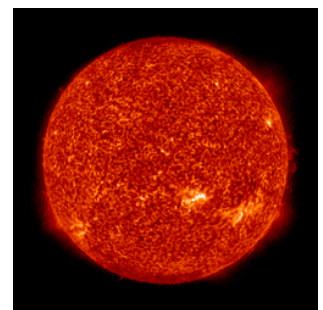
The telemetry downlink will be 435.750 MHz. The inverting linear transponder uplink will be 145.860 MHz - 145.890 MHz. The inverting linear transponder downlink will be 435.760 MHz - 435.790 MHz.

The telemetry downlink features a 1,200 bps BPSK channel to carry the Vanderbilt science data, in addition to a 30 kHz wide transponder for amateur radio use. Telemetry and experiment data can be decoded using [FoxTelem](#) version 1.09 or later.

"Participation in telemetry collection by as many stations in as many parts of the world as possible is essential, as AMSAT Engineering looks for successful startup and indications of the general health and function of the satellite as it begins to acclimate to space," AMSAT said in announcing the possible launch window. "AMSAT will send a commemorative 3D-printed QSL card to the first station capturing telemetry from RadFxCubeSat-2." -- *Thanks to AMSAT*

The K7RA Solar Update

Tad Cook, K7RA, Seattle, reports: Solar activity quieted this week. The average daily sunspot number declined from 57.6 to 28.9, and average daily solar flux from 108.1 to 91.9. Average daily planetary A index went from 6.4 to 4.4, and average daily middle latitude A index went from 5.6 to 3.1.



Predicted solar flux for the next month is 82 on December 10 - 11; 84 on December 12 - 13; 80 on December 14 - 16; 82 and 88 on December 17 - 18; 92 on December 19 - 24; 94 on December 25 - 28;

96, 94, and 92 on December 29 - 31; 90 on January 1 - 4; 88 on January 5 - 7, and 86 on January 8 - 11.

The forecast for planetary A index shows 40 and 25 on December 10 - 11; 8 on December 12 - 13; 5 on December 14 - 17; 12, 20, and 8 on December 18 - 20; 5 on December 21 - 22; 8, 10, and 8 on December 23 - 25; 5 on December 26 - January 5; 10 and 8 on January 6 - 7, and 5 on January 8 - 13.

A [coronal mass ejection](#) on December 7 was expected to spark a geomagnetic storm on December 10 -- 11, which explains why the planetary A index is predicted at 40, 25, 8, and 8 on December 10 -- 13.

The [ARRL 10-Meter Contest](#) this weekend is much anticipated because of recent increased solar activity. I'm hoping for the best!

Sunspot numbers for December 3 - 9 were 40, 38, 42, 25, 35, 11, and 11, with a mean of 28.9. The 10.7-centimeter flux was 102.9, 95.8, 99.9, 90.9, 89.5, 82.4, and 82.1, with a mean of 91.9.

Estimated planetary A indices were 3, 2, 5, 6, 3, 5, and 7, with a mean of 4.4. Middle latitude A index was 1, 1, 4, 4, 2, 4, and 6, with a mean of 3.1.

A comprehensive K7RA Solar Update is posted Fridays on the ARRL website. For more information concerning radio propagation, [visit](#) the ARRL Technical Information Service, [read](#) "What the Numbers Mean..." and [check out](#) K9LA's Propagation Page.

A propagation bulletin [archive](#) is available. For customizable propagation charts, visit the [VOACAP Online for Ham Radio](#) website.

