



# USECA EXPRESS



Michigan's Largest and Most Active Amateur Radio Club

UTICA SHELBY EMERGENCY COMMUNICATION ASSOCIATION, INC.

Volume 20, Number 1, January 2004

## Election:

### Club Officers

The following are the results of the December elections — your new officers for 2004:

#### President

Jim, W1IK

#### Vice President

Dave, KC8IAQ

#### Recording Secretary

Ann, KT8F

#### Treasurer

Delphine, KC8JSH

#### Membership Secretary

Mary, KC8IAP

#### Board Members

Scott, WN1B

Dennis, W8DFG

Jerry N8KLX



## Antenna Weather

Dick, AF8X

Does anyone put up antennas in nice weather? Usually people are too busy operating or doing other fair weather things. There is always a lot of amusing talk about November and December being antenna-erecting time. If you are planning to put up a wire antenna, there is something you can do to make the process easier and more efficient. Last year I bought a Carolina Windom antenna with only a vague idea where it would be installed. My lot is fairly small so in order to take advantage of every foot of it, I drew a plot plan.

—Continued on Page 10

## Grounding in RF Environments

Bill, N8SA

Proper grounding of radio stations is probably one of the least understood aspects of ham radio. It almost has a certain aura of mystique or magic about it instead of being the pure science it should be. This is a very important aspect of any radio installation.

There are two major criteria we need to consider when doing the planning for this installation.

The primary reason has to be safety, both for ourselves as the operator who will be seated at the controls, but also for our equipment and possibly the structure—probably our home.

The second of course has to do with the performance of our antenna system and it's ability to radiate an efficient signal. Let's treat these separately for now and they will coalesce into a total plan at the end.

### Surge (or Safety) Grounding

We need to protect our installation and ourselves from lightning. There is no protection against a direct lightning hit! It has way more power than we can shunt to ground safely than our budget can handle. That is what insurance is for. We CAN however make our installation an unattractive target to lightning. We can also take care of any secondary surges and static build up that can destroy equipment and give healthy zaps enough to more than get your attention.

—Continued on Page 9

## Silent Key

Stuart B. Satrun, Jr., Age 65, November 17, 2003; formerly married to Nora Satrun (nee Simon). Loving father of Peter, Stuart III, Nicole, Brian and Renee. Stuart raced motorcycles, worked as a Radio DJ and as a TV and radio broadcaster, a photographer and enjoyed being a Ham radio operator with the call sign **KW8K**. He was known as a, "Gentle genius with a giant heart."

## Hams Win!

Michigan Hams Win Antenna Exemption Victory (Dec. 3, 2003)—Amateurs in Troy, Michigan, scored a major victory for that community's hams on November 24 after convincing the Troy City Council to reject the city planning commission's restrictions on the height of Amateur Radio antennas and antenna support structures.

—Submitted by Dick, AF8X



Next Meeting — January 13

# CLUB DIRECTORY

## BOARD OF DIRECTORS

President Jim Wickstrom/W1IK (586) 771-4135  
 Vice President Dave Cunningham/KC8IAQ, (586) 791-2720  
 Recording Secretary Ann Manor/KT8F, (586) 751-3893  
 Treasurer Delphine Wrona/KC8JSH, (586) 791-4669  
 Membership Secretary Mary Cunningham/KC8IAP, (586) 791-2720  
 Past President Nancy Carr/KB8QMS, (586) 749-3383

## ELECTED BOARD MEMBERS

Scott Madison/WN1B (248) 628-4756  
 Dennis Gaboury/W8DFG (586) 465-7126  
 Jerry Radcliffe/N8KLX (586) 731-9041



## COMMITTEES

ARRL Liaison Phil/W8IC (586) 751-3893  
 Awards Manager Tom/KC8LOC (248) 542-3340  
 Door Prizes Dina/N8YJI (586) 825-6182  
 Editor Joe/K8OEF (586) 781-0050  
 Field Day Chair  
 Health & Welfare Charlene Gracey (586) 777-2954  
 Historian Jerry/K8CFY (586) 791-4484  
 Mailers/Sorters Ann/KT8F; Phil/W8IC; & Crew  
 Net Manager Brian/KC8DIR (586) 749-4561  
 Photographer Richard/K8QLM (586) 731-4475  
 Program Director Dave/KC8IAQ, (586) 791-2720  
 Public Relations Officer Ken/N8KC (248) 652-1187  
 Refreshments Don/KC8CPT & Richard/KC8HMJ  
 Repeater Trustee Dennis/W8DFG (586) 465-7126  
 Swap & Shop Scott/WN1B (248) 628-4756  
 Technical Director Floyd/W8RO (248) 391-6660  
 Technicians WN1B; K8FT; WA8GQL; KC8IAQ; W1IK; N8KLX; AD8S; N8SA  
 VE Testing Joe/N8OZ (586) 977-7222

## CONTROL OPERATORS (\*Phone Number Above)

Dennis/W8DFG*	Jim/W1IK*	Floyd/W8RO*
John/NS8E	Mark/W8IR	Dave/AD8S
Dave/KC8IAQ*	Joe/K8OEF*	Bill/N8SA
Phil/W8IC*	Nancy/KB8QMS*	

## PROGRAMMERS

Dennis/W8DFG	Dave/KC8IAQ	Mark/W8IR
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## SILENT KEYS

Len Czapiewski/K8DHH	Stuart Satrun/KW8K	Vance Dupuis/WB8QNI
Art Sheff/W8EGV	Rick Parady/KB8KLW	Dave Martin/W8VB
Joe Lucido/NU8F	John Moore/KA8KTV	Harry Young/W8VRW
Charles Smith/N8FWF	John Palmer/WD8LBH	Velma Ragon/N8YVC
Clarence Ringo/W8HQO	Joe Palson/WD8MFN	John Tomlins/KG8YX
Joe Steel/KA8IZM	John Pizzuti/WB8NHT	

f=Founder      c=Charter      h=Hon. Charter

N8AWV h	N8HCT f c	WB8OSF h
KA8BDG c	KA8IZM f c SK	K8QLM f c
N8BK h	KA8KTV f c SK	WB8QNI c SK
N8FDN c	G. Manquardt h	KA8VYV h
N8FNO f c	WD8MFN f c	WA8VZZ c SK
J. Haubner c	WB8NHT f c	

**Happy New Year!**

*The Editor is:*

# Still Going

*Joe, K8OEF*

Congrats to all the elected officers at our December meeting. The meeting was preceded with Chili, Coney Dogs, Chips and Pop—it was such a success, there will be Sloppy Joes at the next general meeting. And, (more food) there will be a spaghetti social on February 26th and all radio clubs will be invited to attend.

