



# LETARC PROPAGATION

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## A Handy-Dandy Super Cheap Field Meter

by

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One of the most useful instruments one can have around the ham shack is a simple R.F. field strength meter. Most of the time we aren't looking for National Bureau of Standards accuracy, we just want a quick and simple method of tuning our system for "maximum smoke." The field strength meter I describe is just such a device; so simple and cheap, no ham should be without one, and sensitive enough to be truly useful. It will give a usable indication or relative field strength at power levels from QRP to full legal output.

You can deploy this instrument just about anywhere. You can just set the thing on your operating position, or if you really want to get picky, you can put it on a pedestal below your dipole and use a pair of binoculars to read the thing.

There is no sensitivity adjustment pot included, to make things even simpler. Sensitivity is adjusted by tweaking the length of a collapsible antenna.

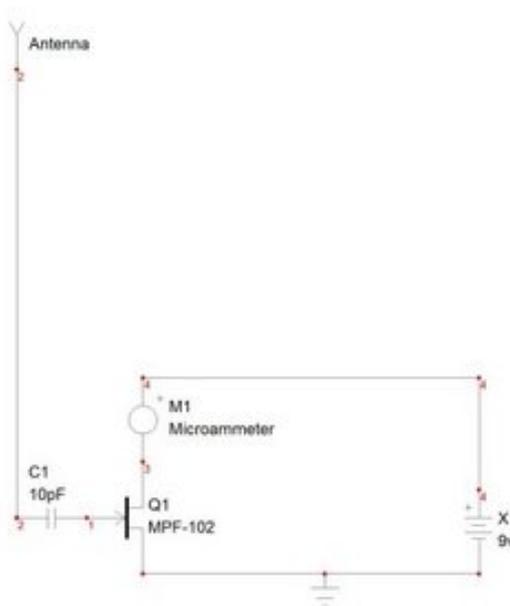
The circuit is extremely simple, as you can see by the schematic. The most expensive part is the micro-ammeter. (The last time I went to our local Radio Shack and asked for a micro-ammeter, the genius behind the counter came back with some sort of battery tester and said, "This is the smallest ammeter we've got." Needless to say, you will have to find a more apt source for your micro-ammeter, such as Ye Olde Junque Box). The real "guts" of the device is the MPF 102 J-FET which acts as an R.F. detector and DC amplifier. Incidentally, this beastie is so sensitive, it will detect DC fields as well, such as approaching lightning storms...a handy little side-effect you should be aware of.

You can install the whole shooting match inside a small plastic project box, or you can build a box out of double clad circuit board, which gives you that rich coppery appearance. Mount the collapsible antenna securely to the top of the box. (You might want to add some dead weight to the bottom of your box, so the thing wont fall over with the antenna fully extended).

This device is also handy for tracking down excessive R.F. in the shack. Theoretically, you should have more R.F. near your actual antenna than you do in your shack...if not, probably some investigation is in order!

By the way, you may find that the D.C. field strength capabilities of this are even more interesting than the Rf. aspect. A slight modification of the circuit, replacing the junction FET with a MOSFET, will make this a true static field instrument. (A J-FET requires a finite, if minuscule amount of gate current, while a MOSFET does not). The MOSFET version, with a long, vertical wire antenna, will also allow you to investigate phenomena such as electron precipitation events, if you happen to live in high latitudes. Electron precipitation is one of the major cause of sudden R.F. blackouts...and can be easily read with such simple instruments.

You will find this handy little instrument useful, educational, and fun. It's a great weapon in your radio arsenal.



# Newbie Corner - The Storied History of the Ham Radio Call Sign

by  
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Every legal amateur radio operator in the world has a government issued call sign, and many hams are better known to their radio friends by their call sign than they are by their given birth name. The uniqueness and prestige of a call sign is indeed one of the most important things that provide the persona that IS amateur radio. Remember when you first opened that letter from the FCC, it was not unlike Christmas day as you learned what your new call sign would be. From then on, you would be known by that call sign.

Call signs are important indeed. Think of the call sign **W1AW**, and 99% of hams would know that this once identified Hiram Percy Maxim, the founder of the ARRL. The call sign was so important that it became the official call sign of the ARRL. But, if one thinks about it, we don't really own these call signs, they're leased to us by the FCC for our use as long as we remain licensed. We are the caretakers, and when we become a silent key, they are passed along to the next caretaker. (This author is the fifth caretaker of the **W7VO** call sign, and seventh if one includes the original **7VO**, which has been traced back to 1922.) However, this begs the question; where did our treasured call signs first originate, and what is the evolution of this most important moniker? Of course, one cannot discuss call signs without covering some of the storied history of amateur radio itself in the process.

The origins of amateur radio call signs go back to the earliest days of radio, informally at first, then more formalized as major world events transpired that changed the face of amateur radio itself. This evolution can be broken down into five distinct periods of history:

- 1) The Pioneer Years, pre - 1918
- 2) The Reconstructive Years, 1918 - 1927
- 3) The Pre-War Years, 1928 - 1941
- 4) The Post-War Years, 1945 - 1975
- 5) The Modern Era, 1975 - present

## The Pioneer Years, pre 1918, "The Days of Anarchy"

The very early days of ham radio was an interesting time, not completely unlike the untamed wild west itself. Prior to 1912 there were no real laws governing the new communications medium known as "wireless", it was for the most part completely unregulated. The airwaves of the time consisted of signals emitting from crude spark gap transmitters, by a combination of governmental, commercial interests, and fledgling ham radio operators (who mostly worked for these other interests). The Marconi Company was among the first to use three letter call signs to identify their transatlantic coastal wireless telegraph stations, and to identify their company owned shipboard stations. The coastal station call signs started either with a "V" (for "Voice of (somewhere)", or "M" (for "Marconi"), while the shipboard stations just used the starting letter of "M". Amateur radio operators for the most part started off by using just names as identifiers, such as "BILL" or "MAC", then that evolved into a combination of two or three letters, a mixture of letters and numbers, or even just numbers! It would be easy to see that there ended up being a

LOT of overlap in call signs, both commercially, and among hams themselves. Was "MAC" a Marconi Company owned shipboard station sailing off the coast of Newfoundland, or Miles A. Cornwall (using the call sign "MAC"), the ham radio operator in New York? With such a limited range for the spark gap transmitter (often around a hundred miles or so), this wasn't much of an issue, (at least at first.)

