K9YA Telegraph

Robert F. Heytow Memorial Radio Club

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Prelude to War

1938 - 1941

Philip Cala-Lazar, K9PL

Well before America's entry into WWII, world events were impacting the country's amateur radio operators. Interspersed with newspaper articles covering the usual ham radio topics: Field Day, public service, licensing classes, human interest stories and the occasional dance party, the furor overseas was making itself felt at home.

Even as the U.S. military sought licensed amateurs for their communications and technical skills, i.e., Part 97's "…trained operators, technicians, and electronics experts," the FCC imposed a number of increasingly restrictive operating regulations.

"What, no antenna restrictions?"

Now, from the pages of the Chicago Daily Tribune and other reference works, a look back at the years 1938-1941.

November 17, 1938
A Line O' Type or Two
Four Dots, Two Dots
The long-running column quotes contributor "Quizzicuss." "(The) Continental Morse code of amateur radio is the only language known to man with a specific expression denoting laughter or appreciation thereof." HI is understood as, "'What I have just said is funny. Consider me as laughing, and join me if you wish.'" In response it means, "'I agree that your remarks are funny. Consider me as joining in your laughter.'"

November 24, 1938
Looking at Hollywood
Ed Sullivan's (yes, that Ed Sullivan) gossip column reports Freeman Gosden, W6QUT, one half of the Amos and Andy radio show duo, will "operate a short wave station from his Beverly Hills home." What, no antenna restrictions?

December 21, 1938
RACE TO RESCUE 48 FACING DEATH ON 'CURSED ISLAND'
American ham, E.R. Gibson of Bremerton, Washington reported a distress call from a group of French citizens aboard a vessel anchored off St. Peter Island (FT5Z). Lashed by tropical storms the message read: "SOS St. Paul, Indian Ocean. Bad weather. Exhausted coal. Will Madagascar please call us. We hope for help. Confirm. We 48 aboard L'Ile Bourbon." The stranded group had planned to establish a lobster fishery on the island, located in the Indian Ocean 1,700 miles east of Madagascar.

January 22, 1939
Amateur Radio Bug Gets His 'Math' Lessons by Air
Operator in North Augusta, Ga. receives tutoring from C.E. Kirkwood, W4FFO, a Clemson College math professor. The FCC's online database indicates Charles E. Kirkwood still holds W4FFO.

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Off the Grid

A Guide to Rechargeable Batteries for the Rest of Us

Paul W. Ross, W3FIS

After getting back into ham radio since being away more years than I care to count, the most obvious thing, other than little stuff I can't see with my aging eyes, is that everything seems to run off batteries of one flavor or another. "Primary" cells, like alkaline cells or carbon-zinc, are pretty obvious—use them and toss them (in an appropriate place) when you are done. There are some rechargeable alkaline cells, but I've had only limited experience with them. They require a special constant voltage charger, which is usually provided with the cells when you purchase them.

However, the wild array of rechargeable batteries is another matter altogether! They come in a bewildering collection of shapes, sizes, types, charging systems and warnings for the unwary. How do we sort this stuff out?

"How do we sort this stuff out?"

Well, first, the types of batteries (accumulators to our friends in the UK) we are most liable to encounter:

- "Wet" lead acid batteries – the conventional type in your car. Ok in a pinch, but really designed for starting cars. However, they are cheap. Cheap is good.
- "Deep discharge" lead acid batteries, frequently used in boating and RV applications. They can be completely discharged and then recharged.
- Sealed lead acid batteries, often called "gel cells." Very handy, don't spill and keep the XYL much happier.
- Nickel Cadmium – a fairly old, but good technology. Especially good for power tools.
- Nickel Metal Hydride – the current rechargeable battery of choice for many applications. Exact replacements for AA, AAA size batteries, etc.
- Lithium Ion – the favorite for digital cameras, cell phones, etc. The package is usually proprietary funny voltage, so usually not one-to-one replaceable.

