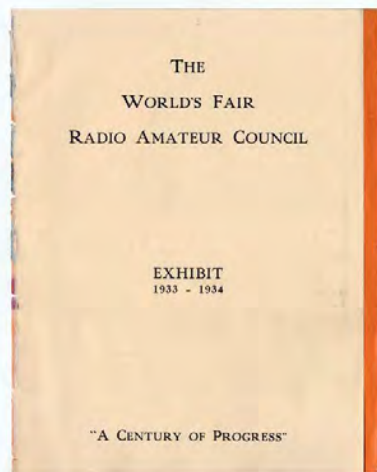


K9YA Telegraph

Robert F. Heytow Memorial Radio Club

Volume 10, Issue 1, January 2013



WFRAC Revisited

A Century of Progress Brochure, 1933-1934

Philip Cala-Lazar, K9PL

My August 2011 *K9YA Telegraph* article, “A Century of Progress,” described the amateur radio exhibits on display at Chicago’s A Century of Progress exposition and associated offsite events, 1933-1934.

Chicago Daily Tribune, July 30, 1933 24 CONVENTIONS SCHEDULED FOR CITY THIS WEEK

The article noted the majority of the hundreds of conventions held in Chicago that world’s fair summer would “sponsor lectures or entertainments at a Century of Progress.”

The WFRAC was one of the august and varied companies of the 24 including the American Association for the Recognition of the Irish Free State, International

Fellows of the Scientific Association of Chiropodists and the Associated Buyers and Northern Jobbers Association.

The World’s Fair Radio Amateur council [sic] is conducting a meeting of the World Wide Amateur association, which will bring 2,000 members to the Medinah-Michigan Avenue club.

This refers to the ARRL convention headquartered at the Medinah Athletic Club on Michigan Avenue.

Selection of Quotes from the Brochure

“A truly Amateur Radio Mecca. Here you will find the latest and best radio material on display by our

CONTINUED - WFRAC ON PAGE 8

*“Scientific
Association of
Chiropodists...”*

A year in the making, founded and manned by a dedicated group of Chicago area hams, the World’s Fair Radio Amateur Council: sponsored, petitioned for the creation of, acquired financing and equipment for, designed the displays, built the transmitters used, and hosted the two amateur radio exhibits licensed as W9USA and W9USB by the Federal Radio Commission. Continuing my research on this fascinating topic I discovered the University of Chicago’s John Crerar Library has in its collection a copy of the four-page brochure (or book insert evidenced by the binding thread holes down the page gutter) produced by the WFRAC that sheds additional light on the exhibits.

The Council, “...composed of prominent Radio Transmitting Amateurs appointed by the various Amateur Radio Clubs and Independent Groups of the entire Chicago Area,” was financed “...by funds derived from the sale of space in the Radio Amateur Exhibit – ‘A Century of Progress.’” The Council’s address for the duration of its existence was located in Chicago’s “Loop” at Suite 1005, 19 South Wells Street. Google street view reveals that address is now occupied by a modern building with a Walgreens drug store at street level.

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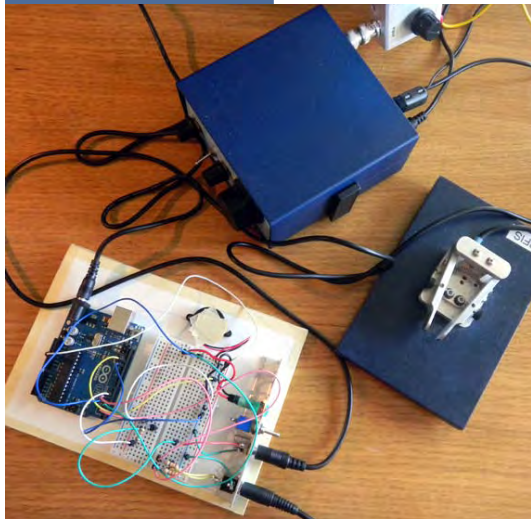
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A Work in Progress

Part I

Paul W. Ross, W3FIS



Recently, I got tired of “brass-pounding” with my vintage J-38 key with my QRP rigs. My Yaesu FT-817ND has an excellent built-in keyer to go along with my American Morse paddle. OK, what about a keyer for my other QRP transceivers? Ready-to-go keyers cost more than I wanted to spend, though there are some nice kits available.

