

**The Central Texas Amateur Radio Club
meets the first Tuesday of each month at 7:00 PM at the
Bell County Communications Center, 708 West Avenue O, in Belton**

Terry's Telegram...

Terry Evans, KF5OHR



Well it's the start of another month and I have noticed that they seem to be moving along much faster now that the weather is getting nice outside. The sun is shining and it's about 72 degrees. The Texas Forest Service has advised of an alert putting portions of the state in the "critical" and "elevated" categories for wildfire potential. The increased fire activity concern is due to the winds we've been having, along with the above normal seasonal temperatures and low humidity levels. So please use caution in any of your outdoor activities that could lead to accidental fire starts.

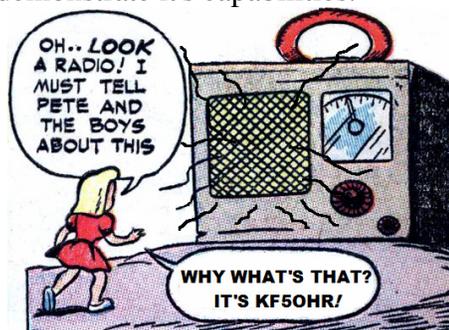
The Easter weekend is now over and with the exception of the state holiday on the 21st of this month, the next holiday is not until Memorial Day at the end of May. The wife is now out of the Hospital and back home, so things should be getting back to normal I hope.

As far as the club goes, we have a few things to work on and I hope we can get something set up like a Fox hunt somewhere in the local area. I have never done that, but I've been told it's a blast. If anyone has some ideas on things that we can do as a club, that would be great. We really need something to get people motivated and try and help the club grow. This hobby can be a lot of fun and should be something that our kids would like to do. We just need to get them away from the Xboxes, cell phones, I pads and put a radio in their hands. So I am open for some ideas!

One thing we should start talking about and planning for, is next month, towards the middle of May, Fort Hood will be conducting an extensive full-scale exercise which will involve an estimated 8,000 people - both participants and role players, as well as local county and state emergency service representatives. Bob Harrell, the Coryell County Emergency Manager, is meeting with Fort Hood's Garrison Commander to try and arrange amateur radio participation in the exercise to demonstrate it's capabilities.

Rick tells me he'll have extensive information on this in the next issue of our newsletter. In the mean time, our next club meeting is Tuesday, April 5th at 7:00 PM, at the Bell County Communications Center and I hope to see you all there.

- 73 de Terry, KF5OHR





"Can you predict what will come in one hundred years? Or in ten? Or in the next minute? Some people think they can. Nuclear scientists. Mathematicians. Astronomers. Biologists. They'll predict the shape of the future. Why? Because they MAKE the future. Because they see beyond the known dimensions of time and space - into the unknown: Dimension X."



Dimension X was an NBC radio program broadcast on an unsponsored, sustaining basis from April 8, 1950 to September 29, 1951. The first 13 episodes were broadcast live, and the remainder were pre-recorded.

Dimension X played heavily on an "adventures in time and space, told in future tense" and was a very effective demonstration of what could be done with science fiction on the air. Until the premiere of *Dimension X* -- a full two decades after network radio was established -- there were no major science fiction series of broad appeal to adults.

There were 50 episodes in the series, and they all can be listened to again at: https://archive.org/details/OTRR_Dimension_X_Singles



The Central Texas Amateur Radio Net meets every Thursday at 8:00 PM on the N5ZXJ repeater, on 145.310(-) PL 123.0
Join Us!

April NCS & Back-Up NCS Schedule

April 7th: Net Control: N5JLL Back-Up: W5VEX	April 14th: W5VEX K6WXA
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April 21st: Net Control: K6WXA Back-Up: KF5OHR	April 28th: KF5OHR AD5SK
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CCRA Swapmeet

The Copperas Cove Repeater Association will hold their annual swapmeet on Saturday, April 2nd from 8:00 AM to Noon at the Copperas Cove City Park. The park is located on West Avenue B / FM 1113, off of Hwy 190, in Copperas Cove. Talk-In frequency is 147.260(+) PL 88.5 and call for K5CRA.