The capacity of cells is expressed in ampere-hours (Ah) or milliampere-hours (mAh). The approximate time a battery will last per charge can be found by dividing the battery pack capacity (normally written on the battery pack itself) by the average current consumption of the device. Thus a 600 mAh battery pack can be expected to power a receiver that takes 60mA for 10 hours. Now, for some specific issues to address.

Lead acid batteries will "self discharge" if left unused. In addition, sulfation buildup occurs as lead sulfates form on the battery plates during the normal charge and discharge cycles. During this process, some of the sulfates enlarge to the point where they will no longer accept or release energy. As a result, they stay on the plates. Over time these sulfates can build up to the point where battery efficiency is reduced and the battery dies.

Pulse chargers emit a pulsating direct current into the battery that enables the sulfate deposits to leave the plates and convert them to active electrolyte. This process also exposes the active material on the plates that means your batteries are stronger. With a pulse-type charger, the lead acid cell can be "floated" on the charger until needed. The same applies to the deep discharge style, except that they can be fully discharged when used. The conventional lead acid automotive battery should not be run down completely between charges.

Gel cells, or sealed lead acid batteries are a slightly different beast. They need a "programmed" charge, first at a higher current rate, then at a reduced rate to eventually "float" on the charger. Excessive charging rates are to be avoided, as they are sealed, and the off-gassing, which is usually vented in a conventional battery, must be re-absorbed within

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the gel cell itself. Make sure to get a charger specifically designed for gel cells.

Gel cells are ideal for off-the-grid operation of small transceivers or QRP rigs. Don't store any variety of lead acid battery in a discharged state.

Nickel-cadmium cells (Ni Cads) have generally been the most commonly used rechargeable batteries in consumer applications. They come in similar sizes to non-rechargeable cells, so they can directly replace non-rechargeable alkaline or carbon-zinc cells. Ni Cads have a lower voltage output than non-rechargeable cells, which is not important in most cases.

Ni Cad batteries have a low internal resistance. This makes them good for equipment that will draw large amounts of current (e.g., portable transmitting gear and power tools). However, their low internal resistance means that extremely high currents will flow if cells are short-circuited. Short-circuiting should be avoided as it can cause heat build-up and cell damage. A nasty fire is also a possibility.

The normal charging rate for a Ni Cad is about 10% of a battery's capacity for 14 hours. For example, if a battery pack has a 600 mAh rating, its correct charging current is 60 mA. Because the charging process is not 100% efficient, the charger needs to be left running for about 14 hours instead of 10 hours. Higher charging currents are possible, but the charging time needs to be proportionally reduced. Ni Cads can be left on a trickle charger indefinitely if the charging current is reduced to 2% of the battery's ampere-hour rating. Avoid the build up of heat during charging for long battery life.

"Avoid the build up of heat…"

Ni Cad batteries require a constant current charger. For best life, do not discharge Ni Cads to less than 1.0 volt per cell. When charging, Ni Cads should read 1.45 volts per cell. If the cell voltage is higher during charging (e.g., 1.6 or 1.7 volts), the cell is faulty and should be discarded. Batteries should be stored charged. A lifespan of 200 to 800 charges is typical for Ni Cad batteries.

Nickel metal hydride (NiMH) is especially interesting for portable equipment, such as hand-held transmitters. They can typically be recharged up to 1,000 times.

NiMH cells are not as suitable as Ni Cads for extreme current loads, but do offer a greater capacity in the same cell size. A typical AA Ni Cad may have a 750 mAh, but a NiMH cell of the same size may provide 2700 mAh—almost 400% more. This makes NiMH cells a good choice for applications where long life is desired but current demands are not high, e.g., portable receiving equipment.

Ni Cad chargers can be used to charge NiMH batteries, but the charging time needs to be lengthened to take NiMH's typically larger capacity into account. The main enemy of rechargeable cells is heat. If cells get hot during charging, reduce the charging current to no more than that recommended.

