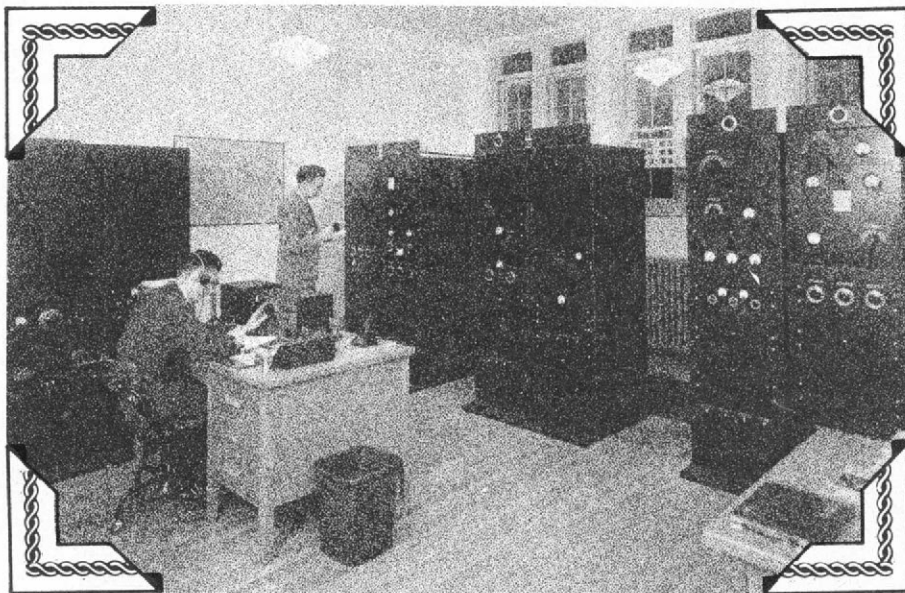


# A Concise History of the ARRL Headquarters Station

By George Hart, W1NJM

Communications Manager (retired), ARRL



Circa 1938.

The history of the ARRL Headquarters Station goes back almost as far as the history of ARRL itself. It was in about 1924 that the boys at 1045 Main Street, Hartford, put the first station on the air. The call was 1MK, applied for and duly assigned to ARRL by the Federal Radio Commission. The first rig was four UV202s in parallel (five-watters, they were called), generating perhaps 20 watts of input power. The note was rough, the signal was broad, and operation was conducted by staff operators, usually during the noon period, on about 77 meters.

## 1MK—The First Station

That's right, 1MK. There was no prefix in those days, just a digit and two or three letters, the digit indicating the call area, as today. Operation was by CW, no phone. A CQ might have gone like this: CQ CQ CQ U 1MK 1MK 1MK K. The U stood for United States. Canadians put a C in that space, and other countries similarly used the first letter of their country name. Later, as DX started becoming popular and propagation-possible, it was decided to include the first letter of the continent; thus the U was replaced by NU, the C by NC, and so on. This was all unofficial. Not until 1929 did all prefixes denoting the country become official.

But getting back to that first station. Contacts during the noontime period were scarce, so occasionally someone would come in after hours, or in the evening, and then contacts were more readily available. The best DX was the Netherlands, not too bad a hop for the power even today!

The receiver was the then-familiar Schnell detector and one-step of audio amplification, using a UV200 and UV201 respectively, entirely staff-built of course. It was a sensitive little thing, but not very selective, powered by a storage battery for filaments and "B" batteries for plate supply. Both the receiver and the transmitter were often out of commission because of staff tinkering to make them "work better."

