

CLUB OFFICERS:

President Mike Brannock, KG4IES
V. President Jerry Mueller, KC4WZO
Secretary Paul Harrington III, KB4ENQ
Treasurer Steve McFadden, KA4TJD
Trustee for KY4WC Jerry Mueller, KC4WZO

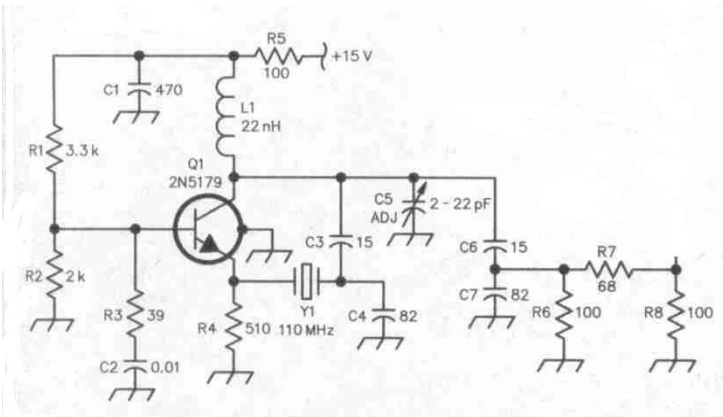
COMMITTEE CHAIRMAN:

Program Jerry Mueller, KC4WZO
Emergency Paul Harrington III, KB4ENQ
Field Day Jerry Mueller, KC4WZO
Web Site Paul Harrington III, KB4ENQ
Net Control Steve McFadden, KA4TJD
Repeater Paul Harrington III, KB4ENQ
Newsletter Todd Rose, KE4YAH
Fund Raising Paul Harrington III, KB4ENQ
Adopt-a-Highway Paul Harrington III, KB4ENQ

The Woodford County Amateur Radio Club meets on the first Wednesday of each month at 7:00 p.m., in the Versailles Fire Station #2 on Big Sink Pike. Anyone interested in Amateur Radio is cordially invited.

The Woodford County Amateur Radio Club Home Page is located on the internet at <http://www.ky4wc.org>. The Club receives e-mail at ky4wc@ky4wc.org. E-mail may be sent to the membership by sending a message to maillist@ky4wc.org.

The Club holds an ARES practice net Thursday evenings at 8:00 p.m. Nets are held on the 145.330 repeater.



What Would You Do?

The circuit to the left is a snip from the complete diagram of a project that I am currently working on. The documentation suggests that the builder substitute a 50-ohm resistor for the crystal Y1, and adjust C5 so that the circuit oscillates at the frequency of Y1 (measured across R8). This is supposed to set the free running frequency of the circuit to match the desired frequency so that when the crystal is introduced (in place of the resistor), the circuit will be adjusted correctly. As you might have guessed, it did not work out that way. The free running frequency varied from 138.3 MHz to 111.0 MHz with C5 at maximum capacity and minimum capacity respectively. A check of all components indicated that the circuit was

assembled correctly. The handiwork was acceptable, with no cold solder joints. I use 63/37 solder, a superior product that makes a cold joint near impossible to achieve. There were also no bridged circuit traces. Granted, introducing the crystal with the C5 set to minimum might have resulted in the desired frequency, it would be better to have some adjustment available. In other words, it is advantageous for the correct setting of C5 to be near mid-range. How should the circuit be modified to allow this? Look for the solution that Jerry Mueller, KC4WZO, Steve McFadden, KA4TJD, and I came up with elsewhere in this month's newsletter. 73's de KB4ENQ

Minutes of August 2nd, 2006

The Club President, Mike Brannock, KG4IES called the August meeting to order at 7:05p.m. The minutes of the last meeting were reviewed. Steve McFadden, KA4TJD, seconded a motion made by Jerry Mueller, KC4WZO, to accept the minutes as published. The motion carried.

Committee Reports:

Field Day: The Field day report has been mailed.

Net Report: The net continues to be called as scheduled. The 7/20/2006 net was called without aid of the repeater. Thanks to Charlie O'Neal, KE4AIE for relay help that evening.

