



# Di-Dah-Dit

Official Newsletter of the Parkersburg Radio Klub  
1722 20th. St. Parkersburg, WV 26101

## Amateur Radio Played Role in Missing Airliner Response

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Following the mysterious disappearance on March 8 of the Malaysian Airline Boeing 777-200ER jetliner with 239 passengers aboard, the airline's Emergency Management Centre (EMC) at Kuala Lumpur Airport provided hotel accommodations for passengers' next of kin. Malaysian Amateur Radio Transmitters' Society (MARTS) President Mohd Aris Bernawi, 9M2IR, said his organization was asked to provide a link between the airport and the hotel.

MARTS quickly set up a station, led by Zanirul Akhmal Zanirun, 9M2PRO, with Azizi Samsuri, 9W2ZZE, as the airline's team leader. The Negeri Sembilan Amateur Radio Club (NESRAC) provided volunteers for the station at the EMC. MARTS set up a cross-band VHF/UHF link to avoid any unnecessary interference to and from public service communications, and later added an HF link.



During the callout, 11 Amateur Radio volunteers were at the EMC, and 23 volunteers were at the hotel. 9M2IR, who oversaw the entire process, said

MARTS -- an IARU member-society -- was pleased to be able provide the communication link as the search for flight MH370 continues. -- Thanks to Jim Linton, VK3PC, Chairman IARU Region 3 Disaster Communications Committee



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### Hams Detect Signal

**H**ams Detect Signal from Retired NASA Deep-Space Probe: Radio amateurs from AMSAT-DL (Germany) and Bochum Observatory detected the beacon signal of the retired NASA International Cometary Explorer (ICE) deep space probe on March 1 and 2. After some changes to the ground equipment and aligning the receiving antenna to the predicted position in the sky, the beacon signal could positively be identified due to its frequency, the position in the sky, and the frequency shift due to Doppler shift. They used a 20 meter radio telescope.



The ICE deep space probe. [NASA image]

Launched in 1978 as the International Sun-Earth Explorer 3 (ISEE-3), ICE was the first spacecraft to detect the "solar wind" approaching Earth. In 1982, the spacecraft was renamed the International Cometary Explorer and diverted to the Moon, where its gravitational pull placed ICE into a heliocentric orbit. Support for the ICE mission was terminated in 1997, although the spacecraft transmitter was left on. It was last detected by NASA's Deep Space Network in 2008. -- Thanks to AMSAT-DL



## Hams' Experimental VLF Signals Heard in the UK, Europe

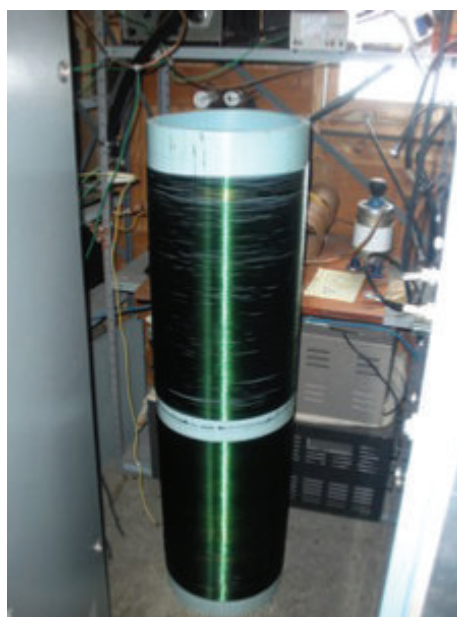
In what's believed to be a "first," a very low frequency (VLF) signal from a ham radio experimenter in New York was heard across the Atlantic. Bob Raide, W2ZM, was transmitting on 29.499 kHz under a Part 5 Experimental license, WH2XBA/1. His very slow-speed (QRSS) CW signal was initially detected in the UK just before 0000 UTC on March 3 by Paul Nicholson, an SWL, and later by Mike Dennison, G3XDV, and Markus Vester, DK6NM, in Germany. Nicholson also copied a 29.501 kHz transmission from Dex McIntyre, W4DEX, in North Carolina, operating as WH2XBA/4.



