



P.O. Box 6421 Auburn, CA 95604

April 2015

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At The Key of SFARC:

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Mark Graybill, W8BIT

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History: Gary, KQ6RT
Misc Radio: Fred, K6DGW
Sunshine: Richard, WA6RWS

WEBMASTER:

Birton Gilbert, N6UG

REPEATERS

145.430 (-0.6 MHz/PL 162.2)
440.575 (+5.0 MHz/PL 162.2)
223.860 (-1.6 MHz/PL 162.2)

CLUB NET

Thursdays, 7:30PM, W6EK/R
145.430

CLUB MEETINGS

Second Friday of the month,
7:30PM at the Auburn City Hall,
1215 Lincoln Way, Auburn CA

CLUB BREAKFAST

Last Sat of the month at Mel's Diner
1730 Grass Valley Hwy, Auburn 7:30AM

NET CONTROL OPS

Dave Jenkins, WB6RBE
Norm Medland, W6AFR
Bob Brodovsky, K6UDA
Al Martin, NI2U

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Barbara Anderson, W6EVA
anderson51@wavecable.com

ARRL PIO:

Carl A Schultz, WF6J

VOLUNTEER EXAMINER

Dave Albright, NO6NO

Calendar of Events

April 5th:
Easter Sunday

April 10th:
Club Meeting

April 25th:
Club Breakfast

April 25th:
Rocklin Public Safety Day

April 26th:
MS Walk in Folsom

Inside this issue:

- *Highlights from our first swap meet*
- *Bill Aston W6JDT SK*
- *John Grant Webb, W7GE SK*
- *The Invisible Tower*
- *2015 SFARC Field Day T-shirt*
- *Board & General Minutes*



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How to do a ham swap in three easy steps

By Bob Brodovsky, K6UDA

March 15, 2015. Wow. As I sit here on the sofa soaking my feet andddddddddd.... I'm awake.

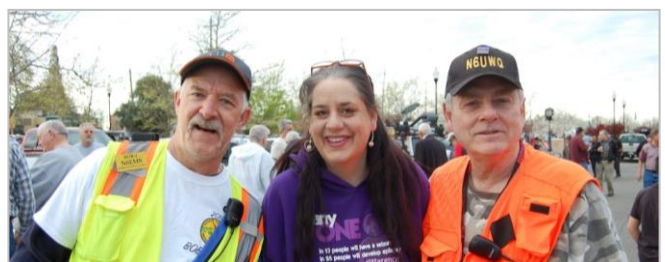
Seriously. I can hardly believe we pulled this one off. It was incredible. I never imagined it would be as big as it was or as well received by the ham community. Two years ago I proposed doing a swap meet and it was received pretty lukewarm. After bringing it up again last year and being named the committee chair I started to question my intelligence as well as my sanity.

I'd never planned a large event and had no idea what hosting a hamfest entailed. Luckily for me **Carl WF6J** has had plenty of swap experience from some of the other area clubs. Carl gave me lists of things that needed to happen if a swap meet was going to happen. Carl also contacted every club and media outlet on the planet to get the word out.

I'm compiling a manual on putting this swap together so the next guy (or gal) who takes this on isn't trying to reinvent the wheel. The secret sauce though really is surrounding yourself with capable folks who are committed to getting the job done right. My hats off to everyone who participated, which was most of the club. However, I give most of the credit to Carl. Let's start planning for next year. The location and date are pretty much written in stone, but I see the opportunity to grow this into a true 3 ring circus. Once and for all let's make SFARC "the" club to be a part of in Northern CA. or the State of Jefferson. Whichever.



You guys and gals know I'm not the guy who likes the status quo, but what I'd like to propose for next year is bigger and better. First, I'd like to utilize more area for the swap. We can go all the way down to the circle at the end of the park. Next, I'd like to work on bigger vendors and maybe an HRO, Elecraft, or Icom display. I think a VE session would work out very nicely and last, I think to myself, how about a seminar? How about a D-Star University? I can work on getting the big names in the D-Star industry to come to little ol' Loomis and build a production that Barnum & Bailey would be proud of. Who's with me?



