

HAMS Keywite

December 2010
NEWS

www.marc.org.za

PO Box 1076, Hilton, 3245

M I D L A N D S A M A T E U R R A D I O C L U B



AFFILIATED TO
THE SARL & IN
ASSOCIATION
WITH THE NATAL
CARBINEERS

CLUB COMMITTEE 2010-2011

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076 305 9644

The Chairman's Report

Another year has flown by, and somehow it seems I had even less time this past year than the previous ones. My intentions were to let this edition fly before Christmas, and I might just make it by the skin of my teeth. Times have been tough for many of us and still are. In spite of this we still had memorable club meetings and outings, and many more are planned for the next year.

The relative silence on our repeater network belies what is happening behind the scenes. Many of us do not come up often on the band due to work commitments, and miss each other when announcing ourselves mobile. Announcing yourself mobile is important, I feel, even if most stay unanswered, as it does open the opportunity for a qso with someone who is listening and has time for a chat. It also alerts other listeners of your whereabouts and if you should land in unexpected trouble, help will be a radio link away. This was the case when Shaun ZR5S had the unfortunate encounter with a Kudu on the Muden road a few months back. A few of us were following his progress when he had the accident, and some of us could have mobilised quickly for assistance. Fortunately this was not necessary.

I'm proud to be associated with all of you in this club. As mentioned, a lot happens behind the scenes, and we are making an effort to stay abreast of technology where we can. Not even 12 months ago there was talk of D-Star repeaters, and many said that it is not feasible and that it would never work. A few weeks after this, Shaun had a repeater up and running. A first for this country. The club computer used was Shaun's own computer, which has eventually given up the ghost. We have since acquired our own club computer, which is still being loaded up with all the necessary software. In the new year it should be up and running, providing us with all feeds we had become accustomed to, like the ship and plane plotters, EQSO, Echolink, D-Star repeater etc. Apart from the various technological advantages D-Star offers you, it guarantees that you have someone to chat to, worldwide, when the local repeater network is quiet, even when mobile. All this is made possible with the enthusiasm of individuals in this club.

Compared to previous committees, the present one is very young, and the average age is less than 50 years :-). Many of us only have been hams for only a few years. It does reflect the encouraging growth we have experienced in the last few years. But what is also very important is that we still have many "older" experienced active members who help out where needed, providing a balanced environment. We cater for both the young and the old, and the term "old man's hobby" is becoming outdated at long last. It is now a hobby again which can be enjoyed by all age groups. Personally I think it is one of the best hobbies to be enjoyed during the retirement age.

I've heard some rumblings from non members about our tone guarded 750 repeater, and that it is "keeping 75% of all hams off air". If there are any members who do not have tone facilities on their rigs, our club offer still stands in that we will supply you with a board if you cannot afford one.

Thus, there is no excuse for any members not to be able to get into our repeater network. The reason for tone guarding the repeaters is just that - to tone guard them against the ever increasing interference. If there are other alternative cost effective solutions, please let us know, and also if you know of anyone who cannot access the repeaters - we would love to help them out.

The Hamnet 700 repeater has become quite busy, which is great. Please bear in mind though that the repeater belongs to Hamnet, and that overs are to be kept short, and long pauses are to be left between overs. Also, only use as much power as necessary to trigger this repeater, as should be the practice with any repeater or simplex operation. The main reason for this request is that two or three of us can also trigger the Estcourt 700 repeater when using higher power, and I'm one of them. For example, if I use the Windy Hill repeater, and use 25W from my qth, I manage to trigger the Estcourt repeater. My signal however is not strong enough to make myself readable on the Estcourt repeater, and thus I open the whole network with annoying noise when I forget to turn my power down. Hence the friendly request to all who are in a similar situation to only use low power when using the Windy Hill repeater. And btw, if you find me doing just this, I expect to be reminded of this :-)

A special thank you also to Gudrun ZS5GEL for spending many hours browsing through our old records and minutes of meetings in order to compile a comprehensive summary of our rich club history. It is most interesting and it is clear by reading from it that history repeats itself, and that we don't learn from it as expected. I also smiled when I read about a past HHN editor who contemplated throwing in the towel as members were not submitting any articles. Nothing has really changed. (Thanks Errol ZS5EGW for the jokes you sent in). On this basis I don't feel too bad contemplating whether we should scrap the HHN as well? - the forum is well suited to distribute current news, project data etc. The losers would be the three members who do not have internet access however....

