

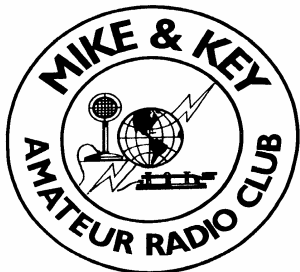
K7LED

RELAY

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Mike and Key Amateur Radio Club - Seattle, Washington

December 2002



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N7IHS

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The Prez Sez

Club President Jack Grimmett, N7IHS



At the December Mike & Key ARC business meeting, the proposed operating budget for 2003 will be presented to the general membership for its consideration. This budget is printed in this month's issue of the Relay.

The Executive Board has spent the last two meetings developing this budget. Jack Burrell, the Club's treasurer, provided good visibility on our budget performance for last year (2002). The membership had approved a 2002 budget with a \$5,412 deficit. The estimate-to-complete for this year shows that we will

probably end up with a much smaller deficit.

The proposed 2003 budget has a deficit of \$2,503. This deficit includes a capital expense of \$2,000 for a LCD projector. Many of you have seen one of these devices at a couple of our programs. Simply put, it takes output of a computer and displays it on a screen or wall. I believe that this device will greatly enhance our programs, education activities, and various club meetings.

The Executive Board has approved this budget by a unanimous vote of the Board members present at the November Board meeting and recommends approval by the general membership.



**The Board of the Mike & Key Amateur Radio Club
Would like to wish all of you and yours a
Very Happy Holiday Season and
a Safe and Happy New Year**



Programs and Activities

Activity Manager Michael Dinkelman, N7WA



Hope everyone had a good time at the Christmas Party last week. Hats off to Bill Sommerwerck KA3QXL for volunteering to organize and those who did the cooking and dirty work.

We do have volunteer to organize the annual Banquet in April. Dave Smith KB7PSN has stepped right up and I look forward to hearing his plans in this very newsletter in the next month or two.

There is no program for the December Club meeting. Following the business meeting, we will have the monthly and year-end raffles. The kitty for the year end raffle was almost \$600. No, I'm sorry, your raffle ticket purchases in December do not count towards the year-end raffle.

You do not need to be present to win items in the year-end raffle. We'll hold your winnings until you eventually show up.

The January program is scheduled to be the APRS program that was previously schedule for November. In February, we will do the usual Flea-market preparation program and March will be elections.

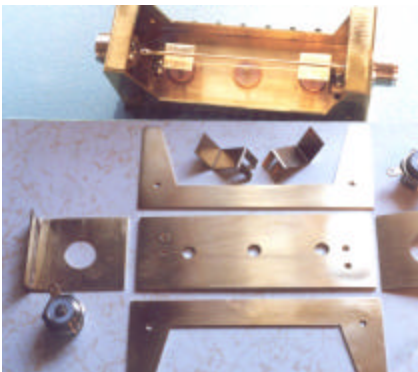
(In this Club, we are pretty lucky to have some highly experienced people in different fields. Starting this month, Club member Dr. Roubal KC7ZEO will instruct us in some techniques he has found useful when creating metal enclosures. A lot of work went into this, hope you enjoy it.)

METAL ENCLOSURES AND OTHER DEVICES FOR ELECTRONICS FROM SHEET BRASS AND ALUMINUM

By Wm. T. (TED) Roubal, PhD, KC7ZEO

When you spend time and effort wiring together that new experimental receiver or a piece of new test equipment or other circuitry, you don't want to house it in just any old box or enclosure. Instead, if you are like me, you want something really great to put it in. In this regard, I am continually refining ways that make my projects stand out both in fabrication and function.

Sheet aluminum and sheet brass are two common materials that you can use. But unless you use good machining and assembly procedures, working with thin materials can be troublesome. Simple things like hole drilling, cutting and bending and soldering require special attention if you are to succeed. Accordingly, in this article I'll discuss the best ways to drill both small and large holes in thin stock, how to shear or cut it, bend it, and in the case of brass, solder it. There will be information on soldering aluminum as well, a metal that is very difficult to solder. I'll also describe an easy way of polishing metals as well. All of these methods find use in making really outstanding project boxes and other enclosures for electronic circuitry.



A Good Place To Start: Let's construct the metal enclosure shown in Fig 1. This is an all-brass version of the pickup box used in an impedance bridge described by Robert Luetzow, K9ZLU, and published in the ARRL Handbook for 1981. Bob's construction consisted of soldering together parts cut from double sided circuit board, and although there is nothing wrong with this, I chose to assemble the bridge using all-brass construction in order to illustrate the construction methodologies presented in this article. The enclosure consists of a base, two sides, two end plates, and cover. The completed assembly con-

tains pickup wires and two parts called box tabs which are all fashioned from metal and assembled as described in the 1981 article. I can provide assembly instructions if you request a copy.

I cut the base from 1/8" thick plate and the sides and ends from 1/16" thick brass using a band saw. Then I dressed up the edges with a belt sander and hand filing, and I'll have more to say about finishing parts later.

A Full Size Drawing of What You Want To Make is a Good Idea:

Before doing any actual cutting out of the parts or drilling any holes, it is first necessary to mark the metal by means of scribe lines so you will know exactly where to cut and drill the metal. But before getting to the point of actually scribing lines on metal I normally make a drawing of what it is I'm going to assemble. I don't use a computer with drafting software for this, however I do use a computer for printing out panel markings or when I need to re-label or re-scale an analog meter face for instance. Most of the time I use conventional drafting equipment T-square, triangles, drawing set, lettering aids, and so forth. Drafting equipment like this is still very much in use and is available from college book stores or art supply shops, and at a fraction of the cost of a computer.