However, as the airwaves became more and more congested it was clear that more needed to be done to coordinate and publish established call signs to reduce conflicts. While there were publications that listed known commercial wireless stations, the May 1908 publication of *Modern Electrics* magazine published one of the very first list (a "wireless registry") of known amateur wireless radio operators, their associated call signs, and also the approximate wavelength they operated on. (One could argue that these are really the first ten documented ham radio operators!) Most of these hams used two letter identifiers signifying their initials, but one ham, Otto Curtis of Rochester, New York was simply known as "Q", long before the letter became associated as fictional James Bond's technical adviser.

By May of 1909 the "wireless registry" listed many more amateur wireless stations and their call signs, most listed were using three letters by now. (It's interesting to note that many used two letters followed by the third letter of "M" to denote that they were employees of Marconi Company). Some hams were listed with a combination of letters and numbers, such as J.C. Randall of Albany, New York who was listed signing as "S4", and F.W Harris of Renton, Washington, who signed simply as "3B". One special call sign listed was that of Earl C. Hawkings of Minneapolis, Minnesota who utilized the call sign of "HAM". I guess one could argue that he was the first real "ham"!

In such an unregulated environment that had many wireless stations competing, (all utilizing transmitters with very broad emission spectrum), and coupled with crude receivers on the other end, conflicts caused by both unintentional and intentional interference were commonplace. This was getting worse by the day, and one day it all came to a head. That day was April 15, 1912.

On that fateful day, the seemingly impossible happened. The "unsinkable" RMS *Titanic* (call sign: **MGY**), with 2,200 passengers aboard hit an iceberg in the North Atlantic, and was sinking fast. While there were hundreds of passengers eventually rescued by the RMS *Carpathia* (call sign: **MPA**), several problems with wireless radio communications of the day played a key role in delaying the rescue effort, and undoubtedly added to the *Titanic's* fatality totals. For one, the shipboard wireless station aboard the *Titanic* was owned and manned by employees of Marconi Company. Marconi's main competition for the ship wireless telegraph market was bitter rival Telefunken, based in Germany. At the time Marconi Company owned stations were not allowed to have any contact with Telefunken owned stations (call signs beginning with a "D"), and as a result messages from the competition were largely ignored. In addition, there was both unintentional and intentional interference from other commercial stations (and hams alike), making for even a more chaotic scene. Many thought the distress signals from the doomed ship were fake. After all, how could the "unsinkable" *Titanic* really be sinking? It must be "fake news"!

There was also a third issue. The Marconi Company early on had established the "CQD" ("CQ Distress"), message. The now familiar "SOS" ("Save Our Ship, or "Save Our Souls"), had actually been made the worldwide standard at the second *International Radiotelegraphic Convention*, was signed in 1906, and became effective on July 1, 1908. This was a full four years earlier than the *Titanic* sinking. Only the

Marconi Company equipped ships still used “**CQD**” as the standard distress message when the *Titanic* ran aground.

While the above is a nice narrative about a well-known disaster, what does this have to do with amateur radio call signs? When the dust settled, the US Congress began investigations into how to keep this disaster from repeating itself. Besides the sole remaining *Titanic* wireless operator, Harold Bride, the radio pioneer and tycoon Guglielmo Marconi himself was called before Congress to explain his company’s practices. The end result of these hearings became what is known as the Radio Act of 1912, written into law on August 13, 1912. This historic act had the following provisions, among others:

- 1.) It established a Federal law that mandated that all ships constantly monitor distress frequencies, (the primary one at that time set at 600 meters (500 kHz))
- 2.) Mandated that the familiar Morse “**SOS**” be the defacto standard for distress calls
- 3.) Mandated that all radio stations in the US be inspected and licensed by the federal government.
- 4.) Provided the possibility of fines for intentional or malicious interference
- 5.) Limited experimenters (amateurs) to 200 meters wavelength (about 1.5 MHz) and lower, (as frequencies higher than that were considered “useless”!)

The end result of the new licensing requirements dramatically dropped the number of amateurs from about 10,000 to around 1,200 almost overnight, and almost killed off the hobby. This was a win for the Navy and commercial wireless interests, as they really didn’t want any “amateurs” on the air anyway, interfering with *their* airwaves. While US stations, (including amateurs), had to be inspected and licensed by the US government, this act didn’t really do much for formalizing call signs per se.

On the international front, the International Radiotelegraph Convention of 1912 established the first internationally recognized call sign standards, based on the country. This standard replaced the random three letter call signs prevalent then. Major world powers were given single prefixes such as “**N**”, “**W**”, and half of the “**K**” prefix allocations (**KDA-KZZ**) (United States), “**A**”, “**D**”, and “**KAA-KCZ**” (Germany), “**F**” (France), “**B**”, “**M**”, and “**G**” (Great Britain). The convention was signed at the International Radiotelegraph Conference in London on July 5, 1912. It is important to note that while these international standards were applied to commercial wireless stations, amateurs for the large part were still left on their own.

On May 9, 1913, the official United States Policy for Radio Call Letters was published:

“The call letters for amateur stations in the United States will be awarded by radio inspectors, each for his own district, respectively according to the following system:

- (a) The call will consist of three items; number of radio district; followed by two letters of the alphabet. Thus, the call of all amateur stations in New England (which comprises the first district) will be the figure “one” in Continental Morse, followed by two letters; in California (in the sixth district) the figure “six” followed by two letters; in South Carolina the figure “four” followed by two letters; in Missouri the figure “nine” followed by two letters, etc. The letters “**X**”, “**Y**”, “**Z**”, must not be used as the first of the two letters.

The territory of each district was as follows:

- (b) The three items; a given figure first, followed by two letters of the alphabet, thus may be combined in 598 different calls, which will probably suffice for the amateur sending stations in most districts for some time to come.

- (c) Radio inspectors will insert amateur station calls in station licenses according to this system, and will keep a permanent chart, of 598 squares, lettered with the alphabet from left to right and from top to bottom (“**A**” to “**W**”), inserting in the appropriate square the serial license number of the station to which the call letters were awarded. Within these limitations radio inspectors will use their discretion in the award of calls, avoiding, of course, duplications.

- (d) When a station is abandoned and the license canceled, or if a license shall be forfeited for violation of law, the call assigned to it may be allotted to another station.

- (e) If the entire 598 calls have been exhausted, radio inspectors will issue additional calls, consisting of the figure of the district followed by three letters. From such combinations should be excluded the combination **SOS**, and **PRB**, all three-letter combinations beginning with **QR** or **QS**, all combinations involving the repetition of the same letter three times, three-letter combinations beginning with “**K**”, “**N**”, “**W**”, “**X**”, “**Y**”, “**Z**”, and other combinations, which, for various reasons, international, national, local, or individual, may be objectionable.”

