

The Static

An evolving publication of the Hill
Country Amateur Radio Club



...and now a word from the prez.

Here I am, late in the evening preparing this for our editor who was so “gracious” to send me a very **gentle** reminder.

Our holiday was great with travels to Austin, Houston, Winnie, and Lumberton in just four days. While in Houston at the Galleria motel location, a gentleman standing by my car said, “What is that “RADIO OPERATOR” on you car license tag?” I might not be very technical but I started in and gave him a ton of information in about four minutes. I used terms like FCC, amateur radio, 2 meter, call sign, and a few others plus a dandy demonstration. I was proud to explain emergency communication and remind him his cell phone would be useless in a serious emergency. He was amazed as well as appreciative.

Do you feel pride when discussing amateur radio? I do. Always remember our hobby is special to us and we should be mighty proud to share it with others, even when they don’t ask.

2012 is going to be a great year for HCARC. We are a great team! I have every confidence that we will have another winning year. It’s always more fun to be winners. YOU are part of this winning team so join in with ideas and actions to make us better than ever.

Happy 2012 and I really look forward to seeing you at the meeting on the 5th. I would be even happier to hear you on the Monday net or just driving around town.

73,

Marilyn KE5DDR

Answer to last month’s quiz.

- a) Always. 73 means best wishes
- b) Nope – 73s would be best wishess
- c) Nope- 73’s would be best wishes’s

Meet the members

Due to an extreme case of editorial sloth, there will be no “Meet the members this month.

Ways to while away a rainy afternoon

Here are some websites with interesting topics related to amateur radio

<http://dx.qsl.net/propagation/> As you may expect this site has some practical and theoretical information on propagation.

<http://lcwo.net/main> Just in case you are interested in learning CW give this a try. It has 40 lessons – allow half an hour for each.. Beats TV

http://www.hamuniverse.com/n4jaanten_nabook.html This is a 74 page article that you can download on antennas for non-technical operators.

www.heathkit.com is back in business making educational materials. They have had a lot of interest by hams wondering if they are going to get back in that market. The answer is hmmm. Keep an eye on them.

http://www.youtube.com/watch?v=SxZWcku_Sw0&feature=youtu.be This gives you a brief 4 minute lesson on oscilloscopes. Questions about these scopes are on both the General and Extra tests

Want to print out multipage documents? You can e-mail the document as an attachment to mailto:

store3736@theupsstore.com They will print it, double sided, if you want, and punch it for you. **The UPS Store** is located next to HEB on Sidney Baker South. They have the best prices I've found.

Static Distribution via Reflector

The Static will be posted monthly on the club website. I will send out a notice on the reflector with a direct link to it. If you have not signed up for the reflector, the following article by John Guida gives you everything you need to know to get started

Hi Fellow HCARC Club Members

K5XA John Guida here.

For those of you who have already subscribed to the HCARC Reflector, my thanks. I hope you're enjoying it. And remember - take the opportunity to read and post whenever you think that your information and comments are of some interest to the other subscribers. But I hope you will read on below, as there are a couple of features that might be advantageous to you.

For those of you who are not yet subscribed, I hope this email will encourage you to do so. Currently, 47% of the HCARC club membership is subscribed to the reflector. Those of you who are not may be missing out!

Before I launch into a lot of explanation that you may or may not care to read, the simplest way for you to subscribe to the reflector right now is to follow this link:

<http://mailman.qth.net/mailman/listinfo/hcarc>

Just click on the link and follow the instructions. It's very easy, and you'll be glad you did!

For those who like to read, now please let me explain the general workings of your HCARC Reflector.

First let me assure you that using the reflector is as simple as sending an email to any of your family, friends, or business associates, and of course is free to use. And if you should face a little problem with something along the way, help is just an email away.

Every reflector subscriber can send an email (to the reflector), and it will be forwarded (reflected) to every HCARC Reflector subscriber - even to the original author.

Reflector subscribers can then reply to the reflected email if they care to, either to the entire reflector, only the author, or both. This is very simple two-way email communications with every other reflector subscriber. And you don't have to remember all of those other member's email addresses.