The plate tank circuit in the WH2XBA/1 VLF transmitter. [Bob Raide, W2ZM, photo]

"In recent weeks a number of amateur tests have been running from the USA to Europe around 74 kHz and at 29.499 kHz using several hundred watts to large antennas," blogged Roger Laphorn, G3XBM. He said that signals on 74 kHz were "well copied," but that "the surprise" was detecting the 29.499 kHz signal. "As far as I know, these 29.499 kHz VLF signals are the first amateur VLF [transmissions] to span the Atlantic -- fantastic results by well-equipped stations using suitable receivers and good software."

Warren Ziegler, K2ORS, who is on the Experimental license as WH2XBA/2, told ARRL that he and several other radio amateurs have obtained Part 5 licenses to experiment on 500 kHz and on 137 kHz. Ziegler, who has been a participant in the ARRL-sponsored experimental operations on 500 kHz as WD2XSH/23, said Raide wanted to be the first to span the Atlantic on VLF, which he defined as between 3 kHz and 30 kHz, so Ziegler applied for and received the WH2XBA Experimental grant, and included Raide and four others on the license.



The loading coil for the WH2XBA/1 VLF antenna system. [Bob Raide, W2ZM, photo]

"I was ready," Raide told ARRL. His transmitter has a 3CX3000A7 tube in the final, running grounded grid and generating 800 W. The effective isotropic radiated power (EIRP), however, was estimated to be approximately 1 mW. To operate on 10,000 meters, Raide has a 90 foot vertical antenna using a recon-

figured Zepp, fed via a huge loading coil that is 4 feet tall, more than 1 foot across and comprised of some 2000 feet of #14 wire. He employs a few thousand feet of "chicken wire" for his radial system.

The transmission consisted of "XBA" sent at a rate of 120 seconds (2 minutes) per dot and 360 seconds (6 minutes) per dash of CW. In the UK Nicholson copied the signal on software using a PC sound card with a preamplifier ahead of it. His antenna is a pair of orthogonal loops, each 20 meters square, at ground level, transformer coupled to the preamplifier. Read more. -- Thanks to Warren Ziegler, K2ORS, Bob Raide, W2ZM, and Joe Craig, VO1NA

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## HRD News

HRD Software Acquires Rights to SAM Callbook CD, Database: HRD Software LLC has acquired the rights to the SAM Callbook CD and database, begun in the early 1990s by RT Systems before being purchased by VIS. HRD has said it will honor the current subscriber base and continue to ship the monthly CDs. It will also develop a Windows interface for the Callbook and plans to incorporate the Callbook data into the Ham Radio Deluxe logbook. HRD also has announced its release of the preview/beta 2.1 version of Ham Radio Deluxe 6.2.



## Klub Minutes

### November 11, 2013

The Parkersburg Amateur Radio Klub met at the Western Sizzlin Restaurant for the November meeting. Introductions were made by 17 members and guests.

Around 6:30 PM, before the meeting started, Jerry KA8NJW showed a video from Ham Nation N7TFP on the Air, about radio waves, how different frequencies are reflected from the ionosphere.

The meeting was called to order at 7 PM by president Jerry Wharton KA8NJW. The 50/50 drawing of \$12 was won by Lynn Palmer N8IIM. The minutes of the last meeting were read and approved with a correction of the treasury amount. The treasurer's report was given by Jane N8MOW.

Unfinished business: Jep K8BOT reported on the 146.970 repeater site. He, Dave Thompson WD8CYV, Earl KB8HRG and Jerry KA8NJW mowed the site. Earl KB8HRG connected some coax inside the building and now the repeater sounds better.

The Christmas party will be December 14th and no program has been planned so far. A discussion was held about hiring someone to do it. No action was taken.

New business: Jerry KA8NJW will show part 2 of the video next month. Earl will probably have the January program. The programs will probably be done around 6:30 PM while those eating are finishing.

Connie N8IO's husband Jerry N8GRH is very ill and the family

had been called in.

Curt K8UC has holly tree trimmings for the Christmas party decorations.

Bill W4WBB gave an enjoyable talk on his history in ham radio.

Jep K8BOT moved and Dave N8NWV seconded to adjourn at 7:26 PM.

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### December 14, 2013

The annual Christmas dinner was held and no minutes were taken.

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### January 13, 2014

The Parkersburg Amateur Radio Klub met at the Western Sizzlin Restaurant for the January meeting. Introductions were made by 28 members and guests.

Before the meeting Earl KB8HRG gave a presentation on the digital modes, such as SSTV, MSSTV and EasyPal.