[Share](#) your reports and observations

Just Ahead in Radiosports

Dec. 12, 3 -- [ARRL 10-M Contest](#) (CW, ph)

Dec. 12, 4 -- PODXS 070 Club Triple Play Low Band Sprint (Digital)

Dec. 12, 3 -- TRC Digi Contest

Dec. 12, 3 -- SKCC Weekend Sprintathon (CW)

Dec. 12, 3 -- International Naval Contest (CW, ph)

Dec. 13 -- QRP ARCI Holiday Spirits Homebrew Sprint (CW)

Dec. 13 - CQC Great Colorado Snowshoe Run (CW)

Dec. 14 -- 4 States QRP Group 2nd Sunday Sprint (CW, ph)

Dec. 16 -- NAQCC CW Sprint

Dec 19 – RAC Winter Contest, CW, ph

Dec. 21 – K1USN Slow Speed Test

Dec. 20 – [ARRL Rookie Roundup](#), CW

Jan. 9 – [North American QSO Party](#) – CW

Jan 16 - [North American QSO Party](#) – SSB

Jan 16 – [AARL January VHF Contest](#)

See the [ARRL Contest Calendar](#) for more information. For in-depth reporting on Amateur Radio contesting, subscribe to [The ARRL Contest Update](#) via your ARRL member profile email preferences.

All dates & times are UTC.

ARRL Section, State and Division Conventions / Hamfest

[in the West or near members everywhere:](#)

Note: Many conventions and hamfests have been canceled or postponed due to the coronavirus pandemic. Check the [calendar of canceled events](#) on the ARRL website.

No Conventions listed this Covid-19 Month or for the next year!

Find conventions and hamfests [in your area](#).

In Brief...

Tennessee Centenarian Receives ARRL Centurion Award

Elizabeth "Betty" Oakberg, N4LZL, of Oak Ridge, Tennessee, recently received the ARRL Centurion Award. Now 102, Oakberg started in radio as a shortwave listener



(SWL) and earned her Novice-class license in the late 1970s, when she neared retirement as an elementary school teacher. She subsequently upgraded to her Amateur Extra-class license. During her more active hamming years, she earned Worked All States (WAS), made the DXCC Honor Roll, received the Austrian OE-100 Award, and contacted the Mir space station, among other achievements. A longtime member of the Oak Ridge Amateur Radio Club, she served as an officer for several years and regularly participated in ARRL Field Day. She was also a frequent

check-in with the American Foreign Service Net. Oakberg received the ARRL Centurion Award plaque in November, and once pandemic restrictions ease, a formal presentation will be arranged. -- Thanks to John Oakberg, NK4N

Announcements

- **The Radio Society of Great Britain (RSGB)** has announced a Get on the air for Christmas ([GOTA4C](#)) initiative, shared on social media with the hashtag #GOTA4C, December 19 - January 9. "[I]t will bring together a few activities that radio amateurs can participate in over the holiday period," RSGB said.
- **International Space Station (ISS)** - Radio amateurs and others may listen for ham radio activity from the ISS by monitoring **145.800** MHz.
- **Amateur Radio on the International Space Station (ARISS)** says its InterOperable Radio System (IORS), launched in March, has now been in space about 6,655 hours and traveled some 116.5 million miles, according to the Arduino-based Space Radio clock by Kerry Banke, N6IZW, of the ARISS Hardware Team.

**The U.S. Air Force Is Tearing Down a Giant Spy Antenna
'Elephant cages' are a dying breed**



The U.S. Air Force has started tearing down a massive antenna in Japan. Once used to scan airwaves around the world, these systems have become obsolete as countries change how they communicate.

On Oct. 15, workers began removing the antenna—designated AN/FLR-9—at Misawa air base in Japan. The demolition has been on the flying branch’s agenda for [more than a year now](#).

“Technology and fiscal constraints have driven Misawa Security Operations Center to seek new ways of doing business,” Col. Joseph Winters [told](#) Air Force reporters. The antenna—which is almost 1,500 feet wide—should be completely gone by the end of 2015.

Misawa’s system was one of eight AN/FLR-9s the Pentagon built in the United States, Europe and the Pacific during the 1960s. The site actually has three concentric rings of smaller antennae, hence the popular “elephant cage” nickname.

Chief Master Sgt. Joseph Rabig came up with the moniker for security purposes, says D.D. Kavanagh, a retired member of the flying branch’s Pacific Electronic Security Division, according to the [Federation of American Scientists’](#) Website.