SFARC 2015 ham swap meet

It was Pi day, 3/14/15, around 6 am, when I first tuned into the W6EK repeater. The box was alive and busy with information to and from everyone as they began their journey towards the Loomis train depot. The sun had not even reached the horizon when the vendors were loading in and setting up shop for that morning's event. Being late to this swap meet would not be an option. Pulling into the parking lot around 7 am seemed to be perfect timing.

The fully coordinated parking effort was very nice and convenient. Answers to any questions were as easy as finding a neon vest. It was around 9:26 am and the SFARC first annual swap meet was well under way. I had everything set up between WB6EDR Dick and NO6NO Dave that I was going to sell. I had my raffle tickets in hand and I was trying not to get overwhelmed. This was my first ham swap and I wanted to make the most of the quickly fading morning.

The smell of kettle corn and old electronics and the sounds of bargains galore! This was the place to be if you wanted to look at cool stuff and talk to awesome guys (and girls!) about anything radio related. There were things to look at you would never know existed with nostalgic and historic value unsurpassed by any modern retailer.

I stayed to the very end without ever realizing it. I came, I saw, I swapped. K6UDA Bob did an amazing job and I want to thank everyone from the club for making my first ham swap better than I could have imagined. I'm looking forward to the rest of this year's upcoming swaps and will be back in Loomis for 2016!

73,
KK6RXT
Jason from Auburn



Bill Aston, W6JDT SK

Bill Aston passed away February 23, 2015 after a long bout with declining health. Bill was a very active ham, constantly building simple projects such as solid-state regenerative receivers and was very active on CW. He worked the world with QRP CW, his favorite mode. He amassed a collection of QST magazines that was missing only a few issues in the early 1900's. He was an avid swap-meet buyer and had a wide variety, and a garage full, of ham equipment. In earlier years, Bill attended the SFARC Field Day and worked his QRP CW to bring the club extra points. When amateur-radio packet began, Bill was an early adopter, and he and I would correspond regularly in that mode. When the internet became widely available, he transitioned to it and was quite comfortable browsing the net. Bill was 81. Working him now would surely be a DX record.



John Grant Webb, W7GE SK

John Grant Webb was born on September 21, 1929, in Gerber, California. He got his Ham radio license in Reno, Nevada in 1948. Over the years he had four different call signs: W6ZTM, W7MAH, W6RCW, and finally W7GE. The last call sign was particularly suited to him as he worked for General Electric in the 2-Way Radio Division for 25 years.

He was a Colonel in the United States Air Force (Reserves, and Air National Guard). He passed away on November 12, 2014 in Auburn, California, and is survived by his wife of 58 years, Shirley Webb, daughters Debbie Forsman, Donna Webb, son Scott Webb, six grandchildren, and seven great-grandchildren.