It was refreshing to learn that Scott, WN1B (new board member) will chair our swap on October 31. Rumor has it, a new Field Day chair will be announced. I enjoy seeing people “step up” and contribute to our club’s activities. Now all we need is the person(s) for this year’s Pre-Field Day and annual picnic. Could it be you?

Have a great new year!  
73 for now.



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**TO ALL GREAT LAKES DIVISION ARRL AFFILIATED CLUBS**

December 9, 2003

*SPECIAL CLUB PROGRAMS—A CALL FOR ACTION*

Is your amateur radio club looking for a meeting program that will be more beneficial to amateur radio than anything else you can do?

The Amateur Radio Spectrum Protection Act, known as House Bill HR 713 and Senate Bill S 537, is legislation now being considered and we can do more to help amateur radio than anything we have done in the past. Our very existence is at stake!

Many members of Congress will not consider co-sponsorship of comparatively small, technical bills like HR 713/ S 537 without concrete evidence of support from **their own constituents**. So if you'd like to help Amateur Radio make a statement on The Hill, consider getting together with your members at an upcoming **special meeting** of your club to send a letter, or even a QSL Card to your legislators. Yes, I said **Special Meeting, because time is running short!** Our legislators are going on Holiday recess and there is no better time than now to get this done. You may even set up a personal meeting with your legislator while they are in their home office for the Holiday Recess.

This is so very important to the amateur radio service that I would suggest making this a part of your Holiday Party Meetings. It takes very little time if you prepare in advance by having addresses ready for your members to use. Please read the following hints from the firm that is lobbying these bills for ARRL. They are professionals and they know the ropes. Please read and follow their suggestions.

Another thought for a meeting that will help is to invite your legislator to attend your club meeting and ask for their support as a co sponsor. To those of you that have legislators that are co sponsors, take a moment to send them a note to thank them for their support. **It is the numbers that count and will make a difference, the more mail the better.**

Please forgive the length of this document. I have also included sample letters (boiler plate) that can be used as a guide as well as a list of the sponsors and co sponsors and the latest news on the bills.

ARRL President Jim Haynie, W5JPB testified on Capitol Hill, this summer, on the importance of this bill to protect amateur radio. Please heed this call for action and get our members mobilized to protect our valuable spectrum. Nothing is more important at this time. While you're at it, you may want to remind everyone of the importance of ARRL Membership and support of the Spectrum Defense Fund. We need your help.

Happy Holidays to all.

73, Dick Mondro, W8FQT  
Vice Director, ARRL Great Lakes Division

[Note: Additional information and sample letters, etc., can be found on our web page—*Ed.*]



***This is . . . The USECA Repeater System!***

***It is NOT a machine!***

Johnny Cash**Great CW Story!**

**I**N AN INTERVIEW with the late Johnny Cash, he was asked how he got started in his career, and a great CW story emerged.

Cash was born on a small cotton farm in NE Arkansas. They were very poor, and the whole family worked the fields together. Their only enjoyment was they did have a radio. When they came in from the fields, they could listen to Earnest Tubb, the Carter Family, Gene Autry and so on. Johnny had a great singing voice, but the family was too poor to afford a guitar so he just sang. His ambition for life was to sing on the radio.

In 1950, he enlisted in the Air Force. Aptitude tests showed he had great capability for Morse Code, probably due to his musical mind set he thinks. He went to the usual AF places like Lackland and Keesler, graduating first in his class in CW. Then they selected him for high speed intercept operator and he aced that class. Then they sent

him to learn Russian language and Russian code. He was doing 35 WPM in Russian. On graduation first in his class, he was offered either Adak Island Alaska or Germany. Cash didn't know anything about Adak except that it was 100s of miles from nowhere, but he had heard that Germany was a good place, so he went there.

Asked if he ever intercepted anything interesting he had two stories. Sitting there with headset and typewriter, one day he was copying the TASS news service bulletins to the outlying SSRs, when he copied the first TASS bulletin on the death of Stalin. This went right up the chain to Washington of course, as the first news they heard of it.

Another time, he was tuning around when he picked up an in-flight position report from a Russian bomber flying from Moscow to Smolensk. It was a real weak signal at 45 WPM, almost lost in the QRM

and QRN, but he copied the code and ran it over to the crypto shop. The departure time and ETA were way too short for that route (either 1/3 the usual time or 1/3 off the usual time, I forget). From this, Intel determined that the Russians had got their jet powered bomber flying at last. This news flashed to WDC, and Cash got an Air Force Commendation Medal for that intercept.

After a few years, he made rank and became chief of the station. Meanwhile, in his off time, he finally had enough money to buy himself a git-tar, which he instantly learned to play. The Air Force offered him good assignments and bennies to re-up, but he always just wanted to sing on the radio. The rest is History.

—Submitted by Rich, KCSJHJ

**Radio Active Ship Plying the Great Lakes**

The U.S. Naval Cadet training ship, *Pride of Michigan*, located at it's home port on the Clinton River, has recently become the operating center for the newly formed amateur radio club, *The Noble Odyssey Foundation Radio Club*, named after the supporting foundation of the Great Lakes Division of the U.S. Naval Sea Cadet Corps.

The cadet members are trained in the use of the VHF and HF radio equipment on board and encouraged to use it when not engaged in other duties while at sea. Most of the members have already passed the FCC tests required for an operator's license and others are preparing for the test.

Local ham, Dick Arnold is the club trustee and has acquired the club call sign, K8NOF, which is assigned to the club station to be used while operating the ship's club equipment. New antennas in conjunction with the amateur gear will allow communications worldwide.

The Captain, LCDR Clyburn and Lt. Trax are also licensed ham operators and give their full support to the club.

—Submitted by Dick, AF8X

**USECA Board Meeting Minutes—December 2, 2003**

**In attendance:**

W1IK, Jim	President
W8IR, Mark	Vice-President
KT8F, Ann	Recording Secretary
KC8IAP, Mary	Membership Secretary
KC8JSH, Delphine	Treasurer
KC8IAQ, Dave	Board Member
N8KLX, Jerry	Board Member
KC8RVF, Dave	Board Member
KB8QMS, Nancy	Past President



\*Absent

Meeting called to order by the President at: 7:34 PM

Motion made to accept the minutes as printed in the Express made by Mary, KC8IAP and 2<sup>nd</sup> by Jerry, N8KLX; motion carried.