Lithium ion cells are the most recent of the battery types discussed here to come onto the market. They offer higher cell voltage (3.6 volts) and greater capacity for a given volume. This makes them especially suitable for handheld equipment where long operating times are important, such as mobile phones. The best part is they can be fabricated in something other than a cylindrical form, so can be designed to fit unusual shapes.

However, read the instructions that come with your devices, especially regarding overcharging, or extended time on the charger. Let the battery completely discharge before recharging. Avoid the temptation to "top it up," as you typically do with Ni Cad cells.

To summarize:

- Read the nice manual that comes with your battery-powered device.
- Don't store batteries discharged.
- Don't overcharge—heat is not your friend.

Clearly label the adapters, chargers and wall warts as to what device they are to be used for. Just because the voltage and connector match doesn't mean you can use it!

Off to Field Day! ■

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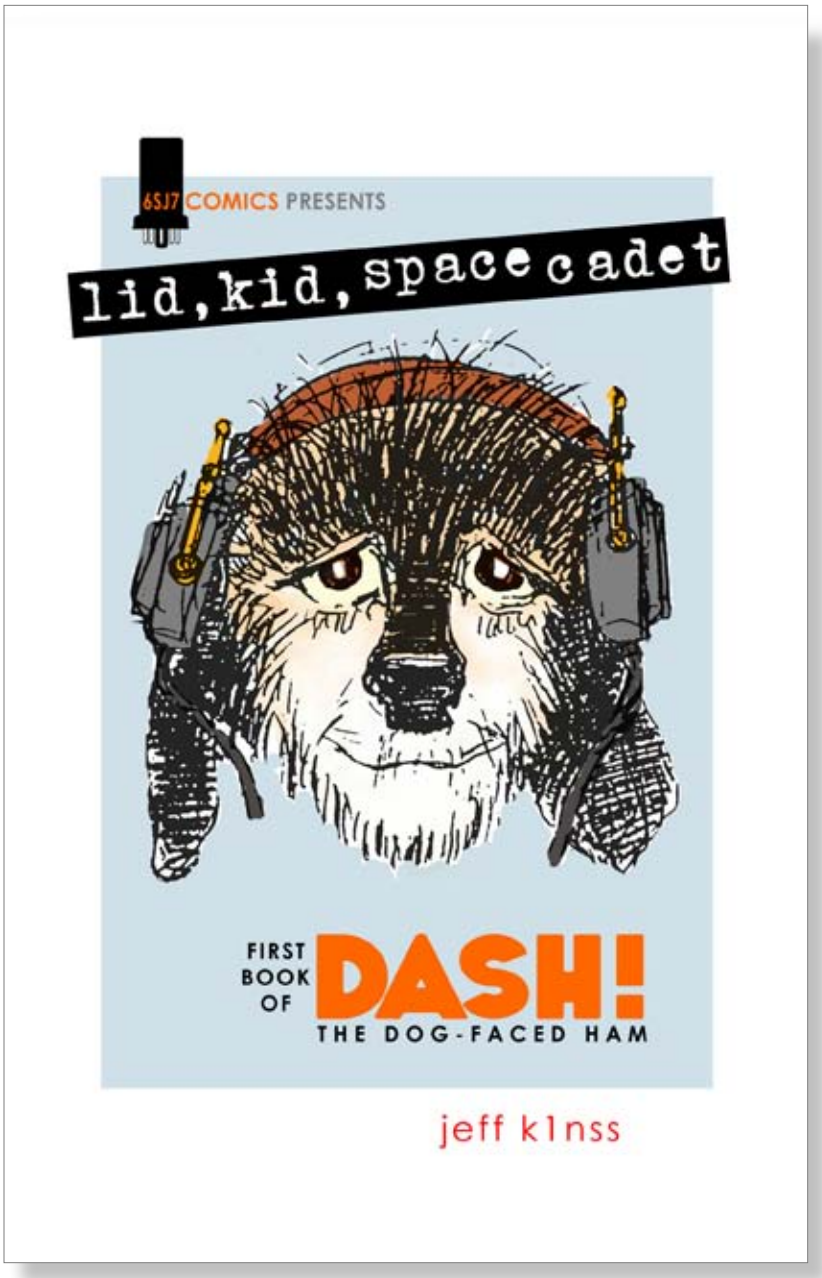
lid, kid, space cadet