What is also interesting from the records is that members were abreast of technology. Read Gudrun's summary of 1948 (later in this edition) - they had a demo of a tape recorder in this year. That was state of the art equipment! If they could do that, so should we, or try to. In a way we are trying to do just this. Examples are D-Star, staying ahead of technologies opened up by the internet - communications via Echolink, EQSO, D-Star, Skype and yes, even email - hard to believe that most of us were not using these technologies 15 years ago.

On this note, I wish every one of you readers a festive season and a progressive and prosperous New Year. And to all who are travelling, safe and pleasant journeys.

73, Mike ZS5ML

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Diary of Events

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| 31 December | Closing date for submission of los for the PEARS HF QSO Party to contest@pears.ham-radio-op.net |
| 15 January | 1 st 2011 club meeting at the club house at 11h00 |
| 20 January | Closing date for submission for application for May 2011 RAE bursaries. Visit www.amateurradio.org.za for application forms |
| 30 January 2011 | Closing date for phase 1 of the construction competition |
| 27 February 2011 | Maritzburg Marathon |

Ham Bulletin Readers

- 26 December - ZS5ML
- 02 January - ZS5AZ
- 09 January - ZR5SF
- 16 January - ZS5V
- 23 January - ZS5ML
- 30 January - ZS5AZ

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The M.A.R.C. Infrastructure

Voice Repeaters (FM)

Visit www.marc.org.za/pages/freq.htm for updates of this list

VHF	Tx	Rx	Equipment
Hilton	145.6625MHz CTSS 88.5	145.0625 MHz	SCR200 20W, Diamond X-200 rx and tx
Estcourt	145.700 MHz	145.100 MHz	Emcom SA256 25W, Diamond X-200 rx
Franklin	145.725 MHz	145.125 MHz	GE MVP 10W
Worlds View	145.750 MHz CTSS 88.5	145.150 MHz	Emcom SA256 25W, Diamond X-200 rx and tx
Greytown	145.775 MHz	145.175 MHz	Home Brew @ 20w, Diamond X-200 rx and tx
Underberg	145.7875MHz CTSS 88.5	145.1875MHz	Q8000 30W
Windy Hill	145.700MHz	145.100MHz	Hamnet repeater.
UHF			
Mt Gilboa	439.225 MHz	431.625 MHz	Vertex Standard VXR-9000, Diamond X-200 rx and tx
Zwartberg	438.775 MHz CTSS 110.9	431.175 MHz	GE MVP 15W

APRS

The national APRS frequency is 144.800 MHz (Tx & Rx). The I-Gate is at Hilton (ZR5S). Fixed stations should beacon at approximately 30min intervals with a path of WIDE5-5. Mobile stations should beacon at approximately 1min intervals with a path of "WIDE1-1, WIDE5-5". We have aprs digi's throughout KZN. A PBBS (mailbox) is on ZS0PMB-1 for emergency use. A KA-NODE is on ZS0PMB-7

Packet Radio

No packet radio frequency. However, limited packet radio facilities are available on 144.800MHz

ECHO-LINK "voip"

Our node number is 244279 Call Sign ZS5PMB. This Echo-link facility is available on the Midlands linked Repeater network.

E-QSO "voip"

We are in the "101ENGLISH" virtual room, on the "repeater.dns2go.com" server. This is linked to RF at Hilton on 433.000 MHz simplex. Temporarily on 145.450MHz

BEACON

Greytown 50.321 MHz (Tx) ZS5SIX FSK (Not active at the moment)

Banking Details

Account Name: Midlands Amateur Radio Club
 Account type : Cheque
 Bank: First National Bank
 Acc #: 62057756507
 Branch: Bank St
 Branch Code: 220825

WEB SITES

MARC'S very own website www.marc.org.za
 SARL's website www.sarl.org.za
 HAMNET website www.hamnetkzn.org.za

Regular Events

The KwaZulu Natal Net (Early Birds):

Starts at 06h00 on 7.055 MHz. in winter and 3.650Mhz in summer and continues until 07h40. Colin ZS5CF hosts the net from 06h00 & Gary Potgieter (ZS5NK)-takes over later on.

MARC Sunday Morning Net:

Times: 07h45. Club bulletin is presented at 08h0.

Frequencies: VHF: 145.750MHz, 145.6625MHz, 145.775MHz, 145.725MHz, 145.7875MHz, 145.700MHz
 UHF: 439.225MHz

Hamnet Bulletins: Sundays at 07h00 on 145.625MHz and 3.760MHz
 Wednesdays at 19h30 on 145.625MHz and 3.760MHz

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ICASA 2011 licence fees

You have to pay R6.75 for January - March 2011 when you receive your account. Do not attempt to pay the April 2011 to March 2012 fees as they have not been finalised. Wait for an announcement during January 2011.