I was just about to order a kit over the Internet, but during a visit to my son, he showed me

an all-on-one-board microprocessor system, complete with USB I/O, logic input and output pins, and all sorts of other goodies. Into the bargain, it is programmed with a variant of the C language, and includes all the functions for doing interesting stuff. It is the Arduino unit from Italy. For details, see this link: <http://arduino.cc/>. The Arduino also has a very large user base and plenty of examples. What more could you ask? Also, this would give me an excuse to try some new technology.

These boards are available from a variety of suppliers (Radio Shack, Amazon, Sparkfun, for example). Google is your friend! While the order was in the mail, I did some research on what you need for a keyer implementation:

1. A paddle—I already had that.
2. Power supply—the computer will provide that through the USB port, or you can hook up an external supply. You need a USB “A” to “B” cable. You can also run it off four “AA” batteries, assuming you don’t need much power.
3. Breadboard for initial testing—part of the stuff I ordered. Bits and pieces from Radio Shack and the junk box.
4. Something to put stuff on—some foam board from the local crafts store and some double-sided tape to hold things down.

5. A few connectors—1/8” stereo ones will do the trick. And, a piece of aluminum angle from the local hardware store for a nice sturdy bracket.

I had to do a mental “reset” on a lot of my thinking. I am used to real switches, turning off and on real circuits. In a microcontroller environment, we have a slightly different modality:

- Data definitions, constants, etc. This is the usual “housekeeping” in a C program.
- Any initializations—assign pins to functions, such as the connections to the key or keying circuit (an open collector 2N2222 switching transistor) for the QRP rig.
- A basic never-ending “loop”—often called a “polling loop,” which repeatedly looks at the paddle contacts, generates a “dit” or a “dah,” and repeats.

The code looks like the following:

*“What more
could you ask?”*

```
/*
Keyer program
Version 1.1
Light up light on key
closure
Send tone & closure for
DIT
Send tone & closure for
DASH
P.W. Ross 3-10-12
*/
// set pin numbers and other stuff
const int buttonPin1 = 2; // first
key-dot side
const int buttonPin2 = 5; // second
key-dash side
const int myLed = 3; // my local
led
const int myAudio = 4; // output to
piezo speaker
const int myOut = 6; // output
switch to xmitter
const int unit = 100; // unit for
code element
```



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```

const int myTone = 440; // tone for
output sidetone
void setup()
{
  pinMode(buttonPin1, INPUT); // set
  up paddle switches
  pinMode(buttonPin2, INPUT);
  pinMode(myLed, OUTPUT); // set up
  my LED for output
  pinMode(myAudio, OUTPUT); // set up
  piezo speaker for output
  pinMode(myOut, OUTPUT); // set
  up output line for switching
  transistor
}
void loop()
{
  // read the state of the switches
  into local variables:
  int reading1 =
  !digitalRead(buttonPin1);
  int reading2 =
  !digitalRead(buttonPin2);
  // dot code here
  if (reading1)
  {
    digitalWrite(myLed, reading1); //
    set my LED
    digitalWrite(myOut, reading1); //
    key transmitter for dot
    tone(myAudio, myTone); // tone to
    speaker
    delay(unit);
    digitalWrite(myLed, !reading1); //
    turn off the LED
    noTone(myAudio); //turn off the
    sound
    digitalWrite(myOut, !reading1); //
    turn off transmitter
    delay(unit);
  }
  // dash code here
  if (reading2)
  {
    digitalWrite(myLed, reading2); //
    set my LED
    digitalWrite(myOut, reading2); //
    key transmitter for dash
    tone(myAudio, myTone); // tone to
    speaker
    delay(3 * unit);

```