In my work, I use two drawing boards. One is in my den in space shared with a fly tying bench and a clock repair bench. Here, I keep drafting instruments for finalizing my ideas on paper. In a corner of the shop downstairs, is my second drawing table, smaller than the first. Here I keep metal marking tools such as scribes, a small hammer, center punches, drawing compass, dividers and dial calipers. It is here where I transfer measurements from my original drawings on paper to the metal parts themselves and perform the actual scribing of lines and marking of hole locations. The surface of the drawing board is protected by one of those so-called magic cutting boards a sheet of plastic used in sewing that is cut resistant. Cuts from a scribe, scalpel blade or knife do not remain permanently imbedded in the surface, instead they reseal themselves and vanish. In order to provide good lighting, I hung a light bulb in a reflector above the board by a short drop cord.

On a somewhat related topic, I also use artwork that I generate for screen printing decals and instrument panels and printed circuits. For the latter purpose, I use copper clad printed circuit board that I coat with pre-sensitized photo etching resist. I introduced the method of do-it-yourself pre-sensitized circuit boards to the electronics enthusiast in an article that received wide acclaim and was published in Popular Electronics Yearbook for 1976.^{ref1}

How to Cut Thin Metal Parts, Locate Holes to be Drilled, or Bend Metal With Precision:

Suppose you

(Continued on page 3)

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need a part that is 0.500" wide; not 0.498" or 0.503" wide but 0.500 inches in width. The precision in this example corresponds to 0.001", and is easily met with the multipurpose tool mentioned later under metal shearing. It is equipped with a stop that you can adjust (using a micrometer or dial calipers) limiting width of cut to 0.500" exactly. But suppose you don't have the multipurpose tool. What then? First, cover the surface of the metal with a coating called a layout dye. Layout dye is supplied in a spray applicator, dries very quickly, is dark blue in color and can be easily scratched to reveal the metal underneath. Then, the dimensions from your drawing on paper are transferred to the metal surface by scribing through the layout dye so that you now show where the metal is to be cut and/or drilled. Mark out the parts a bit too wide or long so that after you cut out the parts you will be able to "dress" the cut to the desired value (by sanding or filing) checking your progress with a micrometer or dial calipers as you go and stopping when you reach the target. More on filing, sanding and sawing later.

Coat one side of the metal with toolmakers layout dye (Tacoma Screw Products, Grizzly, Enco, Harbor Freight, ^{ref 2}). Do not use spray paint or enamel for this purpose. These will be impossible to remove later. Layout dye, on the other hand, washes off with rubbing alcohol. Using a sharp pointed scribe (a large sharp sewing needle supported by pin vise works just fine), scribe lines through the layout dye where the metal is to be cut and mark out all hole locations with crossed lines. Before drilling holes use a center punch and make an indentation where lines cross in order to later guide the point of the drill into the right starting spot. If you make an error in locating the starting hole location (punch mark), you can shift the punch mark into proper position by placing the point of the punch to one side of the existing indentation and striking the punch again. In this way you can shift the indentation the proper direction to relocate it.

Drill all holes and thread any that need it with a hand held tap in a tap wrench. Now remove the layout dye. Do this simply by placing the parts in an old sauce pan outdoors, adding 99% (absolute) rubbing alcohol and sloshing the liquid about. Some dye may not come off and it will be necessary to gently scrub it off with an old toothbrush wetted with alcohol.

Getting Ready to Drill Holes: NEVER steady or hold the work with your hands. You'll be surprised at the turning torque exhibited by even small diameter drills as they pass through the work. This is especially true using large drills. If the work gets away from you and starts spinning, before you realize what has happened, you could be seriously injured. Thus, you must always use a mechanical clamp of some sort to steady and hold the work. The clamp style shown in Fig 2 is ideal for use with a drill press. With this clamp, you can exert high clamping pressure and the jaws span a long distance making work



hold-down an easy task, and much easier than with a large C-clamp. Likewise, if you use a power hand drill, clamp the work to a sturdy flat support attached to a workbench. The clamp shown above is of wood and metal construction, popular with wood workers and available from your favorite tool source such as Harbor Freight, Home Depot, Grizzly, (see ref 2), Sears and others. I'll have more to

say on drilling later.

Drilling Small Diameter Holes in Thin Metal: Conventional twist drills can be employed for making holes up to about 1/8" in diameter. But making perfect holes that are larger than about 1/8" in diameter is not easily accomplished using twist : drills. They will usually dig in, rip, and badly deform the material being drilled. There are steps one can take to prevent this from happening, and one is simply to increase the drill rotation speed to a very high value. But this, too, can be troublesome, may not be safe, and is not the best fix. There are other ways though, but these are time consuming and often difficult to employ, and I won't describe them because there are much easier and foolproof ways to make holes Hole diameters from about 1/8" up to up to about 5/8" are easily obtained with the so-called unibit, shown in Fig 3.

Said to be the single drill bit that does it all, the bit consists of a series of cutting circles of increasing diameters. "Unibits" (correctly called multi-step drills) are available from your local hardware store. If you use a unibit in handheld drill, go slowly; its easy to overshoot and make the hole too big. Better control is achieved with a drill press. Single step drills make hole enlargement easy, and you can find these at Boeing Sur-



(Continued on page 4)

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plus ^{Ref 2.} The forward portion of the drill is small in diameter and passes through thin material without distorting it. Then the step passes through, enlarging the hole in one



jump. The good news is that brand new step drills are sold by the pound at Boeing surplus. For a few dollars you can equip your shop with a lifetime supply of step drills in many diameters (Fig 4).

Whether or not raised burrs occur when drilling depends on several factors—type of drill, hole size and drill rotation speed, feed pressure and the nature of the metal itself. Raised burrs can be expected when drilling both aluminum and brass with twist drills. Most if not all of the burr shows up on the bottom face of the work piece, where the drill passes out through the material.

Next month:

Deburring Small Diameter Holes
Making Larger Holes in Thin Metal
Shearing and Bending Sheet Metal
and much more.....