Treasurer's report given by Delphine, KC8JSH. Motion to accept the report made by Nancy, KC8QMS, 2<sup>nd</sup> by Dave, KC8RVF; motion carried.

Membership: Mary, KC8IAP: 236 members. Will email absentee ballots if needed for the election.

Webmaster: Dave, KC8IAQ – up to 50K hits. Members must go to the board and log once to activate your account in order to receive bulk email messages. Dave has updated some out-of-date info on the site.

Express: Joe, K8OEF- no report.

Technical report: Floyd, W8RO – did site surveys in November and made pictures of all equipment. Stated we need to consider replacing the receive antenna at TACOM. Jim requested that the tech committee review the issue and make a recommendation to the BOD. Continuing to discuss the necessity and viability of a downtown receive site. The David Scott building is under consideration. Discussion on the interference at the east side site – provided by Scott, WN1B.

ARRL: Phil, W8IC – ARRL is putting together an on-line licensing course. The donations received are being used to bring in a impartial professional engineering company to do a BPL interference study.

Trustee: Dennis, W8DFG – sent in paperwork, requested 5 new frequencies. (Mt Clemens site, Warren, etc.) TDS to be renewed in January or February. Dennis is considering adding a control op. Reviewing present control ops. Will bring this up at the next BOD meeting.

Health & Welfare: Walt, WB8E is reporting all is being taken care of.

Swap: Scott, WN1B – discussed the date of next year's event and desired vendors.

**Old Business:**

Christmas party: Ann, KT8F provided report on the status.

Discussion took place regarding the deadline for being placed on the printed ballot.

**New Business:**

Walt, WB8E requested that BOD members and other key positions in the club join the nets.

Nancy, KC8QMS – made a motion that Dave, KC8IAQ should not continue to stand the cost of providing the website, it should be paid for by USECA. Seconded by Dave, KC8RVF. Motion carried.

Discussion re: censorship of articles submitted to the Express.

Dennis, W8DFG – discussed the possibility of having a spaghetti dinner at the Elks, probably in February 2004.

Floyd, W8RO – asked for the BOD to approve a purchase a bottle of wine as a gratuity to Messina. Mary, KC8IAP made the motion, Dave, KC8RVF seconded. Motion carried.

The meeting was adjourned at 9:25 PM

Respectfully submitted,  
Ann Manor, KT8F, Recording Secretary



**USECA General Meeting Minutes—December 9, 2003**

**In attendance:**

*W1IK, Jim	President
W8IR, Mark	Vice-President
KT8F, Ann	Recording Secretary
KC8IAP, Mary	Membership Secretary
KC8JSH, Delphine	Treasurer
KC8IAQ, Dave	Board Member
N8KLX, Jerry	Board Member
KC8RVF, Dave	Board Member
*KB8QMS, Nancy	Past President

\*Absent

Meeting called to order by the Vice-President at: 7:45 PM.

Motion made to accept the minutes as printed in the Express made by Peggy, W8PEG and 2<sup>nd</sup> by Steve, N8XO, motion carried. The secretary neglected to mention Scott's role as co-chairman of the swap and wishes to extend belated thanks

Treasurer's report given by Delphine, KC8JSH. Motion to accept the report, motion carried.

Membership: Mary, KC8IAP: 236 members. Taking applications now.

Webmaster: Dave, KC8IAQ – provided a report. Will do his presentation next year.

Technical report: Floyd, still working on the Detroit site. East site presently out of service for maintenance.

ARRL: the funds we sent to ARRL are going to be used to hire a professional engineering company to study the BPL problem. Please contact your congressman and senators to ask for their support for the amateur spectrum protection bill. Troy hams are working toward approval of a 75 foot antenna ordinance.

—Continued on Page 11

## How To Repair Electronic Equipment

1 Approach the ailing instrument in a confident manner. This will give the instrument the mistaken idea that you know something. It will also impress anyone who happens to be looking, and if the instrument should suddenly start working you will be credited with its repair. Should this fail, proceed to step 2.

2 Wave the service manual at the instrument. This will make the instrument assume that you are at least familiar with the source of knowledge. Should this fail, proceed to step 3.

3 In a forceful manner, recite Ohm's Law to the instrument. (Caution: BEFORE TAKING THIS STEP, REFER TO A HANDBOOK TO

BE SURE OF YOUR KNOWLEDGE OF OHM'S LAW.) This will prove to the instrument that you do know something. This is a drastic step and should only be taken if the first two steps fail. If this step fails, proceed to step 4.

4 Jar the instrument slightly. This may take anything from a three to six foot drop, preferably on a concrete floor. However, you must be careful with this step because, while jarring in the approved method of repair, you must not mar the floor. Again, this is a very drastic step. If it should fail, proceed to step 5.

5 Brandish a large screwdriver in a menacing manner. This will frighten the instrument and demonstrates the deadly "SHORT CIRCUIT"

technique. If this step fails, proceed to step 6.

6 Add a tube...even if the instrument is solid state. This will prove to the instrument that you are familiar with the design of the instrument. Also, this will increase your advantage and confuse the instrument. If this step fails, proceed to the most drastic and dangerous step of all, step 7. It is very seldom used and is the last resort if all else fails.

7 Think! Is the most dangerous step of all! It is very seldom used and is the last resort if all else fails.

—Internet

## Notice To All Visitors

WHAT YOU ARE ABOUT TO WITNESS IS AN AMATEUR RADIO STATION, LICENSED AS \_\_\_\_\_ BY THE FEDERAL COMMUNICATIONS COMMISSION IN WASHINGTON, D.C.

BEFORE YOU ASK THE QUESTIONS, HERE ARE THE ANSWERS:

1) The total cost of this equipment cannot be discussed here as it creates marital conflicts.

2) No, we cannot send a message to your brother in Hong Kong, we suggest you call Western Union.

3) This is strictly a hobby, we do not have the facilities or the time to fool around with TV sets, radios or HI-FI. We can recommend a good service man.

4) Yes, an antenna in the back yard is essential to the operation of the equipment.