```

digitalWrite(myLed, !reading2); //
turn off the LED

noTone(myAudio); //turn off the
sound

digitalWrite(myOut, !reading2); //
turn off the transmitter

delay(unit);
}
}

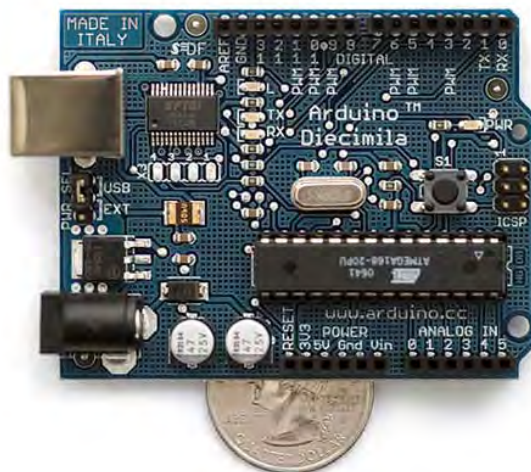
```

If you follow the code, you will see it is really simple. Now, this is just a start. There is no “memory,” and the keying rate is around 10-wpm. Things to do in the future:

1. Add a memory capability—for beacons, “CQ,” etc.
2. Change keying rate—awful slow to awful fast...
3. Look into use of an interrupt to sense a “command mode” to enter memory storage/recall/keying rate.

Of course, I wanted to have a unit that would be a little more presentable and usable in the field. I acquired a nice box and prototyping board to hold all this in a more finished form.

Definitely a “Work in Progress.” Stay tuned for future enhancements! ■



Arduino Board Close Up



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High Speed Morse (HSM)

Paul Signorelli, WØRW



Most people who learn the Morse code seem to hit an upper speed limit as they progress. Here is the reason and how to overcome it.

Receiving High Speed Morse

Here is what I have found during my Morse lifetime and you have probably heard it before, copy words not letters. Receiving high speed Morse is like playing an anticipation game in your brain. You have already learned how to do that at slower speeds and your

Google search engine does it all the time.

When you Google search “Indianap...” Google brings up Indianapolis before you can finish spelling the word; “Moorest...” brings up Moorestown; “Camd...” brings up Camden; “Wheel...” brings up Wheel of Fortune. When you copy “Missi...” you say to yourself, “I know he is going to send Mississippi, why can’t he just send MS?”

Your brain does this when you are receiving Morse. This is not cheating; it is just how your brain completes the missing elements. Remember the old FCC “Fill in the Blank” Morse code tests? It had partial sentences like “My _____ is in a tree.” The answer was “Antenna.”

HSM requires the anticipation game extend from just words to common phrases. The phrases are common sayings or clichés frequently used in the game “Wheel of Fortune.” You intuitively know all these phrases; you only need to practice them on HSM. For example: “The XYL has....” The anticipated phrase is going to be: “called me to dinner,” “come home and I have to QRT,” or “I am really out on a...” limb. Here is a link to some common ones: <http://www.knowyourphrase.com/>

When you begin copying HSM you will immediately copy words like: and, the, good, you, your call, name

and QTH. It may surprise you that you can instantly recognize many words; that certainly should encourage you to listen more. This process has been taking shape ever since you started using Morse.

HSM can be like the ‘Butterfly of Love’ that will gently land on your shoulder after you quit pursuing it. HSM begins differently for each person, but it should begin at a speed that is more than you can write down. You have to learn to copy words and phrases in your head.

Obviously, Morse word sounds cannot be deciphered this way if they are sent letter by letter with big spaces in between. The Farnsworth method, which uses fast letter speed and wide letter spacing, does not allow word recognition. You have to learn the common words, but there will always be some not yet in your HSM vocabulary, like “Poughkeepsie,” unless you practice it. (If you live in Poughkeepsie please send your QTH as NY.)

See QST for the ARRL’s fast code practice operating schedule.

After you become proficient at HSM, slower speeds and Farnsworth reception will be like teaching a teenager how to drive a stick shift automobile.

Sending HSM

Your manual dexterity or typing skills will probably be the limit to your manual sending speeds. You can’t send 40-wpm on a Morse keyboard for very long if your typing speed is only 20-wpm. If you know how to “touch type,” you probably know typing becomes a hand movement pattern routine.

Hand typing patterns are hard-wired into our body after we practice them enough. A Morse keyboard will allow you to send great CW, but the outgoing CW speed is limited by your typing skills. Using a bug or paddle will also have manual dexterity limits, but you don’t have to send as fast as you can receive.

I use a single-lever paddle and find it better for HSM. I have also noticed that if I forget what I am sending

*“My _____
is in a tree.”*