Public Service Committee 11/16/02

Meeting called to order by Barry. In attendance: Kim, Barry, Steve, Pam, Dawn, Dan, Ted, Brendan, Paul, Jim, Terry, and Dick

Old Business: New member packet is on hold until after the booklet is completed. Dick will send what we have to Brendan for a fill on each committee. The text will be sent to committee chairs for approval prior to publication. Survey is on hold until after the booklet is completed. Ted reported on the Heart Walk. Questions about working with a commercial outfit like Hamilton Promotions. Terry reported that Hamilton was very appreciative of our efforts. Ted reported on the Diabetes walk. All went well.

Booklet discussion: We have sold one ad at this point. Vetco, Active, Icom and Supertronics are on the list along with others to contact. Terry will do the marketing letter after Brendan sends him the copy, and has a list of potential contacts. Discussion of the addition of emergency contact information, either one or two pages. Terry is

working on the two sections, pre-preparation, and what to do during an emergency. Dan and Dawn have mailed out queries regarding hamfests. Ted has radio exam contact information for all clubs except Mike and Key, Jim has information for all the clubs on his part of the list except Aberdeen. Pam reports that she has preliminary date information for the parades. She has a call into Gene Underwood for his events. Steve and Kim are in process on club contact information. We need to work on a timeline to determine deadlines for a release on March 7th. Suggestion that February 14th be the deadline for printer ready copy. Proof copies be available for the January meeting. January 1st is the deadline for our copy to be turned in to Brendan for layout. Final editing of dates and phone numbers can be made up until printer deadline.

New Business: Brendan will chair the December meeting due to Barry and Kim being out of town. Barry passed out the agenda immediately prior to adjournment.

Meeting adjourned.

Christmas Party 2002

Submitted by Jo, KB7UFM

The 2002 Mike and Key Christmas Party was a success. If you weren't there you missed a lot of fun, nonsense,... and thievery. A lot of people didn't attend and were missed.

A very special thanks to Bill who chaired the party and to Ronnie and Mike and all else who did the cooking and carving of the turkeys and ham. Everyone had plenty to eat as some went back to the tables for seconds and one guest was back for thirds (or was it fourths?). However, there was enough for the cooks and set-up

crew to take a snack home for later. Cal did a good job as M.C. but really Cal, where did you dig up those jokes? You re-buried them, didn't you? A brand new addition to the Pasquier family was first seen at the party. Little Iric just arrived at Thanksgiving week-end and made his presence known but quietly. Congratulations to Mama Jennifer, Papa Richard n7mer and Grandma Carolyn and family.

By the way, would the person that stole my tee shirt return the picture that I had left in the bag? Please?

73---Jo--kb7ufm

Meet Club Member—N7QHC

Sights and Sounds by Sunrise, KC7YYB



I thought perhaps you'd like to meet Dan N7QHC, the senior member of your "logo committee". Dan has been a Johnny-come-lately to the ham community. He first became interested in radio via CB during a cross country trip to Pennsylvania to visit

Humphrey family.

Not finding the general chatter to his liking, he migrated over to Channel 9, the national emergency channel and found the world of REACT (Radio Emergency Associated Communications Teams). You may have been at a rest stop to get free coffee over a holiday, which was manned by these intrepid volunteers. Safety or Wake Breaks, were started by REACT members as a Nationwide way of preventing sleep related accidents over the holidays. Now you find many different non-profit organizations setup on Interstates not just on holidays but almost any weekend.

With the urging of N7FSW Lyle Peck, our next door neighbor and the loan of a TenTec Argonaut from his brother, Jim N07T; Dan started studying with tapes on his commute back and forth to work each day. Even with his hearing problems, from years in the woodworking industry, he was able to pass the 5 WPM and the technical, which he studied every chance he got. With the upgrade rule change coming, where people could get a license without code, he decided to study and pass before it went into effect and did so; going from Novice to Tech. Then, when I went to a Gordon West weekend and got my no-code Tech, he was challenged to move up to General.

He's been toying with the idea of becoming an Extra, but that might have to wait until retirement in a couple years. Next month, part two of this story will be coupled with our becoming your "Logo Committee". By the way, we just celebrated our 35th Anniversary, which fell the weekend of the Christmas party. We couldn't make the party—the first one we've missed in a long time—but I'm sure that you'll agree that a 35th beats a Christmas Party anytime!

(Congrats! - ed)



Well, like an ill wind, I have returned: submitted by Jan K7YH

This Months Radio Discussion: Navy Marine Corps MARS and its Reorganization:

As you are all aware I like to expound on at least one aspect of the Hobby each month. This month I am going to let you know what is happening behind the scenes in the MARS world. Specifically Navy Marine Corps Mars, that also supports the Coast Guard. Most every ones knows there were seven regions in Navy MARS. There is a National Staff, based in Williamsburg VA, a Regional staff headed by a Navy Chief Petty Officer, with a staff of civilians in each region, and each state has a staff. Big Changes will be in place by the time you read this.

The regions have been totally changed, streamlined, and renamed. The National level remains the same, as call signs and titles go. There are now four administrative areas: (named) Northeastern, Southern, Central and Pacific. The attributes of this are also many and varied. These MARS Areas, and their regions, correlate to the FEMA emergency zones, FEMA Region Offices are numbered 1 to X and are known as FRRs (Federal Response Region). The MARS Northeastern Area consists of MARS Regions 1, 2, and 3 headquartered at Groton, Ct. Central Area consists of MARS Regions 4 and 5 and is headquartered at Great Lakes, Ill. Southern Area consists of MARS Regions 6 and 7, and is headquartered in Corpus Christi, TX.

The Pacific Area became active December 1st. It consists of MARS Regions 9 and 10, to start with, and will be headquartered in San Diego. Region 8 will become part of the Pacific Area some time in the first quarter of 2003. The Pacific Area is the first area to adopt this new organizational system, and it will function under a trial basis. This new organizational structure parallels the FEMA system and hence the Homeland Security system. This will require the establishment of area command and control nets, however the present net system to move traffic and MARS messages will be essentially unchanged, and will not delay traffic movement. I also believe it will enhance inter-service inter-operability between Air Force and Army MARS systems.