7/20/2006	7/27/2006	8/3/2006	8/10/2006	8/17/2006
KB4ENQ	KB4ENQ	KB4ENQ	KB4ENQ	KB4ENQ
KE4AIE	KI4OJG	KE4AIE	KE4AIE	WA4PCS
KG4TND	KI4OQN	KI4OQN	KI4OJG	KE4AIE
KI4ODT	KF4LRK	KI4MTB	K4HOD	KI4MTB
KD4UBN	KI4ODT	KI4OJG	KG4TND	KG4TND
	KE4GNX	KF4LRK	KF4LRK	KI4ODT
	KE4AIE	KD4GNX	KI4ODT	KI4LSG
	W4RKG	KD4UBN	KC4WZO	KF4LRK
	K4OAN	KC4WZO	KE4GNX	KE4GNX
	KE4LZP	KE4GNX	KG4LXR	KI4OJG
		KE4STM	KF4DSS	
			KI4AWZ	
			N4ALG	

Chart contains currently available net data. The first call sign in each column indicates the net controller for that session.

Newsletter: The membership is encouraged to submit articles, or ideas for new items to appear in the newsletter. Changing format and mailing schedule for the Newsletter are still in the works.

Program: An abbreviated presentation on CTCSS generation was offered after the business meeting. The project, temporarily disabled due to a programming problem, could not be demonstrated. A more in-depth presentation will follow at a later date.

Repeater: During a trip to the repeater to gather insurance information, the power was interrupted to the 145.330 machine. The problem was corrected the next day. Discussion revolved around rearrangement of the power supply circuit so that the battery backup would have prevented the outage. The Club will be acquiring insurance on the repeater equipment from the ARRL, at the rate of \$1.50 per every \$100 in replacement cost.

Adopt-A-Highway: An Adopt-a-Highway activity is scheduled for Aug. 12, all volunteers should meet at McDonalds at 8:00 a.m. for breakfast.

Fund Raising: The Hill Billy Daze is scheduled for September 16th. The Club's booth will be in the same location as last year. The drawing will be held at that time. The following prizes have been secured:

<i>Prize</i>	<i>Sponsor</i>	<i>Prize</i>	<i>Sponsor</i>
Gas Bar-B-Q Grill	Cables	Oil change / Lube	Valvoline Oil Change
1 night stay/breakfast for two	Sheraton Suites	Oil change / Lube	Jeff Jones
2 large pleaser pizza's	Little Caesars	\$20 DINNER certificate	Sweet Potatoes
\$25 GAS certificate	Queens Chevron	\$15 certificate	Moore's Produce/Meats
Oil change / Lube	Valvoline Oil Change	\$25 Dry Cleaning certificates	Concord Custom Cleaners
		\$20 Movie Rental	Hancock's

The membership expressed interest in an additional ticket sales event prior to Hill Billy Daze to be held at Kroger's, Sept 9th, pending their permission.

Emergency: The Club received a "Statement of Understanding" concerning our participation during an emergency, from the Frankfort office of the Red Cross. This statement comes after the local Red Cross office closed. It was noted that the document referred to the club as the WARS. The document will be corrected, signed and returned with contact information.

Web Site: No news.

Todd Rose, KE4YAH, seconded a motion by Steve McFadden, KA4TJD that the meeting be closed. The motion carried, at 9:00 pm.

Attendance:

Mike Brannock	KG4IES	Steve McFadden	KA4TJD
Todd Rose	KE4YAH	Jerry Mueller	KC4WZO
Paul Harrington III	KB4ENQ	Mark Currens	KI4OJG

Upcoming Hamfests:

These hamfests are within 100 miles of Woodford County.

Talk-In: 146.700 (PL 79.7)
Contact:
Joe Pollock, K4ULW
10012 Old Third Street Road
Louisville, KY 40272
Phone: 502-935-7197
Email: k4ulw@bellsouth.net
Shepardsville, KY
Paroquet Springs Conference Centre
395 Paroquet Springs Drive
Div: Great Lakes
Sect: Kentucky

17 Sep 2006
GCARA HAMFEST 2006
Additional hamfests:

21 Oct 2006 + Oak Ridge ARC
<http://www.discoveret.org/orarc/hamfest06.html>
Talk-In: 146.880 and 146.970 (no tones)
Contact: Thomas Muncy, AG4SF
142 Manhattan Avenue
Oak Ridge, TN 37830
Phone: 865-482-4123
Email: ag4sf@arrl.net
Oak Ridge, TN
Fraternal Order of Eagles
1650 Oak Ridge Turnpike
Div: Delta
Sect: Tennessee

Upcoming Exams:

All exams listed are within 100 miles of Woodford County.

