O.C.A.R.C. AUCTION
This Friday
OCT. 19th

DO I HEAR $5?

THIS MONTH'S MEETING: SEPT. 19th / 7:30 PM "SPACE PHOTOGRAPHY"
THE PREZ SEZ

Congratulations to Seth, W3EIN/W6, who recently passed his Extra class, and to Bill, N3W6OC, who mastered the Advanced class. Yours truly also just passed the Advanced class and hopes to get down to LA for the Extra in a month or two. Any other club members who recently got a higher class license? If so, let me know so we can boast about it here. Remember, the second phase of incentive licensing will go into effect this November 22nd unless extended by the commission.

Often, in the past, I have encouraged ARRL membership and, that if you join through the club, we get a 50% kickback into the club treasury. Many have subsequently joined or renewed their league membership, and I dare say the number of club members who are also ARRL members is climbing beyond 70% and I hope the trend continues upward. If we achieve 100% ARRL membership standing, we will receive a handsome certificate from the league and be listed in the ARRL affiliated club honor roll which is periodically published in QST.

More than "just belonging" to ARRL is the many interesting activities sponsored by the league. For instance: the Communications Department field organization consists of many appointments made by the elected Section Communications Manager (SCM) to those active stations in various operating activities. Some of the leadership appointments are: Emergency Coordinator (EC), for leadership in a city or county AREC organization; Route Manager (RM), for leadership in CW or RTTY traffic-handling activities; Phone Activities Manager (PAM), for leadership in phone traffic-handling activities. Some individual station appointments are: Official Relay Station (ORS), for CW or RTTY traffic-handling capabilities; Official Phone Station (OPS), for phone traffic-handling capability; Official VHF Station (OVS), for amateurs active in experimentation or net operation on 50 Mhz or above. Official Bulletin Station (OBS), for those stations willing to broadcast official ARRL bulletins at designated times and frequencies; Official Observer (OO), for those stations capable of monitoring signals and accurate frequency checks - this appointment is very important and OOs have saved many a ham from an FCC citation. All holders of ARRL appointments are required to submit a brief station activity report (Form 1) each month to the SCM who uses the information in the section's activity column which appears each month in QST. Full details of each of these appointments are on pages 3, 9 and 10 of "Operating an Amateur Radio Station," or is also detailed in the ARRL Operating Manual. If you are interested in an appointment, contact our SCM: Roy Maxson, W6DEY, 1334 So. Olive St., Santa Ana, 52707. He will send you the necessary application forms.

By the way, those of you who like operating contests, all ARRL appointees are eligible to participate in the "QSO Party" which is held four times (quarterly) each year. This is something like "Field Day" or "Sweepstakes" except all that is exchanged is your appointment and ARRL section. See what you are missing? Are you a league member?

VY 73, JERRY
Jerry, WA6ROF

DEADLINE NEXT "RF"
Monthly meetings of the CCARC are held on the THIRD Friday of each month at the LINOCIN SAVINGS AND LOAN FLDG., at SEVENTEENTH ST. and BRISTOL in Santa Ana. The next month's meeting will be held at that location on SEPT 19th at 7:30 PM.

Jack, WB6UIDC, has a fine program lined up for the coming meeting: DR. Dan Tompkins of Aeroneutronics will present a talk on "SPACE PHOTOGRAPHY". This will be a really fascinating program and you should see some interesting pictures. So, I hope all the members can come. AND BRING A FRIEND!!!

NEXT MONTH'S MEETING -- CCARC AUCTION

Since the ARRL Convention next month in San Diego falls on our normal meeting night, next month's meeting will be held on the second Friday, OCT. 10th at 7:30 PM at our regular location. The Annual CCARC Auction is the program and everybody is invited. Here's your chance to clean out that garage and make a few dollars at the same time: or to find some goodies for your latest project. Please put tags on all items indicating your call and the minimum bid you will accept. I hope everyone will bring or buy something to the auction since your club's treasury receives 10% of the gross sales.

Since next month's meeting will be held a week early, there will be no paper printed next month. So mark the auction date on your calendar so you won't forget it.

MINUTES OF THE LAST MEETING -- AUG 16, 1969

The meeting was called to order at 1950 hours by the President, Jerry WA6ROF. The officers were introduced at this time by Frank, WB6TBQ.

Our speaker of the evening was Mr. George Zelbal whose subject was "Green Cheese Or Rock". This lecture on the moon, complete with slides, was very interesting; and many questions were thrown at him at the conclusion of his talk.