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CONTINUED - HIGH SPEED MORSE ON PAGE 8

Conan Wyatt Burtram Barger, W3CVE

Part VII

5

Scott B. Laughlin, N7NET

When the sounders would go along at 30 to 35 wpm I could make good copy. But when I got on a circuit going 40 to 45 wpm my copy was pretty bad. Knowing the Continental Morse first I would find myself putting down E I instead of R, IE instead of C, K instead of F, and 5 instead of P. The circuit to Omaha was the fast one and if I had to take copy I had a dickens of a time. The supervisor was a good fellow. He knew both codes and would fill in the mistakes on the finished copy. When all those sounders were going at the peak of the day, about thirty of them, it sounded like a swarm of bees. But each Morse operator could recognize his own sounder no matter if he was taking five or drinking a cup of coffee. It was fantastic how some of those old timers could copy that stuff at 50 to 70 wpm. I remember when I came on watch at 3 pm there was an old timer who had been with the postal service since he was a kid. His sounder was rattling at least 60 wpm and he was copying with ease. He greeted me and started talking and asking questions while typing on the mill. I didn't say much because I thought I might interrupt his copy. And he would say, "Come on, Red. Talk to me." After the sounder stopped he would keep on typing for at least ten more words, rip off the copy and hand it to the supervisor.

During the 1930s operators who held a commercial radiotelegraph ticket, with the proper endorsement from the Radio Inspector, could work for a broadcast station. My first broadcast job was with KFXJ and when they moved from Denver I went with KFEL and worked as chief engineer for several years. When KFEL was scraping the barrel I was again looking for another job.

My next job was with KOA in Denver where I assisted in the construction of a new studio in the Knight-Campbell building. It was an exact duplicate of studio A at Radio City in New York. It was built to acoustical perfection with a flat frequency response from 5 to 10,000 cycles.

From KOA I went to KMA at Shenandoah, Iowa and helped construct a 5,000-watt transmitter. One of their main attractions was The Sons of the Pioneers.

My next job was working as a combination radio operator at Garden City, Kansas for KIUL. Many

stations in the 1930s subscribed to the Transradio Press. WCC was one of the transmitters that sent press copy at scheduled times each day and a combination operator was the person who could copy the International Morse code as well as hold the license for the transmitter. KUIL was a small, 500-watt station, but it had good coverage throughout the state. When I took copy at the transmitter a messenger from the downtown studio picked up the latest broadcast.

WCC covered the heavy weight championship fight between Dempsey and Firpo. I made good blow-by-blow copy of the fight and the sports announcer read it over my shoulder while Clem Morton at the studio mixed in the yelling crowd from a sound effect recording. When the fight was over many of our listeners said they did not know we were hooked into a national chain. Some said that our fight reports were better than those of NBC.

I remember when the Hindenburg Zeppelin was getting ready to dock at Lakehurst, N.J. WCC gave FLKASH that the Hindenburg had exploded. From then until the wee hours of the following morning we stayed on the air and gave our listening audience a vivid word picture of the tragedy. ■

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I can't help but wonder if Rod,
In his qso eyeball with God,
While paying respects
Murmured "How is DX?",
Which God, I think, wouldn't find odd.

Mike Parris, VA3TJP



KOA Radio Transmitter Building and Antenna



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Contesting? Who, Me? Are You Kidding?

John Swartz, WA9AQN

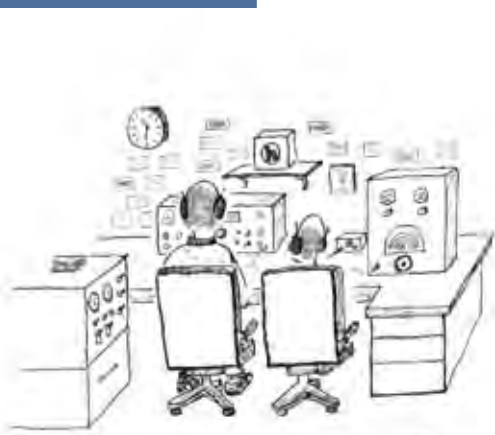


Illustration by WA9AQN

What, the Worked All Lower Forgottonia Contest is this weekend? Are you kidding? C'mon, why would I spend (waste) a perfectly beautiful fall day ("Warning, the National Weather Service is predicting...") cooped up with the hot blast from my big 6146?

No, Mom, I can't rake leaves because the Weather Service says...

Contesting? That's nuts. Do you know what those guys have to do? I thought it was all about making as many QSOs as possible