02-Sep-2006
Sponsor: CINCINNATI REPEATER ASSOC INC
Time: 8:30 AM (Walk-ins allowed)
Contact: DALE W PRITCHETT
(513)769-0789
Email: KC8HJL@ARRL.NET
VEC: ARRL/VEC
Location: HARTWELL PRESBYTERIAN CHURCH
210 PARKWAY AVE
CINCINNATI, OH 45216

Upcoming Exams continued:

09-Sep-2006
Sponsor: BLUEGRASS VOLUNTEER EXAMINERS
Time: 10:00AM (Walk-ins allowed)
Contact: HARRY R SPARKS
(859)272-8762
Email: KN4S@ARRL.NET
VEC: W5YI VEC
Location: RED CROSS BUILDING
1450 NEWTOWN PIKE
CLASS ROOM B
LEXINGTON, KY 40511

Greater Cincinnati ARA
<http://gcara.org>
Talk-In: 145.37 (-600), 146.88 (-600)
Contact:
Stan Cohen, W8QDQ
2301 Royal Oak Court
Cincinnati, OH 45237-2939
Phone: 513-531-1011 or 513-531-3834
Fax: 513-531-3834
Email: stanco49@aol.com
Cincinnati, OH
Diamond Oaks Career Development Center
6375 Harrison Avenue
Div: Great Lakes
Sect: Ohio

23 Sep 2006 + Hazard Swapfest
Kentucky Mountains ARC
<http://home.alltel.net/jfarler/hf.html>
Talk-In: 146.07/.67 MHz (PL 103.5)
Contact: John Farler, K4AVX
109 Hall Street
Hazard, KY 41701
Phone: 606-436-5354
Email: k4avx@alltel.net
Hazard, KY
Civil Air Patrol Building
Wendell Ford Airport
KY Hwy 15
Div: Great Lakes
Sect: Kentucky

09-Sep-2006
Sponsor: BUTLER COUNTY VHF ASSOCIATION
Time: 8:30 AM (Walk-ins allowed)
Contact: THEODORE WILSON
(513)868-7012
VEC: ARRL/VEC
Location: BUTLER TECH VOCATIONAL SCHOOL
3603 HAMILTON MIDDLETOWN RD
BUTLER COUNTY
TALK-IN 146.97 PL 118.8
HAMILTON, OH 45011

09-Sep-2006
Sponsor: USS JURASSIC ARC & GRANT ARC
Time: 10:00AM (Walk-ins allowed)
Contact: CAROLYN I DONNER
(937)379-2517
Email: N8ST@ATT.NET
VEC: ARRL/VEC
Location: ABCAP BUILDING
200 S GREEN ST
ENTER THRU SIDE DOOR
2ND FLOOR CONFERENCE ROOM
GEORGETOWN, OH 45121

11-Sep-2006

Sponsor: NORTHERN KENTUCKY ARC

Time: 6:00 PM (No walk-ins)

Contact: LYLE H HAMILTON

(513)315-4032

Email: AB8SH@ARRL.NET

VEC: ARRL/VEC

Location: TURKEYFOOT MIDDLE SCHOOL

3230 TURKEYFOOT ROAD

REGISTER AT LEAST 3 DAYS AHEAD

MAY ALSO CALL 513-533-5604

FORT MITCHELL, KY 41047

01-Oct-2006

Sponsor: CINCINNATI REPEATER ASSOC INC

Time: 8:30 AM (Walk-ins allowed)

Contact: DALE W PRITCHETT

(513)769-0789

Email: KC8HJL@ARRL.NET

VEC: ARRL/VEC

Location: HARTWELL PRESBYTERIAN CHURCH

210 PARKWAY AVE

CINCINNATI, OH 45216

Swap Shop:

There is a limited quantity of WCARC baseball caps available to Club members for \$8.00 each.

From the ARRL Newsletter:

"RADIATION BELT REMEDIATION" PLAN COULD AFFECT HF PROPAGATION, STUDY SUGGESTS

A New Zealand university research group believes a US Defense Advanced Research Projects Agency (DARPA) "Radiation Belt Remediation" (RBR) plan could cause major worldwide disruptions to HF radio communication and GPS navigation. DARPA reportedly envisions RBR as a way to protect low-Earth orbiting (LEO) satellites from damage caused by severe solar storms or even from high-altitude nuclear detonations. The New Zealand-based research group suggests, however, that policymakers need to carefully consider the implications of the project. Headed by Craig Rodger of the University of Otago Physics Department, the research group says RBR could significantly affect radio propagation from several days to a week or longer.