USA ARDF Championships

The US championships of Amateur Radio Direction Finding will take place April 7-10 near Killeen at the Parrie Haynes C5 Youth Ranch and Equestrian Center, located at 13816 Maxdale Road, off of Hwy 195 just south of Killeen.

Sponsored by Texas ARDF and the Austin Orienteering Club Texas. On-foot foxhunting fans of all skill levels will gather for 4 days of intense competition.

Much more information is available at: <http://www.texasardf.org/usa2016/> and at: <http://www.arrl.org/news/texas-to-host-us-ardf-championships-in-april>



Rookie Round-Up

This event runs from 1800 UTC to 2359 UTC, Sunday, April 17th. This six-hour event is aimed at amateurs who have been licensed for 3 years or less. Rookies work everybody; non-rookies work only rookies. For further info on this, visit: www.arrl.org/rookie-roundup

International Marconi Day



International Marconi Day is a 24 hour Amateur Radio event held annually to celebrate the birth of Guglielmo Marconi on April 25th, 1874. "IMD" is held each year on a Saturday close to Marconi's birthday, with this year's event being held on April 23rd.

The event is not a contest, but rather an opportunity for amateurs around the world to make point-to-point contact with more than 50 stations around the world which are being set up at various historic sites with links to the inventors work.

Several special event stations will take to the air April 23rd, from 0000 UTC to 2359 UTC, to commemorate the 2016 International Marconi Day.

This event offers a thrilling throwback to the days whenever a connected world was but a bold dream and just a couple of exceptional people, for example Marconi, saw the worth inside it.

More information on this can be found at: <http://www.gb4imd.org.uk>



NVIS Exercise

John Galvin, N5TIM

There will be a NVIS Exercise on Saturday, April 23rd, from 8:00 AM to 2:00 PM. Modes of communications will include voice and data communications using WinLink and sideband to show the potential of NVIS and its effectiveness as a mode of communication.

In addition, this exercise will demonstrate the amount of work needed to ensure readiness for the effective operation of the NVIS mode of propagation. The exercise will also analyze the role of HF communications in emergency situations and demonstrate that NVIS is a reliable and effective means of emergency communications.

The communications technologies that are available to public safety agencies today are currently more complex and powerful than anyone could have imagined a few years go. Unfortunately, a side effect of increased complexity is a greatly increased potential for vulnerability.

NVIS (*Near Vertical Incident Skywave*) provides a simple and reliable solution for backup communications over a wide regional area with no need for additional communication systems and should be a part of every public safety agency's toolkit as a backup for communications loss because of a natural disaster or loss of regional communications.

More information for an emergency NVIS antenna system can be found at: <http://static.dxengineering.com/pdf/WP-NVIS-Rev2.pdf>

Guglielmo Marconi towards the end of his life philosophized: "Have I done the world good, or have I added a menace?"

Technician Class Series

Know someone who is interested in getting their Technician Class license?

This series follows the Technician Class study book written by Gordon West, WB6NOA, with Eric P. Nichols, KL7AJ. Rather than staying strictly with the way that the question pool is laid out, they took all the questions and grouped all questions that cover the same topic all together which makes for much easier studying / reading. A like-wise edition will be soon coming out for those interested in gaining their General Class license. Have them visit:

<http://www.everythinghamradio.com/2015/07/technician-class-series-introduction/>



Credit Card Scam

The ARRL has received a report of a "phishing" attempt to illegally obtain credit card information from a member. The caller told the member that they needed \$75 to "get his QST" and asked the member to provide their credit card number over the phone to complete the transaction.

So far, this is the only report the League has at this time. Members should understand that the ARRL would never contact you and ask for credit card information over the phone.