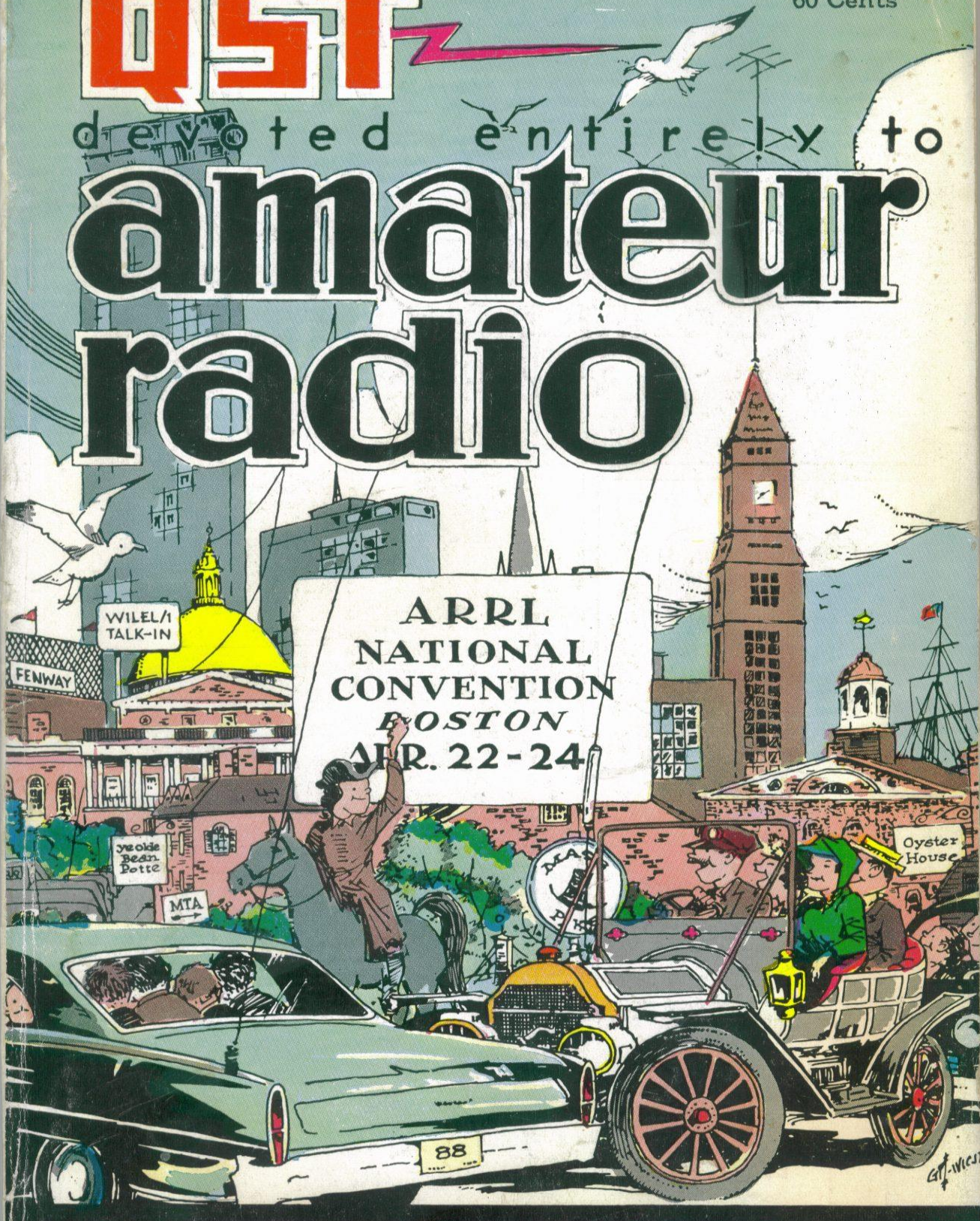
April 1966

60 Cents

QST

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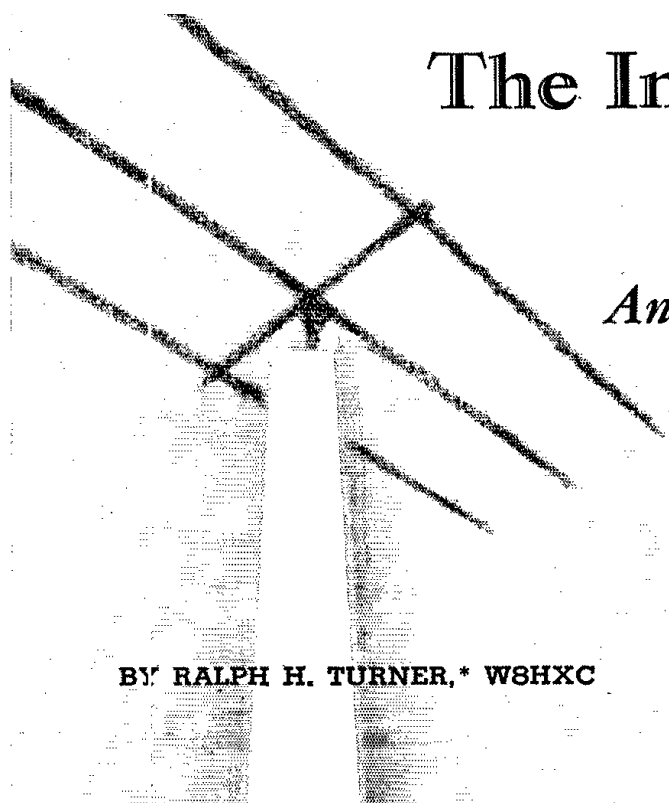
amateur radio