New members to the club are M. McMasters and Larry Hart. Visitors to the club were introduced at this time and were as follows: Warren Ross, Fred Gregory, Chuck Wohl WB6SIE, and Roger Werner WB6EEG.

Senator Whetmore's reply to Jerry regarding Bill #60 was read. We were happy to hear that the Amateur would not be affected by this bill.

A letter from the Monterey Park Amateur Radio Club regarding their picnic to be held September 21, 1969, was read. We are all invited and the charge is $1.00.

The Treasurer's report was read and our balance as of this date is $903.95.

The Bond for the officers of our club has been re-instated.

John W6BNX was the winner of Mr. "R.P."
ANTENNAS AND WIND

by
W6MHC

Probably one of the least understood technical aspects of HAM RADIO (at least to the author) has been trying to determine if the antenna farm is really safe from falling down. Hams usually don't worry if they use wire antennas or have commercial installations with all the manufacturers charts. But what about the ham who builds his own antenna or tower? Since I am putting together a homebrew antenna farm and since the Santana breezes are due shortly, I thought I'd better understand the problem. Well, the information is not too easily found. So now that I did gather some information, I thought you might like to have it passed along.

WIND RESISTANCE

The key to determining the forces on your antenna due to wind is calculating the forces due to wind on a circular cylinder (such as wire or a piece of tubing). Using the "HANDBOOK OF FLUID DYNAMICS", edited by V. I. Streetler, I was able to put the following information together.

The drag force on a circular cylinder is:

\[ D = C_d A \left( \frac{\rho}{2} \right) V^2 \]

where:
- \( D \) = the drag force on a circular cylinder
- \( C_d \) = the drag constant of the object. For circular cylinders, \( C_d \) equals 1.2.
- \( A \) = the silhouette area of the tubing measured in \( \text{ft}^2 \).
- \( \rho \) = the density of air. A good number is \( \rho = 0.0024 \frac{\text{lb-sec}^2}{\text{ft}^4} \)
- \( V \) = the velocity of the wind measured in feet / second.
( to convert: 1 MPH equals 1.46 feet/sec)

I have used the above equation to formulate a table showing what size force winds having different speeds will create on a one-square-foot area.

<table>
<thead>
<tr>
<th>wind velocity ( V ) (MPH)</th>
<th>drag force ( \frac{\text{lb}}{\text{ft}^2 \text{ of area}} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 MPH</td>
<td>6.5 lbs.</td>
</tr>
<tr>
<td>75 MPH</td>
<td>17.5 lbs</td>
</tr>
<tr>
<td>100 MPH</td>
<td>31.0 lbs</td>
</tr>
</tbody>
</table>
EXAMPLE PROBLEM

Now that we have a formula and a table to determine the forces on tubung, let's use a typical antenna installation to find out the size of the forces. The example installation will have a five element 15MTR beam on a 15 foot mast on a 60 foot tower. To "worst-case" the design, I picked a 100 MPH breeze.

A) BEAM
Assume that a typical element on the 15 MTR beam is shown below.

\[
\begin{align*}
A_1 &= (10 \text{ ft})(0.0637 \text{ ft}) = 0.85 \text{ ft}^2 \\
A_2 &= (12 \text{ ft})(0.0625 \text{ ft}) = 0.75 \text{ ft}^2 \\
A_{\text{element}} &= A_1 + A_2 = 1.6 \text{ ft}^2 \\
A_{\text{beam}} &= 5A_{\text{element}} = (5)(1.6 \text{ ft}^2) = 8 \text{ ft}^2
\end{align*}
\]

Now, using the force table for 100 MPH winds, the total force on the beam is:

\[
D_{\text{beam}} = (31 \text{ lbs/ft}^2)(8 \text{ ft}^2) = 248 \text{ lbs}
\]

B) MAST
Assume the mast is 2 inches in diameter and 15 ft long.

then:

\[
A_{\text{mast}} = (15 \text{ ft})(0.167 \text{ ft}) = 2.5 \text{ ft}^2
\]

\[
D_{\text{mast}} = (31 \text{ lbs/ft}^2)(2.5 \text{ ft}^2) = 77.5 \text{ lbs}
\]

C) TOWER
Assume the tower is a triangular crank-up type with three 20 ft sections constructed of 1 inch pipe. The total length of 1 inch pipe is 180 ft. Since I'm not about to figure out how many feet of bracing is used on a tower, I will neglect them and just add 50% to the force on the pipe in the tower.