Book Review

Philip Cala-Lazar, K9PL

In the May 2009 issue of the *K9YA Telegraph* I asked, "Where is our Eric Sloane?" Well, I've found him, and he is Jeff Murray, K1NSS, the extremely talented author and illustrator of the graphic novel memoir, *lid, kid, space cadet*.



It was the Remco radio station's fault, once enchanted, Jeff transformed from human boy to DASH! THE DOG-FACED HAM scenting the adventure-filled radio trail to his Novice class license. Along the way we meet the people, events and things that made that youthful achievement possible.

More than one ham's reminiscence, Jeff remembers and speaks for a whole postwar generation raised on space adventures, duck and cover drills, cars with fins and Danish modern furniture—the world of tomorrow—today. That same generation's collective curiosity impelled a market for inexpensive shortwave receivers that enabled them to overhear and then participate in a worldwide community unfettered by national and social boundaries.

Printed on high quality stock, Jeff's highly detailed, full-color drawings and compelling narrative make *lid, kid, space cadet* an impressive tour de force and a unique addition to the body of amateur radio literature. This is one of those rare books where you regret having to turn the page, yet you can't wait to see what's on the next. Ham cartoonists are a rare, but much appreciated breed, and with the publication of *lid, kid, space cadet* Jeff jumps to best in class.

The book concludes with Dash earning his Novice license with the tantalizing, "But that, dear reader is another story." All I can add is: hopefully soon told.

lid, kid, space cadet: The First Book of DASH! THE DOG-FACED HAM, written and illustrated by Jeff Murray, K1NSS, 6SJ7 Comics, Lulu.com, 2009, ISBN 978-0-557-04625-6. Amazon.com

http://www.dashtoons.com/

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Mix

1TS-W1TS was a Pioneering Ham's Ham

Rod Newkirk, VA3ZBB/W9BRD

It's good to see Don Mix getting space in recent ham press articles. He was one of a kind, and his high adventures in the high arctic aboard McMillan's *Bowdoin* will long stand the test of time. Getting locked in the ice at 40 below takes a special temperament. It was a cup of tea for Mix. Minus 40 is where the Celsius and Fahrenheit scales meet and cross. I don't want to see it.

I had the pleasure of working with Don on ARRL's staff for a few years. His quiet wit was inspirational. His job wasn't easy, whipping rough contributed articles into publication shape and contributing his own work for ARRL's Technical Department. He was a consummate technician, conscientious to the core.

The new word "circuitry" came along with appearances in the advertising pages. Don, a super conservative, questioned this trend. Deciding whether it should appear in *QST's* stylebook was the main subject for a staff meeting. Don just wanted to be right. "Circuitry," of course, won out.

He ducked into my office one day and said I got something wrong. My copy, a quote, read, "When days get longer, signals get stronger." Mix gave me his correct version: "When evenings lengthen, then signals strengthen." He was right, as usual.

Don Mix on the Schooner Bowdoin

Don Mix wasn't a fan of tricky or compact antennas. He said you simply had to run a wire through the house as far as it will go, tie in a tuner and work your DX. If you were as good an operator as W1TS maybe you didn't even need the wire.

He always ran 300 watts. Don found that running more power wasn't worth the trouble. Not enough difference by ear between 300 and a kilowatt. His 300-watt signal always sounded like a gallon, anyway. And he was a CW man all the way.