ARRL NATIONAL CONVENTION—BOSTON—APRIL 22-24

The Invisible Tower

6



Another Solution to a Difficult Problem

BY RALPH H. TURNER,* W8HXC

ONE of the most persistent problems facing many hams is the enactment of zoning ordinances governing erection of towers. While the ARRL has often helped beleaguered hams by collecting legal precedents which can be cited in their defense, a far better procedure would be to avoid the problem in the first place. As in the case of TVI, a little prevention is worth a couple of pounds of cure when it comes to soothing ruffled feelings. Several noteworthy attempts have already been made along these lines in concealing stretches of wire used for antennas.^{1,2} In both cases the problem was neatly solved by using wire of such small diameter that it could not be seen from a distance.

The Basic Idea

It is not possible to utilize this same principle when it comes to concealing something as large as a tower. Obviously an appeal must be made to a different set of principles in coming to grips with this much more difficult problem. Fortunately most of the relevant principles are already known to most persons and the several that are unfamiliar are easily grasped with the aid of a few examples.

As is known to almost everyone the visible portion of the spectrum extends from red at one end through orange, yellow, green, and blue, to violet at the other end. (You will recognize this sequence of colors as identical to the sequence used in resistor and condenser color codes. This order was adopted as a convenience in helping

to remember the numbers.) The colors to which the eye responds have a wave length of about 760 millimicrons at the red end and a wave length of about 400 millimicrons at the violet end. Colors which have wave lengths longer than 760 millimicrons or shorter than 400 millimicrons lie outside the visible portion of the spectrum and arouse no visual sensation. This knowledge is the key for a solution to our problem. Although a number of problems arise which must be discussed thoroughly in the next section, the basic idea is to paint the tower with a color which lies outside the visible portion of the spectrum. Such a color can produce no visual sensation, and the tower is thus rendered invisible. The problems encountered in achieving this desired end will be divided into practical problems and theoretical problems.

Practical Problems

An objection that has been raised to this approach is that if an object is coated with an invisible layer, you may see what is behind the layer and defeat your purpose. This will not be the case if the precaution is taken to use a paint that is rated by the paint industry as high in "hiding power"—a term that has additional significance for us. The paint industry has perfected products for painting over wallpaper where a paint rated high in hiding power can completely conceal a prominent wallpaper pattern with one coat. It is impossible to see through such a layer of paint because it is not transparent. Our layer of invisible paint is of this well-known type. Don't confuse an invisible layer with a transparent layer. If the invisible layer meets the current standards of the paint industry for high hiding power, it will not be transparent and nothing can show through.

* Department of Psychology, Oberlin College, Oberlin, Ohio.

¹ Scotten, "The Invisible Antenna," *QST*, February, 1949.

² Gordon, "Invisible Antennas," *QST*, November, 1965.