Advice from SARL is : ***ALWAYS WAIT FOR YOUR INVOICE***

SARL office holiday closure

The SARL Office will be closed from 13 December to 12 January 2011.
For any urgent matters send an email to secretary@sarl.co.za

Global Eruption Rocks the Sun From <http://science.nasa.gov>

On August 1, 2010, an entire hemisphere of the sun erupted. Filaments of magnetism snapped and exploded, shock waves raced across the stellar surface, billion-ton clouds of hot gas billowed into space. Astronomers knew they had witnessed something big.

It was so big, it may have shattered old ideas about solar activity.

"The August 1st event really opened our eyes," says Karel Schrijver of Lockheed Martin's Solar and Astrophysics Lab in Palo Alto, CA. "We see that solar storms can be global events, playing out on scales we scarcely imagined before."

For the past three months, Schrijver has been working with fellow Lockheed-Martin solar physicist Alan Title to understand what happened during the "Great Eruption." They had plenty of data: The event was recorded in unprecedented detail by NASA's Solar Dynamics Observatory and twin STEREO spacecraft. With several colleagues present to offer commentary, they outlined their findings at a press conference today at the American Geophysical Union meeting in San Francisco.

Explosions on the sun are not localized or isolated events, they announced. Instead, solar activity is interconnected by magnetism over breathtaking distances. Solar flares, tsunamis, coronal mass ejections--they can go off all at once, hundreds of thousands of miles apart, in a dizzyingly-complex concert of mayhem.

"To predict eruptions we can no longer focus on the magnetic fields of isolated active regions," says Title, "we have to know the surface magnetic field of practically the entire sun."

This revelation increases the work load for space weather forecasters, but it also increases the potential accuracy of their forecasts.

"The whole-sun approach could lead to breakthroughs in predicting solar activity," commented Rodney Viereck of NOAA's Space Weather Prediction Center in Boulder, CO. "This in turn would provide improved forecasts to our customers such as electric power grid operators and commercial airlines, who could take action to protect their systems and ensure the safety of passengers and crew."

In a paper they prepared for the Journal of Geophysical Research (JGR), Schrijver and Title broke down the Great Eruption into more than a dozen significant shock waves, flares, filament eruptions, and CMEs spanning 180 degrees of solar longitude and 28 hours of time. At first it seemed to be a cacophony of

disorder until they plotted the events on a map of the sun's magnetic field.

Title describes the Eureka! moment: "We saw that all the events of substantial coronal activity were connected by a wide-ranging system of separatrixes, separators, and quasi-separatrix layers." A "separatrix" is a magnetic fault zone where small changes in surrounding plasma currents can set off big electromagnetic storms.

Researchers have long suspected this kind of magnetic connection was possible. "The notion of 'sympathetic' flares goes back at least three quarters of a century," they wrote in their JGR paper. Sometimes observers would see flares going off one after another--like popcorn--but it was impossible to prove a link between them. Arguments in favor of cause and effect were statistical and often full of doubt.

"For this kind of work, SDO and STEREO are game-changers," says Lika Guhathakurta, NASA's Living with a Star Program Scientist. "Together, the three spacecraft monitor 97% of the sun, allowing researchers to see connections that they could only guess at in the past."

Global Eruption (SDO, 200px)

An artist's concept of the Solar Dynamics Observatory. [SDO home page]

To wit, barely two-thirds of the August event was visible from Earth, yet all of it could be seen by the SDO-STEREO fleet. Moreover, SDO's measurements of the sun's magnetic field revealed direct connections between the various components of the Great Eruption--no statistics required.

Much remains to be done. "We're still sorting out cause and effect," says Schrijver. "Was the event one big chain reaction, in which one eruption triggered another--bang, bang, bang--in sequence? Or did everything go off together as a consequence of some greater change in the sun's global magnetic field?"

Further analysis may yet reveal the underlying trigger; for now, the team is still wrapping their minds around the global character of solar activity. One commentator recalled the old adage of three blind men describing an elephant--one by feeling the trunk, one by holding the tail, and another by sniffing a toenail. Studying the sun one sunspot at a time may be just as limiting.

"Not all eruptions are going to be global," notes Guhathakurta. "But the global character of solar activity can no longer be ignored."

As if the sun wasn't big enough already....