The “official” US amateur ham radio station call sign was officially born, but what is interesting to note here was that the Department of Commerce, who was responsible for these regulations, thought that 598 call signs per district were plenty “for some time to come.” Little did they know that the number of US amateurs would balloon to the almost three-quarter million we have now!

Then on April 7<sup>th</sup>, 1917 the entire world of amateur radio was turned upside down, when by executive order amateurs were told to “dismantle and render inoperable radio wireless equipment, and antennas” as the United States formally entered “The Great War”, World War One. This mandate applied to both receivers and transmitters, and all amateur licenses issued to date were immediately cancelled. Amateur radio was dead, and radio itself became a government monopoly utilized strictly for the war effort. To ignore this mandate could be considered an act of treason, so it was not taken lightly.

Radio amateurs, while no longer licensed, were a valuable asset for the war effort. They were encouraged by the government to help man coastal wireless stations and enlist in the Signal Corps for field radio operations.

### **The Reconstructive Years, 1918 - 1927, “Starting Over”**

At the conclusion of the war the US Navy put together a very large push with the Congress to ensure that future amateur radio activity remained silent, so the military could continue to have the airwaves for themselves. Mostly due the effort of Hiram Maxim and the ARRL that effort was defeated, and amateurs could once again be licensed and back on the air starting in early 1919.

Since all licenses had been cancelled at the start of US involvement in the war, all previous call signs were forever lost. When the nine district radio offices once again opened for business amateurs lined up in an attempt to ensure low letter suffix assignments. (Are things really

different now outside Apple stores these days when the new phones come out?)

As early as 1920 some of the call districts had run out of two letter suffix assignments, so began the three letter suffix call sign. (That said, there were some reassignments of two letter call signs, if you knew the right person!)

By 1923, as both receiver and transmitter technology greatly improved, international contacts between amateurs were becoming commonplace. Amateur stations, for the most part, still didn't follow the call sign prefix standards set by the International Radiotelegraph Convention of 1912, so there were again problems related to duplication of call signs. Only this time on a worldwide scale. Remember that the policy established in 1913 did not cover call sign prefixes for amateurs, only the district assignments and suffixes. There could be a **2AL** in New York working a **2AL** in Brazil, or another one in England. Amateurs, (being inventive as they are), took the matter in their own hands, and sometime starting in the mid 1920's US amateurs began using an unofficial "u" or "U" as a prefix on call signs to denote they were from the US. By 1927 the prefix "nu" (North America, United States) became commonplace on QSL cards (example: **nu6AA**), while a ham in Canada would use "**nc**" (North America, Canada) as a prefix, (ie: **nc7AA**).

In 1925 the Department of Commerce opened up the "**Z**" letter suffix for assignment, and allowed the "**Y**" letter suffixes to be used for educational institutions. Examples of the latter are still in use to this day; Stanford University is often on the air with **W6YX** (originally **6YX**), and down the road San Jose State University is still on the air (since 1928) with the **W6YL** call sign. The "**X**" letter suffix remained for "experimental" stations, and was not released as a 1X2 (ie: **W7XQ**), standard call sign until 1977. Two-by-three letter "**X**" suffix call signs remain to this day reserved for experimental stations. Not exactly as the Convention of 1912 dictated, but better than nothing!

#### **The Pre-War Years, 1927-1941, "Amateur Radio is Here to Stay!"**

The Washington Conference / Radio Act of 1927 established formalized US amateur radio bands, and finally put US amateurs under international prefix rules that were loosely established in the international conference of 1913. As a result of this act a new commission was formed, the Federal Radio Commission. The commission was assigned the task of issuing licenses, including amateur radio. Also part of this latest act, the US was finally going to follow the already established International Telegraph Union (ITU) call sign standards.

The ITU standards were upgraded to grant the entire "**K**" prefix to the US, in addition to the existing "**W**" and "**N**" prefixes. (Remember that Germany had the "**KAA**" to "**KCZ**" prefixes issued previously). The Navy was reserved the "**N**" prefix, while starting in 1928 the "**W**" and "**K**" prefixes were authorized for civilian services, such as amateur radio. As new amateur licenses were issued, and old ones were renewed, the "**W**" prefix was simply added to the existing call sign. For example, the call sign of **6UO**, (or the unofficial **nu6UO**), became **W6UO**. The "**K**" prefix at that time was reserved for US possessions, such as Alaska, Hawaii, and other islands. (Note that "**A**" block letters were unassigned until 1947, when the US received the "**AA**" through "**AL**" prefix blocks). The US amateur radio call sign had finally taken its modern shape we all know today.

Unrelated to amateur history, (but a question that always seem to arise), is the history of how the US commercial broadcast stations got geographically divided into "**K**" (for stations West of the Mississippi), and "**W**" for Eastern stations. This oddity goes back to early Federal Radio Commission regulations, and was originally applied to ships operating either in the Atlantic, ("**K**" prefixes), or Pacific or Great Lakes

area ("**W**" prefix). Eventually, this was applied to land based commercial stations as well, (but somehow in reverse order), using (with exceptions), a rough line matching the course of the Mississippi river.

In 1933 President Franklin Roosevelt requested the Secretary of Commerce to appoint an interdepartmental committee for studying electronic communications. A recommendation was made by the committee for the establishment of a new agency that would regulate *all* interstate and foreign communication by both wire and radio, plus telegraphy, telephone and broadcast, under one umbrella. This resulted in what became known as the Communications Act of 1934. A key part of this act was the creation of a new federal organization known as the Federal Communications Commission, (FCC) to replace the Federal Radio Commission that was previously established in 1927. Amateur licenses were now moved under this new commission, and this act also created many of the laws that still govern the hobby to this day.

On December 7, 1941, the "day that will live in infamy", the world of amateur radio was upended for the second time, as the US was drawn into the Second World War. All amateur activity was officially suspended January 9th 1942 for the remainder of the war. The big difference here though, was that the FCC continued to issue and were allowed to renew amateur radio *operator* licenses. After all, that gave the government a ready pool of trained and *certified* radio operators and technicians for the war effort. There were no *station* licenses issued, and existing ones were considered revoked. Once again hams were forced to silence their stations but at least this time, unlike the previous war, receivers were still allowed to be used.

This lasted until the war officially ended in September 1945, and shortly afterwards amateurs were granted limited permission to get back on the air in November of 1945, with only the ten and two meter bands to start. The US amateurs were back, even if only in a limited capacity at the time.

