

# Four States Amateur Radio Club Newsletter

Number 10

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October 20, 1989

## Officers

### President

Pat Bell, KG5SC

### Vice President

Wes Bolin, WV5I

### Secretary

Travis Bailey, K5AVH

### Treasurer

Bill Miller, WD5HJF

## Directors

Wes Bolin, WV5I

Jack Goodson, KA5IQB

Dan Griffin, W5LTQ

Don Lynch, N5DZ

## Committees

### Activities

Don Lynch, N5DZ 838-4155

### Field Day / Flea Market

Dick Curtis, W5NEU 838-6028

Malcolm Bussey, KF5JX 773-9130

### Instructional Classes

"Cap" Caplinger, WA5APY 832-1410

### Newsletter

Travis Bailey, K5AVH 792-2080

### Digital

Hal Clark, KF5YO 772-8742

### Skywarn

Al Parsons, KA5LPJ 832-2421

### VE Testing

Wes Bolin, WV5I 838-0568

Club meetings are held each Sat. Morning at 9am in the rear of the cafeteria on the 2nd floor of Wadley Hospital. Visitors are welcome.

Business meetings are held on the 2nd Saturday of each month at the same time and location.

Articles for the newsletter must be submitted to the editor no later than the first Saturday of each month.

## From the President

Pat, K65SC

1989 has flown by. It is hard to believe that it is October already. What that means to all of the members is that it is time to start planning the club activities for 1990. The only way we can have another successful year is for each and every member to give their input to the planning for the new year. What activities would you like to see for the new year? I would appreciate it if each and every member would make known to me what you would like in the way of club activities for next year.

Contact me either in person, by phone or by letter but let me know what you want. With everyone's help we can make 1990 the best yet for the Four States Amateur Radio Club.

In this month's newsletter you will find a complete copy of the Constitution and By-Laws of the Four States Amateur Radio Club. This is done for two reasons: 1) I have proposed a few minor changes and 2) every member will have a current copy. The changes that I proposed and that were approved at the October meeting will be in brackets. No action is required on your part if you approve of the changes. I will consider silence on your part as approval of the Constitution and By-Laws as presented. Please contact me should you have any comments or questions.

## Digital Talk

Hal, KF5YO

Last month's digital meeting was a very good one with lots of individuals and topics. We discussed the antenna situation at TXK and decided that the next Saturday we would get a crew together to raise and resecure the antenna to the tower. Well, that was accomplished without a hitch so TXK is now up to stay. It seems as though the extra 25 feet that we raised it does make a difference. Some of the Hams in Shreveport are now seeing TXK direct which they couldn't do before.

I would like to thank all the individuals who helped with the TXK antenna and would also like to thank Wes

(WV5I) for the use of his climbing equipment. Another topic of discussion was to see if there was anything that could be done to help the Fort Smith group with improving the Mena Digipeater. I will be writing to them and see what the possibilities might be. We also talked about having packet radio classes for all those interested in getting into packet and also help the ones already with tnc's to become more familiar with the mode. We would be setting up both HF & VHF stations. All those that would be interested in the classes call me so that a time and date can be set up.

The question of why people connecting to Shreveport can no longer connect to TXK directly was also brought up at the meeting. The Shreveport group made the change to the Net-Rom so that it will now be able to connect with only a legitimate call sign and not a group of letters such as TXK or LSV. The reason for the change was that many people would connect with SHV and then try and connect with areas that SHV might not be able to see, which kept the Net-Rom much too busy so they decided to set it where it would only connect with actual callsigns. It is possible to change our KA-Node from TXK to KF5YO-1 which would then work just fine. I will be bringing this issue up at the next digital meeting.

## Business Meeting

The October business meeting of the FSARC was held on Saturday October 14. There were 22 members present.

Pat called the meeting to order and the minutes of the last meeting were read and approved. Bill reported that there are now 72 paid members and the bank balance at the end of September was \$598.47.

Yes said that the next VE test session will be December 16.

Hal reported on the work that was recently done on the TXK digi antenna.

Cap said that Novice classes are set to start on November 4. He has 6 signed up for the class and 2 other potential prospects. Anyone interested in these classes should contact him for more information.

Dave said that the regular Tuesday night net time will be changed back to 8pm on November 7th to correspond with the the time change at

the end of October.

Copies of the FSARC By-Law changes were passed around and Pat pointed out the changes that had been made to update these. After this discussion, the members present voted to adopt the changes.