One Mix characteristic I can never forget. When the League staff got together for some special event he gripped his gin and tonics with nicotine-stained fingers. During his third drink he started to teeter. Unfazed mentally, his huge frame teetered at precarious angles. If you were conversing with him, you had to teeter, too, in phase. Soon the whole gathering was teetering.

Our club kept begging him to join us but he said he was always busy on our Wednesday meeting nights. We offered to change to a different night but he would have none of that. His personal life was almost secretive. Occasionally he would have a duckpins date with a lady ARRL staffer. Duckpins is an exasperating sport, bowling with balls you hold in your hand. If you score 100 you're good.

Few of us knew what activity occupied his busy Wednesday nights. When he joined Silent Keys we found out. For years at his local public library he had been reading books to the blind. That's also why he was so well informed on so many subjects. A darned good man was my friend Don. ■

Don Mix in the *K9YA Telegraph*

January 2007: "The Hassell-Cramer Flight"

February 2008: "Lightning Strikes Twice"

Ham History

DICK SYLVAN, W9CBT

FROM 1947, MY FIRST DECENT RECEIVER

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April 1, 1939
THE FAMILY GOES ON THE AIR WHEN STORK PAYS VISIT
The stork gets a boost from amateur radio. Driving his ham gear-equipped cab, San Franciscan, William Noble, W6JWH, got a call from his wife, W6BPY, "W6BPY calling W6JWH; Hurry Bill." Following the birth, "This is W6JWH. It's a boy!"

September 4, 1939
HONGKONG PUTS ALL GERMANS IN A PRISON CAMP
As storm clouds build in Europe, German residents of the British colony in Asia are sequestered in a requisitioned church. Strict censorship is imposed on communications as the licenses of all 10 of Hong Kong's hams are revoked.

September 15, 1940
A Radio Ham Brings Solace to a Dying Boy
A young man from Hawaii in Chicago to find work is stricken and lay dying in a Y.M.C.A. room, could his parents in Honolulu be notified as to his plight? A call went out to Lee W. Mida, W9LW, ace amateur radio operator and champion golfer known for her ability to get the message through. She succeeded in relaying the message and the young man told his parents were now aware of his condition, but he died a short time later.

In her ten years as an amateur radio operator, Mrs. Mida earned the respect of hams nationwide for her invaluable participation in emergencies including the January 1937 Ohio Valley flood. For her work with the Red Cross in that disaster she earned a public service certificate from the ARRL.

Before she became a ham, Mrs. Mida was the first women's Western Open champion, 1930; won the Western Medal Play title in 1923 and 1927; and was part of the first Curtiss Cup team to play abroad, 1929.

(See: *K9YA Telegraph*, January 2008, p. 6)

September 21, 1939
U.S. BOARD SUSPENDS RADIO LICENSES OF 2 AMATEUR OPERATORS
The FCC imposed six-month suspensions on two hams as, "the international situation makes it 'doubly necessary' that amateurs observe closely all rules and regulations." One operator, in Pottstown, Pa., was charged with communicating with an unlicensed radio station, and the second operator, in Wales, Mass. "was charged with permitting the operation of his station by an unlicensed operator."

Ominously, the FCC fires this shot over the bow, "…'further unauthorized activities by amateur stations during the period of the European war may tend to bring about curtailment of the short wave operations of amateurs generally.'"

October 6, 1939
U.S. Liner Is Doomed, Berlin Warns
German Grand Admiral Erich H.A. Raeder warned, in a statement of misdirection meant to alter the U.S. government's neutrality policy, that the "British or French for purposes of bringing America into the war on the side of the empires" would sink the liner *Iroquois* as it neared the U.S. east coast. Raeder's statement banked on recent memories of the sinking of the passenger liner SS *Athenia* torpedoed, in contravention of international law, by a German U-boat, but blamed by the German government on Britain.