#### **The Post-War Years, 1945-1975 "The Glory Years of Amateur Radio"**

The Atlantic City International Telecommunications Union (ITU) Conference of 1947 (the ITU had changed its name in 1932), reallocated some call sign blocks, and granted a few developing island nations their own prefixes. Meanwhile in the US, the call sign districts were moved around to equalize ham populations.

During the war the Midwest, and West coast industrial centers had greatly increased the amateur radio populations in those areas. As a result, a new 10th call district formed for the central Midwest, allowing Wisconsin, Illinois and Indiana to have the 9th district to themselves. The 6th district was changed to encompass California only. The remaining states that used to be part of the 6th district (Nevada, Arizona and Utah), were moved into the lesser populated 7th district. As licenses were renewed, the new call sign districts were mandated, and often entire call signs changed as a result. A new call was assigned to denote the new district, but one "might" keep their old suffix if it was currently unassigned in the new district. If the suffix was already assigned to somebody in the new district, a new suffix was assigned as well. For example, pioneer Charles Newcombe, **6UO**, in Yerington, Nevada became **W6UO** in 1928, but had to change to **W7VO** when the state became part of the 7th district in 1947 as **W7UO** was already in use. The rule allowing special call sign suffix dispensation lasted until 1978, when the systematic call signs program began. (More on that later.)

Also at this time US Possessions had own unique prefixes assigned, ie: **KP4** for Puerto Rico, **KH6** for Hawaii, and **KL7** for Alaska.

In 1951 there was a big push to create an “entry level” amateur license, so in response the FCC created a new Novice amateur radio license class, originally as a one year, non-renewable, low power, and CW only license. These new “novices” were assigned either a **WN** or a **KN** prefix, but the “**N**” would be dropped from the call sign once the licensee upgraded. (For example, new novice **WN7XYZ** would get a new call sign of **W7XYZ** once he upgraded.). When the FCC ran out of “**KN**” and “**WN**” call signs, they began issuing “**WV**” prefixes for novices, which became “**WA**” or “**WB**” prefix calls when upgraded. US Possessions used “**W**” for the first letter of the novice prefix, (ie: **WH6ABC** to denote a novice call sign, which changed to **KH6ABC** when upgraded).

Another interesting thing happened at the same time. Another new class of license was created, called the “Technician” class. It was a new VHF/UHF/microwave (220 MHz and higher) licensed designed to encourage experimental exploration of these frequencies, (but not intended as a communicators license!) The call sign assignments for the Technician class license followed the same rules as all of the other amateur classes, except Novice. Since Novice and Technician privileges didn’t overlap, it was possible to hold two different call signs at the same time. There was also another rule that if an amateur had homes, (such as a “snowbird”), in two different FCC districts, he or she could hold call signs that reflected the numbers of both districts. So, technically, one amateur could potentially hold four amateur call signs simultaneously! It is unknown whether anybody ever took advantage of this loophole, but it was technically possible. When the Novice license was upgraded, the Technician license was forfeited, as the General class already included all Technician privileges. This system was in force until sometime in the 1960’s.

As the number of licensed amateur operators greatly increased in the boom years following the war, “**W**” prefix call signs started to run out, so starting in 1947 the first “**K**” prefix calls began to appear in the continental US. By 1953 most districts were issuing them, and some still were until 1964. (The 9th call district area was first to implement the new “**K**” prefix)

By the late 50’s/early 60’s all of the possible combinations of 1X3 format “**K**” were all assigned in some districts, so “**WA**” and “**WB**” (2X3 format) call signs started appearing. “**WB**” call signs were issued from 1965 to 1975, but in the mid 1970’s some districts were also running out of “**WB**” calls, so the FCC began recycling old “**WA**” calls that were expired or otherwise unused in the system. (The author’s first call sign was one of these, **WA6HKP**). The amateur ranks were filling up fast!

However, the recycling of old call signs was not new when they began reissuing unused “**WA**” call signs. Starting in 1966, (and until 1977), Extra Class licensees, licensed for 25 years or more, could apply for unused 1X2 call signs.

### **The Modern Era, 1975 to Present “Things get complicated”**

The issuance of the recycled call signs was a lot of extra work for the FCC, so it began issuing new “**WD**” prefix call signs in the 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> area call districts, starting around 1976. (In 1978 the “**WD**” prefix was replaced with the “**KA**” prefix, as systematic licensing was put into place). But what happened to the “**WC**” prefix, which logically should have come after “**WB**”? The answer is; those prefixes were reserved for Radio Amateur Civil Emergency Service (RACES) stations at the time. VHF and UHF club owned repeaters also had their own 2X3 format call signs issued, starting with the “**WR**” prefix. At least one “**WT**” (**WT6AAA**) call sign is known to have been issued in the 1970’s, as a “temporary” call after a FCC mixup denied a prospective amateur’s new license. (He had the same first and last names as somebody who

previously had their license revoked, and once cleared up a temporary license was issued until the standard license could be processed).

In 1975 the FCC released special 1x1 call signs for special event stations, choice 1x2, and “**AA-AL**” and “**N**” prefix call signs. Starting in 1977 the 25 year licensing requirement was dropped for Extra Class upgrades to unused 1X2 call signs, and in addition, the 1X2 “**N**” (ie: **N1AA**) prefix call signs were added to the mix. Also, the new 2X2 “**AA-AL**” prefixes (ie: **AA7CR**) became available for Extra class licensees. There were certainly a lot of new “Extra Class only” call signs to choose from, and many licensees took advantage of the opportunity!

However, just as things seemed to be running smoothly for the issuance of call signs, in early 1977 a FCC employee at the 3<sup>rd</sup> District office in Gettysburg, PA was indicted for taking bribes offered by amateurs wanting special call signs, and who did not have the license class to be awarded the change, (among other issues). This unfortunate event resulted in the termination of all then informal FCC processes for issuing call signs. The new rules implemented on February 23, 1978 required that all amateur call signs must be issued only by the “systematic” process as specified in the rules. No specific call signs could be assigned; call signs were instead assigned consecutively, via a computer database. There were a few other sweeping changes:

- Amateurs were no longer required to change their call sign when moving to a new district.
- Secondary, Repeater, Control, and Auxiliary Station licenses were discontinued
- Call signs were now going to be assigned by Groups, and by license class

The Groups were defined as:

#### **Group A -- Amateur Extra Class**

Contains all “**K**”, “**N**” and “**W**” 1x2, most 2x1, and most “**AA-AK**” prefixed 2x2 call signs

#### **Group B -- Advanced Class**

Contains most “**K**”, “**N**”, and “**W**” prefixed 2x2 call signs

#### **Group C -- Technician & General Class, (and later, the Technician Plus Class)**

Contains all “**N**” 1x3 call signs. Unassigned “**W**” and “**K**” prefixed 1x3 call signs are not issued under the sequential call sign system, but are available under the later Vanity call sign system

#### **Group D -- Novice Class**

Contains most “**K**” and “**W**” prefixed 2x3 call signs. The letter “**X**” may not be the first digit of the suffix.