Bill, WD5HUF, speaking for the nominating committee recommended that the club re-elect the present officers for a second term to begin January 1990. Also, they recommended that Al, KA5LPJ, be elected as director to replace Dan, W5LTQ whose term expires at the end of 1989 and to elect Don, N5DZ as Trustee, a job that was not filled in 1989. A motion was made and seconded to accept this slate of candidates and the vote passed.

Pat said that there is a club discount available for anyone interested in Callbooks and for anyone interested to contact him for details. Al, W5ENA gave a brief report on Army MARS and said that they are looking for new members. If you are interested in MARS, give AL a call.

There being no further business, the meeting was adjourned.

## Antenna Basics (Part 2)

### Effect of Antenna Height

The mere fact that the antenna length has been adjusted such that the antenna drive point is purely resistive does not insure that the v.s.w.r. will be 1:1. Figure 2 is the familiar plot of antenna resistance vs. antenna height

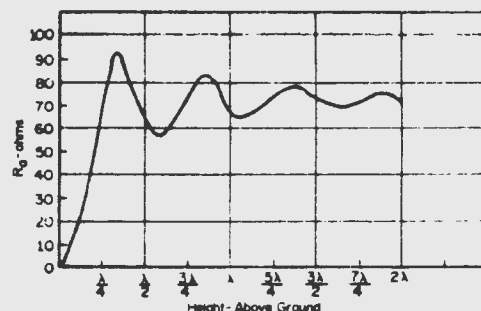


Fig. 2—Plot of theoretical radiation resistance versus antenna height in wavelengths for a resonant dipole.

for a resonant horizontal dipole antenna. Notice that the impedance varies greatly, especially at the lower heights. Unfortunately, most of us

must use the lower heights when we try to use a set of existing supports and, therefore, seldom do we achieve a perfect match to the transmission line. The variation of radiation resistance with antenna height is caused by the current flow that is induced in the antenna by the wave reflected from the ground. For a given voltage impressed across the antenna, the normal E/R current flow is augmented by the induced current and this gives a net effect of a resistance change. Different antenna heights affect the magnitude and phase of this induced current and thus affect the antenna reactance and radiation resistance. Because the radiation resistance terminates the transmission line, a v.s.w.r. other than 1:1 will result unless the radiation resistance and characteristic impedance of the line are equal. Since most of us use standard transmission lines, then the minimum v.s.w.r. on these lines is determined by the radiation resistance of the antenna. Figure 3 is a plot of v.s.w.r. vs. the height of a resonant dipole for 50 and 75 ohm transmission lines. The v.s.w.r. shown in figure 3 is the absolute minimum that will be observed when the antenna is resonant. At a given frequency, for example, as a slightly long antenna is pruned through resonance, a minimum v.s.w.r. will be observed and this minimum will not be less than that determined by the relation of the radiation resistance to the characteristic impedance of the transmission line. Figure 3A is a plot of antenna height vs. minimum v.s.w.r. for a resonant horizontal dipole used with a 50 ohm line. Figure 3B is a similar plot for a 75

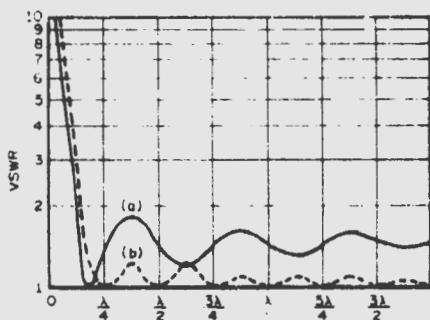


Fig. 3—V.s.w.r. vs. antenna height for a horizontal resonant dipole.

ohm transmission line. The fact that the v.s.w.r. does not go to 1:1 does not constitute a major disaster. However, the v.s.w.r. does affect

transmitter loading and power transfer, so it is usually made as low as practical considerations permit. In addition to the radiation resistance, the height of the antenna affects the radiation angle and the angle of the main radiation lobe affects the local and DX performance of the antenna system. While it is not intended that this article concern itself greatly with the pros and cons of the angle of radiation, Figure 4 is presented to show how the height of a horizontal antenna influences this angle. The portion of the radiated signal that gets reflected from the ground appears to originate from an "image antenna" that is apparently located below the surface of the ground similar to a mirror image. The real and image antennas function similar to the elements of an antenna array in which the image antenna is fed with a phase difference of 180. Notice that at low antenna heights, i.e.,  $1/8$  wavelength, the vertical radiation pattern is practically circular. This means that the strongest signal is being radiated straight up where it does the least good. As the antenna height is increased, however, the circular pattern begins to flatten on top as shown at the quarter wavelength height. Additional increase in antenna height causes a depression to develop at the zenith in the vertical radiation pattern and this depression grows until at an antenna height of a half wavelength, minimum signal is radiated upward. If the antenna height is beyond a half wavelength, then a third lobe begins to develop vertically as shown in the  $5/8$  wavelength pattern. This third lobe grows with antenna height (see  $3/4$  ), develops a depression (see  $7/8$  ), and eventually splits into two lobes with minimum radiation to the zenith when the antenna height is a full wavelength. This process of developing the vertical lobe, its splitting, etc. continues as the antenna height continues to increase. At multiples of a half wavelength, there will be minimum signal radiated to the zenith, but the number of lobes will increase such that there are two lobes for each half wavelength of height. Consequently, the more practical antenna height appears to be a half wavelength for at this height, the signal radiation is concentrated in only two vertical lobes and fortunately they have a desirable vertical radiation angle. Also, at this height, the radiation to the zenith is at a minimum.