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From the archives : 1948

compiled by Gudrun ZS5GEL

History

This year saw the continuation of all previous activities, notably in the field of providing the necessary communication at the various sporting events. It also held two Field Days with the Durban division of SARL, one in May and one in November. The Haywire News publications appeared to have not been published regularly as mention is made of an appeal, again, to member for added assistance by the Editor. To encourage and promote more enthusiasm amongst members, the committee followed through with an idea to create sub-committees to which various members could be elected. These included the Tea Committee, Sick Visiting Committee, Socials Committee, Club Room Funds Committee, Bulletin Committee, Welcoming Committee and Field Days, Contests and Relays Committee.

It must be noted that there were sufficient members to man all these committees as in the Chairman's Report of this year, mention was made that membership had increased from the previous year's 56 to a total of 71 members. The Branch in this year also assisted the Youth Club with their Youth Week by manning an exhibit stand as well as, according to the Chairman's Report "a complete station which was in operation for a whole day and aroused a lot of interest". The club members were also very active in supporting The Food Parcel Scheme, organised by the Durban branch, in support of British Hams. Making good use of their newly acquired Collins Rig, the members extended their activities at sporting events to include the Bluff Races, Hilton Gymkhana and Burnham Drive Hill Climb. It should also be

mentioned that in the minutes of the monthly General Meeting of September, it is reported that the "Rag Chewers Club" was well under way to being organised and that the "Hour Glass Club" was functioning very well and promised to "show quite a substantial amount collected in fines, the amount to go to the Food Parcels Fund for British Hams."

There were a few touchy areas to contend with such as an article in the Haywire News under the title, 'Contest Crime' which one member took great exception to but which the majority of members agreed was excellent and suitable for publication. Also, the SARL newsletter 'Radio ZS' approached the various branches for submission of all local news for insertion into the Radio ZS publication. This resulted in members, in October of 1948, after confirmation from the Editor of the Radio ZS that all news from this branch would be printed in the newsletter taking the decision to discontinue publication of the Haywire News. The Chairman encouraged members to support this endeavour, however, OM Turner felt disinclined to do so as he "advised the Meeting that an article he submitted some considerable time ago had not been used."

Technical

10 March 1948: GENERAL MEETING: "OM Turner reported a contact with VQ4ERR who wished to express his thanks to the SARL for their Bulletin reports regarding his Mountain Expedition, and he made some contacts with ZS'S."

"OM Blinkhorn-Street gave a most interesting Lecture and Demonstrations on Echo Sounding, which was greatly appreciated."

14 April 1948: GENERAL MEETING: "After the Tea Interval a very interesting Demonstration was given on a Tape Recording Machine. Many recordings were made and played back, much to the amusement of all present."

13 October 1948: COMMITTEE MEETING: "The Secretary agreed to write a personal note re deliberate QRM on local transmissions and enquire if anything was being done about it."

13 October 1948: GENERAL MEETING: "WAR SURPLUS: The Secretary applied to HQ for Surplus Equipment to be displayed at Branch Meetings s advertised in Radio ZS."

12 November 1948: COMMITTEE MEETING: "The following resolutions were passed:-

That Band Planning be made compulsory.

That the maximum power of 100 watts be increased on frequencies higher than 14 mcs.

That the Maritzburg Branch area be the magisterial district of Maritzburg, Camperdown, Richmond, Lions River, New Hanover, and that members residing outside of these areas have the choice of deciding which Branch they would like to join.

That first year operators be crystal controlled. That an elementary test be undertaken before a licence is issued.

If more than three stations working on 40 or 80 metre bands, and working each other, they be compelled to Net.

It was proposed that Council be informed of 5GM who is handling traffic in the amateur band on 40 and 20 metres."

8 December 1948: COMMITTEE MEETING: "Deliberate QRM : The Secretary reported that this matter, previously discussed, had been dealt with by the Radio Inspector."

And so ended the year 1948.

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November/December Radio ZS now online

SARL members will now be able to download the November/December edition of Radio ZS. Listen to SARL on Sunday for a review of the articles. If you would like a sample copy send an email to armi@sarl.org.za with RZS in the subject line.

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SO67 OPERATION SUSPENDED *from www.amsatsa.org.za*

Last week the flash boot memory of a CAN controller on Sumbandila was corrupted by a probable radiation event. It does not affect satellite health but prevents activation of the amateur radio payload as the particular script detects an anomaly and aborts.

The same problem also occurred in October of 2009 and was corrected. However, the fix requires time consuming effort, which cannot be exerted immediately.

SO-67 repeater activations are therefore suspended. We apologise for any disappointment and hope to return to normal operations during January.2011

FREQUENCIES

UPLINK 145.875 MHz
DOWNLINK 435.345 MHz

ACTIVATION TONES

Transponder 233.6 Hz
Parrot 218.1 Hz

Beacon is not operational

If you have worked SO67, drop a line to saamsat@intekom.co.za We appreciate your effort.