“Joe came up with the explanation that it was an ‘elephant cage.’ He maintained that was their purpose and justified the explanation by pointing out [that] ‘they work pretty well, don’t they? You don’t see any elephants running around loose, do you?’”

The Air Force, Army and Navy, in cooperation with the National Security Agency, operated the elephant cages. The giant antennas could scoop up high-frequency radio transmissions from thousands of miles away.

The setup exploits the basic physics of high-frequency communications to pull off this feat. To reach long distances, radio waves bounce off of the ionosphere in the upper atmosphere.

America’s huge antennas would intercept those transmissions as they fell back to Earth. With the AN/FLR-9 at Misawa, the NSA could keep tabs on Soviet, Chinese and North Korean movements in the Pacific and listen in on their conversations.

But after almost 50 years, the elephant cages simply can’t keep up anymore. And the NSA and the military might not be particularly sad to see them go in the end.



For one, this method of grabbing intelligence has always been fickle. A signal could easily weaken after ricocheting off hills or mountains or due to changes in temperature or even just heavy cloud cover.

The Pentagon has likely been able to substitute the Air Force's [RC-135 and U-2 spy planes](#), as well as satellites, for the ground antennas, Tim Brown told War Is Boring.

With the U-2 possibly retiring soon, the Pentagon is also interested in sending drones to scan for enemy transmissions. The Air Force and Army both want signals intelligence packages for unmanned aircraft such as the Global Hawk and Gray Eagle.

But even more importantly, China and North Korea have seen “a general trend” away from high-frequency transmissions, Dr. Jeffery T. Richelson, a senior fellow at the National Security Archive, tells War Is Boring.

Brown agrees with this assessment. “The [elephant cages] are obsolete, mainly because the Cold War is over, and the enemy doesn't really use long range HF [communications] anymore.”

Richelson and Brown both suggest that Beijing and Pyongyang have no doubt moved on to buried cables or to higher frequencies than the AN/FLR-9s can handle. Fiber optic lines, for instance, are a great replacement “A, because the bandwidth is huge and B, it's less susceptible to intercept,” Brown notes.

As a result, “it is not clear there is anything required to replace the FLR-9 HF capability,” Richelson adds. “Operational security as well denial and deception—e.g., underground facilities—can limit what those systems detect.”

And this goes for America's other aerial spies, as well. Intelligence agencies are probably relying heavily on traditional tradecraft to get at communication lines tucked away from prying eyes.

“The CIA-NSA joint venture, the [‘Special Collection Service’](#) goes out and physically taps the fiber optic cables, bribes and blackmails embassy code room workers, etc.,” according to Brown. “It's always easier to steal codes than to break them.”

Really, the removal of the last elephant cages is “a reflection of the changes in communications methods that have occurred over the last several decades,” Richelson says. After the antenna in Japan goes, the Pentagon will only have one AN/FLR-9 left at Joint Base Elmendorf-Richardson in Alaska.

“The elephant cages, like elephants, are rapidly going extinct,” Brown says.

Submitted by Steve, KI6GUY, which he indicated, is historical, but of possible interest to HF Hams.

Select DX News (QRV = Ready! or Are you Ready?)
ARLD050 DX news

This week's bulletin was made possible with information provided by The Daily DX, the OPDX Bulletin, 425 DX News, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

AFGHANISTAN, T6. Robert, S53R is QRV as T6AA from Kabul **until December 15**. Activity is in his spare time. QSL to home call.

ROTUMA, 3D2. Tony, 3D2AG is QRV as 3D2AG/p **until mid-January 2021**. Activity is on 160 to 6 meters, including 60 meters, using CW, SSB, RTTY and FT8. QSL #1

SENEGAL, 6W. Look for a group of operators to be QRV as 6V1A from Goree Island, IOTA AF-045, from **December 18 to 20**. Activity will be on various HF bands using CW and SSB. QSL#4

ZAMBIA, 9J. Rob, IK2LON is QRV as 9J2RD while **living in Ndola. [Listed Dec. 2020 – ed]** Activity is on the HF, VHF and UHF bands using SSB, RTTY and FT8. QSL via IZ8CCW.