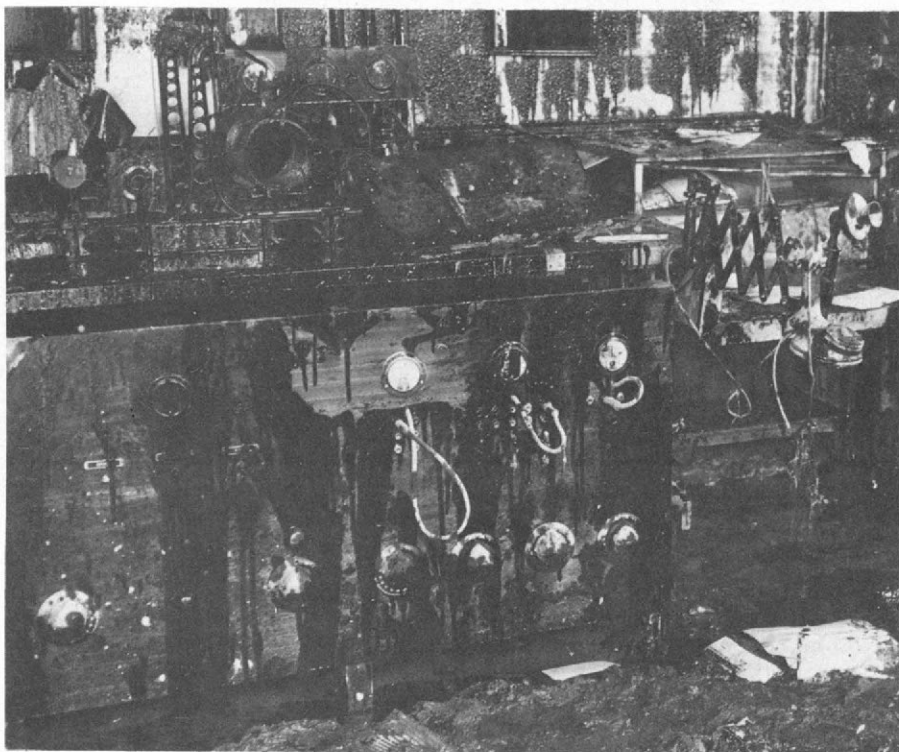
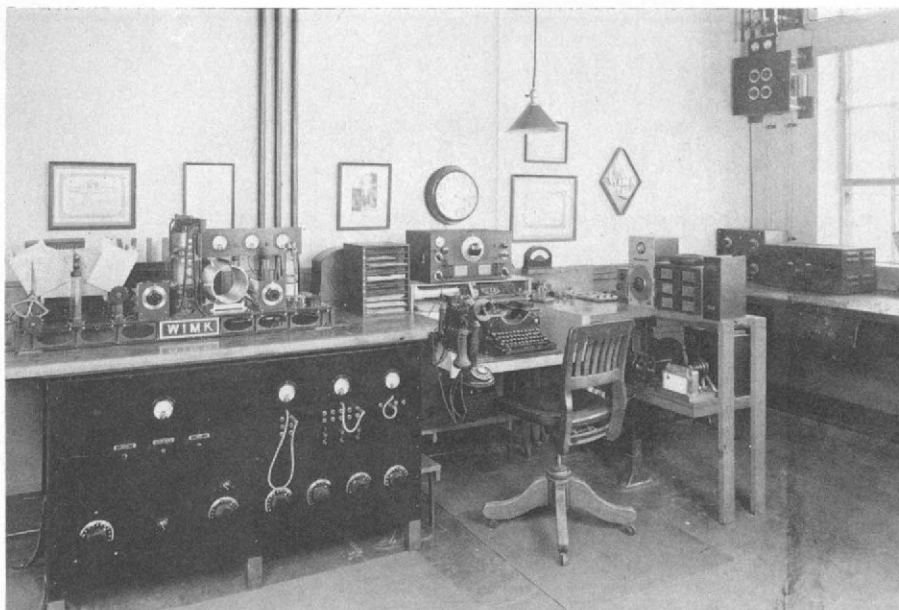
The five-watters were replaced by more modern tubes in subsequent rigs being operated from HQ, but 1MK was to be heard prominently on the air, sometimes with a quite raucous note. It was no disgrace, in those days. "Getting out" is what counted. Only rarely did stations use rectification and filtering.

## An Official Station—With a National Guard Op

In 1928, responsive to membership demand, the Board of Directors authorized an official HQ station, located somewhere away from HQ (by then moved to 1711

Park Street, Hartford), and the hiring of an operator to attend it full time. After a lot of searching and negotiation, the station was installed in a National Guard building at Brainard Field in Hartford. Since the location was in a secure area, the operator who ran the station had to belong to the Guard, and this put a bit of a damper on finding a qualified man. That man was finally found, however, in the person of Bob Parmenter ("RP"), from Kentucky, where he operated under the call 9OX, 9TW and several others.