There are many reasons that you might want to send or receive club related email in this manner. Here are just a few:

1. Announcements and requests from club Officers or Committee Chairpersons
2. Ham radio related equipment - for sale or looking to buy
3. Club member activities that they may be wanting to share
4. Members looking for help on antenna building, station grounding, or other station building projects or ham radio related comments or questions
5. Providing Internet links to other subscribers of subjects of interest
6. Announcements of on the air activities, DX contacts, and contest schedules and scores

7. Hamfest announcements

8. Member health and welfare announcements

These are but a few possible uses of the reflector, and by now perhaps you have thought of even more.

For those of you that want to limit the amount of mail in your In-box, when you subscribe to the reflector, you can choose whether to receive each individual reflected email, or select the option to only receive a digest of daily, weekly, or monthly posts.

Also, if you care not to have email such as from the HCARC Reflector adding to your regular In-box, most email clients provide "filtering" capabilities. If your email client provides this feature, you can create a folder - as an example, named "HCARC_REFL" - and set up a filter to move all incoming HCARC Reflector email to that folder, eliminating it's presence in your standard In-box.

And of course, this will keep all of your HCARC Reflector activity all in one separate unique folder. I use this filtering capability to separate special interest emails and various of my email addresses into their unique folders.

But remember, even if you don't wish to subscribe to the reflector, you can use this filtering method for any of your other incoming emails.

Enough said. I hope you will consider subscribing.

You can do so easily by following this link:

<http://mailman.qth.net/mailman/listinfo/hcarc>

Just click on the link and follow the instructions.

And please email me with any questions.

Tnx es 73

K5XA John Guida
k5xa@godfather-ridge.com

Articles for The Static...

Have you ever had the urge to write an article on your favorite project? Well, fire up the word processor and put down your thoughts then e-mail your work to me. I'll include it in the newsletter with minimal editing. You can also send comments, complaints, or suggestions.

bob.k5yb@yahoo.com

An Alaska aventure...

Shemya Story

Story and Photos by John Reisenauer Jr.,
KL7JR
July 22, 2003

From one of the most remote places in the United States, history and DX come alive.

I never leave home without my ham gear when my job takes me to remote areas of Alaska. Being a history buff and avid

island activator, I jumped at the opportunity for a short-term job assignment on Alaska's Aleutian Island chain. The Aleutians are steeped in WW II history--just ask any veteran who served in the North Pacific. Shemya Island, more commonly referred to as "The Rock," is out near the tail end of the Aleutian chain 100 miles from Russian waters, or about 1400 miles from Tokyo. A godforsaken place like that, famous for the foulest weather imaginable, would certainly be a challenge for mobile Amateur Radio operating. I was up for the challenge of both working on Alaska's ballistic missile defense project and hamming from The Rock. And, I had some experience to draw from: a few years ago my friends John Wolfe, AA0NN, and Frank Hurlbut, KL7FH, logged many contacts from Shemya Island.

The Adventure Unfolds

Whoever first uttered, "Getting there is half the fun," surely wasn't sitting on a hard canvas-laced chair in a cramped and cold C-130H cargo plane next to crates of equipment and supplies bound for Shemya Island. But I was ecstatic to be on board since I'd just cleared security at Elmendorf Air Force Base in Anchorage with a briefcase full of radio gear in one hand and a 5-foot long steel whip antenna in the other. All I heard was, "So, you're gonna do some fishing, huh?" Don't you just love it when some things look like other things?

We made our first stop 90 minutes later at the town

of King Salmon to refuel and take on more cargo. After four more hours of flying we set down on Shemya, second to the last rock out on the chain. I'd experienced the allure of the Aleutians a decade ago from Dutch Harbor; it was awesome to be back.

My rig was my trusty old Kenwood TS-50 transceiver and AT-50 auto-tuner. The antenna is a RadioShack mobile CB whip on an old mag-mount base. Naturally, the vertical would work on 10 meters and some whips I've experimented with work well on 20 meters using a tuner--hold your laughs until the results are in! Now I only needed to borrow a vehicle and a set of jumper cables for fast temporary power hook up to complete my mobile station.