SPAIN, EA. Special event station AO50UPC will be QRV **from December 15 to 30** to celebrate the 50th anniversary of the Polytechnic University of Catalonia. Activity is on the HF bands. QSL #2

ITALY, I. Members of the ARI Club of Grosseto are QRV with special event station IO5CNPP **until December 20** in remembrance of the Heroes of Chernobyl. QSL via IZ5RHU.

OGASAWARA, JD1. Harry, JG7PSJ will be QRV as JD1BMH from Chichijima Island, IOTA AS-031, from **12/14/20 to 1/9/21**. Activity will be on 40 to 10 meters using CW, SSB & RTTY. QSL#1

JAN MAYEN, JX. Erik, JX2US has been active on 20 meters CW between 1300 and 1500z. **[listed 12/2020 – ed]** QSL via LA2US.

LITHUANIA, LY. Valerijus, LY2QT is QRV as LY20XMAS during **December for the Christmas holiday**. QSL #1

PERU, OA. Members of the Radio Club Peruano

are QRV with special event call OA900 **until the end of 2020** to celebrates the club's 90th anniversary. QSL via OA4O.

FINLAND, OH. Special event station OH9SCL is QRV from Lapland during the **month of December**. QSL via LoTW.

GREECE, SV. Members of the Radio Amateur Association of Greece are QRV with special event call SX2500S **during December**, 2020 to commemorate the Battle of Salamis. Activity is on the HF bands using CW, SSB & digi modes. QSL#3.

MARSHALL ISLANDS, V7. Neil, WD8CRT is QRV as V73NS from Kwajalein Atoll, IOTA OC-028. Activity is on 20, 17 and 15 meters using CW. **Length of stay: unknown. [12/2020 – ed]** QSL via W3HNK.

CHINA, BY. Dale, BA4TB is QRV as B9/BA4TB from Xining city in the Qinghai province. **[Listed Nov. '20 – ed]** QSL to home call.

SINGAPORE, 9V. James, 9V1YC has been active using FT8 on 30 meters. **[Listed Nov. '20 – ed]** QSL via W5UE.

DJIBOUTI, J2. Rene, DL2JRM will be QRV as J28XX. Activity is on 80 to 10 meters using CW and SSB. **[Listed Nov. '20 – ed]** QSL to home call.

FEDERAL REPUBLIC OF GERMANY, DA. Special call sign DK70DARC is active until the **end of Dec. '20** to celebrate the 70th anniversary of Deutscher Amateur Radio Club. QSL #3

Long Term: (longer than 1 month)
CHATHAM ISLANDS, ZL7. Stuart, ZL3STU has moved to Canterbury on the Chatham Islands (OC-038) & uses call ZL7STU on 80 to 6M using SSB and FT8. **(Listed July 2020 – ed)** QSL for both calls via M0OXO.

Until the End of 2020

UNITED NATIONS, 4U. Special event station 4U75UN is QRV **until the end of 2020** to celebrate the United Nation's 75th anniversary. QSL via HB9BOU.

NETHERLANDS, PA. Henk, PE4T is QRV as special event station PE75T from Peize **until Dec.**

31 to celebrate the 75th anniversary of the Dutch Radio Amateur Organization Veron. Activity is on the HF bands and with FT8. QSL#2

DENMARK, OZ. OZ200EM is on the air until the **end of the year (2020 – ed)**, honoring the memory of Hans Christian Orsted, who discovered the principle of electromagnetism 200 years ago. QSL via OZ1ACB.

THE NETHERLANDS, PA75. Special event station PA75WSN will be active until the **end of the year [2020 – ed]** to commemorate the 75th anniversary of the liberation of The Netherlands in World War II. Activity will be on various HF and UHF bands using SSB & Dig. Modes. QSL #3 or #1. See QRZ.com for details.