5) The farthest station we have contacted is in the Ubangiland.

6) The cards on the wall are called "QSL cards". They are confirmation

of contacts made with other stations.

7) It is technically impossible for this station's equipment to interfere with television reception, telephones or stereo systems. Any interference problems of that nature are caused by design flaws in the home entertainment devices themselves.

8) An Amateur Radio station may only be operated by a highly qualified, technically skilled electronics expert. It takes dedication, training and intelligence to reach the level of competence that justifies one to be licensed by the United States government. Therefore, it is NOT considered inappropriate to show proper awe, respect and general obsequiousness when I discuss my hobby or operate the controls.

FURTHERMORE...

IF YOU ARE GRANTED THE EXTREME HONOR OF BEING INVITED TO SPEAK INTO THE MICROPHONE, PLEASE OBSERVE THE FOLLOWING RULES:

1) Speak in a low and soothing tone.

2) Do not disagree with me in any manner.

3) Say no bad words and tell no off-color jokes.

4) It is customary for guests to make complimentary remarks about this station and its operator when talking to other hams on the air.

DO NOT TOUCH ANYTHING, TURN ANY KNOBS, SIT ON EQUIPMENT, ETC.

I HAVE LOST SEVERAL VISITORS BY ELECTROCUTION IN THE PAST FEW WEEKS.

—Internet

## Good Antenna = Good QRP

Dick, AF8X

**A** GOOD ANTENNA can increase your QRP operating fun by a factor of 10 or more. As most of you have heard on the repeater, Walt, WB8E and I love to do what Walt calls, "A Lark in the Park." We also try many different antenna configurations, some good, some not so good, but either way we have a lot of fun and some times even learn something.

My latest project was a RockMite kit. The RockMite is a very popular transceiver with a built in keyer and about 250-miliwatt output. This is below QRP and is called QRPp. This little rig is fun to operate as long as you are making contacts. My first contact with it was to Seattle, WA, using my Carolina Windom at my home.

Since then I have had little success out in the park with Walt using marginal antennas. I hate to admit it, but Walt loaned me his antenna and I made a contact immediately. That proved to me I needed something a little better for the RockMite.

For the past year I have been experimenting with loop antennas and

had some success with the "Nursing Home Loop" you may have read about.

For portable operation I needed something easy to deploy. A Delta Loop hung from the apex, what could be simpler? I refreshed my memory of the formula used for loops and came up with a workable loop on 20 meters for the RockMite.

I bought a 100' spool of #22 twisted alarm wire from Radio Shack for about \$9.00. I unrolled it, put the end in a cordless drill and untwisted it, giving me two 100' pieces. I rolled up one and cut the other at 71.5 feet, the total length of the 20-meter loop.

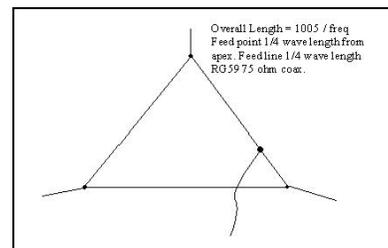
Then I found a piece of 1/2" PVC pipe in my garage and cut off three pieces 1/4 in wide to use as insulators and one piece 1 1/2" for the feed point attachment. I ground a groove on each side of this piece to seat the coax and drilled two small holes near the ends for the antenna wires.

I intended to use a couple of tie raps to secure the coax around the PVC, but I couldn't find any, so used a waxed string wrapping to secure it. (See picture).

After attaching a 1/4 wavelength of RG59 coax (75 ohm) I attached the three PVC insulator rings at the appropriate places. (Configured to place the feed point at 1/4 wavelength from the apex for vertical polarization) I wound the whole mess of wires around a piece of cardboard and headed for the park.

After getting a string over a high branch and raising the apex of the antenna about 25 feet, I staked down the lower corners and attached the coax to the MFJ antenna analyzer. It showed about a 1.2 SWR at a frequency a little lower than where I wanted to operate, so a little trimming will be in order. To continue with the test, I hooked up my little ZM-2 QRP tuner and tuned it to 14.060.

I made a contact in South Carolina right away and received an impressive 579 report! Convinced it would work, I wound up the strings and wire and headed home. As I am writing this, Walt hasn't seen this one yet and I am hoping to blow his doors off at the next outing we have together.



## Where "HAM" Came From

Dick, AF8X

I heard a discussion on the repeater about the derivation of the name "HAM" This is what I found and believe to be true.

Why an amateur radio operator is called a " ham " - it goes like this:

The word ham was applied in 1908 and was the call letters of one of the first amateur wireless stations operated by some members of the Harvard Radio Club. They were Albert S. Hymann, Bob Almy and Peggie Murray. At first they called their station Hyman - Almy - Murray. Tapping this out on code called for a revision and they changed it to Hy - Al - Mu, using the first two letters of each name. Early in 1909, some confusion resulted between signals from amateurs wireless Hyalmu and a Mexican ship named Hyalmo, so they decided to use only the first letter of each name and the call became "Ham."

## Lark in the Park Antenna

Dick, AF8X

**M**Y FAVORITE PORTABLE antenna is the MP-1, a multi-band, tunable vertical antenna from *Super Antennas by W6MMA*. This antenna sets up quickly and is surprisingly efficient. However when I completed my 20-meter RockMite 350 mw transceiver, I wanted a monoband antenna that would give optimum performance considering the tiny 350-mw-signal output.

I also wanted an antenna that would take up very little room in my carry bag and be easy to erect. The full-wave delta loop seemed the ideal solution. Made of flexible wire, it could be wound up into a small package and needs only one support, and is resonate on 14.060 MHz without the use of a tuner.

I used the formula:  $1005/\text{freq in MHz}$  to find the full length of the loop.

$$1005/14.060 = 71.47 \text{ feet (71' 6")}$$

$$71.47/3 = 23.82 \text{ feet per leg. (23' 10")}$$

The impedance of the delta loop is 100 ohms. To match it to a 50-ohm feed I used a 1/4-wave 75-ohm coax Q section.

To find the impedance needed for the Q section you need to find the square root of the antenna impedance times the feed line impedance ( $100 \times 50 = 5000$ )  $\sqrt{5000} = 70.7$ . 73-ohm RG 59 is a close match to the calculated 70.7 ohms for the Q section.