At that point a spokesman for the White House named hams as the source of a potential news leak, that is, had not President Roosevelt already approved release of Raeder's statement to the American public. An apparent misunderstanding by the executive branch of what was meant by International *code*, yielded this confused and confusing message:

White House Secretary Stephen T. Early reported that the warning had been relayed to Capt. E.A. Chelton of the Iroquois *by international code and that amateur radio operators are probably deciphering the message. He said this was an avenue in which the warning would probably reach the American public if the White House had chosen to keep it secret.*

Forewarned, U.S. Coast Guard and Navy vessels safely escorted the *Iroquois* to a U.S. port, as her crew searched for explosives planted aboard the liner.

That was not the end of the story for the *Iroquois*; in 1940 she was converted to a U.S. Navy hospital ship and renamed USS *Solace*. The *Solace* was present at Pearl Harbor on December 7, 1941 when she rendered invaluable assistance to crews of the stricken warships.

October 8, 1939
STREAMLINE GUARD UNITS
The Coast Guard was looking for a few good amateur radio operators; those accepted into the expansion program would be "…enlist(ed) as apprentice sea-

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men and advance(d)…the same day to the rating of seaman, first class." Following their assignment to Coast Guard cutters and radio training "…they may be advanced to the rank of radioman, third class."

January 21, 1940
Expect 1,500 Radio 'Hams' to Attend Dance on Feb. 3
The annual dance and installation of new officers of the Chicago Area Radio Club Council planned for the Bal Tabarin of the Hotel Sherman. What happened to this tradition?

April 28, 1940
Built by Amateur Radio Operator
Description of Ted Bourke's, W9DXX, custom built $40,000 house situated on six and one-half acres in the Chicago suburb of Homewood. W9DXX's station was "…said to be one of the most powerful in the United States." Located near the house was a "…60 foot tower for a rotary beam." Ted Bourke was a member of the Army Amateur Reserve System.

June 6, 1940
ACT TO BAR SHIFT OF TERRITORY IN THIS HEMISPHERE
Reacting to events overseas, this article records various defensive provisions taken by the U.S. Congress and other government entities. Included in those provisions was: *The federal communications commission issued an order banning amateur radio communications with foreign countries. The order was announced as an antiespionage move.*

June 11, 1940
AMATEUR RADIO ASKS LESS RIGID SILENCING ORDER
ARRL secretary, Kenneth B. Warner, requested the FCC reconsider its June 7 order banning operation of all amateur portable and mobile stations. Exceptions to the ban permitted portable and mobile operation on the 56 megacycle and higher bands and for Field Day that year: June 22 and 23.

June 12, 1940
MODIFY ORDER BARRING USE OF AMATEUR RADIOS
The FCC reacted rapidly by amending its June 7 order "No. 79." Now domestic communication with portable and mobile gear may be used "in the public interest" during a bona fide communications emergency when normal facilities are inadequate or nonexistent, and allows actual domestic testing and development of this emergency use equipment on Saturdays and Sundays of each week, between sunrise and sunset, provided notice is given at least 48 hours in advance to the commission inspector in charge of the district where the operation is planned.

July 19, 1940
Police Will Fingerprint Radio Defense Volunteers
Chicago-area amateur radio operators who enrolled in the "national defense commission" can be fingerprinted at the city's district police stations. The fingerprint records must be submitted with their applications to the FCC.

May 1, 1941
U.S. NABS 'FRITZ THE RADIO SPY'; HE'S ONLY A HAM
A 21 year-old Peoria, Ill. man "bugs" about amateur radio was charged for transmitting spurious messages on government frequencies and is being held for grand jury action. In those transmissions he claimed to be a Nazi agent seeking "American military secrets." The "unlicensed 'ham' broadcaster" called himself "Fritz" when he attempted to break into government nets with demands for "codes and ciphers." Federal authorities stated he faced "a maximum penalty of two years' imprisonment and a fine of $10,000."