The main transmitter consisted of a pair of UV204s on 80 meters, purchased from Heintz and Kaufman. This transmitter was a workhorse for many years at W1MK. Power was furnished by a motorgenerator set which delivered dc with just a trace of ripple, giving the signal a distinctive whine. The station location, on the flood plain near the levee of the Connecticut River, provided excellent ground characteristics, and 1MK boasted a whopping signal that stood head and shoulders above everything else on the band. The station went on the air in September of 1928, "RP" at the key. Parmenter was an excellent operator and devoted a lot of time to the station, both on the air and in building maintenance. Other transmitters, for additional bands, were added under his guidance, and in 1929,



These photographs show W1MK as it looked in 1936 before and after the flood. Power was furnished by motorgenerators in an adjoining room. Our pride and joy, this station was completely destroyed by flood waters.

when the International Radiotelegraph Convention (Washington, 1927) provisions went into effect, 1MK became W1MK.

For almost eight years, this station represented ARRL HQ on the air, Parmenter doing most of the operating, supplemented at times by other staffers as necessary.

In 1933, RP returned to Louisville and a new career with radio station WHAS. Since W1MK had many schedule commitments, staff operators had to take over. The brunt of this operation was performed by Ev Battey, W1UE, F. E. (Ed) Handy, W1BDI

(who was in charge as ARRL Communications Manager), and Arthur Hebert, W1ES, the League's treasurer. Other names appearing in the log during this period were Fred Pritchard, W1AQU, and one Charles Dean. Ev, however, was in effect the chief operator, a super-proficient CW man and a worthy albeit temporary successor to the popular RP.

But these staffers had other duties in the HQ office, so in April 1934, Hal Bubb, W8DES, appeared on the scene and took over the function formerly performed by RP. Hal later became W1JTD and took

over full-time operation of W1MK. Then followed a period during which the station facilities were supplemented and modified to make W1MK a showpiece of high quality Amateur Radio operation of the day.

### The Great Flood of 1936

But alas, when the torrential rains in March 1936 followed a winter of exceptionally heavy snowfall, the Connecticut River overflowed the levees, and W1MK was doomed in the Great Flood of 1936. Only a few items of equipment could be rescued before the inundation by six to eight feet of muddy, oily water, causing complete devastation of everything left behind. It was a sad day in the annals of the HQ station when our proud status as an Amateur Radio showpiece fell apart and W1MK became history, leaving the Headquarters station silent.

But not for long. Ed Handy and Hal Bubb procured some equipment and facilities from the HQ lab, supplemented it with the few items rescued from W1MK before the flood and erected an antenna atop the League's 38 La Salle Road Headquarters in West Hartford. Within days this new station representing HQ was on the air, signing W1INF, the call of the ARRL Headquarters



W1INF acted as the headquarters station following the flood. This medium-powered rig was in a corner of the Communications Department at the West Hartford headquarters offices.



It was a long, cold winter, but work continued on the new building into early 1938.

Operators Club. This station, operating from a crowded corner of the Communications Department office, although limited in power and coverage, made a good account of itself in the interlude between the devastation of W1MK and the opening of the new W1AW in its present location in 1938. The chronology went something like this:

#### A New Station, Dedicated to HPM

In February 1936, before the flood, our beloved founder and first president, Hiram Percy Maxim, W1AW, "The Old Man" himself, became a silent key. The ARRL Board of Directors, meeting in May of that year, voted to establish a new HQ station in Maxim's memory, appropriated a sum of money for the purpose and put Ed Handy, W1BDI, in charge of the project. At about the same time, overtures were made to the Maxim heirs and then to FCC to assign W1AW to ARRL Headquarters as the call to be used by the memorial station. A search was begun for a suitable site.

The site needed to be away from heavy traffic and heavy industry, with good ground characteristics. The League finally purchased seven acres in the little town of Newington, a suburban-rural town between Hartford and New Britain. The price, would you believe it, was \$2200. Of course at that time the area was rural countryside, about the only dwelling being that of the former owner, Miss Elsie Starr, from whom the property was purchased.