The Q section 1/4 wavelength is found by the formula:  $246 \times \text{Velocity factor}/\text{Freq.}$  ( $246 \times .66/14.060 = 11.54$  feet).

Any length 50-ohm coax can be connected between the Q section and the transceiver.

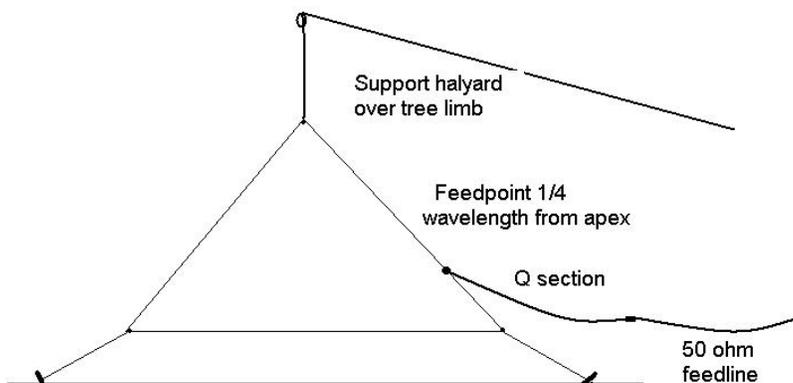
Once the Q section was connected to the two free ends of the loop wire, three insulators made of 1/4 inch wide slices of 1/2 inch PVC tubing were attached at 23' 10" spacing.

The insulators were attached by pushing a loop of wire through the hole and then pulling the insulator through the loop making them easily movable and in my case, positioned so that the feed point was located 1/4 wavelength from the apex giving the antenna vertical polarization.

If horizontal polarization is desired, it can be accomplished by simply moving the insulators so that the feed point is on the horizontal portion of the antenna. This antenna is easily hung by throwing the halyard over a tree limb and staking the corner supporting lines to the ground.

This antenna has a very good signal to noise ratio, desirable in any antenna system, and the directional characteristics of this antenna are opposite to the small loop antennas, in that the maximum radiation is perpendicular to the plane of the loop.

The wire I used for the antenna was #22 stranded alarm wire from Radio Shack (278-862). It comes as two conductors twisted and wound on a spool. I reeled off the required amount and secured the ends in a vice, then chucked up the other ends in a cordless drill and power-unwound the twisted pair until I had two separate wires. The wire is lightweight and flexible and can be wound up without kinking. I have also used this wire for portable dipoles.



## Grounding in RF Environments

—From Page 1

There is nothing more frustrating than trying to talk on a radio and you keep getting zapped on the chin while doing so! I speak of personal experience here. Let's let it go at that.

The Safety ground has to consist of enough ground contact surface area to safely dissipate the surges into the soil safely. Multiple ground rods connected with solid 1 ott ground wire is best. You should have one rod where your antenna support structure is, whether it be a tower or mast or roof tripod, etc. It must have at least 4 gauge bare or insulated wire—NOT stranded.

These surges can easily be hundreds of amps. DO NOT scrimp on the wire. This is your life you are dealing with. If stranded wire is used it should be no more than 8 conductors. Heavy bolt type connectors should be used for all connections.

You should also employ a non corrosive type coating. All of these connectors and grease are available at your good home or electrical supply house. All grounds for the installation should be bonded together at the ground. NEVER daisy chain grounds. ALL connections from devices should go DIRECTLY to closest ground point. Use eight foot copper ground rods for all. Bond the rods with single ott solid bare copper wire.

Drive a ground rod for electrical supply to house if you do not already have one. Bond it to others with aforementioned wire. If you have overhead service to house, run wire direct to neutral wire at feed point and use split bolt connections with grease for corrosion.

If you have underground service, ground at meter box. If your power company objects run it to your service panel. You need a minimum of one eight foot ground rod for every protected structure, i.e., every mast, tripod, vertical antenna, etc. These must all be connected together AT THE GROUND. Run bare copper between the separate ground rods to form a ground system. The bare copper provides additional surface contact area for the ground system. It should be underground, but does not need to

be deep for any engineering reasons.

Make sure you make yourself a map of the runs for future projects to avoid hitting and digging up the system in the future. Use heavy duty bolted connectors designed for this service. If you have access to a ground megger or ground tester the system should be less than 15 ohms. In sandy soil, this can take several rods to achieve.

I have had to put down 3 32-foot rods (consisting of four 8 foot rods with couplers and driven in with a power driver) in sand to get the measurement needed. This should take care of our safety grounds.

### RF Grounding

RF grounding is considerably different than surge grounding. First thing is you are working with RF. Since it is an AC signal it has impedance. The length of the ground runs has much more to do with the fraction of a wavelength at the frequency involved than the DC resistance of the wire.

While the DC resistance of a ground wire may be only a fraction of an ohm, the impedance (or the AC resistance at RF frequency) can easily be hundreds or thousands of ohms on the same wire. This can make it pretty difficult to get an effective RF ground. Remember an RF ground wire is just a short antenna!

We want to make it as lousy an antenna as possible! We really don't need it radiating extra RF inside our shack. It is supposed to remove this stuff not cause it. An effective RF ground needs to be less than a quarter-wave length at the highest frequency used. As you can see there is no such thing as an effective ground for VHF or UHF.

We will concentrate our efforts to 10 meters and above—this means our ground wire from radio to ground must be about 9 feet or less! This is still pretty difficult. All radios, tuners, meters, etc in radio system should be grounded in a star ground configuration.

The common point should be at the tuner if one is used, otherwise a ground bus bar can be purchased at an electrical house. All connections to radios should be with either insulated or bare wire with as few strands as possible.

RF likes smooth surfaces best. DO NOT USE braid for RF connections. This is an old wives tale! Your ground run should go directly to the ground where you should have a ground rod for the connection point. (which will be connected to all your other ground rods in the system as discussed above).

This run must be less than nine feet to be effective. If you are on the second floor, this will make this length impossible. Use of a shielded ground\* wire can stop radiation of the ground wire but you will still have a lousy ground. Nothing can change this.

Ground wire tuners only turn your ground wire into a counterpoise for your antenna, meaning it WILL radiate. This will only ensure that the low voltage point of your antenna will be at your radio. Next we need to form our RF counterpoise outside at our ground system.

You will next need to add some bare copper wire at the RF feed-point where your shack ground wire connects to. I prefer to use bare 8 gauge copper ground wire here. It is single conductor, bare copper and easily bent and run around house.