The meeting was opened at 7:06 PM by vice president Earl Hulce KB8HRG. The 50/50 drawing of \$20 was won by Carroll Ayers K8BXW.

Charlie Helmick W8JZN SK was remembered and a moment of silence was observed.

The minutes of the November meeting were read and approved. The treasurer's report was given by the treasurer, Jane McGuffey N8MOW.

Unfinished business: Mark WR5N has updated the club web site.

Sympathy was conveyed to Connie N8IO in the passing of husband Jerry N8GRH, SK

New business: Dues for the new year are now due.

Upcoming hamfests are Nelsonville on January 19th and Tusco on January 26th.

Ken WA8LLM announced a class on constructing PC boards will be held on January 25th at 9 AM at the Health Department. A laser printer is used to mark the boards for etching.

There is a need to update the list of club property and where it is stored.

Ken WA8LLM inquired if there is any interest in linking the club repeaters. A short discussion was held about the pros and cons. No action was taken.

Jep K8BOT moved and Linda N8LDU seconded to adjourn at 7:41 PM.



## Klub Minutes (continued)

### February 10, 2014

The Parkersburg Amateur Radio Klub met at the Western Sizzlin Steakhouse for the February meeting. Introductions were made by 19 members and guests.

The meeting was called to order at 7:04 PM by president Jerry Wharton KA8NJW. There was no 50/50 drawing.

The minutes of the January meeting were read and approved. The treasurer's report was given by the secretary Ray Bodie N8TWV, in the absence of the treasurer, Jane McGuffey N8MOW.

Applications for membership were submitted for Joezie S. Hickman KD8WHO, Robert G. Riordan KA4VNC, Brynn E. Riordan KB8JDH and Elizabeth A. Riordan KD8CAD. They were all approved by a unanimous vote.

Unfinished business: There was no report on the club repeaters. Both are operating well. A report was made on the Nelsonville hamfest. There were 5 attending from the local area. Dave WD8CYV won the grand prize.

Upcoming hamfests: Mansfield on February 16th and Charleston on March 15th.

New Business: Curt Fouse K8UC asked if anyone reads his e-mails notifying of the weekly nets and monthly club meetings. Several responded in the affirmative.

Dave Wright N8NWV reported on his friend Elma who is recovering

in a Charleston hospital from a fall resulting in a broken neck.

Net control for February 11 will be Dave Wright N8NWV, February 18 Darlene Leonhart W8PAN and February 25 Mike Leonhart WD8MIQ.

Darrell Fouse W8DLF moved and Linda Thompson N8LDU seconded to adjourn.

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### March 10, 2014

The Parkersburg Amateur Radio Klub met at the Western Sizzlin Steak House for the March meeting. Introductions were made by 27 members and guests. Before the meeting, president Jerry Wharton KA8NJW showed 2 videos about ham radio, one about old time ham radio and a Hallicrafters receiver.

Mark KR5N won the 50/50 drawing of \$15.50.

President Jerry Wharton KA8NJW opened the meeting at 7:04 PM. The minutes of the last meeting were read and approved. The treasurer's report was given by Jane N8MOW.

Unfinished business: A report was given on the project of building 3 new repeater controllers. Jep K8BOT built them and Earl KB8HRG is installing them in the new Kenwood 720 repeaters that were donated to the club.

New business: Dave Thompson WD8CYV received correspondence from SERA concerning a 147.39 repeater near Lewisburg. It was on a tower that was knocked down by a bulldozer. They are wanting to relocate it on a 4800 foot mountain

near Richwood and will need a waiver from us since the coverage overlaps slightly. It will be running 20 watts and using solar power. Dave also requested that sometime within the next year to replace his call on the 147.39 repeater to the other club call, W8PAR. Curt K8UC moved and Jep K8BOT seconded to grant the waiver and also to confirm our coordination with the SERA organization. The motion passed.

Upcoming hamfests: Myrtle Beach April 19, Charleston March 15, Gallipolis March 22, Athens April 27 and Toledo March 16.

Jep K8BOT moved and Dave N8NWV seconded to adjourn at 7:31 PM.