If you receive a phone call that is suspicious, you can contact ARRL at: (888) 277-5289 to report it.

"The swelling army of radio fandom has its dangers as well as its advantages. It has become so large that the influence of the early amateurs is disappearing and that is a distinct loss."

Radio Age - April, 1926

Never before in the history of the nation has it been more evident that with efficient communication in time of war, rests the success or failure of campaigns.

- Colonel Samuel Reber
U.S. Army Chief Radio Signal Officer
(April, 1916)



The President's Letter

The White House
Washington

The organization of the amateur radio operators of this country under the direction and control of representative American civil, military and naval officials, would undoubtedly be a valuable asset to the nation, as it is only through the agency of such organized bodies that maximum efficiency can be obtained. The value of such an organization in coordinating the activities of a large number of specially qualified young men along carefully planned lines will be of great benefit not only in an educational way to the young men themselves, but also to the country at large when the necessity for their employment, individually or as an organization, may develop.



Information courtesy of Budd Johnson, WB4J

This past March 21st - 24th, the National Hurricane Conference was held in Orlando, Florida which included 3-1/2 hours of amateur radio workshops. These workshops were video taped and posted on YouTube which include:

- Meet and Greet with Dr. Rick Knabb & Opening Remarks.
- Importance of Amateur Radio / Spotter Surface Reports with Q & A by Dr. Rick Knabb.
- Canadian Hurricane Centre and Hurricane Meteorological Topics by VE1MBR.
- WX4NHC, the Amateur Radio Station at the National Hurricane Center Overview by WD4R.
- Hurricane Watch Net Overview, Personal Weather Stations and Backup Power and Antenna Overview by KB5HAV.
- VoIP Hurricane Net Overview & Best Practices in SKYWARN for Tropical Systems by KD1CY.
- ARRL Beginner's Course in Ham Radio Hurricane Preparedness by K1FUG.
- Moderated Q & A and Door Prize Raffle.

You can view this 3-1/2 hour presentation from the National Hurricane Conference by visiting:

<https://www.youtube.com/watch?v=NyQJ48tB44>



Gulliver's Travels

This past March 3rd & 4th Rick was at it again in his travels out and about. This time it was to Galveston Island.



Memorial to the 6,000+ victims of the hurricane of September, 1900



Part of the historic district - the placard on the sidewalk denotes it's history since 1870



The Pleasure Pier and the 'Bubba Gump Shrimp Factory' Restaurant

HamEXPO!



Sponsored by the Temple Amateur Radio Club -W5LM, *the Belton Hamfest* returns to the Bell County Exposition Center in Belton, **Saturday, April 16th** from 7:00 AM to 2:00 PM.

Getting there is easy; from U.S. Highway 190 take the exit for Loop 121 and follow the signs to the Exposition Center. Plenty of free parking!

Talk-in frequency is 146.820(-) PL 123, and call for W5LM.

General admission for the public is \$5.00 at the door. Admission price includes one free raffle ticket for various door prizes raffled off during the event. Winners must be present to collect their winnings.

For more information, please visit: <http://www.tarc.org/hamexpo>



Ham Expo Amateur Radio Test Session

In conjunction with the HamExpo, amateur radio tests will be given in the main building of the Expo center, on the 2nd floor, and is sponsored by the Central Texas Amateur Radio Club. The testing will begin at 9:30 AM and end when all applicants have been tested, probably around 11:00 AM.

Since the test session is in conjunction with the very popular Ham Expo, we expect between 25 and 50 people taking the tests. This requires at least 10 Volunteer Examiners to properly staff the event. The VE's participating should be on site by 9:00. Both General and Extra VE's are needed since all test levels are being made available.

This is a 'Ham Community' effort and all area VE's are needed and most welcome to participate. As we go to press, the VE Liaison heading this session, has yet to be announced.