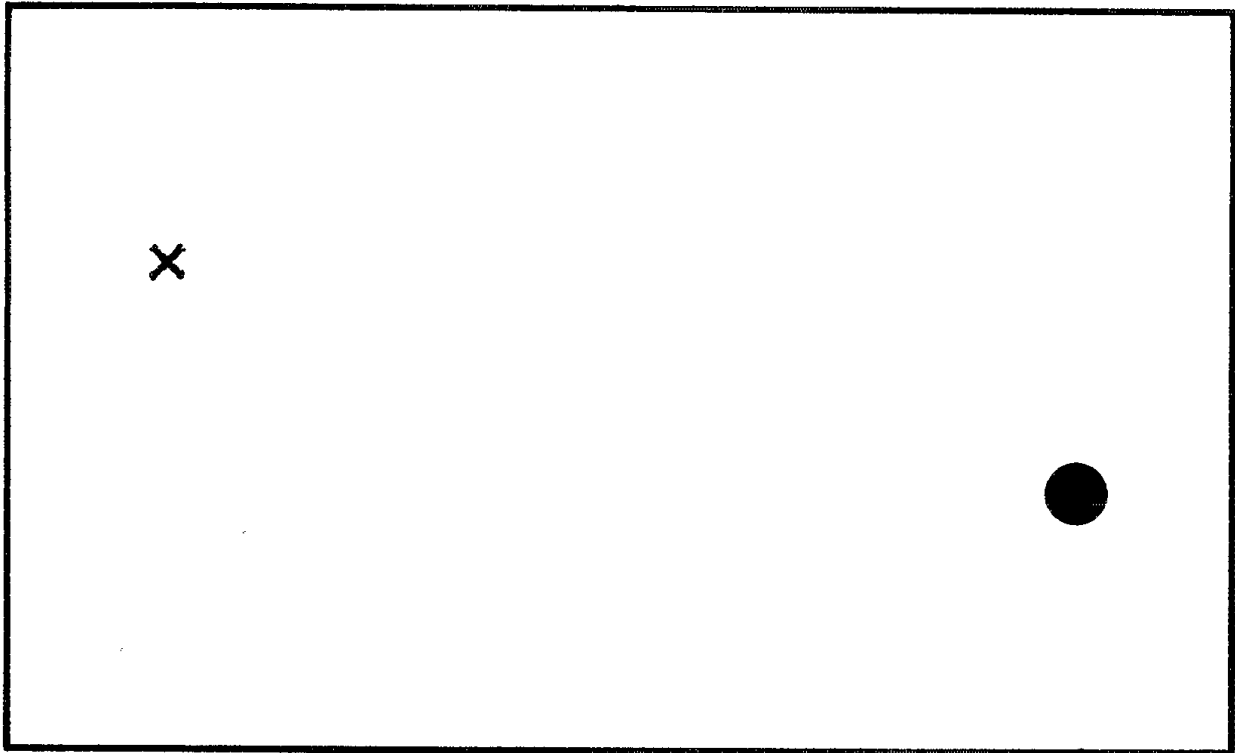


Fig. 1—Follow the instructions in the text carefully and you will be able to make the dot disappear from view.

A more serious problem is that of making sure that the pigment is not mixed with pigment that gives off wave lengths in the visible portion of the spectrum. If it is, the paint will be seen and the tower will be quite visible. Fortunately this problem is not as difficult to solve as the problem of trying to make sure that the pigment is pure and gives off only one wave length. This latter problem of producing a pure pigment is made difficult by the fact that different particles of the same batch of pigment tend to give off slightly different wave lengths. Our problem, however, is not that of producing a pure pigment having just one wave length. Rather, we have the simpler problem of just making sure that the several wave lengths do not fall within the visible portion of the spectrum. By selecting a color whose wave length is well below the red portion of the spectrum or well above the violet portion of the spectrum we can make sure that, even though our mixture is not pure, it does not give off wave lengths that are in the visible region.

Theoretical Problems

To the person who encounters this idea for the first time, one of the most troublesome matters is the answer to this question. "If a tower coated with invisible paint is seen against a solid background, such as the side of a house, won't it become visible? Since each section of the tower will block out a corresponding section of the house these holes in the visual field will have the outline of a tower and it will be easily recognized!" This sounds very logical but the perceptual processes just don't operate that way. These holes cannot be seen and we can prove it with the

following simple experiment which is designed to show what you see when there is a hole in the visual field.