Note that no provision had been made for the issuance of **AA-AL** and **NA-NZ** prefixed 2x3 call signs, and these call signs are not currently issued to anyone.

In 1995 the Vanity “for a price” program opens, consisting of four “gates”:

**Gate 1:** 5/31/96, for those amateurs that had held a call before, or eligible for “in memoriam” calls 7/22/96, for Club station trustees that were eligible for “in memoriam” calls

**Gate 2:** 9/23/96, Amateur Extra requests

**Gate 3:** 8/6/97, Advanced Class requests

**Gate 4:** 12/2/97, Everybody else

So now we have the full history of the ham radio call sign, from the infancy days of amateur radio, until the present day. What does the future hold for our call signs? Who knows? Eventually, the “N” and “A” 2X3 call sign formats will have to come into play as the “K” and “W” prefixes run out. There also have been other ideas floated out there that include authorizing a mixture of letters and numbers for Extra class call signs, similar to what is in use in Europe. (ie: **W71VO**), or even the “sale” of 1X1 call signs to Extras, now reserved for special event stations.

In conclusion, please take the time to appreciate the past efforts and tenacity our forefathers, and especially the gallant early efforts of the ARRL, had to ensure that the hobby we all enjoy as radio amateurs even exists today. Our unique call signs define who we are as amateurs, and have from the start. Please remember to take good care of our special call sign heritage for future generations of amateurs.

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## **What Happened to Elmering?**

**By**

**John Armstrong - KG5LWD**

**B**ack in the early 1970s when I first got my Amateur Radio license, there seemed to be an abundance of Elmers willing to help newbies out while learning the ropes of Ham Radio. My good



friend at the time was a radio engineer for KHEY 690 AM in El Paso named Charlie Schlieper. Not only was he a very good friend, but an excellent mentor who provided encouragement to dig deeper

into what I learned. Charlie was a great Elmer who helped me get my ham license and First Class ticket for commercial radio. When he left El Paso for other endeavors elsewhere in Texas, I lost touch with him over the years and was deeply saddened to hear he became a silent key a few years ago from a heart attack.

As I recall from many years ago, it was around 1983 I received notice that both licenses needed to be renewed. I ignored those notices since I was no longer involved in radio any anyway except for listening to it while driving down the highway in my car. I let both licenses expire and never renewed them since my vocation was in the energy industry. That was a big mistake that I discovered 40 years later on in life as I decided to take up Ham Radio again in my retirement years.

Now I pine for the friendship I once had in having Charlie as my Elmer who helped me understand radio and electronics better. His absence today makes me now wonder what ever happened to Elmering in Amateur Radio. It seems to have died out and no one is interested in helping out newbies become proficient in using their radios. Are radio operators nowadays more interested in who has the tallest antenna, the most powerful amp or how much can an old broken down piece of radio gear be pawned off on to the unsuspecting newbie? What happened with the practice of Elmering in Ham Radio?

Then in 2016 I got the radio bug again after a friend with the Tyler ARC invited me to a meeting. Soon after attending that meeting, I got re-energized to pick up the hobby once again. However, since my license had expired long ago I was tasked with having to study for my Technicians license and eventually my General. It was no big deal studying for these exams since the code requirement was no longer applicable. After studying the AARRL manuals for a while, I passed both exams without any difficulty.

But, I realized there was something missing when I took the exams. I realized anyone could memorize answers to questions, but to fully grasp the reasons for those questions was lacking. Why? It's because an Elmer wasn't there to help clarify questions or to demonstrate how things work. Again, I wished for my old friend Charlie who always took time to answer questions and show me how things worked in radio. He was such a kind hearted and patient fellow who gladly passed on his knowledge.

After passing my Technicians and General license exams, I went out and purchased a Baofeng HT radio to get me started on 2 meter. But, I soon found 2 meter was not my cup of tea and I wanted more out of my Ham Radio experience than talking with folks locally. I wanted to reach out to folks all around the world; to make new friends and acquaintances. So, I saved my nickles, dimes and quarters and purchased a basic Icom IC-718 transceiver and G5RV antenna. This setup got me started, but I soon discovered that my antenna was the limiting factor to reaching out around the world. Some folks will swear by a G5RV and feel it is an excellent antenna. As for me, I have a hard time getting across the street with a good signal using that hunk of wire. It's in instances such as this an Elmer would help decide which is the best antenna to get and that's something I was definitely missing. Also, having someone to help set things up would have been nice. Instead, it was learning by the seat of my pants and not knowing if I made a mistake. However, that's what learning is all about. Elmers just make life a little simpler learning amateur radio. One can draw upon the mistakes Elmers made in the past.

As part of trying to learn more, I joined a couple of radio clubs. I found a mixture of club members who knew a lot about Ham Radio and those who didn't know diddly squat except for turning on the radio. For those who knew radio and you asked them a question, you would usually get an answer. Sometimes, they wouldn't know and would refer you to another club member to get the answer to the question being asked. However, many times the memberships of clubs can be clickish and this makes it difficult to fit in and even more difficult to

ask questions. This goes against the grain of what use to be done in years past with ham clubs where there is a group of people openly willing to share their knowledge and expertise to help a newbie along. Ideally, this should still be the modus operandi of radio clubs to reach out and help someone new to the hobby and help them expand their horizons rather than be stuck in a 2 meter world learning little if nothing. Cq, Cq, Cq Charlie.

## How Did You Get Into Ham Radio?

By  
John Armstrong – KG5LWD

For most of us, what I am about to say may not come as a surprise. Often times, I am asked “what got me started in ham radio” by curious folks who don’t know anything about the topic. Like many others, there was an Elmer or neighbor who had a tall tower sitting in his back yard with all sorts of antennas connected to it or a neat looking radio in the shack that really piqued interest. Listening to short wave radio from distant lands always seems to attract a lot of interest in young folks.



As for me, I think listening to my dad’s old Zenith Transoceanic Radio is what got me started as a young child and then later on in life, a friend who turned out to be my Elmer, finally got the ball rolling in earning my amateur radio license.