Then came the hiring of an architect and planning for the building of new equipment and installation of antennas. At the Board meeting of May 1937, Mr Handy was able to report that all three phases were well under way, that the architect was well along with plans and excavation had started. Hal Bubb was hard at work on construction of transmitters, assisted by League staff technicians, and five 65-foot poles of western red cedar had been purchased and

shipped and were ready to be set. The plan was to use four of the poles for the rhombic antenna, 350 feet on a leg, oriented due west (270°) to enhance West Coast coverage.

The acquisition of Maxim's personal call, W1AW, was accomplished in February 1937, and W1AW started being used in place of W1INF at the little station in the Communications Department in West Hartford. Hal worked on building the new transmitters during the day while operating the temporary station for bulletins and general membership contacts at night.

#### The Famous Rhombic

The five antenna poles were duly installed in the fall of 1937 by a volunteer crew from the Hartford Electric Light Co, and the work of putting up the antennas commenced—Hal Bubb again, climbing poles, constructing feed lines, working on new transmitters, operating W1AW from West Hartford. Outdoor work slackened during the winter months, but in the spring of '38 it recommenced with vigor. As the building took shape, the new rhombic was completed, along with long-wire and zepp antennas for 160, 80 and 40 meters. The rhombic could be used on all bands but was to be the principal 20-meter radiator.

By early summer of 1938, Hal had finished construction of kilowatt transmitters for 80, 40 and 20 meters, plus a 500-watt rig for 160, and a common modulator generating 500 watts of audio in class B, switchable to all but the 40-meter rig (no phone band on 40 meters then). Each rig was completely self-contained, from power supply through antenna. The transmitting equipment was installed in the new building in early summer, and testing commenced. Reports of performance of the rhombic were fantastic, with especially good results in the Southern Rockies, Southern California, New Zealand and Australia, especially the latter. We also packed a powerful wallop in South Africa. The signal

in Europe was respectable, as in other places around the globe, but it was very evident that the rhombic would give us the much desired Southwest US coverage.

By late summer, the station was in operation from its new location, already giving a good account of itself on the air, although there was still work to be done ironing out bugs and building a new transmitter for 10 meters. Ed Handy and Hal Bubb conferred daily at length on problems and plans, often seeking advice and assistance from George Grammer, W1DF, and his crew in the ARRL lab. Remember, only W1AW was located in Newington at that time; the HQ offices were still in West Hartford, five miles away.

#### The Dedication

The official dedication of the new W1AW

#### W1AW: America's Station

For 75 years W1AW has helped you; now W1AW needs your help!

For untold thousands of radio amateurs throughout the world, the W1AW call sign has meant code practice as they strove to better themselves in the hobby.

For others, it has meant up-to-the-minute news of the world of Amateur Radio through the W1AW bulletin service.

No one can ever forget the first time they heard or worked W1AW.

The thrill of that contact with America's most historic Amateur Radio station is the subject of many fondly told tales.

Now America's station needs you. Fifty years of New England winters have taken their toll on the building. The equipment looks like it should be in a museum, *not* part of the station all American radio amateurs look to with pride. It's *your* turn to help.

ARRL has established a fund to put the pride back where it belongs, in this flagship station. We need to replace a floor that sags under the weight of five kW amplifiers (one per band) that line the center of the room. We need to replace the shop-worn tube-type equipment that has helped to guide generations of new hams through their code practice.

Please help put the pride back in America's Station. Send your tax-deductible donations today to the W1AW Renovation Fund, 225 Main St, Newington, CT 06111

We will acknowledge your donation with a certificate that you can proudly hang on the wall of your own shack. It tells friends and visitors alike that you cared enough to say "Thanks!" to America's Station.—Stephen A. Mendelsohn, WA2DHF, ARRL Hudson Division Director

#### W1AW Kilowatt Club Correction

The W1AW Fund Drive extends its appreciation to Dr Ted E. Palmer, D.C., WA6MUK, as a contributor to the Kilowatt Club. Ted's call sign was previously listed incorrectly.