**Next Month--VSWR and the Transmission Line**



Fig. 4—Vertical patterns of resonant dipole for various heights above perfectly conducting ground.

CONSTITUTION AND BY-LAWS  
OF  
FOUR STATES AMATEUR RADIO CLUB, INC.

ARTICLE I  
NAME

The name of the organization shall be : FOUR STATES AMATEUR RADIO CLUB, INC., a non-profit organization hereafter referred to as the CLUB.

ARTICLE II  
OFFICIES

SECTION 1. The registered offices shall be located in Texarkana, Texas.

SECTION 2. The Corporation may also have offices at such other places within the State of Texas as the [Executive Board] may from time to time determine or the interest of the CLUB may require.

ARTICLE III.  
OBJECTIVES

The objectives for which this CLUB is organized are :

1. To render a public service to governmental agencies during impending storms or severe weather, assist in disaster relief operation(s) and other community functions as required.
2. To unite the amateur radio operators of this area for the purpose of exerting effectively a combined influence upon matters concerning amateur operation.
3. To promote good operating procedures and the exchange of technical information and assistance.
4. To stimulate adherence to a code of ethics, both written and understood.
5. To admonish members to comply with existing FCC Rules and Regulations.
6. To be an influence to new amateur operators of the area in the operation of their station
7. To promote good will and fellowship among the members.
8. To further the art of electronics and encourage prospective members to participate in the purpose of the CLUB.

ARTICLE IV  
MEMBERSHIP

SECTION 1. Eligibility for membership in the CLUB is set forth as follows :

- a. They hold a valid Amateur Radio Operator /Station License.
- b. They indicate a desire to become a member.

Any person who was included in the original organization of this CLUB is considered a CHARTER MEMBER.

SECTION 2. To become a member of the CLUB, a person who is eligible must furnish his name, address, call sign, telephone number, annual dues and any other information as may be required by the CLUB to the Secretary or Treasurer.

SECTION 3. Honorary membership may be bestowed on any eligible person by a majority vote of the members present at any regular or special meeting. Honorary members will not have voting privileges or hold office.

SECTION 4. Eligible persons residing in the same household may be granted full membership privileges by payment of \$1.00 provided that one member of the household has paid full annual dues. All members of the same household shall have the same anniversary date.

SECTION 5. Eligible persons may not be denied membership on the grounds of: Race, Creed, Sex or National Origin.

#### ARTICLE V. MEMBERSHIP PLEDGE

Each member shall pledge themselves to adhere to the best of their ability to: a. All applicable FCC Rules and Regulations. b. The requirements of this constitution and by-laws. c. The Code of Ethics adopted by the Club.

#### ARTICLE VI. VOTING PRIVILEGES

All full members shall have full voting privileges provided they are not delinquent in their dues and assessments.

#### ARTICLE VII EXPULSION

Members of the CLUB may be expelled in accordance with such procedure as is established in the by-laws for violation of this constitution, violation of the Code of Ethics of the CLUB, or for other conduct which would tend to cause discredit to fall upon the CLUB or upon amateur radio as a whole.

#### ARTICLE VIII RESIGNATIONS

Any member has the prerogative of resignation from membership in the CLUB and any resignation will be recognized and accepted when submitted to the Secretary in writing. Resigned members will be restored to the CLUB upon satisfying the requirements for membership.

#### ARTICLE IX GOVERNMENT

The government of the CLUB shall be vested in the Officers [and Directors] of the Club. The officers of the CLUB shall be the President, Vice-President, Secretary and Treasurer. [There shall be four Directors elected for terms as specified in the By-Laws.]

#### ARTICLE X MEETINGS

SECTION 1. Regular meetings shall be held as determined in the by-laws. A quorum shall consist of 10% of the members.