Mobile from "The Rock"

The vertical easily loaded on 10, 20, and to my amazement, 15 meters, as well. It was great to have an extra band or two to try when 10 meters would fade as it often does up in the Northland. By 2000 UTC, only weak stations were heard on 20 meters, which was a good sign the bands were improving. I was able to



Amateur Radio station KL7JR, as set up in the temporary mobile operating position from the job office area on Shemya Island-- note the jumper cables running into the cab through the window.

borrow a truck from our safety department, but I had to stay close by in case they needed the vehicle. So, I remained in the parking lot surrounded by six-story tall office buildings, dorms and flickering street lights which no doubt caused the heavy interference I was experiencing on 10 meters. It was raining and windy. Then came freezing rain, then snow, as I watched a storm front off the Bering Sea collide with another storm front from the Pacific Ocean right in front of me. Snowy whirlwinds swirled about. Out at the confluence of these two great bodies of water, hurricane-like winds and monster waves are born. Twenty minutes later, the sky cleared and HF came alive with strong signals.

First in my log was my buddy Geno, AL7GQ, on a prearranged schedule. I also called my island-activating buddy Rick Kaplan, KL7AK, but to no avail. Geno said he was hearing us both just fine. Shortly afterward a ham in Papua New Guinea called and we exchanged 10 over S9 reports on 10 meters. Then I was overwhelmed by Japanese hams for about an hour--JA7OWD, JA8OKR and JG0TL to name a few--with DU1SAN, NH2PW, VE7SMP and a couple of W5 stations wedged in. When 10 meters faded I was back on 20 meters with another Japanese pileup until that band dropped out as another Bering Sea storm began to brew. I was band switching by what color the sky was!

Back on 10 meters I worked RA0LGH, NH2PW and others needing Shemya Island, AK-019S for the US Islands Award and NA-037 for Islands on the Air.

By then, most of the reports I received were 5-by-9. The other operators would often chuckle when I explained my operating position sitting in a pickup truck on a tiny Alaskan island! I moved up to 15 meters to work JM1KYY and a string of W6s and W7s. Then another JA station broke in to say 10 meters had reopened and there was a bunch of hams calling for me! I hated to leave 15 meters because it was so quiet and I was enjoying a bit of ragchewing, but back to 10 meters I went. Often I was asked what I was doing "out in the middle of nowhere." I just didn't feel comfortable answering some questions. My vague replies of "for your protection" quickly got the stateside ops to say "Roger" and change the subject.

I was surprised when VK6PP called me at 2330 UTC and BA4DW next, both of whom said they needed Shemya Island. Relentless gusts of snow-turned-ice pelted the vehicle as I worked DS5ACV, WH6LU, AY3HR and RAOLDA. Unfortunately, I had to pull the plug because the safety guys needed their truck, leaving a big pileup with, "I've gotta go and will be back on in a few days." In five hours of operating I made over 300 contacts with 12 countries--almost half on 15 and 20 meters--using a CB antenna. Not bad considering the first two hours I was merely talking to myself while the storms played out, the constant band switching and the fact that I ragchewed a bit.

Bering's Discovery

The Aleutians are the tops of submerged mountains belonging to a range stretching

more than 1200 miles into the Pacific Ocean from Alaska's mainland. A partially submerged continuation of the Aleutian Range separates the Bering Sea from the Pacific Ocean. The Aleutian Islands are comprised of four island groups: the Fox, Andreanof, Rat and Near Islands. Shemya is part of the Near Islands group. About 200 islands containing more than 25 active volcanoes--13 over 5000 feet high--several glaciers and fish-rich rivers make up the whole Aleutian chain. In 1741 Vitus Bering, a Danish explorer sailing for Russia, discovered Shemya Island. Nizki, Alaid and Hammerhead Islands, stepping stones off Shemya, are dwarfed by large Attu Island some 30 miles distant. On a clear day, Attu, the end island, can be seen from Shemya and World War II debris remains scattered about the island. On Agattu Island, snow-capped peaks tower a few miles out on the Pacific Ocean side adjacent to Shemya's main runway.

Shemya Island is 2 miles wide by 4 miles long and has had soldiers stationed here since World War II. At its peak, Shemya Station housed over 1100 American personnel. By 1980, the workforce had been reduced to 600 and in 1993 Shemya Air Force Base was renamed Eareckson Air Station. The base was closed in 1995, only to reopen a couple of years later staffed by approximately 200 personnel.

Several abandoned three-story-high dormitories and other derelict buildings remain as silent vigils of a once bustling military post. Supplies and personnel are air lifted from Anchorage via C-130 Hercules cargo planes, while bulkier

equipment is barged 3000 miles from Seattle. Weather permitting, a cargo plane comes in twice a week and there's one unscheduled Military Airlift Command transport flight. It's a real treat getting newspapers that are only three days old, a major link to the outside world. The word "remote" takes on a whole new meaning on Shemya.