\[
A_{\text{pipe}} = (180 \text{ ft})(0.0837 \text{ ft}) = 15 \text{ ft}^2
\]

\[
A_{\text{tower}} = 150\% (15 \text{ ft}^2) = 22.5 \text{ ft}^2
\]

\[
D_{\text{tower}} = (31 \text{ lbs})(22.5 \text{ ft}^2) = 697.5 \text{ lbs}
\]

Now the force on the entire antenna installation can be estimated.

\[
D_{\text{total}} = D_{\text{beam}} + D_{\text{mast}} + D_{\text{tower}} = 1023 \text{ lbs} !!!!
\]
Never mind the engine--can you tune up this rig on 40 meters???

"Should I put out the carbon or crystal mines Mr. Lord?"

"...just modifying the front-end here..."

"...keep a pretty extensive log record here..."

"...no tale, go'n'not--say his rig won't fit, or something..."

"...Yea, everything here is home constructed..."
DX FROM ORANGE COUNTY

BY JACK, WB6UDC

The month of August saw band conditions start to swing up towards the good fall and winter conditions. However many good DX contacts have been made this past month. Some rare ones were also heard but not worked due to the immense pileup. The all Asia contest took place this Labor Day weekend. Non Asian stations could make contacts only on CW.

The 10 meter band has started to open up very nicely as can be seen from the log below. 15 meters has been very good early in the morning with fine openings to Europe.

It's getting towards the time of the year when the DX contests will start. The CQ World Wide DX Contest gets going in October. So get your antennas in shape and get your equipment in good shape so that you can participate and get your country score up.

The following is from the author's log and also from WA6FIT.

| Callsign | Country         | Operator | Date  | Time
|----------|-----------------|----------|-------|------
| GM3KEZ   | Scotland        | Jack     | 21290 | 1855 GMT
| ET3REL   | Ethiopia        | Dick     | 21295 | 1824
| TU1MWH   | Yugoslavia      | IVAN     | 21295 | 1710
| CT2AA    | Azores          | Bill     | 14240 | 0356
| ZD8D     | Ascension Isle  | Dale     | 21280 | 2223
| LX1BW    | Luxenburg       | Willy    | 21340 | 1732
| OZ7I     | Denmark         | Folmar   | 21350 | 1651
| PA9HVM   | Netherlands     | Hubert   | 21350 | 1638
| Z81CX    | Rhodesia        | Mike     | 21290 | 1604
| VP2KC    | St Kitts        | Kit      | 14240 | 0405
| 4S7TL    | Ceylon          | Soma     | 14202 | 1735
| C31CL    | Andorra         | Rick     | 14230 | 0605
| KC4USP   | Antarctic       | Bob      | 21290 | 1543
| HS3AM    | Thailand        | Al       | 14210 | 1636
| 6W7DY    | Senegal Republic| Jack     | 21280 | 1739
| JW5DL    | Svalbard        |         | 14228 | 0630
| CX5BA    | Greenland       | Bert     | 14240 | 0632
| C31CL    | Andorra         | Rick     | 14235 | 0538
| CV3LY    | Faro Isle       | Ole      | 14203 | 1312
| CR8AI    | Portuiguese Timor| Louiz | 14244 | 1419
| EA8FF    | Canary Isle     | Ambrose  | 14244 | 0739
| C31CE    | Andorra         | Bruno    | 21242 | 1747
| LZ1KAA   | Bulgaria        |         | 14027 | 0225
| 4J0FR    | Asiatic USSR    |         | 14032 | 0359
| EA9ER    | Rio De Oro      | Angelo   | 21340 | 1708
| 5A1TL    | Libya           | Bill     | 14295 | 0513
| VR1Q     | Tarawa          | Neil     | 14212 | 0539
| HK9EKK   | San Andres Isle |         | 14235 | 0623
| VU2KV    | India           | Vencat   | 14205 | 1450

See you next month

Jack
FOR SALE: HEATHKIT HM-100 TRANSCEIVER with the HP10 MOBILE POWER SUPPLY and homebrew AC power supply. All for $250!!!!

contact: Lt. JAMES F. WZORET -- K1VEA
340 East 2nd St. APT 6
Tustin, CA 92680
514-4402

WANTED: HAM TOWER. Anything from 40 to 60 feet; either crank-up or stacking.

contact: PCB ECKSTILL -- WB6QNU
667 Coate Rd.
Orange, CA 92668
639-5074