MEXICO, XE. Ramon, XE1KK is QRV with special call 6E6E until the **end of 2020**. Activity is on 160 to 6 meters using mostly FT8 & FT4. This includes being active on the upcoming CQ World Wide DX Phone contest. QSL via LoTW.

MEXICO, XE. Members of the Radio Club de Radio Aficionados Hidrocalidos are QRV with special event call 4A50CRH **until the end of 2020** to celebrate the club's 50th anniversary. Activity is on 160 to 6 meters using CW, SSB, FM and digital modes. This includes some Satellite activity as well. QSL via XE2AU.

ANTARCTICA. Station KC4USV located at the McMurdo Station, IOTA AN-011, has been QRV on 20 meters using SSB. **[Listed June 2020-ed]** QSL via K7MT.

NORWAY, LN1. The Norwegian National Guard's Radio Amateur Club (LA1V) is QRV as LN1V **during all of 2020** to mark the 75th anniversary of the liberation of Norway at the end of World War II. Operations will be on 160 meters to 70 cm (including 60 and 4 meters) using CW, SSB and digital modes. QSL via LA4LN, either direct or via the Bureau, but no electronic QSLs.

NETHERLANDS, PA. Special event station PI75VERON is QRV until the **end of 2020** to celebrate the 75th anniversary of the Dutch National Club VERON. QSL via PA1AW.

FEDERAL REPUBLIC OF GERMANY, DA. Members of the DARC club of Pulheim are QRV with

special event call sign DL40PUL **during 2020** to celebrate the club's 40th anniversary. QSL #3.

A year-long special event will honor Beethoven. German special event station [DL250BTHVN](#) will be active **until December 17, 2020**, to honor the 250th anniversary of the birth of famed composer Ludwig van Beethoven. The Beethoven anniversary year will take place under the auspices of Germany's Federal President Frank-Walter Steinmeier. Beethoven was born in December 1770 in Bonn, Germany, and lived there for the first 22 years of his life. QSL #1 or #3.

Until 2021

ANTARCTICA, RI1. Alexander, RX3ABI will be active as RI1ANM from the Russian Mirny Station in Queen Mary Land, (AN-016), on the coast of the Davis Sea, **until early 2021**. Activity will be on HF bands during his spare time. QSL#1

JAPAN, JA. Members of the Yoneyama HF Club (JR0YHF) will be operating special event station 8JOK in celebration of the 80th anniversary of Kashiwazaki city in Niigata Japan, until **Mar. 31, 2021**, on 1.8 MHz through 5.7 GHz.

SOUTH SUDAN, Z8. James, Z81C is QRV from Juba while working for a non-governmental organization. **[until March 2021-ed]** Activity is mostly on SSB. QSL #2

CHATHAM ISLANDS, ZL7. Operators Chris, ZL2DX and Catherine, ZL2QT are QRV as ZL7DX and ZL7QT, respectively, from Waitangi, IOTA OC-038, **(until July 2021 – ed)**. Activity is on the HF bands and 6M EME. QSL via M0OXO.

NICARAGUA, YN. Trevis, YN7ZTR is a missionary working in Gaunacastillo for the next two years. He is active in his spare time. **[Until 2022-June-ed]** QSL via LoTW.

LAOS, XW. Mike, XW2DX is QRV from Vientiane and is here for the next 5 years. **[Until August 2025-ed]** Activity is on 20, 15 and 10 meters. QSL via RM0L.

Notes:

1. QSL direct to home call.
2. QSL via operators' instructions.
3. QSL via bureau
4. QSL via LoTW
5. QSL via Instruction on QRZ.com
6. QSL via eQSL
7. QSL via QRZ.com
8. QSL via ClubLog

AMATEUR RADIO LICENSING EXAMS:

TRW Swap meet at the corner of Aviation Blvd and Marine Avenue in Redondo Beach. 10AM in the Northrop cafeteria. Always the last Saturday of the month – no reservation is required.