My dad wasn’t an amateur radio operator, but he did enjoy listening to broadcasts from around the world.

He would switch from listing to Medium Wave Broadcasts which seemed to be popular during the 1950s and early 1960s.

Often times I would turn to a frequency where there was a rapid barrage chirps that seemed endless. It was some sort of code that I still not understand to this day of what was going on. But, I do know no one could key Morse Code that fast...not even Superman.

Then in the 1970s, I became involved with Citizens Band Radio. At first I thought this type of radio was slicker than sliced bread since I could easily mount a radio in my car, stick on an antenna and be in business talking on the radio. Licenses for CB were required back then, but no one used them. It was a free for all rumble to get on the airwaves that seemed to be mainly occupied by foul mouth folks who used every four letter word in the book to carry on conversations.

I soon discovered CB was only good for one thing; traveling on the highway and to find out where “smokey” or “Kojak with a Kodak” was hiding to issue “green stamps” to unsuspecting motorists for speeding. Those were acronyms made famous by the Country Western singer C.W. McCall in his song “Convoy”; a song about truckers using CB radio and the terminology of the day such as “riding in the cocking chair”, “Good

Buddy”, “Breaker, Breaker, anyone got a copy on 1-9”, and “got your ears on?”, you’re “wall to wall and treetop tall” to mention just a few.

Today on amateur radio, if I were to use that terminology on the air, folks would come unglued since we try to keep things civil and legal through self policing; something non-existent in the CB world for the most part. And if I were to sign on amateur radio using a handle such as “Bubba”, “Papa Bear” or “Mr. T”, I guarantee there would be hams out there laying in wait for me to sign on the next time to find out who the moron is so he could be reported to the FCC. That ain’t for me “good buddy, that’s for sure for sure Rubber Ducky”.

However, it wasn’t too long after the CB craze hit that I met a friend who was an engineer at a local radio station and he planted the ham radio bug into me and I eventually earned my amateur radio license and First Class Commercial ticket. It was at this time I started to listen the scanners in the news room of the radio station where I worked. This was way before “Al Gore” invented the internet where streaming audio was not available. I could listen to the police, fire and government radio and found it interesting. Each agency seemed to have its own unique lingo.

But, if you were to ask me today what I like best about amateur radio, it’s listening to some of the old timers ragchew. It’s a place where there are some really great conversations taking place, it’s also a good place to learn about the technical issues radio operators encounter.

However, there will always be those unsavory people lurking around on the various bands who are nothing more than poor ambassadors of amateur radio where there is foul language being used and no one seems to mind or report. These are the Good Buddies of amateur radio and should be relegated to the 11 meter band. It is during these instances where I choose to not feed the animals by visiting the animal farm and go elsewhere on the band. That’s a big 10-4 y’all.

## LETARC MEETINGS

City of Longview Fire Training Facility, 411 American Legion Blvd, Longview, TX.

LETARC’s monthly meeting held the fourth Saturday of each month at 0900 hrs at the Longview Fire Training Facility at 411 American Legion Boulevard. Talk-in on 147.34 (+136.5). Presentations, free coffee and donuts and friendship!

The VE Sessions have also been moved to the fourth Saturday of each month at LeTourneau University. The time of the day not not changed. It still takes place at 2:00PM.

### Minutes of the June 2018 Monthly Meeting Of

### The Longview/East Texas Amateur Radio Club

The June 2018 monthly meeting of the Longview East Texas Amateur Radio Club was called to meeting at 9:18 a.m. Saturday, June 23, 2018 by President Jim Quinn, AA5CX. After introduction of members and guests, the group viewed two You Tube videos, one humorous, entitled “Fake Ham News,” the second entitled “HF Antennas for Difficult Situations,” that gave two real life examples

of how to deal with restrictions on antennas due to physical limitations as well as restrictions imposed by a homeowner's association. After a break, the business part of the meeting commenced. Vice President John Zenter, AE5OY, read the minutes of the May meeting, after which a motion to accept them as read was made by Jim Rogers, seconded by Cliff Scott, AE5ZA, and they were approved as read. The treasurer's report was read next by John Zenter, AE5OY. A motion to approve them was made by Joe Gimbert, AG5FJ, and seconded by Jim Liberacki, N5TQI. The report was approved as read. After this, the following items were discussed:

1. Jim Liberacki, N5TQI, reported that planning for the LETARC/Upshur County ARES special event station scheduled for October 18-20 in Gilmer, Texas, is highly organized, and the group has been authorized to use the special event call sign W5Y. Jim will be passing around sign-up sheets later for anyone interested in signing up to help and helping.
2. Jim Perry, KA5BCM, reported that air conditioning duct work in the Mims Chapel Volunteer Fire Department building is under way. Electrical work on the radio room has stopped due to the sub panel. (He also noted that the electrical contractor agreed to do this project pro bono both labor and materials.) Overall the building is about 80% complete. Unfortunately, it will not be ready for Field Day use.
3. The new antenna is assembled, and sitting in a bay in the building. All of the required adapters to complete the antenna/tower project are complete. However, the thrust bearing was not removed from the existing tower at the Red Cross building, so while Tom Wilbeck, N5KGN, worked on the tower, Jim Rogers, N5VGQ, retrieved the thrust bearing from the Red Cross tower. Due to this, antenna installation was not completed. Also, the tower will be braced with Rohn 20 to a horizontal beam inside the building at approximately 16 feet above ground level. The brace will also serve as a wireway for the antenna feed coax and rotor cables. Also, the antenna coax patch panel has already also been installed.
4. Jim Rogers, N5VGQ, explained that the (new) Fusion 2 repeater is two complete dual band radios complete with an Internet interface, and is rated for 50 watt continuous duty. This will be installed at Jim's house. In a private deal that was not publicized, another new Fusion repeater has been purchased by Ross Bennett's (K5ISR) business for installation at Mark Bennett's tower in Kilgore. Jim Rogers (N5VGQ) recommended the Fusion because of the simplicity of programming the radios that it services.
5. The 146.64 repeater (East Mountain) is currently not linked due to the UHF radio being down.
6. There will be a VE test session at 2 p.m. this afternoon at LeTourneau University.
7. After some discussion, Jim Rogers, N5VGQ, offered a motion to permanently move the date of the monthly dinner gathering from the first Sunday to the second Sunday of the month, to allow enough time for adequate notifications to be made to everyone who wants to attend it. The motion was seconded by Dave Luchak, KL7BX, and passed by the group. For July, the monthly dinner gathering will be held at Cracker Barrel Restaurant on I-20 at the Eastman Road exit Sunday, July 8, 2018, at 6 pm.
8. President Jim Quinn, AA5CX, announced that the monthly CERT meeting would be held on Thursday, June 28, 2018, at the Fire Training Center, and that a local game warden

would be doing a presentation on venomous critters of Texas.