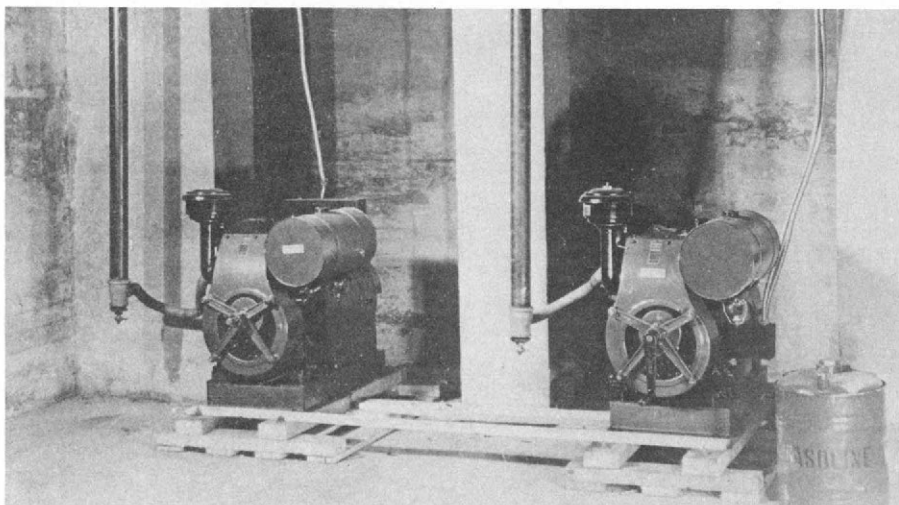
was a great event in the annals of ARRL history (see September *QST*, p 49). Visitors from far and wide were invited, and a canvas canopy was erected for the ceremony in front of the station, facing Main Street in Newington. The formal dedication was covered by radio stations WTIC and WDRG in Hartford and CBS nationwide. ARRL Vice President George Bailey, W1KH, was master of ceremonies, introducing the dignitaries, some of whom addressed the assemblage, which included all members of the ARRL staff, town and state dignitaries, and manufacturers' representatives. The highlight of the ceremony was the unveiling of the memorial plaque in the front lobby. "Dedicated to the Memory of Hiram Percy Maxim, 1869-1936. Father of organized Amateur Radio, Beloved First President of the American Radio Relay League, Inc." Applause rippled through the audience as ARRL President Eugene C. Woodruff, W8CMP, pulled back the bunting to reveal the plaque. As the new second operator of W1AW and the latest addition to the HQ staff, I watched from far in the rear, a large lump in my throat.

That evening the Maxim Memorial Relay took place, with W1AW in full operation making contacts and handling congratulatory messages. While the on-the-air activity was taking place, WTIC conducted an on-the-scene interview with Ed Handy, W1BDI, with the keying relays tapping away in the background. As the evening progressed and the visitors dispersed, things became quiet. However, the work of making contacts and handling messages continued far into the night, until dawn the next day, with Hal and I taking turns at the key and mike.

In the weeks that followed, I couldn't get enough of operating those marvelous transmitters. Hal and I operated six-hour shifts every day, plus alternate weekends. The normal shifts were from 3 PM to 3 AM, with regularly scheduled bulletins at 8 PM and midnight, plus a few traffic schedules and general operating periods on each band, phone and CW. Since Hal was the station engineer and chief operator, he usually took the early shift and I took the "graveyard." By 3 AM, I was usually not the slightest bit interested in going home and frequently continued operating until after daylight, thence to my rented room for some sleep during the daylight hours—only to show up for my shift at 9 PM and a repeat of the same procedure. Of course this could go on only for a certain length of time, but neither Hal nor I confined our presence at W1AW to the hours we were required to be on shift.

#### **A Tropical Hurricane... And Emergency Power**

Before the W1AW operation from Newington could get well under way, however, the area was visited by a tropical hurricane that devastated towns along the southern New England shoreline and blacked out electric power and telephones for several days in large portions of the



The 1938 hurricane proved the need for emergency power. These two Kato generators were capable of supplying enough power to run one of the several W1AW kilowatts at full steam.

northeastern US, including Newington. I happened to be at W1AW alone when the full fury of the storm struck. It was afternoon and I remember feeling the building shudder with the impact of the wind from the east. Then the electricity went off. Investigation revealed that rain water was being driven in through the cracks under and around the door in the front lobby. I mopped it up while staring out at the trees along Main Street being whipped wildly around. A large oak tree leaned drunkenly, then fell across the road, blocking traffic.