So, in summary, Navy MARS is realigning to conform with the FEMA structure. Therefore a NavMarCorMARS member in Seattle will be in Washington State, Region 10, Pacific Area, NavMarCorMARS.

And now; brought to you free of charge, the same price as a free ticket a few words of wit!-!



It is time for a little humor. I cannot claim to be the one who came up with this, but like the Darwin Awards it is appropriate to our day and time. It is a list of new words, and their definition, received from a club member, and forwarded for your enlightenment and may haps it will elicit a laugh or two. They are E-Rated, E for everybody:

(Continued on page 6)

(Continued from page 5)

BLAMESTORMING: Sitting around in a group discussing why a project failed, or deadline missed, and who outside the group is responsible.

KISSMOSIS: the process by which some people seem to absorb success and advancement by kissing up to the Boss! (see BLAMESTORMING)

CUBE FARM: An office filled with cubicles for the workers.

PRAIRIE DOGGING: Making a loud noise, or dropping something to watch the heads pop up out of the cubicles to see what is going on.

MOUSE POTATO: The online answer to the couch potato. (SEE ME-SAME SHAPE same same)

SITCOM: Acronym for Single Income, two children, oppressive mortgage; this happens to yuppies when one opts to stay home to take care of the children.

STRESS PUPPY: A person who seems to thrive on being stressed out and whiney.

XEROX SUBSITY: euphemism for swiping free photocopies from one's workplace.

IRRITAINMENT; Entertainment and media spectacles that are annoying but you find yourself unable to stop watching them. E.G. OJ trial, Bill Clinton's impeachment, any news story with "expert" talking heads.

TALKING HEADS: So called experts who explain everything over and over again, without knowing what they're talking about. E.G. all the experts who were interviewed on news stations during the D.C. Snipers attacks.

ADMINISPHERE: Those rarefied organizational levels beginning just above the rank and file. Decisions that fall from the adminisphere are often profoundly inappropriate or irrelevant to the problems they were initiated to solve. (see BLAMESTORMING)

WOOFYS: end form of YUPPIES, aka Well Off Older Folks!

OHNOSECOND: Those miniscule fractions of time in which you realize you have just made a BIG mistake! E.G. sticking a screwdriver into a hot tank circuit. ZZZZAAAAPP PPPP!!!!

Well folks, here's to you; have a Merry Christmas, and a Peaceful New Year. Poit Wouldn't that be great!

(For those of you who have not read this column on a regular basis, "Poit" is the wand wave of the reality fairy, wears a tutu, has black hair, waves a wand around, and works a lot of CW.

And a HOHOHO to You and Yours!



P.S.: ANYONE KNOW HOW I GOT THE SMILEY FACE IN THE HEADER? I WAS NOT WATCHING THE SCREEN OR THE KEYBOARD, AND DO NOT KNOW HOW I DID IT. Hmmmm was it the fairy??

(Well, the Fairy... ah Editor removed the smiley face—as any good Editor would. The smiley face "symbol" is part of the extended character set. You can insert that, and many more, symbols using the Insert/Symbol menus if your program supports it. You can also hit special key sequences (Alt 0xxx) to bring some up.) ☺☺☺ ☘

Flea Market Committee

The Flea Market Committee is taking December off. The next Flea Market Committee meeting will be Tuesday, January 7th, 7:30PM at the Salvation Army HQ. Looks like we are fully staffed with Committee Chairs but the worker staffing is way behind. After two Club meetings with the signup book available, only 28 people have signed up to work. That's only about 30% of what we need and many of those are the Committee Chairs.

Who are the Chairs? Overall and Facilities: Hal/N7NW, Registration: Diane/KB7DNE, Loading: Fred/N7PZ, Tickets: Ronnie/KC7UFS, Security, Alan/KB7SVU, Country Store: Dawn/N7VWH & Curtis/N7MWC, Announcing: Kim/KD7YFD & Barry/KC7YB, and Publicity and general flunky, Mike/N7WA. Wayne/KC7ORD heads up hospitality and Frank/KA7QHG is doing VE Exams.

My most appreciative thanks go out to the Hallstrom's. In November, I passed along 4,000 flyers to be labeled. By the following Board meeting (4 days), Nils handed them back and asked if there was more. I passed along 4,000 more and he dropped them off a week later. I secretly think Nils is just trying to get his fingers limbered up for a bit of CW in 2003. We have expanded our mailings this year to include Vancouver and Portland - only time will tell if the extra expense was worth it.

As I mentioned last month, HotPress offered to make the Club up a bunch of hats. I choose ten names out the signup book and sent them to HotPress. They are waiting for the last ten names which will come out of the December signup. Who was on last months list? W7RUJ, K7RS, KC7IYP, AG7T, K7STQ, K7JML, KD7IKV, N7MER, K7NEX, W7FKI. Thanks for signing up!

A couple things about that budget

Submitted by Michael, N7WA

As you review the upcoming budget, I feel the need to explain a couple of things that you could say are my fault. Since I consider these two items to be the most controversial portions of the budget, I just want to explain my rationale so nobody get too excited before the vote.

First, you will see under capital improvements, an item listed as a LCD Projector. You've probably seen one of these in your workplace, at school, or at a presentation or program. If you haven't seen one, think of them as a slide projector that connects up to a computer and displays the computer screen as a projection. I'll be honest they ain't cheap and I was really hesitant to broach the idea of the Club buying one. In fact, does the Club need one? Well, it doesn't NEED one and I could easily argue against spending the money for one. Yet, here are some reasons why we might consider buying one.

- The state of the art in program presentation these days is really enhanced by having access to a LCD projector. Many good programs these days are presented via computers and "Power Point" type presentations. In the past, I, and others, have borrowed them from work but that is hard to do on a regular basis. (I almost lost use of the one I borrowed for the Banquet last year.) Renting is out of the question at about \$150 a day and used ones are a risky deal. I feel, that to keep the Club's program's at a high level in future years, we will need regular access to one of these devices.