SUMBANDILASAT Operating hints

The PTT of the transmitter now STAYS ON for the duration of the payload activation (i.e. 15 min), regardless of a valid “transponder” tone received. Note that this does not get rid of the “cut-off” problem, nor of the requirement to embed a valid tone when you want to use the payload – see detailed explanation below.

The following example depicts the ideal usage scenario of the payload:

1. As the satellite comes over the horizon, an unmodulated carrier (“quieting”) will be received by all on UHF
2. Person A starts to transmit on VHF (with valid “transponding” tone embedded in the transmission) and the transmission is relayed on UHF
3. When Person A releases his/her PTT, the satellite will continue to transmit what it is receiving (usually this will be “noise”) for a further $\pm 3s$. Nobody should start to transmit during this time!
4. At the end of the $\pm 3s$ period, everybody will again hear the unmodulated carrier.
5. NB: only when this unmodulated carrier is heard should Person B start to transmit.

In simple repeater operation terms , leave a 3 second gap between overs.

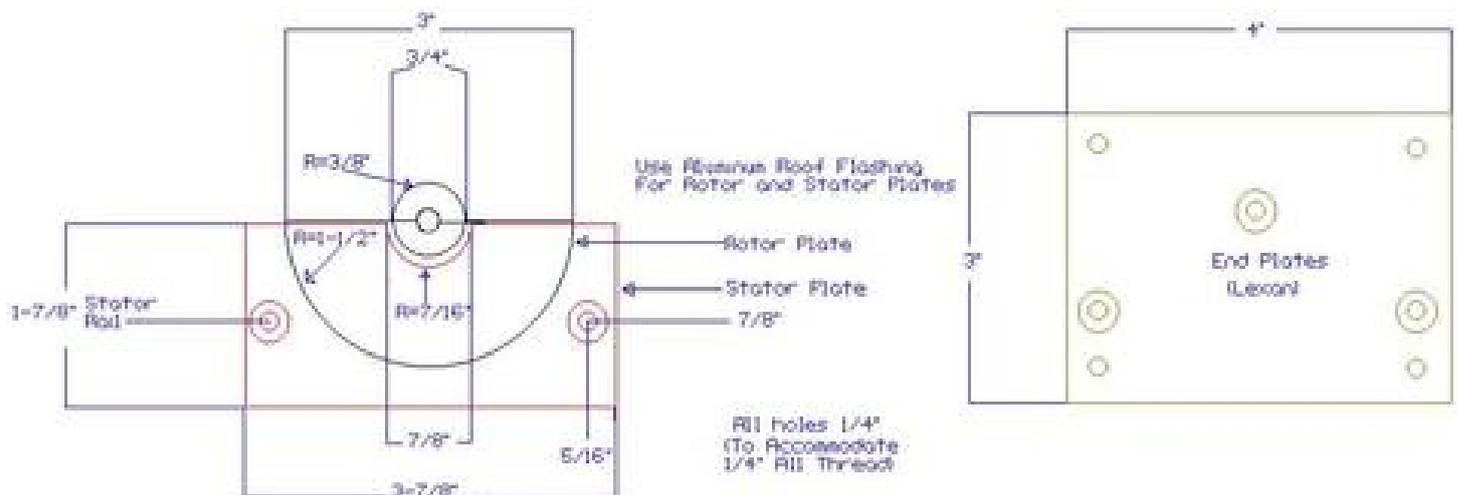
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Build Your Own Transmitting Air Variable Capacitors! By: David Hammack, N4DFP (unedited)

As I was building my transmatch, I became increasingly dissatisfied with my choice of capacitors. They were too small for more than about a hundred watts, and the ganged capacitor was in pretty sad shape. The frame was rusted and I could not remove all of the oxidation from the plates. I had a very nice Hammerlund 450pf that would do well for the Input Tuning, but I didn't have an equivalent ganged capacitor to use for Output Tuning. I am temporarily disabled and have no income at the moment, so it looked as if my transmatch would either be constructed of inferior parts or put on hold indefinitely. As I was looking over the Web, I came across an article by DL5DBM, Anwar von Sroka on building your own capacitors. It looked pretty simple, but I was concerned that the materials would strain my very limited budget. I did some thinking and looked around my local hardware store to check the price of materials. I found that the heavier gauge sheet metal was beyond my price range, but a 10' roll of aluminum roof flashing was only about \$4.00. I figured I could manage that, so I looked for the other materials. A 3' stick of 1/4" all-thread was only \$0.99. I couldn't find the spacers, and did not have a tubing cutter to make them with. I knew from experimentation that the spacing on the Hammerlund Capacitor's plates was the same as a 1/4" nut, so I decided to use nuts as spacers. I didn't feel the flashing would be suitable to make the contact spring for the rotor, so I found a small compression spring to use for tensioning the rotor to the contact plate. I also decided to use nylon filled stop nuts for securing and adjusting the rotor. The total bill of materials came to less than \$15.00, and all materials were found at my local hardware store. I had some Lexan on hand to use for endplates, but any good non-conductive material such as PlexiGlass, Teflon, Nylon, Lucite, or phenolic would work. Usable scraps are usually available at reasonable prices at most glass shops or plastics suppliers. I would recommend not less than 1/4" thickness.