People taking the test do not need to register before hand, just show up at test time. A photo ID and one other form of ID is required. The test fee is \$15.00.





A group of French operators will be active from Juan de Nova Island through the 14th of April as **FT4JA**. QSL as directed.

A group will be active from Hawar Island, Bahrain, 28 April - 1 May as **A91HI**. QSL via A92AA.

UX4UL will be active from Sri Lanka until 15 April as **4S7ULG**. QSL via UY5ZZ.

The Radio Club D'Haïti will be active as **4V1TL** from Port-au-Prince, Haiti until April 30th. QSL via W3HNK.

A group will be active from Batuta Island off the coast of Brazil, 21 - 24 April as **ZX5B**. QSL via PP5BZ.

A group will be active from Botswana 13 - 19 April as **A25UK**. QSL via MØOXO.

G7VJR will be active from Lord Howe Island 15 - 20 April, signing **stroke VK9L**. QSL via MØOXO.

F4FET will be active from Mayotte Island signing **stroke FH**, through the 21st of April. QSL via his home call.

Special Event Station **ZV451RIO** will be active until June 3rd in observance of 451 years since Rio de Janeiro was founded. QSL via PY1AA.

JA7FGI will be active from Laos through the 4th of April as **XW7FG**. QSL via his home call.

JAØRQV, is active from Jamaica signing **stroke 6Y5**, mostly on weekends through April 17. QSL via MØOXO.

SP5APW will be active from Koh Rong Sanloem Island 13 - 19 April as **XU7AKC**. QSL via his home call.

K6PV will activate Santa Catalina Island, 27 April - 1 May. QSL direct.

A group of Russians will be active from Alyumka Island 20 - 25 April as **RT92KA**. QSL via UA3AKO.

7Y9LI will be active from the Cap Ivi Lighthouse, Algeria 28 April - 5 May. QSL via SM4VPZ.

C5FUD will be active from Gambia through the end of April. QSL via SP2FUD.

RC5A and RMØF will be active from Maldiv Islands 17 - 30 April as **8Q7CA** and **8Q7FU**. QSL via their home calls.

K1CN will be active from Saint Georges Cay, Bahamas until 3 April as **C6AMM**. QSL via EA5GL.

KCØW will be active from Tutuila Island, American Samoa, starting 11 April signing **stroke KH8**. His length of stay is not mentioned. QSL via his home call.

J11LET will be active from Chichijima Island in the Ogasawara Islands 26 April - 6 May as **JD1BOI**. QSL via his home call.

F4ELJ will be active from Re Island, France, 9 - 16 April. QSL via his home call.

VA3EGG will be active from Curacao Island through the 3rd of April signing **stroke PJ2**. QSL via his home call.

W1BSA will be on the air from aboard the *U.S.S. Massachusetts* on April 23rd from 1000-1600 EST. QSL via K1WCC.

G3RWL is active as **8P6DR** from Barbados through April 22nd using CW and RTTY. QSL via his home call.

A group of Brazilian operators will be active from Comprida Island 15 - 17 April as **ZV2CO**. QSL via PY2DS.

A group of German operators will be active from from Togo through 11 April as **5V7D**. QSL via DL9MBI.

IV3FSG is active from Bethlehem, Palestine through the 7th of April as **E44YL**. QSL via IK2CKR.

E51DLD will be active from Rarotonga Island 24 April - 10 May. QSL via W6HB.

CORYELL COUNTY JOINT COMMUNICATIONS GROUP
Meeting of March 15th, 2016

Budd Johnson, WB4J

Present were Bob Harrell-KF5YZH, Teddy Bruski-KE5UET, Rick Murray-K6WXA, Pat Bahr-KG5KZW and Budd Johnson-WB4J.

Bob advised that the county was building the radio equipment for the EOC, but the room is still being used for storage, so no further updates. (*Added Note...* the day after this meeting, Bob advised that he met with the County Judge, and he has authorized the room mentioned here, for use as the EOC.)