- Last summer, I sent around a sheet asking if members would be interested in extra-curricular "classes" that would demonstrate Amateur Radio related software. Many were very interested but the idea died as I could not come up with regular access to a computer projector. A similar example would be live projected demonstrations of Field Day logging software. Club education classes could

also benefit. I truly believe the usefulness of such a device would expand as the Club finds the needs.

It should be noted that we are trying to use any influence we might have within the Club membership to increase our buying power if the idea is approved. This purchase is not going to happen unless we can find the features we want at the price we require. (In other words, there isn't any 'chomping at the bit' to spend this money.)

The second item I feel a need to explain is the ARRL Defense Matching Fund. In years past, we have donated quite a bit of money to this fund. In 2002, we donated \$500. However, the Board feels constrained to tighten the amount freely given out as donations and the use of Club funds for the ARRL Frequency Fund is not wholly supported idea (gasp!) by many of our members. The Board originally leaned towards cutting out any donation to this cause in 2003. The following is a compromise.

The Board proposes to MATCH, dollar for dollar, any donations made by Club members to the ARRL Frequency Defense Fund up to a total expenditure of \$250. That means Club members, if they feel strongly enough about this cause to donate their own money, can double their contribution with the Club's help. As mentioned, the Club's contribution will top out at \$250 but, together, we could match the \$500 sent in by the Club in 2002. To get this match, you should present your donation to the Club Treasurer who would then send it in to the ARRL along with the matching funds. No contribution by members would mean no contribution by the Club.

Remember, the budget vote is a YES/NO proposition and it must be approved or rejected as a whole. As I said, I consider these proposals to be somewhat controversial and could be budget killers. I fully accept and understand the decision of the Club membership in either direction. I do thank you for your consideration of these ideas.

No Excuses Radio Project

Submitted by Michael, N7WA

Ever want to build something? Not just a code oscillator or a small accessory but something that could actually transmit and receive radio signals? How about the "No Excuses" QRP Transceiver published last month in QST? Simple and with easy to find parts, it looks like a fun project.

My thought is to make this a group project if there is any interest. Maybe you are afraid of the idea of building something like a transceiver and need some encouragement. Maybe you have never soldered a wire or wound a coil and could use some instruction. Heck, maybe you have never held a resistor or transistor in your hand and wonder just what they do. Here's my plan. See

if this interests you.

As a group we buy — or build in house — the available printed circuit boards for this project. Everybody hunts up their own chassis (or makes one using Dr. Roubals neat ideas). We can either hunt for the rest of the parts individually or as a group - I prefer the latter. Maybe we can raid a few junk boxes and purchase what we don't have on hand. Then, once a month or twice a month, we can come together in somebody's garage or workshop to do the metal work, solder parts, wire the things up, test and troubleshoot. I think we should have a technical session or two to review the design as well. The whole idea is to have some fun and use the strengths of the individuals in the group to help the group as a whole. Some of us may be good at drilling holes, others at soldering, and others at theory and troubleshooting. My goal would be have these finished by summer at the latest.

The idea here is to provide a bit of mentoring and encouragement for those who may not have the experience or the desire to go it alone the first time. Because of this, we could use some experienced members of the club to join in as well. It's going to cost some money. The circuit boards are \$12 each, and the parts and chassis (what we can't scrape up) will be the responsibility of each member. This is not a Club funded project. A quick cost analysis of the most expensive parts runs to about \$75. That doesn't include the chassis or the relatively cheap parts like resistors and caps. You can drop \$20 off that total if you have the appropriate 40M crystals lying

around and even more if we raid our cumulative Club junk boxes. I'm budgeting about \$100 to the project and will be surprised if it takes that much including chassis and printed circuit board. Since, the project will take a few months, I expect a gradual layout of cash.

This is a HF rig and operates 40M CW only (there is a 30M version). Check it out in the December QST. You'll need a HF license to use it so maybe that's an incentive to upgrade. If you are interested, see me at the Club meeting or drop me some email. Remember... nothing beats that first QSO on your own home-brewed rig.

General Meeting Minutes, 11-16-2002

Officers present:

President – Jack Grimmet (N7IHS); Vice President – Jo Hallstrom (KB7UFM); Secretary – Kim Wolborsky (KD7FYD); Treasurer - Jack Burrell (N7ZS); Activity Manager & Relay Editor – Mike Dinkelman (N7WA);

Trustees Present:

Trustee #1 & COB– Brendan Burget (KD7IKV); Trustee #2 – Barry Wolborsky (KC7YB); Trustee #3 – Steve Cook (KD7IQL); Trustee #4 – Dick Radford (WA7NIW); Trustee #5 – Alan Hughes (KB7SVU);

The meeting was called to order at 10:00 AM with all members and guests repeating the Pledge of Allegiance at the Salvation Army Building in Renton. Introductions of members and guests were made. The President made announcements regarding taking breaks on the west side of the building at the request of Salvation Army. The coffee and donut fund is self-supporting. We are an affiliated club are encourage to join and support the ARRL. Please sign the rosters at the table. Visitors are asked to refrain from voting on club matters requiring a vote.

Minutes: It was moved by Brendan (KD7IKV) and seconded by Barry (KC7YB) to approve the minutes of the previous meeting as printed in the Relay, with the correction that Steve Cook was not present. The motion was approved.

Officer Reports

President: Jack (N7IHS): No report.

Vice President: Jo (KB7UFM): We have a quorum. We have several new members including: Joan McDonald and Terry Dettman. Also a new applicant: Hidecki Saito, KC7TCL, approved by the club,

Secretary: Kim (KD7FYD): Will not be at the December General Meeting.

Treasurer: Jack (N7ZS): All books reconciled through the end of October. Brought our Salvation army dues up to current, state licensing and relay charges. Paperwork is here at the meeting, Jack is available to answer any questions.

Activity Manage & Relay: Mike (N7WA): Jan is offering the traffic handling program today.

