NIGHTGRAM

LAIRD CAMPBELL--QST

225 MAIN STREET • NEWINGTON, CONNECTICUT 06111 • PHONE 203-666-1541

MESSAGE REPLY

TO Bob Heslin

DATE

DATE 3 February 1967

Bob:

Sorry, no letter. However, I am enclosing a copy of our official record on your article. In case you can't read it, it says your article was received here November 27, 1961, was acknowledged November 28, 1961, and was accepted December 8, 1961. Of course, it was published June 1963.

73,

Laird

BY

SIGNED

7/14/67 Ltr. I-Sy for 3'

INSTRUCTIONS TO SENDER:

1. KEEP YELLOW COPY. 2. SEND WHITE AND PINK COPIES WITH CARBON INTACT.

INSTRUCTIONS TO RECEIVER:

1. WRITE REPLY. 2. DETACH STUB. KEEP PINK COPY, RETURN WHITE COPY TO SENDER.

Nov 1/67
E-th J-√3
for ill.
11th

HESLIN WA2IQC/7	Inquiry		Article		
	Rec.	Ans.	Rec.	Acc.	Pub.
Log Periodic Antenna - One Antenna for 2, 1 1/4 & 3/4 Meters					June 1963

20 February 1963

Mr. Laird Campbell, WICUT
American Radio Relay League
West Hartford 7, Connecticut

7/14/67
Eth J-SH/A
for ID

Dear Mr. Campbell:

In regard to your letter of 13 February 1963, I doubt if 1/8 inch elements instead of 1/4 inch would adversely affect the overall electrical performance of the antenna. Since particular attention was paid to the three amateur bands when tuning out the VSWR, it is possible that the active elements around the two meter band will have to be slightly adjusted lengthwise to make up for a slight detuning due to 1/8 inch elements. It is a simple matter to determine the element or elements that are primarily contributing at a particular frequency. With a standing wave indicator in the antenna transmission line, simply touch each element in turn and monitor the indicator for which element causes the greatest reaction. You may then make slight adjustments to the length of this element and immediate surrounding elements to match it out. It is possible to adjust the antenna to give fairly flat impedance characteristics over the entire 4:1 band width with a resultant increase in VSWR. This particular unit was built to favor the amateur bands and as a result, the curves have some unusual peaks and nulls.

The antenna pattern measurements were made on an antenna pattern range at the Electronics Systems Division of Fairchild in Wyandanch, New York. The antenna was placed on a Scientific Atlanta Corporation, two axes antenna positioner located on a 50 foot high wooden platform. The transmitting antenna was an adjustable corner reflector located about 200 feet away and equally as high. CW information was transmitted and the log periodic was rotated only in azimuth for both E and H plane patterns. The receiving and recording system was a Scientific Atlanta wide range receiver and a polar coordinates pattern recorder. While it is possible to have experienced multipath effects on the range, it is felt that any pattern degradation because of this would not be of any great consequence.

The VSWR measurements were made in both an anechoic chamber and looking into space. The results were practically identical. The equipment used consisted of a PRD type 219 standing wave detector, a Hewlett Packard 415B standing wave indicator and a Hewlett Packard 608 D signal generator. Measurements were made at 5 megacycle intervals over the entire band and at 500 kc intervals within the amateur bands. This is obviously a very tedious

technique but automatic indicating equipment was not available at the time.

I would like to add that I have since been transferred back to New York and may be contacted here or at my home address which is listed below. I also have reserved new call letters and they also are listed. If I can be of any further assistance, feel free to contact me.

2/14/67
Eth J-5H-B
114

Sincerely,

Robert F. Heslin
K7RTY/2

28 Eagle Lane
Hauppauge
New York

HERBERT HOOVER, JR., W6ZH, PRESIDENT
W. M. GROVES, W5NW, FIRST VICE PRESIDENT
ALEX REID, VE2BE, VICE PRESIDENT

JOHN HUNTOON, W1LVQ
SECRETARY & GENERAL MANAGER

F. E. HANDY, W1BDI, VICE PRESIDENT
DAVID H. HOUGHTON, TREASURER

THE AMERICAN RADIO RELAY LEAGUE
INCORPORATED
A MAGAZINE DEVOTED ENTIRELY TO AMATEUR RADIO

ADMINISTRATIVE HEADQUARTERS
WEST HARTFORD 7, CONNECTICUT, U.S.A.

OFFICIAL ORGAN: QST

February 13, 1963

203 Flewington
66-1541

1/14/67
Ed. J-5 for id.
HC

Mr. Robert Heslin, WA2IQC/7
Fairchild Stratos Corporation
Yuma Test Station
Yuma, Arizona

Dear Mr. Heslin:

Mr. Grammer turned your article over to me for preparation for publication in QST. I constructed a similar antenna using your dimensions and found that it performed more or less according to your findings. The only thing that didn't exactly check-out was the v.s.w.r. on the 2-meter band. At the low frequency end of the band, the s.w.r. was less then 2:1. However, at 146 Mc., the s.w.r. had increased to something like 5 or 6 to 1. I made my elements 1/8 inch in diameter instead of 1/4 inch as you did. Do you think this would be responsible for the discrepancy? The performance of the antenna at 220 and 430 Mc. was as you reported.

I am interested in the methods you used to plot the antenna patterns and to find the v.s.w.r. over the entire range of the antenna. Although we can check s.w.r. here at specific spots in the band, we can't sweep the whole band.

73,

Laird

Laird Campbell, W1CUT
Technical Staff

Bob - Ended this in hopes of finding you there
A Atkinson

ELECTRONIC SYSTEMS DIVISION
WYANDANCH, L.I., NEW YORK
AREA CODE 516 • Midland 3-7171

RECEIVED
A.R.R.L. #4
1963 APR 3 PM 3:09

FAIRCHILD STRATOS

1 April 1963

American Radio Relay League
38 La Salle Road
West Hartford 7
Connecticut

ATTEN: Mr. E. Laird Campbell

Dear Sir:

Enclosed you will find the page proofs of my article. There are several corrections to be made and they are listed below.

I am quite surprised that you have not included any of the submitted antenna patterns. I feel that this is one of the selling points of the unit and I feel that you should include them to show their consistency with frequency. I was also surprised to see the omission of open wire feed as an optional approach. Many UHF amateurs are using open wire due to high losses in coax at these frequencies and since the antenna is basically a balanced system, it is a simple matter to feed it as such.

Corrections:

(1) In figure 5 it is important to keep the center conductor as short as possible when connecting it to the other boom. This is due to the inductance presented at the higher frequencies.

(2) In figure 3 and also in the text, the direction of transmission is shown reversed. The main lobe is off the end with shortest elements.

Very truly yours,

Robert Heslin

Robert Heslin
K7RTY/2

RH:jap
Encl.

2/14/67
E+h.J-V7 for it
1H3

$$Z_0 = 276 \log_{10} \frac{D}{d}$$