Most of our discussion was about the upcoming "*Phantom Wildfire*" full scale exercise to be held on Fort Hood, May 11 & 12th. Rick Murray and Budd Johnson attended a Planning Conference at HQs III Corps on Fort Hood on March 8th at the request of Bob, as he was in a week long training class. The scenario this year is a wild fire that approaches the Comanche housing area from the south, which will cause the evacuation, treatment and sheltering of 450 role players. It is projected to have 40 – 50 "injured" role players that will be sent to Darnell, Metroplex, and Coryell Memorial hospitals and one burn patient will be air evac'ed by Blackhawk helicopter to San Antonio. Other projections will be 2 fatalities, natural gas hazards, structural damage assessment, an electrical outage and a water outage because of the water demand. We will be trying to get amateur radio into the planning in some capacity, but it must be approved by the Garrison Commander. We talked about the possibility of having an operator in the EOC, one at the Command Post and one at home to "relay traffic" outside of the area. We also discussed using the W5AMK Gatesville repeater on 146.960(-) PL 123.0 as our primary repeater, with the K5CRA Copperas Cove repeater on 147.260(+) PL 88.5 as a back-up.

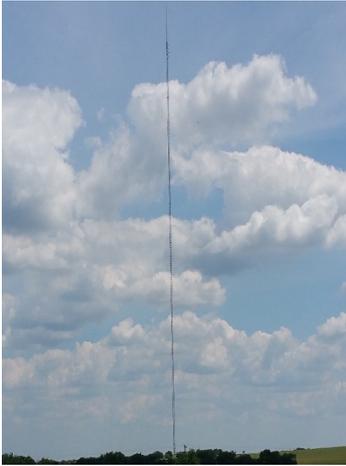
The next meeting is scheduled for Wednesday, April 13th, again at 1:00 PM at the Lil-Tex restaurant located at 502 South Main Street, in Copperas Cove.

The Lil-Tex restaurant has been very supportive of us in providing a room for us to meet there, so let's continue to support them by ordering lunch while at these meetings to justify our using their facility. That way we don't take advantage of their hospitality towards us.

Not discussed, but something I have been thinking about, is the notification of our group volunteers in the event of an emergency. I have used SMS texting in the past and if you wish, I can set it up for a group text message to be sent to those that wish to be included. What I need is a cell phone number and the name of your carrier (AT&T, Verizon, etc). This will only be used for emergencies, unless you as a group, request more text messages such as weather warnings, meeting reminders and things like that.

Those with interest can contact Budd via email at: buddwb4j@gmail.com

Visiting the Weekly Net



The KCEN Tower, photo: W5GLR

Most of you reading this have at one time or another, checked into the Central Texas Amateur Radio Net, which is held on Thursday nights at 8:00 PM.

The net is held depending on repeater status, either over the W5BEC repeater on 147.140, or the N5ZXJ repeater on 145.310. Both repeaters are located on the KCEN TV tower in Eddy, in McLennan County and both have the identical hardware.

Both repeaters are set at 25 watts out, which because of their commanding altitude, provide coverage into 20 counties, with about a 70 mile radius with a coverage area from the IH-35 East-West split north of Hillsboro, south to the Texas Capital in Austin, west to San Saba, and east to near IH-45. The W5BEC repeater is located at 1,680 feet above ground level and the N5ZXJ repeater is a little lower at 1,550 feet above ground level.

Besides the weekly nets, during severe weather events the repeater(s) are connected directly to the National Weather Service in Fort Worth via EchoLink to provide positive ground truth during severe weather events in Central Texas.

A huge thanks to Gerald Richmond-N5ZXJ, for the technical data and pictures!