Many people want to send messages this time of the year. No program in December, but there will be a year-end raffle. Today is the last day to buy tickets. The vest will be part of the year-end raffle. APRS program is rescheduled for January. Relay deadline for next month is December 13th, Christmas party is December 7th. Next flea market meeting is January 7th. Worker sign-up sheets are in the gray binder, if you sign up your name will be in a drawing for a free hat. 10 will be given away.

Radio Officer: Ken Rau (K7YR): He is working in Hawaii.

Brendan: The board is working on the budget, so if you're interested.

Standing Committee Reports

Those committees not reporting in the RELAY are asked to report before the General Membership.

Facilities: Steve Cook (KD7IQL):

Strategic Planning: Carolyn Pasquier: Have a group gathered, if anyone is interested in joining please contact Carolyn. The first meeting will be 6:30 pm the night of the board meeting, here at the Salvation Army.

Technical: Jack (N7IHS): No report

Public Service Committee: Brendan (KD7IKV): Please come to the meeting, we are working on the

Education: Dick Radford (WA7NIW): Dick has sign-up sheets out, please sign up.

Public Service Events: Pam Bryan (N7PRS): Public Service net: Thursday evenings at 7:30 PM on 146.82. For information please see www.mikeandkey.com/pubserve.htm or call Gary at 253-661-7882.

Pam put about 4 items coming up on the sheet, including Gene (W7AKA) contact for Seattle marathon, is about 30 hams short. Please contact Gene W7AKA@ARRL.NET for instructions, meeting this Saturday.

Bill: Christmas Party. Thanks to Mike, Frank and their wives for volunteering. A slight correction: We will provide meat, rolls and butter and beverages. The rest must be provided as potluck, so please bring a potluck item. A-R vegetable substances, S on are desserts. But most important, bring something that you think

you can prepare well. There will be a gift exchange. Let's keep \$10.00 as an upper limit. Please bring 1 or 2 non-perishable items for the Salvation Army, they don't charge us for the room. 5:00 on December 7th.

Alligator Award: It takes a special ham to get the alligator several times. Calvin KC7IYP received the alligator with love (holding a rose in it's little mouth).

Old Business

None

New Business

Revision to the articles of incorporation: Barry moved, Brendan seconded. Motion carries.

Good of the Order

Mike (N7WA): Please be careful with your equipment. Last Friday Mike got a call from Tumwater; the output of the Mike and Key repeater was being transmitted on 1.962MHz (160M Band). We turned off the repeater and by morning it was corrected.

Harry Lewis: W7PV Dick Aspenwald's wife has his equipment for sale.

Jim Darby, NY1R has a radio to donate to the club. He has the manual, built in power system. 15 years old.

House bill 4720 will be under a new number and a new bill in January.

For Field Day, we came in #2 in 6a. Our attendance was down but more help from members. Very well organized!

Lloyd: Talked to K7EFG Eric last night, he is doing fine although still having some trouble getting around.

Jack Grimmet: Hot Press has new items: T-shirt for \$13.00 with your call sign above the pocket. They are also available without the pocket. They also have a new hat. Earl has hot press cards.

Ryan: Chuck Griggs (KC7EOP) is in the Transitional Care unit at Valley Medical in Renton. Dave Lees' mother is there room 1655, Chuck is in room 1608.

(Continued on page 9)

(Continued from page 8)

Jack: Jim Carpenter had multiple bypass surgery a couple of weeks ago. Also, Harry Lewis had a pacemaker (or was it a crystal calibrator) installed.

There being no further business Barry moved to adjourn and Ted, seconded the motion, Jack (N7IHS) closed the meeting at 10:45 AM.

Attested: Kim Wolborsky, KD7FYD, Secretary

Board Meeting Minutes, 11/20/2002

Officers present: President Jack Grimmer (N7IHS); Vice President – Jo Hallstrom (KB7UFM); Secretary – Kim Wolborsky (KD7FYD); Treasurer – Jack Burrell (N7ZS); Activity Manager – Mike Dinkelman (N7WA); Radio Officer – Ken Rau (K7YR).

Trustees Present: Trustee #1 & COB – Brendan Burget (KD7IKV); Trustee #2 - Barry Wolborsky (KC7YB); Trustee #3 – Steve Cook (KD7IQL); Trustee #5 – Alan Hughes (KB7SVU).

Visitors:

Dawn Humphrey (KC7YYB), Dan Humphrey (N7QHC), Nils Hallstrom (W7RUJ), and one other visitor whose call I missed- sorry about that!

The Chairman called the meeting to order at 7:15 pm.

Motion made by Jack Burrell to approve the minutes as amended and seconded by Jack Grimmer. The motion passes.

Officer Reports

COB: Brendan Burget (KD7IKV): Nothing to report

President: Jack Grimmer (N7IHS): Nothing to report

Vice President: Jo Hallstrom (KB7UFM): Future member, Paul Donner (KD7SSD), tech, just got his license, wants to learn and to become active. ARRL member, trained as an electric technician. Jo recommends that we

approve. Board approved.

Secretary: Kim Wolborsky (KD7FYD): Has a copy of the Logger's Bark.

Treasurer: Jack Burrell (N7ZS): Nothing new to report. Will have reports under old business.

Activities Manager: Mike Dinkelman (N7WA): Thanks to Jan for giving the program on short notice. In December, raffle instead of a program. January will be the APRS program. February is flea market; March is elections, so no further programs until April. Relay deadline Dec 13, Bill is doing the Christmas party. Dave Smith will chair the banquet. Next flea market meeting will be the first Tuesday of January. Thanks to Nils & Jo Hallstrom for labeling 4000 flyers already, gave them another 4000.

Radio Officer: Ken Rau (K7YR): Not present.

Committees Liaison Reports

Technical: Alan Hughes: Nothing to report

Public Service: Brendan Burget (KD7IKV): Moving along on the book, have already sold more ads than last year.