(www.W6TRW.com) [inactive - Covid-19-ed]

ARRL Announces Free Exam Review Website

The ARRL has launched a web site that allows users to take randomly generated practice exams using questions from the actual examination question pool. [ARRL Exam Review for Ham Radio™](#) is *free*, and users do *not* need to be ARRL members. The only requirement is that users must first set up a site login (this is a different and separate login from your ARRL website user registration).

Other Free Practice Exam Sites:

<http://aa9pw.com/radio/technician/>

<http://www.eham.net/exams/>

This Practice Exam site Requires Registration

<https://www.qrz.com/hamtest/>

ARRL LAX Section Officers:

Section Manager: Diana Feinberg, AI6DF

PO Box 4678

Palos Verdes Peninsula. Ca 90274-9618

AI6DF@arrl.org or 310-544-2917

Asst. Section Manager: Mark Chung, KK6SMD

mchung@prodigy.net

LAX Section Traffic Mngr: Kate Hutton, K6HTN

For Radiogram formatting instructions go to

www.ARRLAX.org .

RF Safety – Power Density Web site:

http://hintlink.com/power_density.htm

Links: TRW license test

<http://w6trw.com/index.php/amateur-radio-license-testing/>

PodCast – Amateur Radio News

(The above is a link to an MP3 audio feed)

On-Line Stores / suppliers:

<http://www.impulseelectronics.com/> PowerPole

<https://elkantennas.com> - LPA VHF/UHF Ant.

<http://hamcity.com> - Local – Conn, cables, ants.

<http://www.aesham.com/> - Ham Radio Outlet

<http://www.dxengineering.com>

<http://www.gigaparts.com/>

<http://www.AllElectronics.com> – Parts

<http://TheWireman.com> – Ant. Coax, UV Dacron

ARRL <http://arrl.org>

CQ Mag [http://store.cq-amateur-](http://store.cq-amateur-radio.com/product-category/books/)

[radio.com/product-category/books/](http://store.cq-amateur-radio.com/product-category/books/)

BGMicro <https://www.bgmicro.com/>

HARC Past & Current Presidents

1973 Doug Erny, AK7E (former W6NPD)

1974 Orson Just, K6JGV, sk

1975, 76 Tom Rothwell, K6ZT, sk

1977 Tom McInnis, WB6ZEB, sk

1978,79 Sam Weise, W6LXR

1980 Bob Poole, AJ6F

1981 Russ Sanford, WA6NQQ, sk

1982, 83 Chuck, KN6H

1984 John Bennett, WD6BAI

1985 Scott Fraser, KN6F

1986, 87 Ed, K6GQV

1988 John, WA6LOD

1989, 90 John, KJ6AW

1992 Bruce, WB6ARE

1993 Rick, KD6DYN

1994

1995,6,7,8,9 Brian, AB6UI

2000,1,2 Bruce, W6BLS

2004,5,6 Ed, N6EG

2007 - 2014 Barry, KG6NWJ

2015, 16, 17 – Dale Birmingham, WB6MMQ

2018-19 Mike, N6MDV (Current President)

2020 – Brian, AB6UI (President Elect)

Southern California Band Plans:

Tasma – 2 Meters

<http://www.tasma.org/TASMA-2m-Band-Plan.pdf>

220 MHz Spectrum Mngmnt Assoc. of So. Ca

220SMA BAND PLAN

<http://www.220sma.org/bandplan.htm>

SCRRBA (Southern California Repeater and Remote Base Assoc.) – 440 mHz (70 cm) and up

<http://www.scrba.org/BandPlans/BandPlans.htm>

W1AW Operating Schedule (Edited - Note: Local time stays the same, UTC varies w/DST)

Morning Schedule:

Winter	Summer	Local	Mode	Days
1400 UTC	1300 UTC	(6 AM PDT)	CWs	Wed, Fri
1400 "	1300 UTC	(6 AM PDT)	CWf	Tue, Thu