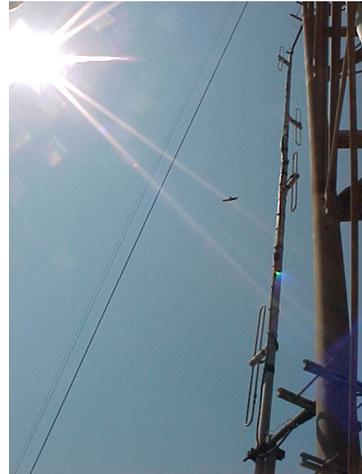
Kenwood TKR-750K2 repeater and Wacom WP-639A Duplexers



The W5BEC repeater - about half-way down the tower in this pic



It's a long way down - photo: N5ZXJ



Decibel Products DB-224E antenna having 8.1 dBi gain



The guy who keeps it all running... Gerald Richmond, N5ZXJ photo: KG5II

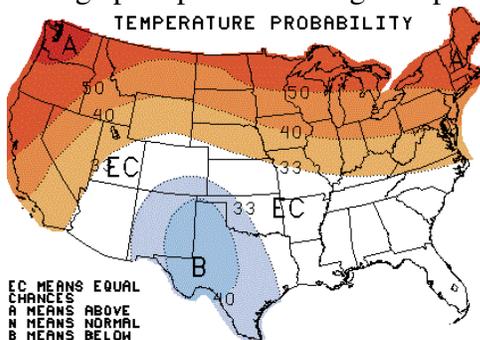
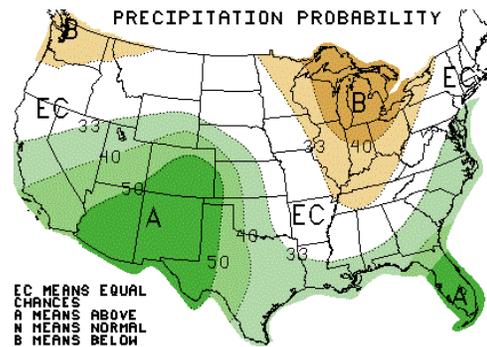


Spring Forecast Outlook

Spring is usually marked by large changes in temperature over a short period of time and this forecast is the overall temperature trend expected over the next three months. Therefore, even in areas where above-average temperatures are depicted there will likely be periods of colder than average temperatures at times during the spring and warmer than average temperatures will be experienced at times in areas where generally below-average temperatures are expected.

The precipitation outlook for above-median precipitation is forecast from California to the central and southern great plains and from the Gulf coast to the mid Atlantic and southern New England. Below median-precipitation is favored for the Pacific Northwest, portions of the Northern Rockies, and from the Great Lakes to the Tennessee Valley.

This pattern across North America throughout the spring season is due to the strong El Niño conditions still in place, with a persistent jet stream that will tend to dominate the southern tier of states, giving us - in our region - a 40 to 50 percent chance of above average precipitation during the spring.



The temperature outlook favors above-normal temperatures across much of the continental U.S., from the West Coast states to the Northern Rockies, across the Great Plains, to the mid-Atlantic and New England.

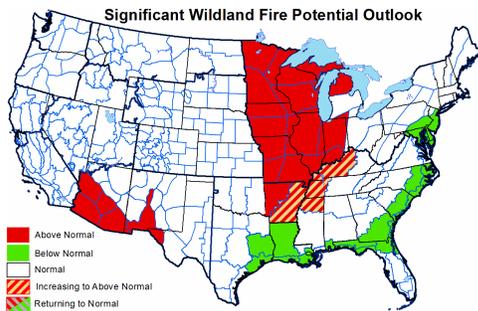
Below normal temperatures are favored for a small area of the southern Rockies, Texas, portions of Oklahoma and nearly all of New Mexico. These temperature outlooks are consistent with strong El Niño conditions,

which are still in place. The below normal temperature outlook for our area is partially related to the expectation of abnormally moist top soil. Both the National Multi-Model Ensemble and the European forecast model show an incredibly similar signal of warm-north, cold-south into early summer.