Single strand is best but it should definitely be bare even if you have to strip insulation off wire. Run it around the house or anywhere it will stay out of the way of lawn equipment but not buried deeper than 1/2". This is CRITICAL. RF will not penetrate soil deeper than this at these frequencies.

—Continued on Page 10

**Grounding in RF Environments**

—From Page 9

Those bonding wires you have between ground rods and ground rods do not exist to the RF! Burying this wire under wood chips or similar non-conductive landscaping, etc. is the way to go.

This counterpoise should be as long as the wire antennas you have in the air. For most hams this will be about 130 feet. Longer is better. I run all the way around my house. I have found the eight gauge will push into the spacing used between driveway and foundation when persuaded with the proper tool (READ HAMMER).

You can connect the loop back on itself at the feed point. This can add several S units to the receive signal and dramatically reduce noise on the signal, though nothing will help all the noise on 80 or 160 meters.

Years ago I installed a long wire antenna that was about 250 feet long and about 50 feet in the air. This should work fantastic you say. I had three ground rods outside window of shack with single solid copper ground wire direct to tuner. Ground wire length was only six feet.

All three rods were spaced about eight feet apart with connecting bare wire interconnecting them—in other words a really good surge

ground. What I did not realize at that time was how lousy my RF ground was. We could not tune the antenna on most frequencies and we kept getting zapped from radio or microphone when we transmitted. Also our signal reports were lousy.

So, after consulting some experts I added 250 feet of counterpoise around the building consisting of some bare 6 gauge copper wire I had. The radio was on while I rolled it out and a friend was listening to the broadcast on 40 meters (OK it was night time---best time to do antenna work right)

Anyway, he reported the broadcast was only about S 4-5 on the meter. As I rolled out the counterpoise it rose to 40 over S9 and came in much clearer. We were able to tune everything easily now and SWR was rock stable.

When we did a signal test, the station we had talked to before accused us of running a contest amplifier. We could not convince them it was only 100 watts, same as before and the same antenna!

**Summary**

Don't underestimate the importance of a good ground system. Include it into the planning of that ultimate shack you are working on. Don't scrimp on good copper wire and connectors. Aluminum can be used above ground but never in ground.

Add one size to aluminum to achieve same current capability.

Ground everything to the system. A ground run to ductwork in house can alleviate a lot of noise. A run to water pipes should go direct to ground — NEVER to radios, NEVER connect radios to ANYTHING inside the house for ground purposes. Always run all grounds from everything to ground directly.

In other words, your furnace ducts will get one run, your water pipes will get one, etc. Don't daisy chain to save wire.

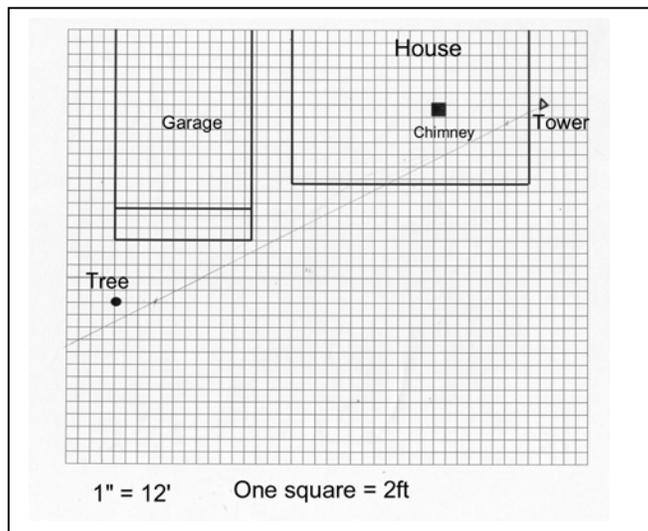
If you have a chain link fence in back yard, run a bonding wire underground from ground system to it and bond well. A solid aluminum or copper wire run along the bottom of the fence as a bonding device will make it a great addition to the system. Weave it through the bottom fence fabric and bond every few feet with a split bolt connector. The power company does this with all their fences around their power stations.

\* A **shielded ground** can be made using RG 8 or similar coax to replace the ground wire. Connect both inner and outer shields to the ground rod and connect the center only to the radio. Add a .1 $\mu$ f 1000 volt cap between ground and shield at this end.

**Antenna Weather—From Page 1**

Yes you could go out with a tape measure and try measuring in every conceivable direction an antenna might be strung, but it's not easy measuring over rooftops and through trees. The plot plan is easy and you can do it indoors after taking a few simple measurements. Make a rough sketch of your property; take measurements from property edges to house and other structures and trees. Apply these to your computer drawing or graph paper.

Once you have the plot plan drawn, fitting in an antenna is a matter of taking the straight-line measurement of the antenna and moving it around on the plot plan until it fits. My own plot plan is scaled at 1-inch = 12 ft. or one square = 2 ft.



## USECA Cork Board

▶ **Radio Items** ◀

MFJ-713, 2 meter HT intermod filter. Like to run your HT mobile but can't stand the intermod? This thing really works. \$40. KC8LOC, Tom, home: (248) 542-3340; work: (586) 576-3314 or email: [kc8loc@yahoo.com](mailto:kc8loc@yahoo.com).



▶ **Miscellaneous Items** ◀

BELKIN — USB 4-Port Hub. NEW! \$20. K8OEF, Joe, (586) 781-0050 or email: [k8oef@k8uo.com](mailto:k8oef@k8uo.com).

INTEL Easy PC Camera. Never used. Still sealed. \$25. K8OEF, Joe, (586) 781-0050 or email: [k8oef@k8uo.com](mailto:k8oef@k8uo.com).

★RCA 35" Color Television (charcoal cabinet). Excellent condition! Still in original shipping carton with manual. Features include: PIP, on screen display, universal remote control, Commercial Skip (GREAT feature!), closed captioning, clock with sleep timer, programmable alarm, channel labels, parental control, external speaker jacks, multiple inputs, stereo audio, etc. Asking \$450 OBO. Contact Floyd, W8RO at (248) 431-7769 or [w8ro@k8uo.com](mailto:w8ro@k8uo.com)

SNAP-ON KR1100 upper tool chest, very large (l-53", w-22", h-18", fits KRL1000 roll cabinet, 9 roller bearing drawers, would make nice bench top box \$1000. KC8LOC, Tom, home: (248) 542-3340; work: (586) 576-3314 or email: [kc8loc@yahoo.com](mailto:kc8loc@yahoo.com).