Construction

Rather than use Anwar's measurements, I modeled my capacitor on the Hammerlund. Since it was 25 plates on the rotor and 24 plates on the stator, rated at 450pf, I figured that 12 rotor and 12 stator plates would give me something on the order of 220pf. I measured the Hamerlund as illustrated:



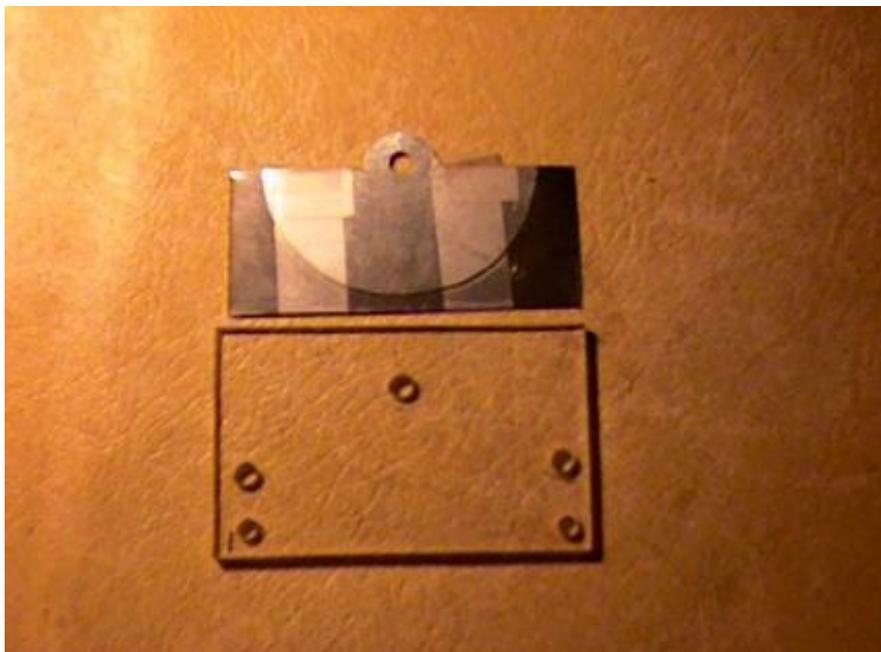
This layout was drawn with Cadvance 6.5b, a free program available at www.cadvance.com

One major advantage to using flashing is the ease with which you can work it. It can be easlily cut with a good pair of utility scissors. Do NOT use your XYL's favorite dress shears for this!

When making your plates, lay out one of each, cut them out, and then use them as templates to layout the rest. Here are the plates, all cut out. Since no one is perfect, make sure you mark an index on each plate as you cut it out. This will insure proper alignment when you assemble the device.

Drill the endplates. It is a good idea to drill both together so the holes will match front and back. To make the contact plate for the rotor, cut a strip of flashing long enough to cover the rotor shaft hole on both sides. After bending the strip over the endplate, drill a small hole to accommodate a 1" 6-32 brass screw.

Next, drill the shaft holes in the rotor plates. Again, in order to insure the uniformity of the parts, you should drill all the holes at once. I used scrap Lexan to hold the plates in the jaws of a Vice-Grip. Dimple the top plate of the stack at the center of the hole. It is a good idea to drill a small pilot hole before drilling the 1/4" hole.