In Fig. 1 there is a small x and a black dot having a diameter of about a quarter of an inch. With your left eye closed hold the page squarely in front of you at a distance of about one foot and look at the small x. If the dot does not disappear, move the page a little closer or a little further away or rotate the page *slightly* in a clockwise or counter-clockwise direction until it does. With a little care you can make the entire dot disappear because the image of the dot falls upon that portion of the retina that is blind since it is punctured by the optic nerve at this point. This portion of the retina is appropriately called the blind spot. But now for the important observation! Keeping your right eye on the x, adjust the page until the dot disappears. Now, without moving your eye from the x, do you see a hole in the page in the area where you know the invisible dot is located? The answer is, "no!" A process called "perceptual filling" fills in this hole so that it looks like the rest of the page. Draw Fig. 1 on a red paper, a green paper or paper of any color and try it again. You will find that the hole is always filled in with the appropriate color so that you still cannot see it. You may even want to try a plaid or polka dot background. In this case the hole will be filled in with a plaid or polka dot effect so that you will not see any hole in the visual field.

Now to get back to the invisible tower. As you view it against a background there are, to be sure, holes in the background which correspond to the portions of the tower that cannot be seen.

But we have just seen that the process of perceptual filling plugs in these holes with whatever is in the background so that the holes cannot be seen. An objection encountered here is that we have demonstrated this for holes at the side of the visual field (our experiment with the blind spot), but how about the situation for holes that are closer to the center of vision. Carefully controlled laboratory experiments have shown that when a subject is trained to fixate a white spot on a black background for a long stretch of time without blinking, the spot will periodically disappear due to fatigue or inhibitory effects. During these periods of disappearance no hole is seen in the background even though it is in the center of the visual field. Perceptual filling operates *anywhere* in the visual field and prevents the perception of holes which would make the tower visible against a background. If the tower is seen against a background of trees, the holes are filled in with trees; if the background is a cloudy sky, the holes are filled in with a matching cloudy sky.

This process of perceptual filling is not new and many of you are already familiar with the principle as it has been applied to the suppression of noise. A noise blanker for eliminating impulse noises of the kind produced by spark plugs or by the Lorain navigational system works on the same principle of perceptual filling. As the impulse is received, the audio system is momentarily cut off for a small fraction of a second until the impulse is past. Thus a hole is created in the auditory field for the duration of the noise-producing impulse. But this hole is not heard at all. Perceptual filling operates in the auditory area and conceals the fact that there is a momentary interruption of audio. Otherwise the noise blanker would be useless since the perception of these auditory holes would be as distracting as the impulse noise itself. The perceptual processes operate so as to prevent us from detecting holes regardless of whether they occur in the auditory or the visual mode.

The only other major problem is whether there may be a limit to the size of the hole that can be concealed through perceptual filling. Let's go back to the blind spot experiment for a moment. Draw the x and the dot on a sheet of paper exactly as you see it in Figure 1. With the paper positioned on top of your desk, place a penny over the dot and look at the x with the

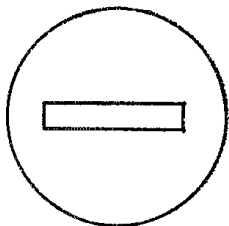


Fig. 2—The paint level indicator which may be cut out of sheet cork stock. The diameter of the disk should be slightly smaller than the inside diameter of the can of paint.

left eye closed. If you can see part of the penny push the penny into a position where it completely disappears. Then try it with a larger coin. Most persons can make an entire quarter disappear with the paper at a distance from the eye of one foot. Since a quarter is approximately an inch in diameter, perceptual filling can handle a hole having a one inch diameter. Now draw Figure 1 again but with the x and the dot separated by twice the distance found in Figure 1. Viewed at a distance of *two* feet, instead of one foot, you will find that an object of 2 inches in diameter will disappear and be completely filled in. By an extension of this same process you can demonstrate that, at a distance of 12 feet you can make an object a foot in diameter disappear. A hole in the visual field a foot in diameter can thus be filled in if you are 12 feet away, and much more extensive filling takes place as the distance is increased. Assuming that the tower is at least twelve feet from the street or sidewalk, this is really more filling than we need since the structural elements of a typical tower seldom have a diameter of more than two inches.