Education: Dick Radford: Not present

Strategic Planning: Sam Sullivan: Committee met tonight and reviewed 92 and 96 plans, made some assignments. Steve Cook noted they requested \$300 for next year for postage and printing. There will be double postage since they'll mail out surveys and enclose a stamped return envelope.

Facilities: Steve Cook (KD7IQL): Salvation Army has been paid. We can re-key the cabinet if we want to, as long as Frank gets a key.

Logo Committee: Dan Humphrey (N7QHC): We have orders to fill, hasn't done any research lately about other products.

Old Business

Jack has signature cards for the accounts, for the purpose of adding new signatures to the accounts. Jack Grimmer and Nils Hallstrom will be the extra signers. Signature card was filled out and handed back to Jack. Our CD will

mature on the 23rd of December, current value is 27,166.19. Jack is going to shop for new CD. He will reinvest \$25,000. Anything over \$25,000 will go into interest revenue.

Budget: Includes Jack Burrell's estimate on where we will be at the end of 2002. There was extra money left in the flea market account this year. We will be moving \$3000 out of the flea market account.

LCD projector: Brendan thinks we can't get a decent one for \$2000. Mike doesn't want to spend more than that, since we won't use it more than 12 times a year. If we got one with 1000 lumens, could see with half the lights off, great with all the lights on. 1500 lumens would look great with lights on, but would cost about \$3000. Jack Grimmer appointed Brendan and Mike to be the committee to look into this. Sam will also look into it. We will include \$2000 for this under capital equipment.

We will present to the membership for approval during the December general meeting.

Jack Grimmer moved that we approve, Steve Cook seconded. Board approved unanimously.

New Business

Nils Hallstrom setup a QSL card index for KB7UFM. Purchased 4 heavy craft file boxes and 400 4x6 inch cards. Need about 368 cards, duly marked. Asking the board to spend about \$80.00 over a ten-year period for filing the QSL cards from the Mike & Key club. Boxes are \$10.00 each, 4x6 cards are \$11.00/100. Mike Dinkelman has a few hundred cards at home. If we have them indexed the club can apply for some awards.

There being no further business a motion by Jack Burrell seconded by Mike Dinkelman to adjourn was made, and the chairman closed the meeting at 8:25.

The last Wednesday in December is Christmas day, so after the December General meeting, we will have a 10-minute Board meeting to approve any new applicants and to determine whether a further December board meeting is required.

Attested: Kim Wolborsky, KD7FYD, Secretary

QSL, for fun and profit Submitted by Jo, KB7UFM

Sounds like a come-on for a telephone solicitor, doesn't it? Well, it could be except change telephone to microphone and you have it made. The best compliment you can give a fellow ham that you have had a QSO with is to send a QSL. You may never speak to him or her again but that QSO or rag- chew you had won't happen again. It's a way to say "Thanks, very nice to meet you and hope we can get together again".

It really doesn't take much effort to say "thanks". I try to write a note with each QSL card describing the area that we live in, what our other hobbies are and sometimes a

picture of ourselves and/or the radio shack, house and antenna. It's not much but puts a personal touch to the QSL card especially for DX QSLs.

QSL cards that are received are priceless as they represent the ham in that particular country or state. The pictures represented can be very interesting. The one from Namibia with the operator at his station with an AK47 beside him is reality to the nth degree considering that particular country's state of affairs. My favorite ones are picture QSL cards. One from Mali with a beautiful cheetah is one of my favorites. A lot of thought and imagination goes into those cards. I'm afraid mine are rather dull and plain but after I go through the 2000 blank cards I have now, I'll order some

(Continued on page 10)

cards that are a bit more inventive --- if I can afford them. Most of you know how frugal (chintzy) I am. - Jo

(At the last Board meeting, one of our members (albeit a newer Ham) actually asked "QSL cards, what good are they?" I will agree with Jo, they are one of the most interesting aspects of the hobby. To me, each one represents a memory (some more than others) - breaking a pileup, a great conversation, a particular contest or QSO. I still have the first one I ever received...

from then WN7TOY. We were both crystal controlled, it was 15M on a mid-Sunday morning. I still remember his code speed seemed so much faster than mine and he seemed much more experienced than WN7UVJ, still in junior high. Memories... from March 11, 1973. I did lose my first DX card. It was my first DX QSO too. I still regret that loss. I still have my cards from operating in HB9 and UA4. More sweet memories. "What good are they?" Not to belittle the person asking..... But the answer seems obvious to me. — N7WA)

Public Service Opportunities

Submitted by Barry, KC7YB

Even though Kim and I will miss all the fun of the December Public Service Committee meeting because we are forced to be vacationing in Phoenix, I still would like to invite you all to attend. We (they) will be meeting at the Yankee Grill in the Renton Holiday Inn on Rainier and Grady Way, just after the general meeting. Kim and I will miss the good food and fellowship due to our being stranded in the sunshine but it will be a good chance for you duck like folks to get in out of the rain.

The Renton EOC is looking for a few good hams (mediocre hams will be considered too). The EOC group currently consists of about 24 members. We are an active

group and drill in our group and with the City. The City also uses us for other municipal events such as Renton River Days. We have an HF station and two dual band TMD 700A's at our EOC command post. Additionally we have 7 additional TMD 700A's at the other fire stations, the Police Station (City Hall), City Shops and in the Renton Emergency Response Van. We badly need additional members.

We are called the Renton ARCS (Amateur Radio Communications Service) and we meet the first Thursday of each month at Renton Fire Station 14 at 1900 Lind S.W. at 1930 Hrs. If you live or work in Renton or any of it's neighbor cities and want to get involved with a professional group of amateurs, come join us. For more information contact Barry Wolborsky, KC7YB at 425-271-5799 or KC7YB@ARRL.NET

(Maybe you've been admiring those nice, but expensive, new Plasma TV's. Not all have this problem but I found this to be a very interesting article on EHam.net. Food for thought—ed.)