The average daily temperature is around 40°F, with extremes of 30°F in January and 50°F in August. Most days are breezy, but every now and then a calm sunny day with blue sky is enjoyed. The International Date Line is bent around us, and on a clear day we can see "tomorrow"! Daylight in December is from 11 AM to about 5 PM, plus or minus storms. There are no trees, but wildflowers, grasses and sedges are abundant. Arctic foxes, introduced by the Russians over 200 years ago, proliferate on Shemya. The island is now a strategic refueling stop for military aircraft as well as a link in the United States' long-range early warning radar system.

Back to the Mic

Two days later I was able to slip away from work again. I parked the truck near our mess hall overlooking the Bering Sea's Shemya Pass. Twenty meters was full of weak signals so I moved down to a wide-open 10 meter band to work JH1RFZ, DU6BG, LU9HZM, WA6GFE, UA0FPL, DU1MEF and several more Japanese hams. Soon, I saw another weather front brewing. Like a giant curtain closing in front of me, the blue sky gave way to an ominous greyness that

hurled snow and rain sideways. Clearly, it was time to head back to work. The blips, beeps and pops often heard on 10 meters are more pronounced out in the Arctic just before and shortly after a storm subsides.

A few days later I was back at it again, but from a much better location closer to the water, with four more new countries worked and another 300 contacts made, mostly on 10 meters. Amateur Radioing doesn't get much better than this for a "little gun" station. My operating position was near a concrete pillbox, a relic of World War II that reminded me of the freedom I was now enjoying, made possible by soldiers who fought out in the Aleutians. Unexploded weapons are scattered about the island and you have to be careful where you trek. Not far away rests a fuel barge that came to its demise in 1958 when it broke loose from its tug boat...another rusting monument adding to the island's history.

Shemya has hundreds of tall towers--mostly rusted relics--various antennas of all sizes and shapes and acres of radar buildings.

While the bands were dead I enjoyed the great photo opportunities. I even spotted a brand new log periodic antenna atop a 50 foot

hydraulic mast on a big trailer. Later, I found out this was a Navy listening post and here's where Murphy gets involved: the Navy demanded I stop operating as they did not recognize a previous agreement made by the Air Force for Amateur Radio operating. Shemya Island is used by the Air Force, but shared with the Army and Navy.

But thanks to John Wolfe, who is a member of the US Air Force, we cut through the military red tape and I was cleared to operate again. In whiteout conditions December 15, during the ARRL 10 Meter Contest, I worked LT5H, LU1HF, DU1MTZ, VE4MM, HL2DBP, JA3BKP, JA6XFT, JH3LSS and many others while parked near Shemya's cargo dock. I was enjoying a terrific opening on 10 meters during and after the contest. Later, I worked my Alaskan buddies



One of the many rusting tower farms on Shemya Island. The sky bears witness to Bering Sea and Pacific Ocean storm fronts moving in.

KL7D, KL1V, and Frank, KL7FH, who last operated from this island. Frank and I chatted about the best spots in the island for operating and our jobs. By now I had already experienced two different weather fronts with 10 foot swells and high winds off the Bering Sea. What a wild afternoon of DX and weather! Battered by wind-driven waves and blowing snow, an icy-white mantle encased the high cliffs of Alaid Island across the bay from me. Last in the log were VE7SMP, HL5BLI, LU7DWF, DS1PCF, WA7TRC and AA7CQ.

Years ago, Shemya AFB ARC station KL7FBI was quite active out here on The Rock. John is the trustee for KL7FBI and I even have their QSL from a 1994 contact. I also have Frank's KL7FH QSL from out here in 1997. I was honored to add KL7JR to the operator list at Shemya. With my month-long tour up, I was both happy and sad to leave. Stepping back in time on Shemya Island allowed me a rare opportunity to experience World War II history, further strengthening my American pride. I thoroughly enjoyed operating Amateur Radio from such a historic place. By sharing my adventure, it is my hope to give something back to our servicemen and servicewomen, past and present, who protect our freedom. Thank you for the privileges we all enjoy as Americans! I also dedicate this story to my friend Dan, KL7Y (SK).