The solid little brick building withstood the forces of the wind very nicely, however. A few shingles blew off, but this was the only damage. With power off and telephone lines down throughout the area, with the attendant need for emergency communication, W1AW was helpless, for there had been no plans made yet for emergency power.

Late in the afternoon, while I checked the station for damage, Ed Handy and Hal Bubb arrived, worried about whether I had survived—but probably still more worried about the state of the building, its contents, the grounds and antennas. Ed announced that the station was officially closed until power was restored, but that power was still on at his home in West Hartford and they would need operators to help man his station. Of course, I volunteered, and three or four busy days followed with little sleep, although Mrs Handy kept us well fed.

The spectacle of a brand new superstation unable to serve in an emergency was understandably unacceptable to Station Trustee Ed Handy, and immediate plans were made to procure emergency generating equipment for W1AW. Generators capable of operating the station at full power were unthinkable. After all, we were still in the Depression, and money was tight. Eventually, a pair of 2-kW Kato generators were installed in the basement, one to operate on each side of the 220-volt line. The two generators worked well together in this configuration, since none of the gear

operated on 220 volts. A maximum of 15 amps or so could be drawn from each side of the line, and this was enough to operate any one of the kilowatt transmitters at full power, plus ancillary equipment such as lights, oil burner and sump pump. Battery-powered emergency lights were also installed, so that in the event of power failure the operator had only to throw a toggle switch at the operating position to provide temporary lighting to enable him to crank up the two generators and throw the big knife switch which would put the entire building on emergency power from the commercial entrance. As luck would have it, it was many years before these generators would be needed in an actual emergency, then only to prove not optimum. This necessitated a new arrangement by means of which the full facilities of the station could be operated simultaneously—a requirement of over 15 kilowatts.

Life at W1AW went on. Hal completed a 10-meter rig using RCA 806s in the final, new frequency-measuring gear, and general maintenance and trouble shooting. Operation continued smoothly, not without problems, but all relatively minor ones.

#### **WW II—Amateur Radio and W1AW Closed Down**

Until, that is, the gathering of war clouds, as the US was drawn closer and closer to the conflict in Europe. When the Japanese struck Pearl Harbor in December of 1941, all our lives suddenly changed. Hal Bubb came to the back door of my little house in Newington that Sunday afternoon and told me not to bother coming to the station the following day—Amateur Radio had been closed down and I was to report to the HQ office in West Hartford instead. It looked like my job was finished. No bulletins were sent from W1AW that night, but the next day I was told that W1AW operation would continue for the time being, that by special FCC request and permission, W1AW was to go on the air with bulletins announcing the closing down of Amateur Radio for the

duration, and to make contacts with amateur stations still operating to make them aware of the ban.

Some of the stations we contacted protested that they had special permission of one kind or another to continue operating and continued to do so. We did not argue with them; our job was simply to inform them that all normal amateur operation was to cease, with a minimum of discussion. W3XXX DE W1AW QRT QRT usually did the trick or, on voice, something like: W3XXX FROM W1AW, BY ORDER OF THE FCC, ALL AMATEUR OPERATION IS TO CEASE IMMEDIATELY. We sent bulletins on all bands on which we were operative, every hour, both phone and CW. This continued into January. Then FCC was consulted to find out how long they wanted us to continue. They expressed surprise that we were still operating and ordered us to cease doing so immediately. W1AW was closed up for the duration, heat turned off, water drained. Amateur Radio had gone to war.

W1AW stood idle for almost four years. Several overtures were made to the federal government to give W1AW an operating role in the war effort, but in each case they fell through, largely because the government wanted to take over completely, confiscating both building and property for the duration and for as long as needed thereafter. While the League was perfectly willing to have the building and equipment used for government purposes, military or otherwise, complete confiscation was not acceptable, and so W1AW stood idle, without heat, without water, completely abandoned. The electricity was left connected, and occasionally someone would go over and turn on the filaments, and check and report on the condition of the building and equipment. Despite the rigors of the unusually cold wartime winters, no extensive damage occurred during these years.