Afternoon/Evening Schedule:

2100 UTC	2000 UTC	(1 PM PDT)	CWf	Mon, Wed, Fri
2100 "	2000 "	"	CWs	Tue, Thu
2200 "	2100 "	(2 PM PDT)	CWb	Daily, CW Bulletin, 18 WPM
2300 "	2200 "	(3 PM PDT)	DIGITAL	Daily, Digital Bulletin
0000 "	2300 "	(4 PM PDT)	CWs	Mon, Wed, Fri
0000 "	2300 "	"	CWf	Tue, Thu
0100 "	0000 "	(5 PM PDT)	CWb	Daily, CW Bulletin, 18 WPM
0200 "	0100 "	(6 PM PDT)	DIGITAL	Daily, Digital Bulletin
0245 "	0145 "	(6:45 PM PDT)	VOICE	Daily, Voice Bulletin
0300 "	0200 "	(7 PM PDT)	CWf	Mon, Wed, Fri
0300 "	0200 "	"	CWs	Tue, Thu
0400 "	0300 "	(8 PM PDT)	CWb	Daily, CW Bulletin, 18 WPM



	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:

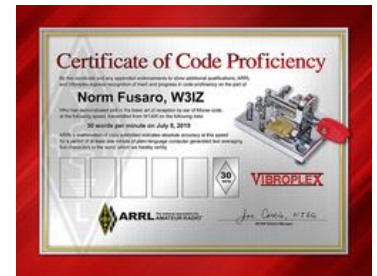
- CWs = Morse Code practice (slow) = 5, 7.5, 10, 13 & 15 WPM
- CWf = Morse Code practice (fast) = 35, 30, 25, 20, 15, 13 & 10 WPM
- CWb = Morse Code Bulletins = 18 WPM

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 alternate speeds.

W1AW Qualifying Runs: [for more info: www.arrl.org/qualifying-run-schedule]

Starting in Dec. W1AW will transmit Qualifying Runs up to 16 times per month.
 Time is PST: [10 – 35 wpm – **Bold 35 – 10 wpm**] – on CW Frequencies listed above

Month	6 AM	1 PM	4 PM	7 PM	6 AM	1 PM	4 PM	7 PM	6 AM	1 PM	4 PM	7 PM	6 AM
Dec.	12/17	12/21	12/16	12/23	12/22	12/15		12/28					12/18 & 30
Jan.		1/4	1/5	1/7	1/8	1/12	1/13		1/14				1/15 1/19
Jan.		1/22	1/21	1/20				1/25	1/27	1/28	1/29		



West Coast Qualifying Runs:

Sat. Dec. 12 @ 2 PM PST (2200 UTC) on 3581.5, 7047.5 & 14047.5 & 18097.5 kHz by K6KPH, 10 – 40 WPM
Wed. Jan. 27 @ 9PM PST (0500 UTC Jan. 28) on 3590 & 7047.5 kHz by K9JM, 40 – 10 WPM

Earn your Code Proficiency certificate by legibly copying at least 1 minute of text by hand and mailing the sheet to: W1AW Qualifying Runs, 225 Main St., Newington, CT 06111. Include \$10 (check or money order) if this is a submission for your initial Code Proficiency certificate; \$7.50 if you are applying for an endorsement (available for speeds up to 40 wpm). Your test will be checked against the actual transmissions to determine if you have qualified.

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, also. The audio (real-time) runs concurrently with W1AW's regular transmission schedule.

K1USN Radio Club Announces New Weekly Slow-Speed CW Contest

The K1USN Radio Club in Massachusetts is launching a new weekly, hour-long, slow-speed contest, the [K1USN SST](#). The inaugural session will be on **Sunday, September 13, 2020 4 to 5 PM PST (0000-0100 UTC)** Suggested frequencies: 3.532 - 3.539; 7.032 - 7.039 MHz, & 14.032 - 14.039 MHz. Exchange name & s/p/c. Read [more](#).