in 18 hours, but it isn't. It's like another homework assignment for school, only worse. It is pure paperwork. Drudgery. Gotta keep a log sheet. Then there's this thing they call a "dupe sheet" to keep you from working the same guy over again. How can you not remember whom you worked? Have you seen those? Geez, three squares down, 21 across for this one, four down 16 over for the next. How's a guy gonna work anybody? Ya gotta look at that sheet before every single contact to see whether you worked the guy before, don't wanna put him off by calling him again, no sir.

Then, when you're done with him, back to the dupe sheet, write it down, and look for the next guy. And what's the big deal about telling some guy he's "599 IL?" So what? Yeah, "599 IL, PSE RPT UR STATE?" Ok, again "599 IL, UR STATE? STATE? STATE PSE?" I said "599 IL." If I'm 599, why should I have to repeat my state?

How do those guys make that many QSOs doing this? To say nothing about why they might want to do it, forget it. What a waste of time.

NO, Dad, we can't rake the lawn, the Weather Bureau issued a warning.

Oh, you mean we can put up that new antenna if I rake the yard? Well, come to think of it, maybe I could get a bit done before it hits...

Ring, ring...

Johnny, it's your Uncle Mike on the phone. Can you take it?

Yeah, Sure! Just a sec. Hi Mike,

Hi, Johnny, do you want to come over for a bit? It's the Worked All Lower Forgottonia Contest this weekend and I thought you might want to help me out a bit in it? You know, like the logging, and the dupe sheet? Have you ever operated in a contest?

No, I mean, sure, that sounds great! I've wanted to try a contest, thanks. I'll be right over. Click.

Mom, I'm going over to Mike's. He wants some help with a radio thing he's working on and he thinks I can help him.

OK, dear, don't forget that your grandmother and Aunt Ruthie are coming for dinner. Oh, will you stop at the Jewel and pick up a head of lettuce for the salad, please?

Aw, Mother... do I?

Schwinn to the rescue!

Hi, Mike.

Hi, John. Come on downstairs with me, I'll show you the log and the dupe sheets. I've hooked up two sets of headphones to the receiver so we can both listen at the same time.

Great!

Headphones work much better than speakers for this kind of operating. You really get sharper sound and learn how to use that filter between your ears.

Yeah, I like using headphones at home. [What's he talking about?]

Gee, this is neat, I can actually hear how he is tuning in the signals... but boy, is he slow, bet I could do it faster. I wonder if he will let me tune that 75A4?

Ok, Mike, what do you want me to do?

Here's the way we'll start, John. I'll copy down in the log the callsign of the guy I'm working. When I do that, you put the call onto the dupe sheet. OK?

Sure, this is neat, how do I do it?

Well, you see the call district numbers are on the left

"Schwinn to the rescue!"



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side of the sheet, and the alphabet is across the top. If the guy is a W, say W9FID, then you put in his call like this, see, and if he is a K, like K9FXN, then you put it in like this. OK?

Is that how this is done?

OK, can you see my log page? Good. Alright, now let's try a few and see how we do. I'm gonna start at the bottom of the band and tune up. Here we go...

Hey, this isn't too bad, it's kinda neat to hear the other guy while I'm doing this, wait, I don't get it, he just logged a call I didn't hear. What is this? There he did it again, but I'll just put in what he wrote down. Who were those guys? Where were they?

Ok, John, that's pretty good, but soon we're going to have to go down the band and listen again going back up the band.

That's OK!

That means I'm going to be hearing some of the same stations we have already worked.

Oh.

So, when I stop on one, I want you to let me know if we have already worked him.

You mean from the dupe sheet?

You've got it!

How?

Just wave your hand a bit, I'll see it and can move on to the next guy. OK?

OK.

Ready? Here we go.

Oh, boy, is this cool, or what!

Hear him?

Yeah, W9NFO; we worked him.

No, not him.

Who?

A bit lower in tone?

What?

He's weaker than NFO. You hear him?

What is this? I don't hear anything other than NFO.

Again, there he is, NFO is standing by, hear him now?

That?

Yeah.

I don't get it, there is someone there, he's weak, there's QSB, he'll never hear us. I can't even make out his callsign.

It's Jack, W6ISQ, (599...). OK, put it on the sheet.

How did he do that?

Mike, I couldn't even hear the guy.