9. Jim Rogers, N5VGQ, suggested that the club should elect a member to be Ham Operator of the Year.
10. Having no other business, the meeting was adjourned at 11:30 am.

**Members in attendance today were:**

Joe Gimbert AG5FJ  
 Cliff Scott AE5ZA  
 Dean Patterson KE5AVH  
 Jim Perry KA5BCM  
 Jim Rogers N5VGQ  
 Dave Luchak KL7BX  
 Leroy Stark KG5YLR  
 Chris Crawford KG5SMZ  
 Jeffery Salmons N5ECP  
 Rich Fleming N3DNU  
 Dora Cleveland KF7KEI  
 Ron Case W2RLC  
 Robert Stoker KD5FJL  
 Jim Liberacki N5TQI  
 Jim Quinn AA5CX  
 John Zenter AE5OY

**Treasurer's Report for  
 June 24, 2018 to July 28, 2018**

<b>Brought forth from the last reporting period:</b>	<b>\$11,062.37</b>
<b>Income for this period:</b>	<b>\$0.00</b>
<b>Expenses for this period:</b>	
Donuts for June 15th (Shipley)	\$26.30
Donuts for monthly meeting (Shipley)	\$34.88
<b>Total Expenses</b>	<b>\$61.18</b>
<b>Ending Balance (as of June 23, 2018):</b>	<b>\$11,001.19</b>

**EVENTS AND CONTESTS**

**August 2018**

**4-5 222 MHz and Up Distance Contest**

**18-19 10 GHz & Up – Round 1**

**19 Rookie Roundup – RTTY**

<http://www.arrl.org/contest-calendar>

**REGIONAL CLUBS**

**Click on underscored name to visit site.**

[Tyler](http://www.tylerarc.org/) <http://www.tylerarc.org/>

[Nacogdoches](http://w5nac.com/) [Athens](http://www.athensarc.org/) [Cedar Creek](https://k5ccl.wordpress.com/) [Marshall](http://marclub.net/) [Minden](http://www.n5rd.org/) [Shreveport \(ARCOS\)](http://www.qsl.net/nw1arn/arcos.htm) [Shreveport \(SARA\)](http://www.k5sar.com/) [Rusk County \(Henderson\)](http://www.ruskcountyarc.com/) Four States (Texarkana) <http://www.4444sarc.org/> [Palestine-Anderson County](http://www.pacarc.org/) [Navarro, Freestone, Limestone and Leon County](http://www.nflarc.com/) <http://www.nflarc.com/> Panola County (no website) LeTourneau University – LUARC (no website)

### Other Ham Clubs

**Fond du Lac Amateur Radio Club, Fond du Lac, WI**  
<https://www.fdlhams.com/>

## The Rare Ones Of New Orleans

Do a little rag chewing with a group of really nice fellows living in and around the Big Easy on 40 Meters – 7.260 Mhz (+/- 5 khz) – Most Evenings About 1930-2130 CST.  
<https://therareonesofneworleans.loga.us/>.

“The “Rare Ones” of New Orleans was resurrected on February 22, 2017 after much deliberation and thought by nine (9) amateur radio operators in the Greater New Orleans Area. The purpose of the group is to promote the amateur radio HF Communications, the City of New Orleans, and the Audubon Zoo.



The original “Rare Ones” of New Orleans was established in 1965. The current

“Rare Ones” are the third generation of this fine group, and are excited to promote our wonderful City’s unique culture, history and fine traditions. To learn about the History of the “Rare Ones” please click on the following link: [History of the “Rare Ones”](#)

The “Rare Ones” of New Orleans also promotes the Audubon Nature Institute. To show our appreciation for the Zoo, each member of the “Rare Ones” has adopted an animal figure to represent a personal connection with the Audubon Zoo. Of course, if you’ve been to the Zoo, they all asked for you! Well, the “Rare Ones” all ask for you to check in with us on the air waves!

One of the goals in resurrecting the “Rare Ones” of New Orleans is to provide a place where displaced New Orleanians could “pull up a chair”

and chat with someone back home. Sharing childhood stories and memories with our displaced friends and family brings a great satisfaction to the “Rare Ones”.

The “Rare Ones” of New Orleans love to tell the story of the City of New Orleans to new comers as well as displaced former New Orleanians. By all means, don’t be a stranger and come by for a spicy taste of New Orleans!”

## Upshur-Gregg County Yamboree-ARES

The Upshur-Gregg ARES, facilitated by LETARC, is setting up a radio station on the Yamboree grounds in Upshur County on October 18-20 for three days from which we will conduct VHF and HF communications with a special event call sign. The station will attempt to do three things: Recruit members for LETARC, Introduce ARES to the community it serves, and acquaint visitors with HAM radio. The event is made possible by the efforts of many members of LETARC so it should actually be considered a LETARC public service and recruiting event.

## ETX LETARC Tail Gate Sale

This event is co-sponsored by the Regional Amateur Radio Clubs and the **Texas Broadcast Museum**.

When: Saturday, November 10, 2018, 7:00 AM till 12:00 PM

What: Free tailgate sale. Bring all of your new, old, & used amateur radio equipment that you would like to sell. This is an outdoor event and will be held rain or shine. **The Texas Broadcast Museum is planning on having an auction to sell off lots of stuff that are duplicates, triplicates or just not of real interest to the Museum. There will be various old radios, video and audio equipment people will find interesting.** Vintage Radio & Phonograph Societies from Dallas and Houston have been invited to attend. Antiquie and classic cars will be on display. There is a \$5.00 donation to tour the museum.

### Useful Links

**LETARC Web Site**  
<http://www.letarc.org>

**Radio Tools and Utilities for amateur radio operators**  
<http://www.dxzone.com/catalog/Software/Utilities/>

**eham.net – Product Reviews**  
<http://www.eham.net/reviews/products/41>

**Android Apps – Tools**  
<https://play.google.com/store/search?q=ham%20radio%20tools&c=apps>

**ARRL**  
<http://www.arrl.org/>

## Freedom Link

<http://www.freedom-link.org/>

## Testing – Get Upgraded

**L**ETARC is working with LeTourneau University to help with facilities for VE testing. We would like to extend our sincere appreciation to the University for helping facilitate this endeavor.