TOSHIBA Laptop computer 486 Satellite with Canon Jet Printer. \$130. Hewlett-Packard Color Printer Deskjet 560C. \$35. Bapco safety analyzer 120v to 220v test for ground on any product. \$125. Sony car stereo, AM/FM cassette with Sony CD 10 Disc Changer \$140. KC8QIC, Denny, (586) 268-7417.

★New or changed this month.  
Notify the editor to have items added and/or removed.

**This Cork Board is for club members only and it's free!**

★**FOR SALE**

**ICOM IC-2100H** – 2M 55W mobile rig, great condition, still current production, tone encode/decode, large green or amber LCD display, box, manual, mobile mounting bracket, mic; \$120-

**2M J-POLE** -- the U-shaped part assembled with copper tube, add coax and some sort of mounting mast (PVC, wood), FREE to a new ham who wants to experiment with J-poles.

**COMPUTER STUFF** – P-III 600MHz processor w/mboard (board bad), Elsa Erazor III 32Mb AGP TNT2 video card, Creative Labs sound card, 3Com 10/100 network card, a complete 386-387 system, assorted old 386-486 type stuff; \$\$\$ ???

**KENWOOD KLF-1** – in-line DC filter; \$8-

**OVERHEAD PROJECTOR BULBS (?)** – have two new bulbs in the box, one is a 36V-400W, the other a 24V-250W(?); both never touched by fingers directly and both verified for filament continuity; \$4-/each

**CB ANTENNA** – abt 26" long, base loaded, base tunable with rings, 3/8" style mount; \$5-

**COMPUTER SPEAKERS** – pair of amplified pc speakers, my hearing is still too good & the tiny slight buzz in the background annoys me, they were new and used only 10 minutes; \$8-

**CELLPHONE MOBILE PWR CORD** – for cellphone with 4.8V battery, DC coaxial plug on phone end; \$5-

**POWER SUPPLY** – switching PS, 12-15 VDC, 16A, works, you wire it up; \$25-

**DUCKIES** – UHF duck abt 6" with BNC: \$5-, dual band 2M/440 "Icom" style abt 6" with BNC: \$15-, CB black rubber duck right angle PL259: \$5-.

**K-40 10/11M WHIP** – 4' fiberglass, black, tunable, substitute for original K-40 stainless whip & base load, no mount or coax just the antenna; \$4-.

**ARGUS 300**—slide projector, with assorted old slides and trays; \$25-

Contact Arpad WY8M at: [wy8m@arrl.net](mailto:wy8m@arrl.net) or [wy8m@k8uo.com](mailto:wy8m@k8uo.com) or at (586) 751-3804 or 147.180 MHz+ 100 Hz PL.

**Meeting Minutes—From Page 5**

Trustee: Dennis, W8DFG turned in the paperwork to MARC to cover the frequencies we require for the links for the remote sites.

Christmas party: Ann, KT8F reported it was a big success and a lot of fun.

Health & Welfare: Walt – WB8E – all taken care of.

Floyd, W8RO opened the nominations and reviewed the candidates.

Dennis, W8DFG reported that the Coney dog sale prior to the meeting was a big success. Next month he is planning to have Sloppy Joes. He stated that the last Thursday in February we will host a spaghetti dinner here. Other clubs will be invited. Part of the proceeds will go to the BPL defense.

- Elected officers:  
 President: W1IK, Jim  
 Vice-President: KC8IAQ  
 Recording Secretary: Ann, KT8F  
 Treasurer: Delphine, KC8JSH  
 Membership Secretary: Mary, KC8IAP  
 Board Members:  
 Jerry, N8KLX  
 Scott, WN1B  
 Dennis, W8DFG

Meeting adjourned at 9:00 PM

Respectfully submitted,  
 Ann Manor, KT8F

**USECA Cork Board  
On The Web**

Every month, this page is up-loaded to our web page for the "whole world" to view.

Don't hesitate to list your wants and/or needs—you never know who will be reading it.

And, the best part, it costs you (members) *NOTHING!*

**Spaghetti Social at the Elks Club  
Thursday, February 26, 2004**



**USECA VE Testing**

Testing will be the FIRST Thursday EVERY month of the year. Joe, N8OZ will have the CVE duty. No pre-registration is needed or wanted. Test Fee is \$12.00. Applicants need copies and originals of CSCE's and/or license. There is no copy machine at the Elks; (there is none close by). Starting time is 7:00 p.m. — please do not arrive earlier. Walk-ins are welcomed. Test site is at the Mt. Clemens Elks, 179 S. Main St., Mt. Clemens. If testing, you must have the following: picture ID (or birth certificate); and a copy of your current license or completion certificates, if any.



Jackets—\$45.00 • Sweatshirts—\$25.00  
 Polo Shirts—\$22.00 • Caps—\$6.00  
 (2X & 3X—Additional Charge)  
**Contact: Richard, W8WTH**  
**At Meetings or Phone (586) 791-4669**

**Net Point System**

- ✓1) HF CW NCO = 4 points, HF SSB/VHF NCO = 3 points, HF CW/SSB check-in = 2 points, VHF check-in = 1 point. HF < 30 MHz, VHF > 30 MHz. (NOTE: Check-ins should do so *personally*, proxy check-ins are legitimate *only* for members on club business. "In & Out" check-ins, though allowed, are discouraged.)
- ✓2) Awards are earned for 50 points and multiples thereof. Additional awards for the highest annual HF and VHF scores. Awards are meant to encourage **participation** and can be earned by any licensed amateur.
- ✓3) Net logs must be readable and include the CALLS and NAMES of check-ins, as well as NCO, DATE, and MODE.
- ✓4) NCO's: Forward net logs to the Awards Manager within 30 days; logs received later will not earn the bonus points normally awarded a NCO. Mail your logs to: Tom, KC8LOC, 26708 Osmun, Madison Heights, MI 48701; or email to kc8loc@k8uo.com.
- ✓5) If *you* notice any errors in the database, wrong or changed call signs, mis-spelled names, etc., let Tom know ASAP.