Flooding Concerns... The risk of river flooding, especially minor flooding, will be more sensitive than normal to precipitation trends. Moderate to heavy rainfall will more easily lead to river flooding than normal. The main reason for the elevated concerns are elevated soil moisture content and stream flow values for this time of year. With the forecast of below normal temperatures and above normal precipitation, the possibility of flooding events will be increased.



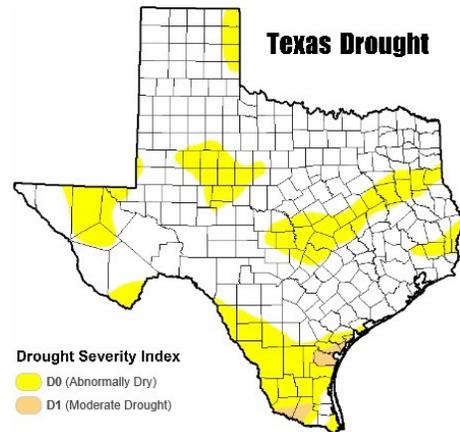
Fire Weather Outlook... Overall, large fire potential is expected to be near normal across the entire area through June. Below normal significant wildland fire potential will be widespread across the Gulf and Atlantic coasts and gradually reduce to small areas in Texas, Louisiana and the Carolinas by June.



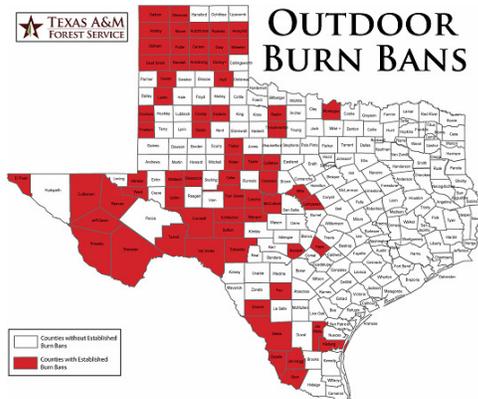
Above normal significant fire potential will expand across the northern Mississippi Valley and Great Lakes states with increasing dryness in these areas. Below normal significant fire potential will decrease to just coastal areas of the central Gulf and Atlantic coasts. Significant fire potential will remain normal across the remainder of the U.S., though potential for pre-green up fire activity increases through spring.

Expect fire activity to still be of concern pending any windy periods. The pre-green up period in areas bordering the Ohio and Tennessee Valleys south and west to eastern Oklahoma and Arkansas could be a potential area of increased activity.

Texas Drought Outlook... Despite wet weather overall since October 2015, short-term deficits were significant enough to bring some dryness and a few areas of drought into parts of Texas. Precipitation was also unusually low in the southern High Plains and western Texas, but this is a climatologically dry time of year for the region, and totals were only an inch or so below normal there. In central Texas, however, spring precipitation is more robust, and with odds tilting toward above-normal precipitation in the region drought removal is expected there.



The areas of drought in southern Texas are expected to persist where March-May is a relatively dry time of year. Drought removal is expected by the end of May in central Texas, where March-May climatology is wetter.



Despite over-all improvement trends in the drought index and the forecast of a wetter than average spring, several counties have burn bans in place. The nearest counties currently within central Texas, are Lampasas and Milam counties.

County burn bans are established by County Judges and / or County Commissioners within their respective counties. Those with interest can stay updated on local burn bans by visiting: <http://texasforestservicetamu.edu/TexasBurnBans/>

The Forgotten Father of Radio

Early radio magic, the magic of sending the voice through *nothing*. But who was the *real* inventor of what we call radio? The true "Father of Radio". Some may point to Heinrich Hertz, who, beginning in 1888, demonstrated that one could produce and detect electromagnetic radiation—now generally known as radio waves, at the time more commonly called "Hertzian waves". Others may lament Guglielmo Marconi, an Italian inventor and electrical engineer, known for his pioneering work in long-distance radio transmission and for his development of a radio telegraph system. He is often credited as the inventor of radio, whose experiments began in the summer of 1895. Still others might herald Reginald A. Fessenden, who performed pioneering experiments in radio, including the use of continuous waves and possibly the first radio transmissions of voice and music in 1906.