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### \$50SAT CubeSat Gets OSCAR Designation:

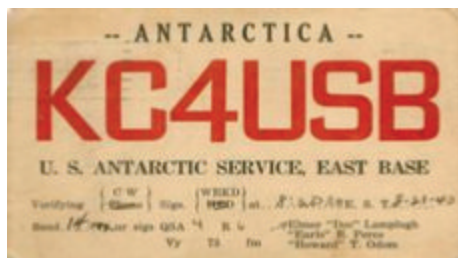
The \$50SAT CubeSat -- also known as Eagle 2 -- has been designated as Morehead-OSCAR-76 or MO-76. The first of the so-called PocketQube satellites, OSCAR-76 is one of the smallest Amateur Radio satellites ever launched, measuring 5 x 5 x 7.5 cm and weighing 210 grams. Transmitter power is 100 mW on 437.505 MHz FM CW/RTTY. \$50SAT is a collaborative education project between Professor Bob Twiggs, KE6QMD, at Morehead State University in Kentucky and three other radio amateurs -- Howie DeFelice, AB2S; Michael Kirkhart, KD8QBA, and Stuart Robinson, GW7HPW. Last month, the CubeSat's sponsors issued the \$50SAT PocketQube Amateur Radio Challenge. -- Thanks to Southgate Amateur Radio News



## Feature: A Century of Amateur Radio and the ARRL

World War II began in September 1939 as a European war, just as World War I had. Suddenly 121 of the 250 countries on the DXCC list were off the air. At that point, the US was pursuing a course of neutrality, so American hams were allowed to remain on the air. The ARRL soon issued its own code of neutrality, which resulted in the federal government's appreciative support of Amateur Radio.

Canada, along with Britain and most of the British Commonwealth, immediately shut down ham radio, however. This created an odd situation: The US (and the ARRL), following their policies of neutrality, had to treat Canada as a belligerent; no mention of Canadian Amateur Radio appeared in QST until May 1941, when QST began publishing the column "The Month in Canada." It is noteworthy that, of the 3380 Canadian hams then licensed, half were in uniform by 1941, some 900 as officers.



A 1940 QSL card from KC4USB in Antarctica. [Courtesy of the Tom Gentry, W5RG, collection]

In those early war years, before the US entered the fray, some interesting things happened. The state of the radio art had reached the point that long-haul DX could be worked even with modest, low-cost stations. The Byrd Antarctic expeditions put KC4USA, KC4USB, and KC4USC on the air. Experimenters began to tinker with wideband FM at the upper end of 5 meters (58.5 to 60 MHz). The FCC revamped its amateur ex-

ams, eliminating essay questions (and the requirement that applicants draw schematic diagrams) and replacing them with a multiple-choice test. Exams could then be graded immediately at the examination point, sparing the applicant weeks of anxiety.

At the 1940 meeting of the ARRL Board of Directors, George Bailey, W1KH, was elected League president.

In June 1940, World War II hit American hams harder, when the federal government prohibited US hams from contacting hams outside the country. The FCC also prohibited all mobile and portable operation below 56 MHz, with the notable exception of Field Day! At the League's request, this policy was soon modified to allow Amateur Radio Emergency Corps drills during daylight hours on weekends, and to allow true emergency communication at any time.

As the US edged ever closer to entering World War II, more restrictions were placed on hams. They were still allowed to operate, but only to make contacts within the country -- no DX!

There was strong evidence of subversive activities and clandestine radio stations in America. The FCC ordered all radio licensees, both commercial operators and hams, to furnish a full set of fingerprints, a passport-type photo, and proof of US citizenship by October 15, 1940.

It was necessary for the FCC to ramp up its monitoring activities, and the September 1940 issue of QST put out a call for amateurs to fill 500 new positions as FCC monitoring operators. Those 500 positions were quickly filled, almost entirely by hams. FCC's well-known Radio Intelligence Division was thus supervised and

staffed mainly by hams, under the direction of George Sterling, W3DF.

The Navy Communications Reserve and the Army stepped up their recruitment of amateurs to enlist as radio operators and repairmen, and hams again responded in great numbers. In addition, the Civilian Conservation Corps and the National Youth Administration recruited hams to serve as radio instructors. During this period, ARRL inaugurated its code proficiency program, with more than 900 hams submitting W1AW copy of the first certificate run.