SECTION 2. Special meetings may be called for any purpose by any Officer of the CLUB who shall preside over the meeting. A quorum shall consist of 10% of the members.

**ARTICLE XI  
AMENDMENTS**

This constitution and by-laws may be amended in the following manner :

- a. Any proposed amendments shall be first presented at any regular or special meeting for approval.
- b. Proposed amendments approved by the majority vote of the members present at any regular or special meeting will be submitted to the entire membership for a vote to adopt proposals.
- c. If approved, the proposed amendment becomes effective immediately.

**ARTICLE XII  
CLUB OWNERSHIP RIGHTS**

The CLUB shall have the privilege of owning property both real and personal with the right to buy and sell in the CLUB'S name according to the provisions within the by-laws.

**ARTICLE XIII  
CLUB STATION RIGHTS**

The CLUB shall have the expressed right to establish operating procedures within the privileges granted by the FCC.

**ARTICLE XIV  
TRUSTEE**

The position of Trustee shall be filled as determined by the by-laws.

**ARTICLE XV  
CERTIFICATION OF MEMBERS**

Upon receipt of application for membership in the CLUB along with the required dues and information required, the Secretary shall furnish the member with certification of membership in the form of a membership card.

**ARTICLE XVI  
OBLIGATION AND PRIVILEGES**

**SECTION 1. CLUB obligation:** It shall be the duty of each member to support the CLUB with their participation, attendance, time and money to the extent that they feel obligated to help make a success of the organization.

**SECTION 2. Code of Ethics:** Each member shall endeavor to abide by the Amateur Code of Ethics to the best of their ability.

**SECTION 3. Privileges:** All members are urged to enjoy all privileges of the CLUB as outlined herein and as offered during the existence of this CLUB.

## ARTICLE XVII

### DUES AND ASSESSMENTS

SECTION 1. Each member is required to pay annual dues at the time of joining the CLUB and at the end of yearly intervals thereafter. The annual dues shall be as follows:

- a. Novice or non repeater user: \$5.00
- b. Digipeater only \$10.00
- c. Repeater and autopatch \$15.00
- d. Repeater, autopatch and digipeater \$20.00

Said dues to be paid in the month of January or in the case of a new member the dues will be pro-rated per month.

SECTION 2. Members who have not paid their dues on or before April the 15th of the current year will be considered delinquent.

SECTION 3. Any delinquent member may be reinstated by payment of dues at any time.

SECTION 4. Family members' annual dues shall be \$1.00. Family members are those persons who reside in the same household as a full member who is the head of a family. Family members shall meet the requirements of the full members under Article IV of the Constituion.

SECTION 5. Special assessments may be voted by two-thirds of the membership, provided, however, the entire membership is notified in writing, the purpose and the amount of the proposed assessment at least thirty (30) days prior to the meeting at which the assessment is to be voted on.

## ARTICLE XVIII

### ELECTION OF OFFICERS AND DIRECTORS

SECTION 1. [During September of each year, the Secretary shall notify all members of the CLUB that the annual election of Officers and Directors will be held at the regular meeting of the CLUB during the month of October. A committee may be appointed by the President at the September meeting for the purpose of preparing a slate of candidates to submit to the members at the October meeting.]

SECTION 2. The term of office of the Directors will be four years. The terms of the Directors will be staggered as to where only one Director will be elected each year. The term of office of all other Officers will be one year beginning on January 1st. The term of the Director elected will begin on January 1st.

SECTION 3. Any Officer or Director may succeed themselves in office, if elected.

SECTION 4. [At the regular meeting in the month of October, the presiding Officer will accept the report of the nominating committee. Nominations will also be accepted from the floor. An election will be held and the candidate for each office who received the majority vote of the members present is elected.]

ARTICLE XIX  
DUTIES OF OFFICERS AND DIRECTORS

The duties of the officers shall be such as their titles by general usage would indicate. Specifically, the President shall preside at all meetings. He is an ex-officio member of all committees. He is the spokesman for the CLUB at all official functions. The Vice-President shall take over all duties of the President in the absence of the President. He shall have all the authority of the President when acting in the Presidential capacity. He shall assist the President in all activities and purpose of the the CLUB. The Secretaries duties shall be to keep the minutes of each meeting. The Secretary shall file all reports and documents required by any government agency. The Treasurer's duties shall be to keep accurate financial records for the CLUB. They shall be held personally responsible for the funds entrusted to them and give an accounting to the CLUB on request. All officers will, upon completion of their term of office, turn all properties belonging to the CLUB over to their elected successors and assist the succeeding Officers to learn the necessary tasks required for the government of the CLUB.