A problem that will be encountered has to do with the application of paint to the tower. Proper application of paint requires that the brush be loaded with enough paint to spread well but not so much that it drips and spatters. Ordinarily there is no problem since we dip the brush to the proper depth below the surface to obtain just the right amount of paint. But our paint is of such a color that the eye does not respond to it and its surface thus cannot be seen. Figure 2 offers a convenient solution to this problem. This level indicator is simply a disk of sheet cork cut so that the diameter is slightly smaller than the inside diameter of the can of paint. Since this will float on the surface of the paint the level of the paint becomes visible and the brush can be dipped to the proper depth through the slot cut for this purpose.

A word of warning. Towers near airports must be painted in appropriate, visible colors as specified by federal regulations. The author can take no personal responsibility for the irresponsible use of non-visible paint on towers located near public airports. As for damage to unsuspecting birds that might fly into one of these specially treated towers, there may be a way out of this difficulty. We have some evidence that the visual sensitivity curve for birds does not correspond exactly to that of human beings. If further work confirms this fact, it will be possible to utilize a color outside the range of human visibility that can still be seen by birds.

A final suggestion. When painting your tower, don't forget to paint the elements of your beam. You might find it hard to explain to neighbors how your tribander manages to stay suspended 60 feet in the air without any visible means of support. And another thing. Don't forget to paint the coax cable that goes up the tower and feeds the tribander. It might be even more difficult for you to explain a 20th century version of the old Indian rope trick!

QST

2015 SFARC Field Day T-shirt

Ladies & Gentlemen,

I present the 2015 SFARC Field Day T-shirt. **Contact Bob K6UDA to order.** The Cost will be \$15.00 each sizes S thru XL. Add a buck for bigger. I'm working on a long sleeve option and call sign option but I'm thinking we use the club name badges and leave the shirts as is. I'll start a signup sheet at the next meeting, and no, your credit is not good with me.

BTW, for those wondering what that means at the bottom, it's the Grid coordinates at Nyack.

73,

Bob K6UDA

(916)871-0726

K6UDA@att.net





BOARD OF DIRECTORS MEETING MINUTES

March 13, 2015

The SFARC Board meeting for March commenced at 1805 hours at the Sizzler restaurant back room in Auburn.

Roll Call: All officers and Directors were present. Also present was guest Dennis WU6X.

REPORTS and DISCUSSIONS

President's Report: Tyghe-KD6MLH began discussion on developing a club policy on social media content. The board decided that Director Birton will write a draft social media policy for board approval. Tyghe reported George-KG6LSB wants to hand over the club general meeting drawing by July.

VP Report: Bob-K6UDA suggested the draft policy to amend the club bi-laws and/or policy on social media to include any links to outside web sites.

Secretary's Report: Bruce-K6BAA received the insurance certificate for the Nyack site for FD2015 and will draft a letter to Grant Wells and will follow up with a telephone call.

Treasurer's Report: Richard-WA6RWS reported net cash on hand at beginning of February of \$7691.62; income of \$950.15 from renewals and a donation from Joe-KN6RH with an ending balance of \$8194.13. Delinquent members were discussed and Richard reported an estimated 70 members are delinquent.

Repeater: Richard – WA6RWS advised he is purchasing a three port repeater controller and will use the old controller as a spare. He is anticipating an expenditure of \$ 475 to \$ 500 for the new unit. Additionally, a new 2 meter receiver crystal has been ordered.

OTHER DISCUSSIONS

Robert-W6RBL discussed items needed at tomorrow's swap meet. Bob-K6UDA advised he will review the final preparations of the swap meet at the general meeting.

Dennis-WU6X Advised the board he would have a Field Day equipment signup sheet at the club meeting and would like to discuss the Yahoo Group site to club members. Dennis additionally suggested anyone posting onto the Yahoo site be a member of the club. Burton made a motion to restrict posting to paid members only on the Yahoo site. Jim-WA8MPA seconded, and the board approved.

Jim-WA8MPA reported on refreshments planned for the general meeting.

Meeting adjourned at 1840. Submitted by Bruce-K6BAA, Club Secretary





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GENERAL MEETING MINUTES

March 13, 2015



The SFARC General meeting for March commenced at 1930 hours at the Auburn City Hall Rose Room, President Tyghe-KD6MLH presiding. All Officers and Directors were present. Tyghe led approximately 48 members and guests in a Pledge of Allegiance to the flag followed by an introduction of Officers, members and guests.