May 2, 1941
'HAMS' PROTEST USE OF NAME FOR PEORIAN
Amateur radio operators in Illinois strongly protested calling the unlicensed individual who interfered with government nets a "ham." The original article stated he was unlicensed, yet the headline proclaims, "HE'S ONLY A HAM." So, not only was he unlicensed, but: "The 'hams' didn't like the press description as 'only a ham.' They assert their status is one to be proud of."

May 15, 1941
WEDDING BELLS TO RING FOR 26 OF CITY'S CO-EDS
It was a "Short Wave Romance" for hams Julia Caldwell, a student at Northwestern University, and Thomas Mitchell, a student at the University of Michigan. Both originally residents of Billings, Mont., they maintained their high school relationship while away at college via amateur radio.

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June 19, 1941
FCC SUSPENDS 13 RADIO AMATEURS, 2 SUBURBANITES
Although there was no evidence of "subversive activities" 13 operators' licenses were suspended for 60 days. Restating the order prohibiting communications with foreign stations, the two local hams cited in the action were monitored communicating with stations in South and Central America.

August 24, 1941
"TRAINING CAMP NEWS"
This recurring column notes William J. Gabriel "…distinguished himself recently by establishing a record in a radio aptitude test…" at 3rd armored division station at Camp Polk, Ga. He earned a score of 76 out of a possible 78, or 97.5 percent. "Prior to entering the service, Private Gabriel was an amateur radio operator."

September 21, 1941
AMATEURS GET 50 KC. BAND FOR FM UTILIZATION
Thanks to the ARRL's efforts the FCC made available an additional 400 kilocycles "for voice communications and allocated 50 kilocycles for utilization of frequency modulation by amateurs." With this action the FCC acknowledged the growing numbers of phone operators and wanted to encourage amateurs' experimentation with the FM mode.

With the new allocation the authorized phone band now occupied 28.100 to 30.000 megacycles; the frequencies 29.250 to 30.000 were reserved for FM.

October 15, 1941
Navy Calls for Thousands of Hams—The Radio Kind
A rising drumbeat for amateurs to join U.S. armed forces as the war situation became increasingly critical. About 15,000 of the nation's 45,000 hams were already part of the navy, Rear Adm. John Downes, commandant of the 9th naval district issued a request for "…hams to join in greater numbers."

October 31, 1941
RECRUITS SOUGHT FOR NAVY'S NEW DETECTOR FORCE
To train on the "newest and secret technique for locating enemy ships and airplanes" the U.S. Navy is looking for men between 17 and 35 years old, high school or radio school graduates, and they must have held an amateur radio license for a minimum of three years or been radio repairmen for at least five years.

November 18, 1941
SCHNELL NAMED COMMANDER IN NAVAL RESERVE
Lieut. Comm. Frederic H. Schnell, legendary amateur radio operator, whose name has often graced these pages was promoted to the rank of commander in the United States Naval Reserve. The news item notes: "In 1923 he established the first two-way trans-Atlantic amateur radio communication, and copied the Armistice acceptance message from Germany."

December 5, 1941
SERVICE CAMPS WILL BE LINKED BY RADIO HOOKUP
Two days before the U.S. was plunged into war this announcement of the USO's "Star Spangled Network." Starting with non-RF "'wired radio stations,'" it will provide news and entertainment via "regular electric circuits" for servicemen at military camps around the country. Later, amateur radio stations, in cooperation with the ARRL, will relay messages from servicemen to their families.

December 9, 1941
PRIVATE FLYERS ARE TOLD HOW TO RENEW LICENSES
With the U.S. at war, and following a temporary grounding of all private aircraft, the Civil Aeronautics Authority issues new rules concerning license renewal. As for amateur radio licensees, no further official word from the FCC aside from "…at least a temporary halt to their exchange of messages both by voice and code."

For more on amateur radio's role during WWII see the September 2006 issue of the *K9YA Telegraph*, "Ham Radio on the Home Front." ■

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