But somewhere in the shadows of the early history of radio, looms the mysterious figure of Nathan B. Stubblefield. Stubblefield was poor, and a mystic. He was a mendicant and a martyr to his invention. Stubblefield, the mystic of the mystic transmission of waves through air and land and water, to the nether reaches of the stars.

"I have," he said, "solved the problem of telephoning without wires through the earth as Signor Marconi has of sending signals through space. But, I can also telephone without wires through space as well as through the earth, because my medium is everywhere."



In 1892, 14 years before Fessenden's experiment, he handed his friend Rainey T. Wells a box, and told him to walk away. He had hardly reached his post when he heard "HELLO RAINEY" come booming out of the box. Wells moved a few feet further on, and all the while he kept hearing Stubblefield talking to him... without wires.



"I can telephone without wires a mile or more now, and when the more powerful apparatus on which I am working is finished, combined with further developments, the distance will be unlimited." However, he was ultimately unsuccessful in commercializing his inventions and later went into seclusion and made no further progress beyond his previous work.

Radio is a device that transmits and receives voice over considerable distance without connecting wires. Stubblefield invented, manufactured, and demonstrated such a device and did so before anyone else on the planet. On March 28, 1928, Nathan B. Stubblefield of Murray, Kentucky died alone, and penniless at the age of sixty-seven of starvation... and too many visions. The citizens of Murray, Kentucky call him "The Father of Radio", claiming that Nathan Stubblefield's invention made Murray the true "Birthplace of Radio."



Radio's First Lady **Judith C. Waller**

In spite of the fact that it's been done before, the most natural thing is to call Judith C. Waller radio's first lady, which she is, by double right, not only as a pioneer in the field but as an executive who dared many "firsts" in broadcasting.

Miss Waller's introduction to radio was one evening in 1922 when she was called from the dinner table by Walter Strong, then business manager of the Chicago Daily News. At that time, she had her eye on the newspaper field and had asked Strong for a job. But she was somewhat startled when he called her from the table to say, "I've just bought a radio station; come on down and run it." She protested that she knew nothing about running a radio station. "Neither do I," said Strong happily, "but come on down and we'll find out." Waller accepted Strong's offer and thus began her career in broadcasting. Waller and her engineer were initially the only two employees of WGU, which went on the air April 13, 1922. It would soon later become WMAQ.

When talent ran short she doubled as announcer, played classical numbers on the song bells and admits that occasionally she filled in on the drums, too. Programs were such that often she would book a show, rush back to the Daily News office to write it and then hurry back to The Fair store, which housed the station, to announce the broadcast.

Under her leadership, WMAQ evolved from a two-person operation into one of the nation's leading stations. WMAQ was the home of *Amos 'n' Andy* and the first station to broadcast a complete home season of the Chicago Cubs baseball team, thanks to Waller's negotiations with the Chicago Cubs.



As station manager, and later, vice president and general manager of WMAQ, she was one of the early visionaries who transformed the technical achievement of radio into the popular medium it became. Waller believed that broadcasting's potential as an educational medium was unlimited. She believed that the new medium should offer more than entertainment. She developed network programs that ranged from radio's *University of Chicago Roundtable* to television's *Ding Dong School*. Her book: *Radio, the Fifth Estate* published in 1946, is the most thorough treatment of the broadcast practices of radio's golden age.

When NBC purchased WMAQ in November 1931, Waller became the director of public affairs programming for the network's Central Division, a position she held until her 1957 retirement.

The broadcasting industry lost one of its greatest visionaries, innovators, and unsung heroes, when on October 28, 1973, Judith Waller passed away at the age of 84.