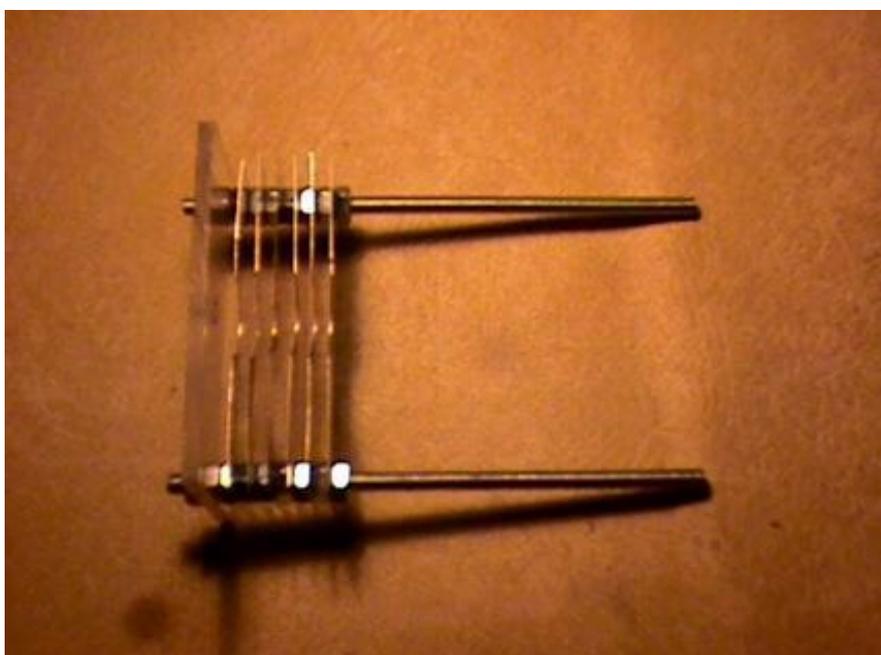
Now, take a rotor plate and a stator plate and tape them together in full mesh. Make sure the shaft tab on the rotor plate is properly aligned with the cut out in the stator plate.

Align the shaft hole in the endplate with the shaft hole in the rotor plate and square the endplate over the parts to be marked. I used a carbide tip scribe for marking, but any sharp pointed object could be used. In a pinch, you could use the point on your pencil compass for marking.

Separate the rotor and stator plates you just marked. Stack all of the stator plates together insuring

that the rotor tab cutout matches and tape them. This will keep them from slipping when you clamp them for drilling.

Cut the all-thread for the stator rails. For a 220pf capacitor of 12 plates, 4-1/2" is adequate. Mount these in the back end plate, leaving 3/8" to 1/2" beyond the outside nut. Secure them to the inside using 2 nuts per rail to leave adequate space for the rotor.



Begin mounting the stator plates. First flatten them as much as possible, removing the bows, twists, and curls. Make sure they are properly aligned. This is where the index marks you put on the plates come in handy.

As you mount the plates, tighten the nuts finger tight - do NOT use a wrench. Excess torque will deform the plates, making alignment extremely difficult. Look for a bowing in the plate. Either the plate was not flat, or the nuts are too tight. Correct this now before proceeding to the next plate.

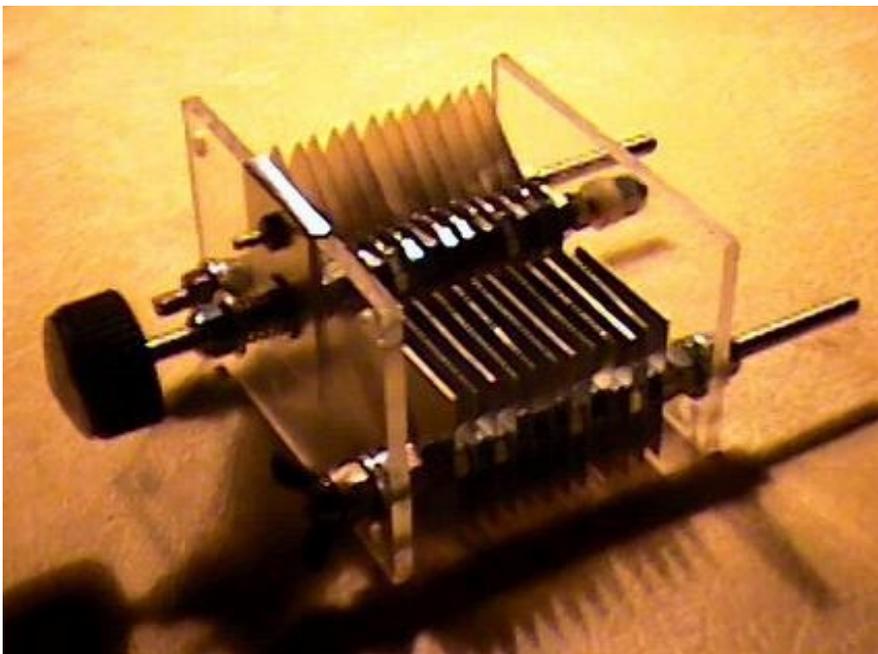
Once the stator is assembled, assemble the rotor, again flattening the plates as much as possible. The

shaft should be cut an 1-1/2" to 2" longer than the stator rails. Use a stop nut as the last nut in the rotor assembly, and then a regular nut.