The *USECA EXPRESS* is published monthly (except July and August), by the UTICA SHELBY EMERGENCY COMMUNICATION ASSOCIATION, INC., of Macomb County, Michigan. Club meetings are held on the second Tuesday of each month (except July and August), 7:30 p.m., local time, at the Elks Club, 179 S. Main (between Church and Robertson), Mt. Clemens, Michigan. *Visitors are always welcome.* Articles for the *EXPRESS* should be submitted to the editor no later than the night of the club meeting for publication in the following month's edition. **The articles within are those of the author and not necessarily endorsed by USECA.** Material contained in the *EXPRESS* may be reprinted provided credit is given to the *USECA EXPRESS* and the author, except material published by permission of a copyright holder. The awards for "Excellent" (1994) and four times "Superior" (1995, 1996, 1997 and 1998) were received from ARNS (Amateur Radio News Service). [Note: ARNS has disbanded.]

# USECA APPLICATION



DATE \_\_\_\_\_  NEW  RENEWAL  
 CALL \_\_\_\_\_ CLASS \_\_\_\_\_ AUTO-PATCH \_\_\_\_\_  
 NAME \_\_\_\_\_  
 STREET ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
 TELEPHONE # \_\_\_\_\_ PRINT IN ROSTER  YES  NO  
 BIRTHDATE \_\_\_\_\_ EMAIL ADDRESS \_\_\_\_\_

Rev. 4/01 **ARRL**  YES  NO **RACES**  YES  NO

## FOR FAMILY MEMBERSHIPS ONLY:

CALL \_\_\_\_\_ CLASS \_\_\_\_\_  
 NAME \_\_\_\_\_  
 BIRTHDATE \_\_\_\_\_  
 MEMBER: **ARRL**  YES  NO  
**RACES**  YES  NO

CALL \_\_\_\_\_ CLASS \_\_\_\_\_  
 NAME \_\_\_\_\_  
 BIRTHDATE \_\_\_\_\_  
 MEMBER: **ARRL**  YES  NO  
**RACES**  YES  NO

Annual Membership Dues Regular: \$20 — Family: \$30 — Auto-Patch: \$35 (One Time Fee) + Annual Dues  
 Applications can be given to the Membership Secretary at monthly meeting or mailed.  
 Please make check payable to: **USECA** — Address: **P.O. Box 1222, Sterling Heights, MI 48311-1222**  
*(Allow 4-6 weeks for processing.)*

USECA reserves the right to accept or reject New or Renewal Memberships.



## 2-Meter LANs

### Local Area Nets

DAY	TIME	CLUB	FREQ.
SUN	1:00 pm	USECA/Information	147.180
SUN	8:00 pm	USECA/Traders/Helpers	147.180
SUN	8:00 pm	SPIRIT of '76	146.760
SUN	9:00 pm	HPARC/DART	146.640
SUN	9:00 pm	Garden City ARC	146.860
SUN-SAT	10:15 pm	S. E. Michigan Traffic Net	145.330
SUN-SAT		MACEOC (Packet)	145.030
MON	7:30 pm	SATERN	147.180
MON	8:00 pm	MECA	147.200
MON	9:00 pm	USECA/Slow Code	147.189
TUE	8:00 pm	USECA/Information	147.180
TUE	9:00 pm	Motor City Radio Club	147.240
WED	8:00 pm	GMARC	146.700
WED	8:00 pm	SPIRIT of '76/Info./Traders	146.760
WED	9:00 pm	ARPSC	145.490
WED	9:00 pm	MICHIGAN QRP	145.170
THU	7:00 pm	HPARC/Kids	146.640
THU	8:00 pm	RACES/ARES	147.200
THU	9:00 pm	ECHO	147.080
FRI	Midnite	USECA/Hoot Owl	147.180

## On The World Wide Web

### USECA Home Page

[WWW.USECA.NET](http://WWW.USECA.NET)



## Net Ops Schedules

### 2-METER NETS

	SUN. 1 PM 147.180 MHz	SUN. 8 PM** 147.180 MHz	TUES. 8 PM 147.180 MHz	FRI. MIDNIGHT 147.180 MHz
WEEK				
1	VA3IDJ	W1IK	K8QLM	-OPEN-
2	KT8F	KC8DBG	-Meeting-	-OPEN-
3	K8QLM	KC8RVF	-OPEN-	KC8DIR
4	W8IR	KW8K	W8DFG	-OPEN-
5*	WB8E	-ALT-	-OPEN-	-OPEN-

\*\*Traders/Helper Net

### HF NETS

	THURS. 9 PM 21.140 MHz/CW	FRI. 10 PM 21.140 MHz/CW	FRI. 11 PM 28.425 MHz/USB
WEEK			
1	K8QLM	-OPEN-	KC8LOC
2	N8MOJ	-OPEN-	KA2IBE
3	-OPEN-	W8IC	K8QLM
4	AA8DD	WB8E	-OPEN-
5*	-OPEN-	-OPEN-	-OPEN-

\*If applicable

NCO's—If you're unable to take your net please get a replacement or contact Brian, KC8DIR (586) 749-4561—Don't wait!

# USECA

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**JANUARY 2004**



## "The Happenin' Club"

### Club Activities

MONTH	DATE	TIME	EVENT
JAN	13	7:30 pm	General Meeting
FEB	10	7:30 pm	General Meeting
FEB	26	TBA	Spaghetti Social
MAR	9	7:30 pm	General Meeting
APR	13	7:30 pm	General Meeting
APR	25		WalkAmerica
MAY	TBA		Pre-Field Day
MAY	11	7:30 pm	General Meeting
MAY	14-16		Dayton Hamvention
JUN	8	7:30 pm	General Meeting & Fox Hunt
JUN	25-26		Field Day 2004

### Swaps

Day	Month	Date	Where
SUN	JAN	18	Hazel Park
SUN	FEB	15	Livonia
Fri-Sun	MAY	14-16	Dayton 2004
SUN	JUN	20	Monroe
SUN	OCT	31	USECA

Source: ARRL

### 6-METER NETS

WEEK	WED 7 PM	WED 8 PM
	50.150 MHz/USB	51.740 MHz/FM
1	-OPEN-	-OPEN-
2	KC8IAQ	K8QLM
3	N8YBY	KC8HYU
4	-OPEN-	-OPEN-
5*	-OPEN-	-OPEN-

\*If applicable

NCO's—If you're unable to take your net please get a replacement

### Name Badges

WITH THE OFFICIAL USECA LOGO  
CONTACT LAURA — (586) 749-4561