[The duties of the Directors shall be to attend CLUB meetings, assist in the setting of policies and procedures and generally promote the principles of the CLUB.]

ARTICLE XX  
TRUSTEE

The Trustee position shall be filled by a majority vote of the members present at a regular or special called meeting.

ARTICLE XXI  
DUTIES OF THE TRUSTEE

The Trustee shall be charged with the responsibility of caring for the physical property of the CLUB, as well as acting in the name of the CLUB in matters that require official Trustee action with the approval of the governing body.

ARTICLE XXII  
VACANCIES

SECTION 1. A vacancy in the office of the President shall be filled by the Vice-President.

SECTION 2. A vacancy in the office of the Vice-President, Secretary, Treasurer, Trustee or Director shall be filled by a majority vote of the members present at a regularly scheduled or special meeting.

ARTICLE XXIII  
THE EXECUTIVE BOARD

SECTION 1. The Officers and Directors of the CLUB shall constitute the Executivew B Board.

SECTION 2. The Executive Board shall have general supervision of the affairs of the CLUB between its business meetings, fix the date, hour and place of meetings, make recommendations to the CLUB, and shall perform such other duties as are specified in these by-laws. The Executive Board shall be subject to the orders of the CLUB and none of its acts shall conflict with the action taken by the CLUB.

SECTION 3. Meetings of the Executive Board can be called by the President and shall be called upon the written request of three members of the Executive Board.



ARTICLE XXIV  
COMMITTEES

[Special or standing committees may be appointed by the presiding Officer at regular or special meetings. These committees will function for the CLUB's benefit and will be terminated upon completion of the assigned tasks.]

ARTICLE XXV  
MEETINGS

SECTION 1. Regular monthly meetings shall be held at a time and place announced by the governing body. Notification of the membership will be in the best manner available under the circumstances.

SECTION 2. Special meetings may be called as prescribed by the By-Laws.

SECTION 3. Roberts Rules of Order, latest edition, shall be recognized as the authority of procedures governing any regular or special meeting, when not in conflict with the Constitution or By-laws.

ARTICLE XXVI  
EXPULSION

A member may be expelled from the membership in the CLUB in the following manner: a. Proposed expulsion of a member shall be openly discussed at regular or special meetings and the reason for the expulsion explained. b. The Secretary shall notify the affected member at least seven days in advance of the next scheduled meeting, at which time a vote of the members will be taken.

ARTICLE XXVII  
CODE OF ETHICS

A Code of Ethics, modeled after the Code of Ethics of the American Radio Relay League, shall be adhered to by the members of this CLUB.

ARTICLE XXVIII  
OWNERSHIP AND TRANSFER OF PROPERTY

The CLUB may own property as provided for in the Constitution. Any purchase or sale of CLUB property must have the approval of the majority of the members present at a regular or special meeting. This does not exclude the Trustee from making or authorizing others to make repairs to the station equipment or any corporation owned property to keep said property fully operational. The operating budget of the Trustee will be approved by two-thirds of the membership present at any regular or special meeting.

ARTICLE XXIV  
APPOINTMENT OF CHAIRMAN FOR SPECIFIC TASKS

[The President shall appoint members to be chairman or coordinator to accomplish necessary tasks for the good of the CLUB. These persons will be directly responsible to the Executive Board and will attend Executive Board meetings as invited.]

### Important

Please call Pat, KG5SC, by November 25th if you plan on going to Vaughns for Catfish on the 27th so that he can make reservations for our group.

### Calendar

**FSARC 2m Net (146.62)**

**Lunch**

**Digital Meeting**

**Catfish Supper**

**Central Mail Exhibit**

**Troubleshooting Workshop**

**Pot Luck Dinner**

**V.E. Testing**

Each Tuesday 9pm (8pm starting Nov 7) Swap Net Follows)

Each Wednesday 12 noon Mr. Gatti's Pizza State Line Ave.

3rd Thursday of each Month 7pm Wadley Hospital Cafeteria

October 27 Vaughns near Linden-Douglasville

**(Meet on K-Mart Parking Lot on Hwy 67 & Loop 151 at 6:30 to Join the Caravan ).**

October 28 (contact Hal, KF5YQ for more information)

November 18 and 25 9am Wadley Hospital Cafeteria

November 19

Saturday December 16 9am Wadley Hospital Cafeteria

#### Skywarn

October

November

Travis-K5AVH, Mike-NSLQV

Pat-KG5SC, Mike-KG5RV

Four States Amateur Radio Club  
18 Highland Hills  
Texarkana, Ar. 75502

**First Class Mail**