This will hold the regular nut allowing you to torque the first plate into position, and will later be used to adjust the turn tension. Assembly of the rotor will require a wrench. As illustrated, use some kind of spacer to tighten the plates against. This will insure that the plates remain level and allow you to torque the nuts fairly tightly.

Now you are ready for final assembly. Hold the completed rotor in a full unmesh position and insert the shaft into the back endplate using 2 Teflon or Nylon washers on either side of the plate at the rotor shaft. You may need to add a washer to each side of the stator to allow space. Secure the rotor with a stop nut. Rotate the rotor to full mesh and install the front plate. Secure the plate with regular nuts on the stator. Place a flat washer, the compression spring, and another flat washer on the rotor shaft. Secure these with a stop nut. Tighten the stop nut till the spring compresses, tensioning the rotor shaft. Now tighten the stop nut on the other end of the rotor to center the rotor plates in the stator. Judge proper centering at the shaft.

It is possible that you find the rotor turns too freely to suit you. You can adjust turns tension by tightening the inside stop nut on the rotor shaft against the backplate to provide a more pleasing tension. Likely, you will need to adjust the rotor plates. This is accomplished using a small screwdriver to slightly bend the plates at the shaft. Be gentle, a little at the shaft translates to a large movement at the outer radius. If you have developed a slight bow in a stator plate, use the screwdriver in the same manner at the nuts on the stator rail. Only as a last resort should you attempt to adjust the capacitor with needle nosed pliers.



Now your capacitor is complete and ready for your project!

Conclusion

As I assembled this unit, I came to the conclusion that Anwar's use of spacers, rather than nuts is probably a good idea. If I were using spacers, I would use a stop nut on either end of the assembly to prevent loosening. Flashing is not the best material to use. If you can find it easily, I would recommend a heavier gauge material. Anwar made a very valid point of which I was not aware when he critiqued my design, which I will pass on here. Sharp corners should be radiused to prevent arc over. It would be a simple matter to round of the corners with a mill file as you drill the holes. I suspect if I use significant power, I will probably have to rebuild the capacitor with radiused corners after it arcs over.

Transmitting air variables are becoming scarce and expensive, even at Hamfests, and the kit capacitor from TenTec is over \$50.00. This is a viable alternative for medium power projects. Though I have not tested it, I suspect a carefully aligned capacitor of this type would easily carry a kilowatt. This would be

perfect for a Transmatch or the coupling capacitor in a Loop Antenna without breaking the bank. Ham Radio is a fun hobby, but it doesn't necessarily have to be expensive, as long as you carry on the HomeBrew tradition!

I would like to thank Anwar von Sroka, whose excellent article inspired this project.

A small little program to calculate capacitor parameters (along with many other GREAT design programs) can be found at: <http://www.qsl.net/ve3sqb/>

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If you have any useful articles for this newsletter, please email them to zs5ml@marc.org.za for publication. Any articles of interest to Amateur Radio, both technical and non technical, will be well received.

If you would like your own email address ending with @marc.org.za, please contact me zs5ml@marc.org.za

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Tailpiece

It's late fall and the Indians on a remote reservation in Saskatchewan asked their new chief if the coming winter was going to be cold or mild.

Since he was a chief in a modern society, he had never been taught the old secrets. When he looked at the sky, he couldn't tell what the winter was going to be like.

Nevertheless, to be on the safe side, he told his tribe that the winter was indeed going to be cold and that the members of the village should collect firewood to be prepared.

But, being a practical leader, after several days, he got an idea.

He went to the phone booth, called the Ca.National Weather Service and asked, 'Is the coming winter going to be cold?'

'It looks like this winter is going to be quite cold,' the meteorologist at the weather service responded.

So the chief went back to his people and told them to collect even more firewood in order to be prepared.

A week later, he called the National Weather Service again. 'Does it still look like it is going to be a very cold winter?'

'Yes,' the man at National Weather Service again replied, 'it's going to be a very cold winter.'

The chief again went back to his people and ordered them to collect every scrap of firewood they could find.

Two weeks later, the chief called the National Weather Service again. 'Are you absolutely sure that the winter is going to be very cold?'

'Absolutely,' the man replied. 'It's looking more and more like it is going to be one of the coldest winters we've ever seen.'

'How can you be so sure?' the chief asked.

The weatherman replied, 'The Indians are collecting a shitload of firewood.'