Th

A view from the northwest corner of Shemya Island, overlooking the Bering Sea.

Thanks to my Elmer KL7JR for this story. John likes to be the DX and will travel to set up and work the world on HF. Right now he is in Cabarete, Dominican Republic. If you worked HI3/KL7JR in the recent 10 meter contest, that's John.

A magic beam yagi

A couple of months ago Curtis Eastwood, AD5UZ gave a presentation at the HCARC meeting on making a horizontal hex Yagi for six meters. He graciously agreed to share that project with us.

Building a Six Meter Hexagonal Yagi

By Curtis Eastwood

AD5UZ

There comes a time when one must admit that the cheap, easy, "get on the air quick" antenna, one built one afternoon from junk box materials, stinks. That was my conclusion concerning my six meter folded inverted

vee. After several months of trying, the only station I had worked was W3XO, Whom I am convinced I could work with an oscillator and a coat hanger if his beam was pointed my direction.

I started the antenna selection process by making a list of requirements.

1: Inexpensive. I had just purchased a new HF, VHF, UHF transceiver so my radio equipment fund was a bit depleted.

2: Light weight: I wanted to be able to raise it myself.

3: Low wind load. I would be turning it with an old Alliance U100 rotater.

4: Low visual impact. I don't have any antenna restrictions but I hope to avoid any "phantom" RFI issues.

5: Constructed with locally available materials. I didn't want to order anything.

6: Use only common hand and power tools. No visits to the machine shop.

7: Structurally Stable. I didn't want it to come down in one of our Texas thunder storms.

After searching my own library and most of the Internet, I happened upon an article, "Put the Hex on the Magic Band" by Harry Johnson, WB3BEL, describing a three element hexagonal yagi. Harry's antenna was built with

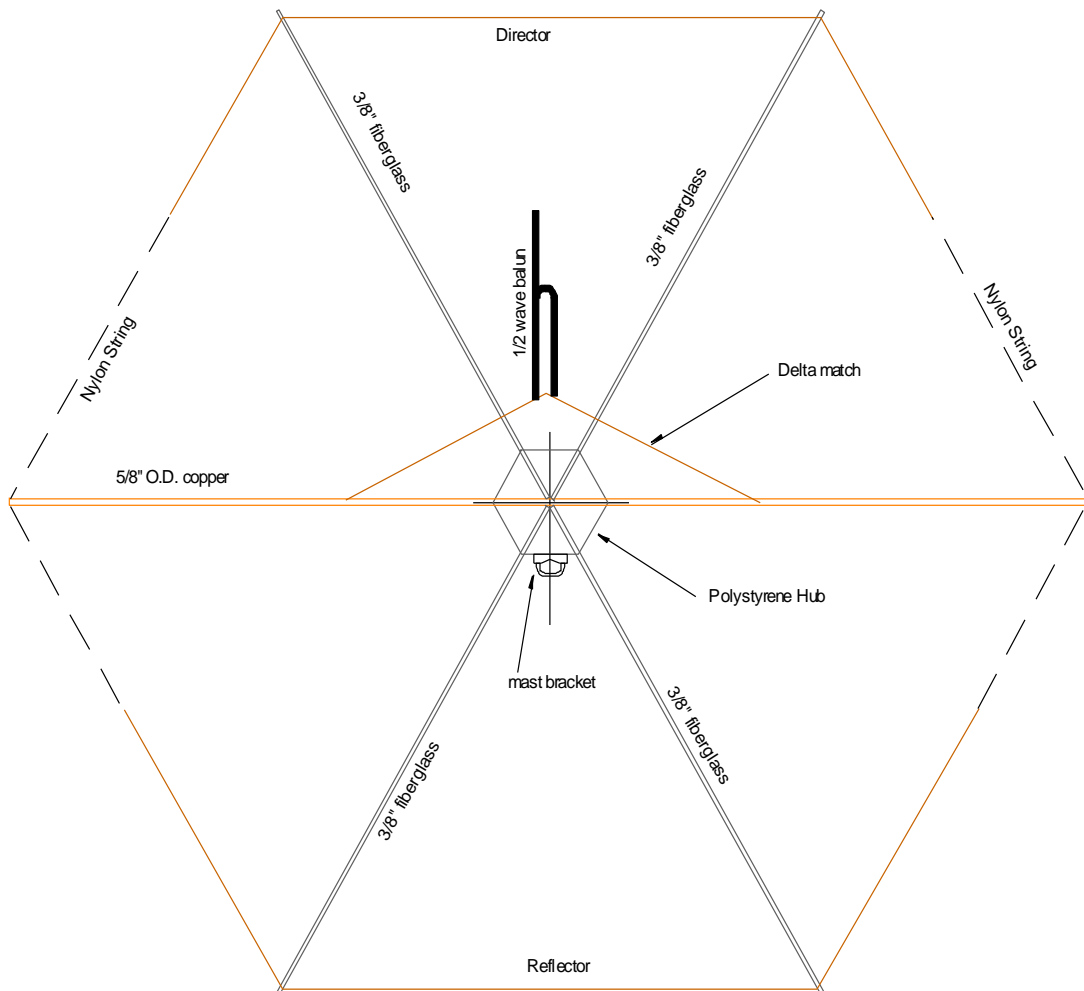
fiberglass spreaders on a plywood hub with wire elements. The article included computer modeling graphs showing performance comparable to any three element yagi. I liked his basic idea but felt his implementation did not meet my needs. The search went on but I kept coming back to the three element hex.