REPORTS:

Past minutes: Minutes were approved as posted in the Newsletter on motion.

President's Report: Tyghe briefly discussed the agenda and then called for Officers' reports.

VP's Report: Bob-K6UDA advised tonight's Tech-Ten presentation will cover tomorrow's ham Swap meet. Bob also discussed the FD2015 t-shirt.

VE's Report: Dave-NO6NO, VE reported that (12) candidates passed, two of whom were license upgrades.

Secretary's Report: Bruce-K6BAA requested input for the club newsletter; a Welcome letter available for new members and guests, and a reminder to the membership to sign the attendance sheet.

Treasurer's Report: Richard-WA6RWS reported net cash on hand at the beginning of February of \$7691.62; \$950.15 renewal/donation income and balance of \$8194.13.

Repeater Report: Richard-WA6RWS updated members on the continuing repeater maintenance and reminded everyone to update their club roster information.

Sunshine Report: Richard-WA6RWS discussed John Webb's passing and Secretary Bruce-K6BAA asked the membership for information and a photo of John so it could be included in the April newsletter. Ron-NC6U advised he would contact John's family for information.

Refreshments/Drawing: George-WB6LSB reviewed items planned for the drawing and reported Dave-NO6NO will take over the drawing in July. Jim-WA8MPA reported on refreshments for the break.

ARES: Fred-KF7QVB reminded club ARES members to see him for identification card photographs.

Yahoo Group: Dennis-WU6X, administrator for the Yahoo Group Site, gave the membership an overview and advised he would be programming Baofeng radios during the break. Tyghe-KD6MLH added that posting on the Yahoo Site is restricted to club members only and a club social media site policy is soon to be posted.

OLD BUSINESS:

Field Day 2015: Mark-W8BIT gave a report of FD2015 Committee discussions and decisions. Mark asked for a 20 meter and VHF Band Captain.

NEW BUSINESS:

Committees: Richard-WA6RWS called to the podium, the 2013 Field Day Chairman Art-W6EQF and presented to him his long overdue 2013 Field Day t-shirt.

General Announcements: The Club Net meets every Thursday at 7:30pm; Board and General Meetings occur on the 2nd Friday, Board meeting is held at **Sizzler Restaurant** in Auburn, and General meetings at 7:30pm at **Auburn City Hall**. The Club breakfast is held on the last Saturday at **Mel's Diner** in Auburn; an Elmer Net is held the first and third Wednesday night at 7:30pm on the 2m repeater. See www.w6ek.org for more information.

Tech-10 & Presentation: The Tech-10 was presented by Bob-K6UDA who conducted an extensive discussion on final swap meet preparations for tomorrow.

The meeting adjourned at 2050. Submitted by Bruce-K6BAA, Club Secretary

SIERRA FOOTHILLS AMATEUR RADIO CLUB
P.O. Box 6421, Auburn, CA 95604

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2015 MEMBERSHIP APPLICATION

Name: _____ Call: _____ Class: _____ e-mail: _____
Address: _____ City: _____ State: _____ Zip: _____
Associate Name: _____ Call: _____ Class: _____ email: _____
Phone: _____ Cellphone: _____ Application is: (Circle) New Renewal

Dues / Donations:

Membership: yearly*	\$ 22.00	Name Badge:	\$ 7.00	Yes (special name)_____
Associate: yearly*	\$ 7.00	Repeater Donation:	\$ _____	
Auto Patch Donation:	\$ _____	Newsletter Booster:	\$ _____	
Misc. Donation:	\$ _____	Christmas Donation:	\$ _____	ARRL member? (circle) Yes No
TOTAL:		\$ _____	Please add \$1 if paying via PayPal	

*Prorated dues for NEW Members/Associates Only

July	\$ 20/6	October	\$ 14/3 + following year
August	\$ 18/5	November	\$ 12/2+ following year
September	\$ 16/4	December	\$ 10/1 + following year

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