When the Japanese surrendered in 1945, W1AW was the first amateur station to come back on the air. It took several weeks for clearance through the military, but on October 31, 1945, W1AW took the air on spot frequencies only, by special dispensation of the Army and permission of the FCC. Permission was granted to send bulletins concerning progress being made in restoring the amateur frequencies to civilian use, from their wartime military training status back to the Amateur Radio Service.

So, when permission was finally granted, did someone just go out there, fire up the rigs and put on the first bulletin? No indeed, it wasn't *that* easy! As negotiations were proceeding, frantic preparations were made to restore the station to operating capability. The antenna farm was in disarray and the rigs were full of bugs (not literally!), mostly caused by the intense cold of winter and likewise intense heat of summer, the dampness and complete absence of use for such a long period.

Once again it was Hal Bubb who came forward to do the dirty work. Hal spent many hours at the station getting things back into operating condition, so that when

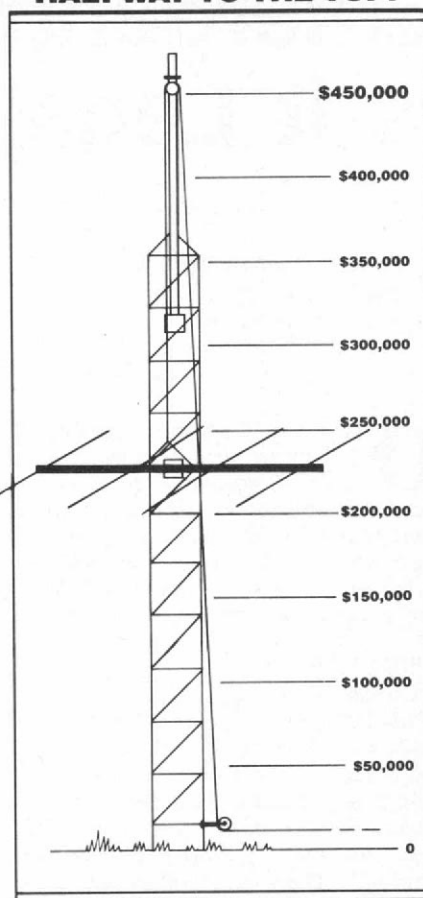
authorization was received there would be no time lost in getting the station "airborne." It was a great day for Amateur Radio and the beginning of an exciting new era when the clear, strong W1AW signal cut through the air with encouraging news to thousands of eagerly waiting hams that their League was on the job getting our frequencies back.

By early 1946, we were back on full operating schedule, with nightly bulletins and code practice, general contacts and participation in all League on-the-air activities. Hal Bubb went on to a new career, and a rapid succession of new operators took over from then until June 1950, when Murray Powell, W1QIS, became second op at W1AW. In December of that year Murray became chief operator, and in September 1952, he was joined by Chuck Bender, W3ODU (now W1WPR), and chief operator of W1AW since 1973), to form a W1AW operating team that lasted for over 20 years.

### HQ Moves Next Door

While changes in the equipment were made during this period, nothing drastic occurred until the HQ offices moved to the W1AW antenna farm in 1963. Very shortly thereafter it was determined that both the inside and outside of W1AW should be renovated to match the magnificent new HQ office building. The memorial lobby was removed from the side of the building facing Main Street and relocated in an addition to the building on the opposite side, facing the new Headquarters. Most partitions inside the old building were removed, necessitating a supporting truss in the attic, making the inside mainly one big room. What had been the garage now became the new workshop, and the former waiting room was dispensed with. The "rigs that Hal built," somewhat modified and modernized, were moved to the basement to be used for spares, and new

### HALFWAY TO THE TOP!



linear amplifiers were ordered, to be built under contract by Bill Orr, W6SAI, in the Eimac laboratories in California. Heavy duty power supplies were built and installed in the basement, along with a 20-kW

(continued on page 109)



You wouldn't know it was the same place! This is what the main operating room looked like after the renovation of 1964.

# 55th ARRL November Sweepstakes Announcement

(continued from page 106)

## Contest Period

	Starts	Ends
<b>CW</b>	Saturday, Nov 5 2100 UTC	Monday, Nov 7 0300 UTC
<b>Phone</b>	Saturday, Nov 19 2100 UTC	Monday, Nov 21 0300 UTC

(D) The use of non-Amateur Radio means of communication (eg, telephone) for the purpose of soliciting a contact (or contacts) during the contest period is inconsistent with the spirit and intent of this announcement.