Plasma TV, Mother of All RFI Producers

by Paul D. Sergi (NO8D)

Have you noticed the big sales push by Best Buy (and others) of those plasma TV screens? You know, the ones whose prices have 4 digits in them. There are even payment plans where the price is spread over months or years to help you afford them. Many of these are going to be sold this holiday season. Unfortunately, no one is mentioning the horrendous RFI that these things put out on HF.

I recently installed a CCTV system to keep an eye on my toys. The security company, ADT, suggested a Panasonic 42" Plasma TV/CCTV monitor since the light output was high enough that the pix could be viewed in broad daylight.

The morning after the installation of the plasma screen, I noticed a huge digital signal about 7.001 MHz and a few other places on the same band. Next, I checked 20 meters, then 15 meters. Same signal but a little weaker as I went up in frequency. Then, I looked at 80 meters - a gigantic noise at 3.505 MHz and other frequencies in the band. 160 meters was the same. What was this!

I did a little direction finding and found that it was

coming from my house! Sure enough when I switched off the recently installed plasma display, the noise disappeared and I could hear the DX again.

The security company, ADT talked with Panasonic, who informed them that there was nothing that could be done. I owned it. I hooked up my HP Network Analyzer to see just how bad the problem was across the HF spectrum. It was unbelievably strong! How strong was it?

(On www.Eham.net) is a graph that shows the noise output of the plasma TV on the HP Network Analyzer. Those numbers on the right side of the graph represent db above the ambient noise level here inside the house. Yes, that would be 50 db at the top. That's about 8 S-units!

Notice how the noise is the worst on the low bands, but the rest of the bands are impacted as well. Your new Super Duper Signal Sucker receiver will definitely find this baby on any of the HF bands! How did I get this graph?

First, I turned the Panasonic OFF. Then, I placed a 2m rubber ducky antenna about 10 feet from the front of the Panasonic Plasma display. I took a reading across the HF spectrum and saved it to a diskette file, which I then imported to an Excel file. This allowed me to graph the ambient noise of the area. Next, I turned the Panasonic ON and repeated the test, again importing it to the Excel spreadsheet. After subtracting the ambient noise curve from the second curve with the screen operating, I obtained the noise produced by the screen alone.

So, you are now saying, "So what - there's a big difference between 10 feet away and the distance between me and my closest neighbor. I might not hear that thing at all." You are SO wrong!

I have a 40m antenna that is located a quarter mile from my house and the signal levels from the Panasonic Plasma screen are still S-3 to S-5. Plus, this is off the back of the unit where the signals are attenuated by the metal casing. The signals off the front are stronger. I have a 4 square for 40m located about 150 feet from the side of the screen and my `MP says it's S9+10db. So, unless the DX is stronger than that, you're likely to have a problem hearing them.

Let's look at some numbers. Just one Panasonic unit produces an S-3 raspy signal on lots of frequencies at 1/4 mile away from my antenna. How many houses are within a 1/4 mile radius from your house? 500? 1000? OK, now what percentage of those houses will have one of those super efficient raspy RFI generators by say, 2004? Let me guess at 2 percent. That means that you will have 10 to 20 of these things within the 1/4 mile radius of your station. Plus the prices are coming down which will result in a lot more of them. Got the picture?

The FCC will protect us, right? This device, which is allowed to pollute the entire HF spectrum, is allegedly consistent with Part 15 rules; they say so right in the literature. It says that this device can't cause any licensed

station any interference and it has to accept all the interference from licensed devices. Now all you have to do is get the rule enforced against all those people that surround you. Good Luck.

Some of the commercial airplane manufacturers are getting ready to use these things on commercial flights. The communication systems of the Friendly Skies are more concerned with VHF/UHF than the HF spectrum, so it's lucky for them that the spurious output of the screens is reduced as we go up in frequency. Even so, in order to comply with the regulations, some of the screen manufacturers have had to resort to a mesh over the front of the screen to form a sort of Faraday Shield that reduces the signals. Of course, this reduces the picture quality, too. So, don't expect your neighbors to start pulling the mesh over their screen to help you listen for the latest weak signal.

Apparently, the manufacturers don't think that those of us on the ground are worth the investment in shielding and the FCC backs them up with the limp Part 15 rules. Or maybe the Part 15 spawned the unthinking use of high voltage switching for a bright picture and RFI be damned attitude. What can we do?

(You can see the graph, and read the comments and responses to this article on www.Eham.net. I found some of the comments from those who do little else other than listen to 2M even more disturbing -ed)

The RELAY is the official tabloid of the Mike and Key Amateur Radio Club. The Mike and Key is dedicated to the growth and betterment of Amateur Radio. We meet the third Saturday of every month at the Salvation Army Renton HQ, 720 Tolbin St., near the SE corner of the Renton Airport. The Club operates repeaters on 146.22-146.82 (PL103.5), and 222.52-224.12 under the call K7LED. The Club mailing address is: POB 4234, Renton, WA 98057. All persons interested in Amateur Radio are invited to participate in the Mike and Key Amateur Radio Club and it's activities. Yearly dues are \$12 for individuals and \$18 for families.

Club Contacts

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Chair Fleamarket	Hal Goodell	N7NW	goodellh@gte.net	253-549-4178
Annual Banquet	Dave Smith	K7PSN	k7psn@jps.net	425-235-5095

December-January 2003

Sun	Mon	Tue	Wed	Thu	Fri	Sat
15 RN	16	17	18	19 PSN	20	21 Club Meeting 10AM MKN
22 RN	23	24	25 Christmas Day 	26 PSN	27	28 Stew Perry TopBand Challenge
29 RN	30	31	1 New Years Day 	2 PSN	3	4
5 RN	6	7 Flea Market Meeting 7:30PM DA	8	9 PSN	10 Relay Deadline	11 CW NA QSO Party
12 RN	13	14 DA	15	16 PSN	17	18 SSB NA QSO Party

RN – ARES Regional Net, 8PM, 146.82

PSN – Public Service Net, 7PM, 146.82

MKN – Mike & Key Net, 9:15AM, 146.82

Contests