Well, you weren't listening. Let's go back down the band. There's NFO. Listen again, there, hear him?

Huh?

There, again, lower in tone than NFO, now.

Yeah, how did you get that callsign?

Listen, again, listen, each time the QSB takes out a different dit or dah, but after three or four times, you get the full call—see?

Sigh

Wow.

Can I learn this?

You can do it, just stick with it, let's try some more.

If he can do it, so can I; I think.

Oh, No, Mike, I was due home 20 minutes ago.

Aunt Ruthie is never, well, she hates it when anyone's late.

Mike, thanks, but I gotta run.

OK, John, glad you came. But remember, that isn't just contesting. Learning how to listen will make all your QSOs better. That filter between your ears can be a great tool. You just listened to the loudest signal; you have to listen for each signal that may be in the passband. Besides, I also heard the guy he had just worked. If you want to be a DX'er, you'll know how to find the weak ones when the band seems full of W's and K's. If you want to do contests, you'll pick up the rare multipliers that way and have a bigger score. If you want to talk to a friend, you'll be able to carry on when everyone else is just doing the "YOU'RE 599 ILLINOIS AND MY

NAME IS JOHN, SRI, OM, QRM, GOTTA RUN" bit. If you want to join a net and handle traffic, you'll be able to copy through the QRM and QRN. And, if you ever come across an emergency, well, you'll be able to copy what the other guy needs you to hear. Practice, besides, it's just fun, practice.

Wow! I hope Aunt Ruthie doesn't stay too late.

Hi, sorry I'm late, what's for dinner?

Oops!

Oh, no, I forgot the lettuce.

That's OK, dear, your sister took the kittens in her baby stroller and went up to get it.

Oh, alright.

I wonder what's on 20-meters? ■

"I forgot the lettuce."



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my words can be completed automatically by the repetitive hand motion pattern I learned. When I start to send my call sign, it has a definite pattern and that pattern is never broken. If my brain sends a priority interrupt message like "BALANCE!" "BALANCE!" as I am losing my balance on a rock, I re-balance my body and my hand keeps sending whatever word I am sending without me thinking about it.

Why Operate HSM?

- It is easier and more conversational.
- It allows you to send more information or make more QSOs.
- It saves energy.
- It is your destiny; I know you can do it. ■

K9YA Field Day 2012

The results are in and members of K9YA's Field Day team are celebrating. Their hard work paid off with a third place finish in category 1A (single XMTR with gasoline generator). They earned First place spot in both Illinois and Central Division. Class 1A was populated with 135 entries.

Not resting on their laurels, Team K9YA is already planning their assault on Field Day 2013.

Ham Lingo

DICK SYLVAN, W9CBT



MEMBERS OF THE BRASS POUNDERS LEAGUE GET TOGETHER TO "POUND BRASS"

co-operating exhibitors—the radio parts profession. They are helping us and we are helping them to show their finest to our visitors—their market."

"We aim to present, at the Fair, a better understanding of our hobby to the public at large and those interested in our subject."

In 1933, operators at the exhibits located in the Travel and Transport Building and the Hall of Science used both special call signs, W9USA and W9USB. In 1934, only W9USA was used.

The Travel and Transport Building exhibit hosted "...four thousand hams and 450,000 of the general public, to come, see and admire the radio amateur displays for five well-filled months of crowded activity."

In addition to radio pioneer, Senatore Guglielmo Marconi, ARRL co-founder Hiram Percy Maxim, W1AW, was one of "...hundreds of... prominent radio men..." to visit the exhibit.

In 1934 the Council proclaimed six transmitters were now employed and "...constructed in a new way and composed of various styles and powers."

W9USA operated on "...all wavebands allotted to amateur use and on all of our transmitters—both fone and CW."

The transmitter located in the Hall of Science "...puts on a half hour show every day before an audience of 10,000 people."

"You are cordially invited to come. You will never forget this treat."

Considering the effort and devotion extended by the World's Fair Radio Amateur Council in their planning and execution, how could visits to W9USA and W9USB be anything but a treat? ■



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Inside of Century of Progress Brochure
(Click image to enlarge)