7) **Reporting:** Contest forms (log sheets, summary sheet, dupe sheet) are available from ARRL HQ by sending an SASE with two units of first class postage. Official forms are recommended. Any entry claiming more than 200 QSOs must submit duplicate-

## Suggested Frequencies (kHz)

CW	Novice CW	Phone	Novice Phone
1800-1810		1855-1865	
3530-3600	3710-3730	3850-3950	
7030-7080	7110-7130	7200-7250	
14,030-14,060		14,250-14,300	
21,050-21,080	21,110-21,130	21,300-21,400	
28,050-28,080	28,110-28,130	28,550-28,650	28,350-28,400

## Explanation of Exchange

	Number	Precedence	Call	Check	Section
<b>Exchanges</b>	Consecutive serial number	Power output less than 150-W PEP	Send your station call	Last two digits of year first licensed	Your ARRL Section
<b>Sample</b>	NR178	A	NU0X/1	66	CT

checking sheets (dupe sheets). Incomplete or late entries will be classified as check-logs. Logs must include dates, QSO times, exchange sent/received, band and mode. Postmark your entry within 30 days after the phone portion of the contest (December 21, 1988).


8) **Club Competition:** ARRL-affiliated clubs for club gavels and awards in the local, medium and unlimited categories as described in January *QST*.

9) **Awards:** Certificates to the top single

operator CW and phone scores in "A," "B" and "Q" categories in each ARRL Section, and the top multioperator entry in each ARRL Division.

### 10) Condition of Entry

(A) Each entrant agrees to be bound by the provisions as well as the intent of this announcement, the regulations of his licensing authority and the decisions of the ARRL Awards Committee.

(B) Disqualifications. See January *QST*. 

## A Concise History of W1AW—The ARRL Headquarters Station

(continued from page 53)

propane-fueled generator set capable of supplying full power to the station in normal operation. The ARRL lab went to work constructing a common exciter for the several linears and transmitting equipment for 6 and 2 meters. The end result of all these changes was an entirely new vista for W1AW, a "new look" so different from the old that a visitor from before the change would not have recognized it as the same station!

While all these changes were being made, W1AW services continued from the basement operating position using commercial transceivers and amplifiers. When the new linears had been installed upstairs, the new custom-built operating console put in place and all interconnecting wiring completed, the operation was shifted from the basement to the new facilities upstairs without a single break in W1AW services. Such breaks in operation, throughout all the station's history, have been few, far between and of short duration, except for the 3½-year hiatus during WW II, thanks

exclusively to the close attention and stewardship of the ARRL Headquarters staff and the W1AW operating crews.

Until the FCC (in 1975) decided that it was not proper for paid W1AW operators to make contacts with amateur stations, a big part of all W1AW operation was devoted to just this—personal contact between the W1AW staff and the general amateur population. Periods during each operating day were set aside for general contacts on each band. Additional periods were also set aside for transmission of bulletins and, starting in 1940 and resuming after WW II, code practice to assist in license upgrading. Nowadays, direct contact between amateurs and W1AW is conducted primarily by visiting operators and during contests, and for that purpose, separate operating positions are set up at the station, with equipment supplied mostly by generous manufacturers' donations. The main rigs are used exclusively for bulletins and code practice.

### Time for Another Major Renovation

As outlined in this series of W1AW

vignettes, Amateur Radio has, since then, expanded over new horizons, and the HQ station must reflect that expansion. This will require much new equipment and more of it and—you guessed it—money. An on-the-air presence is not only a great asset, but necessary to continue rendering past W1AW services and many new ones now possible with Amateur Radio expansion into fields heretofore undreamed of.

Since the "great renovation" of 1964, many changes have been made in the station's equipment and its operating schedule and programs (such as the 120-foot tower for 20 and 40 meters that was put up in 1977, the Alpha amplifiers that power code practice and bulletins on 80, 40 and 20 meters, and so on) but with the advent of satellites, computers and space communication, it is time for another major renovation and reexamination of prospects and possibilities. W1AW will flow with it and reflect it and continue to be the living representative of the League and all that is progressive in the Amateur Radio Service. 