The Straight Key Century Club (SKCC): http://www.skccgroup.com/member_services/beginners_corner/
 SKCC Beginner's Corner - Monthly Straight Key Night (SKN) is on the **1st of each month. It is not a contest. No logs are submitted.** The Elmer frequency is **7114 KHz**. It's a safe haven for CW newcomers. Elmers are encouraged to monitor the frequency and work the CW beginners, some of whom may have had a license for many years.

2020 – 2021 CLUB OFFICERS**Elected Officers:**

PRESIDENT:	Brian, AB6UI	President at W6HA.com
VICE PRESIDENT:	Howard, KE6MAK	W6HA_VicePresident at W6HA.com
SECRETARY:	James, W6JIC	W6HA at W6HA.com
TREASURER:	Paul, KK6TAC	Treasurer at W6HA.com
STATION MANAGER:	Mike, N6MHD	W6HASTationMgr at W6HA.com
Immediate PAST PRES.:	Mike, N6MDV	W6HA at W6HA.com

Committees:

NEWSLETTER EDITOR:	Dale, WB6MMQ	W6HA_Editor at W6HA.com
QUARTERMASTER:	Mike, N6MHD	W6HASTationMgr at W6HA.com
WEB MASTER:	Mike, N6MDV	W6HA at W6HA.com
MEMBERSHIP:	Dale, WB6MMQ	W6HA at W6HA.com
SCRRBA REP:	Ray, WA6NVL	WA6NVL at ARRL.net
MEETING HOST:	Dale, WB6MMQ	W6HA at W6HA
Asst. Host:		W6HA at W6HA
FoTL Conf. Rm. Coor:	Judi, KI6TKT	
FIELD DAY :	Mike, N6MDV, Brian, AB6UI	FieldDay at W6HA.com
MEMBERSHIP:	Dale, WB6MMQ	W6HA at W6HA.com
NET COORDINATOR:	Howard, KE6MAK	W6HA at W6HA.com
YAHOO GROUPS MOD:	Richard KM6FP	W6HA at W6HA.com (http://groups.yahoo.com/w6ha)
CLASS MODERATOR:	Mike, N6MDV	W6HAClass at W6HA.com

RAYTHEON Coordinators:

CLUB REPEATER: W6HA 445.620 MHz (-) PL 127.3 Hz Location: Bldg. R1 roof
Packet (node :hughes) 145.61s W6HA

HARC Repeater Nets: Wednesdays, 7:30 PM (0200 UTC Thursdays)

Thursdays, 12:05PM (1900 UTC) RTN ECT – All are welcome

South Bay ARC Net: Thursdays at 7:30 PM on W6SBA/R, 224.38, PL 192.8

LAFD CERT Net: 1st Tuesday of the month, 7:00 PM

HAC NET: Hughes ARC - 14.233 MHz +/- QRM, 2nd, 4th, 5th Tuesdays, 2000 UTC (13:00 PDT) – Tests in , 2020

Club Shack: The club shack is in E1, Lobby D. There is a Kenwood TS-520 HF radio connected to an 40 –10 meter antenna. This station is open to all club members. (I would be happy to give a tour of the HF station in "Lobby D" to club members. Brian, AB6UI, Station Manager)

Club Newsletter: If you have items that would be of interest to the club, any comments, letters, or items for sale or trade please email it to Dale, WB6MMQ W6HA_Editor (at) W6HA.com. If anyone needs a club application, please contact Dale, WB6MMQ and one will be sent to you.

Club Roster: Hardcopy available at meeting or contact the club membership chairman Dale, WB6MMQ

Web Site: <HTTP://W6HA.com> or <W6HA.com>

The Hughes Amateur Radio Club is an ARRL affiliated club for FCC-licensed amateur radio operators and their family members. Membership is open to all Amateur Radio Operators and those who are aspiring Amateur Radio operators.