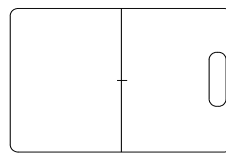
The decision was made as I wandered down the rows of the local Tractor Supply store and stumbled upon the most difficult to locate component, Fiberglass rods. In the fencing supply department, I found four foot long, three eights inch diameter "Step in posts" used for electric fence supports. At about a dollar apiece, they were almost perfect.

The rest just fell into place. A polystyrene cutting board from a department store kitchen supply area for a hub and various hardware and a roll of sixteen gauge wire from a home improvement store completed my shopping list.

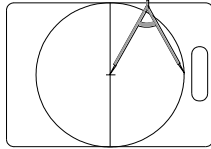
A little time spent with my CAD program resulted in this design: Next page

Construction began with laying out the hub. Using a ruler, I marked the center of the cutting board and drew a line across the width.



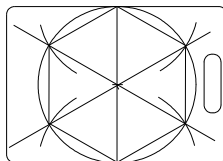


To lay out a hexagon, I used a compass set to half the width of the cutting board and drew a circle centered on the center mark.



Without changing the setting of the compass, I drew a short arc either side of the line where it intersected the circle on both sides of the board.

Connecting all the points with the ruler gave a nice equal sided hexagon.



While cutting the hub using a saber saw, I learned that this must be done at low speed or the cut will try to weld back together from the heat generated in the blade by friction.



I used romex clips to attach the fiberglass spreaders to the hub and bolted the five eighths inch outside diameter copper tubing driven element directly to the hub. A TV mast bracket, bolted to the hub with carriage bolts allows the antenna to be mounted to the rotator mast.



Impedance matching is accomplished with a delta match of automotive wire adjusted by "cut and try" with an SWR bridge and a transceiver set to low power. The delta match is fed with a half wave coaxial balun.

The parasitic elements are made of sixteen gauge stranded copper wire attached to the spreaders with romex clips and tied at the ends with nylon string.



The length of the driven element was calculated using the formula $\text{Length} = 468/\text{Frequency}$ (50.125 MHz) or 9.34 feet.

Reflector length = Driven element x 1.07 or 9.99 feet

Director length = Driven element x .93 or 8.69 feet

I chose to use a difference of seven percent rather than the more common five percent to realize a wider gain bandwidth, that is that the gain would fall off less with frequency changes at the cost of slightly less gain at the design frequency.

The resonant frequency dropped a bit when I raised the beam to it's mounting position. Measurements taken with a noise bridge place it slightly below fifty MHz. But a little series capacitance from a tuner brings it right into line. I will try to re-tune it next time I have the mast down (to add more antennas, naturally).

I will not presume to give gain figures for this antenna but on air tests show a six to seven S-unit improvement over the inverted vee and I am now filling my log with six meter contacts.

This was a fun, satisfying project which cost around \$35 and hopefully one which can be duplicated by other hams.

73 de AD5UZ

Thanks, Curtis, for this interesting project.

That's all for this issue. Enjoy the solar flares and any strange contacts they bring.

73 Bob