### Directions to LeTourneau Campus



Glasko Center. Enter Glasko Center rear entrance and go to classroom 103.

Upon entering the main entrance to the campus, turn right at the stop sign and follow the road around past the Solheim Center parking lot on the right to the first intersection. The building across the street and to your right is Glasko Center. Turn right and go to the parking lot at the rear of

Now that you know where the place is, why not study a little and upgrade your license. If you have a Technician's license, you can upgrade to the General. And if you pass the General exam, the VE Volunteers will offer you the opportunity on the day of your exam to test for the Extra at no additional cost.

Where: LeTourneau University Glasko Engineering Center – Classroom C103.

January is membership renewal month. Please complete the form on the following page to renew your membership and mail your check to the address shown at the top of the application. Application on last page.

**L**eTourneau University is located on 2100 S. Mobberly Avenue in Longview, TX.

## Nominations for 2019 LETARC Officers

Nominations for the 2019 LETARC Board members will begin in August



**WE WANT YOU!**

2018 and continue though the time club elections are currently held in December 2018 (See **Proposed Amendments to LETARC Constitution on Page 12 of this newsletter**). As it now stands, current board members are pretty burned

out since they have served multiple years since no one else has stepped up to the plate to take over the reigns of the club leadership. Most, if not all board members, have indicated they will no longer be willing to serve in 2019.

LETARC needs folks in the current membership to step up to the plate and take on leadership roles and provide some fresh ideas and a new

direction they feel the club needs to go. Otherwise, this leaves the club in a precarious position many have not considered.

If no one steps into these leadership positions, LETARC will not have the necessary officers in place to keep its 501(c)(3) status with the Internal Revenue Service. This would mean the IRS would require all assets of the club to be eventually turned over to another non-profit organization. Consequently, LETARC could loose control of all its radio equipment and monetary assets. **Is this something we want to see happen? Absolutely Not!**

**See Pages 11 and 12 of this newsletter for form to submit Nominations for 2019 Officers and proposed amendments to LETARC Constitution for electing club officers.**

## Newly Upgraded Ham Radio Licenses

Nancy Manning **KT8TOR** - General

Nolan Baade **KI5ASA** - General

## Nominations for 2019 Officers

**President** \_\_\_\_\_

**Vice-President** \_\_\_\_\_

**Secretary/Treasurer** \_\_\_\_\_

**Media Director** \_\_\_\_\_

**Equipment Manager Jim Rogers** \_\_\_\_\_

**Nominations for election committee (Up to three people)**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

You may nominate yourself and do not need to sign this nomination form. The election committee will be appointed by the current board and those appointed will be responsible for talking to the nominees to assure they are willing to hold office. The Longview East Texas Amateur Radio Club can only grow and prosper if we have members who are willing to help it grow. Please consider serving.

# NOTICE FOR AMENDING LETARC CONSTITUTION – CONSTITUTIONAL MEETING

Proposed amendments to the LETARC Constitution were presented at the July 27, 2018 LETARC Board Meeting on whether club elections should be moved from December to November in order to increase club participation and give the new slate of officers time to meet and plan for the next year. During the last month of the year, the Christmas Holidays present a problem since the club meeting in December seems to closely coincide near the holiday and interfere with attendance and voting on new officers. The move to a different month such as November for elections would alleviate this issue. This proposed change would require amending LETARC's constitution and notice is hereby being given to the membership of LETARC for that purpose.

As per the LETARC Constitution, proposed constitutional amendments shall be published in two successive issues of the newsletter along with a notice of a constitutional meeting. The constitutional meeting will be held in conjunction with a regular membership meeting in October 2018. The voting members present at such a meeting shall constitute a quorum. A two-thirds majority of the quorum shall be required to pass a proposed amendment.

Proposed Changes to LETARC Constitution: Article 1.2 and Article 1.25

## ELECTION OF OFFICERS

- 1.2 Election of officers will be held at the ~~December~~ ~~November~~ meeting. A nominating committee will select candidates to present to the general meeting. Every effort will be made to have at least two candidates for each office. Even if only one is running, a vote will still be required to accept or reject the single candidate. Voting will be by secret ballot, simple majority required.
  
- 1.25 Ballots shall be MAILED to all members by the end of ~~November~~ ~~October~~ so that any member that can not attend the ~~December~~ ~~November~~ meeting may cast a vote by mail.

# LETARC AUGUST 2018 CALENDAR

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
<b>12</b> <b>DINNER</b>	13	14	15	16	17	18
19	20	21	22	23	24	<b>25</b> <b>LETARC</b> <b>MEETING</b>  <b>VE SESSION</b>
26	27	28	29	30	31	

August 12, 2018 at 6:00PM – Dinner at Cracker Barrel, 822 S Access Rd, Longview, TX 75602

August 25, 2018 at 9:00 AM – LETARC Monthly Meeting at City of Longview Fire Training Facility, 411 American Legion Blvd, Longview, TX.

August 25, 2018 at 2:00 PM – VE Session at LeTourneau University is located on 2100 S. Mobberly Avenue in Longview, TX in the Glaske Engineering Center, Room C103.

**LETARC MEMBERSHIP  
APPLICATION  
PO BOX 5613  
LONGVIEW, TX 75608-5613**

Membership: \* New \* Renew

Calendar Year: 2018

Date: \_\_\_\_\_

CALL SIGN: \_\_\_\_\_ LICENSE CLASS: \_\_\_\_\_

LAST NAME: \_\_\_\_\_ FIRST NAME: \_\_\_\_\_ MI: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ ZIP: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_ CELL PHONE (optional): \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_ DATE OF BIRTH: \_\_\_\_\_

ARRL MEMBER? \* YES \* NO

=====

TYPE OF MEMBERSHIP (check one)

- Full Membership: \$25.00 per year. A full member shall be an FCC licensed Amateur Radio Operator
- Family Membership: \$35.00 per year. A family membership is available to members of the same family, provided they reside at the same residence. Each member has the same privileges and same membership requirements as a full member.

Privacy: Member names, addresses, (including e-mail addresses and other personal information shall not be supplied to any third party without expressed consent of the individual.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

=====

Please list **all** of your Amateur Radio **Interests**: [Examples: Contesting, CW, 6 meter, 1.2 GHz, Kit building, ISS, AMSAT, Emergency Communications].

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Entered master database;\_\_ Confirmation letter sent:\_\_ Entered master email list:\_\_

**For use by LETARC**