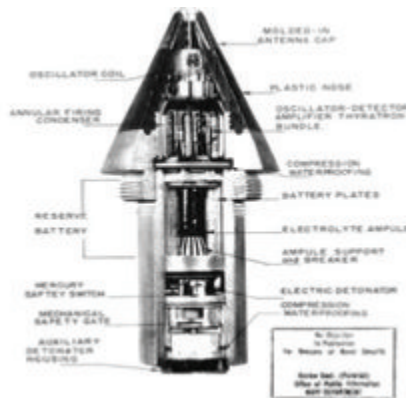
Chain Home radar system towers. [Courtesy of the RAF Museum]

Our nation was still in the phase of "positive neutrality," but there were many efforts in which US hams helped the war effort before we entered the fray. One of those efforts was the Civilian Technical Corps, which maintained and operated British radars, then operating in the upper HF and lower VHF range. One of those early radars was quite important -- Britain's Chain Home radar system, an early warning system to detect incoming German bombers early enough to scramble fighters to meet the enemy at altitude over the English Channel. Chain Home operated at 22 to 25 MHz. Although that frequency range presented problems, it could be built and put into service quickly, using existing technology and equipment.

Sets of three or four 360-foot towers were built at various locations on the

English Channel's coast to support the very large wire antenna arrays. Some of those towers still exist, now supporting commercial antennas.

Next week: I'll tell the tale of a war effort that I became very familiar with by working with some of the hams who developed and put the Proximity Fuze into action. -- Thanks to Al Brogdon, W1AB



A cutaway view of a Variable Time Fuze

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Century of Amateur Radio and the ARRL (continued)

One very important, but lesser-known, advance in weaponry developed during World War II was the proximity fuze. Its cover name during the war years was the "variable time fuze" or VT fuze. Many of the engineers who developed the fuze were hams whom I knew during the post-war years, when I worked at the Applied Physics Laboratory of Johns Hopkins University. The following comments are from my conversations with two APL hams who played significant roles in the development of the VT fuze -- Lorry Fraser, W3LMZ, and Ralph Robinson, W5FDF.

When WW II began, anti-aircraft artillery fire was a game of chance. Rounds seldom made direct hits on aircraft. Modern aircraft of that day had a great advantage over the defense provided by AAA. The Navy needed a fuze that would detonate when it was close enough to attacking aircraft to cause major damage. Enter the VT fuze.

The concept of the VT was simple: Build a range-only radar small enough to fit inside the fuze of a 5 inch naval gun, and make it rugged enough to be fired from that gun. But it had to be done with components available in the early 1940s.

APL found that ruggedized hearing aid vacuum tubes could be fired from a 5 inch Navy gun and survive. They designed a radar employing those tubes, which would detect the Doppler shift of the signal reflected from a target, determine when the shell was nearest the target, and trigger the explosive charge. Powering the VT fuze was a wet-cell battery without its electrolyte. When the round was fired, G forces would break an ampule of electrolyte, flooding the battery, and bringing it and the electronics to life.

After many months of development, tests, and trials, the VT fuze was ready for deployment. Robinson received a direct Navy commission, so he could deliver and put into action the first batch of fuzes. The Crosley Corporation was then chosen to manufacture VT fuzes on a production-line basis. VT fuzes had tipped the balance of power from attacking enemy aircraft to the Navy gunners, just in time.

Next week: What happened to Amateur Radio and the ARRL when the US entered World War II? -- Al Brogdon, W1AB

## Radio History: New Website Offers Treasure Trove of Vintage Ham Radio Photos, QSL Cards

The grandson of Thomas "Tom" Russell Gentry, W5RG (SK), has developed a website that is certain to be of interest to vintage radio enthusiasts. Don Retzlaff, who is not a ham, said his grandfather was among the earliest Amateur Radio operators, getting his license in the early 1920s -- at one point identifying as NU5RG -- and remaining active until he died in 1979. The W5RG call sign has since been reissued.



Tom Gentry, W5RG (SK), at his station in an undated photo.

"He collected QSL cards from other amateur operators all through his life," Retzlaff said of his grandfather. "In recent years I became interested in those cards and my grandfather's hobby."

With the help of his father Donald Retzlaff, W5MIY, Retzlaff located all of the QSLs -- some 5700 in all -- as well as other memorabilia documenting his grandfather's ham radio activities and his time in the Army Air Corps shortly after World War I. He painstakingly scanned both sides of each card along with dozens of photos of now-vintage stations -- many with operators -- that his grandfather had collected and posted them all on a website dedicated to his grandfather and his life as an Amateur Radio operator.

Among other features, the site offers an opportunity to leave comments. "This has definitely been a labor of love," said Retzlaff, who retired this year as a Principal Lecturer in the Computer Science Department at the University of North Texas.