"We've calculated that Earth's upper atmosphere would be dramatically affected by such a system, causing unusually intense HF blackouts around most of the world," Rodger said. "Airplane pilots and ships would lose radio contact, and some Pacific Island nations could be isolated for as long as six to seven days, depending on the system's design and how it was operated." GPS would likely also be disrupted on a large scale, he added.

System tests would employ extremely high-intensity, very low frequency (VLF) radio waves to "flush" particles from radiation belts and dump them into the upper atmosphere. The

disruptions would result from the deluge of dumped charged particles temporarily changing the ionosphere from a "mirror" that bounces HF radio waves around the planet to a "sponge" that soaks them up, Rodger explains.

The group's paper, "The atmospheric implications of radiation belt remediation" <<http://www.physics.otago.ac.nz/research/space/ag-24-2025.pdf>>, appears in the August edition of the international journal *Annales Geophysicae*. University of Otago researchers collaborated with UK and Finnish scientists in its preparation.

ARRL Propagation Report Editor Tad Cook, K7RA, contacted Rodger to learn more about the RBR proposal. Rodger told him that RBR "is a serious project, that 'money is starting to appear to investigate it in more detail,' and 'US scientists with military connections are treating it seriously'," Cook said.

Unclassified US Department of Defense budget documents from earlier this year have proposed using Alaska's High Frequency Active Auroral Research Project (HAARP) "to exploit emerging ionosphere and radio science technologies related to advanced defense applications." HAARP is jointly operated by the US Air Force and the US Navy. The project appears to be included under a program called "Sleight of HAND" (SoH).

"RADIATION BELT REMEDIATION" PLAN COULD AFFECT HF PROPAGATION, STUDY SUGGESTS cont'd

"The effects of High Altitude Nuclear Detonations (HAND) are catastrophic to satellites," the budget report explains. "HAND-generated charged particles are trapped for very long periods of time, oscillating between the earth's north and south magnetic poles. This enhanced radiation environment would immediately degrade low-earth orbiting (LEO) spacecraft capability and result in their destruction in a short period of time."

The military budget documents refer to the SoH program as "a proof of concept demonstration" of technology and techniques to mitigate the HAND-enhanced trapped radiation, with the goal of accelerating "the rate of decay of trapped radiation from the LEO environment by a factor of 10 over the natural rate of decay."

REPORTED "FIREDRAGON" JAMMER/INTRUDER SHIFTS FREQUENCY

A Chinese-language "intruder" signal first spotted earlier this summer on 14.260 MHz this week shifted frequencies. International Amateur Radio Union Region 1 Monitoring System (IARUMS) Vice coordinator Uli Bihlmayer, DJ9KR, says the powerful jammer -- dubbed "Firedragon" -- had been transmitting solely Chinese music on 14.260 MHz since August 5.

"This offender is active day and night -- all day, every day -- and causing very harmful interference to the Amateur Radio Service," Bihlmayer informed ARRL Monitoring System/Intruder Watch Liaison Chuck Skolaut, K0BOG, and IARU Region 2 Monitoring System Coordinator Bill Zellers, WA4FKI, on August 15. In an August 17 update, however, Bihlmayer said the music jammer had moved to 14.050 MHz. That part of the 20-meter band is allocated to the Amateur Radio Service on an exclusive basis throughout the world.

Prior to August 5, Skolaut said, reports indicated that the transmission contained both talk and music and was more intermittent, but "now it's pretty continuous and entirely music."

According to Bihlmayer, German telecom authorities pinpointed the transmitter's location as Hainan Island in Hainan Sheng Province, Peoples' Republic of China (PRC), located south of the mainland in the Gulf of Tonkin. Hainan Island also was the apparent source of an over-the-horizon radar signal heard on 75 meters in Region 3. Bihlmayer said.

Citing complaints from members, Skolaut has reported the intruder to the FCC, although as he and Zellers point out, the

Commission has no authority to make intruder stations outside the US stop transmitting on Amateur Radio frequencies. Such situations typically are dealt with through diplomatic channels.

Skolaut says he was able to hear the jammer for himself this week -- on its new frequency -- from W1AW. Until earlier this week, the same jammer also was appearing on 18.160 MHz. In July, Bihlmayer alerted telecom authorities in Germany and Hong Kong, as well as IARU Region 3 and the PRC embassy in Berlin to the situation. The 17-meter band also is a worldwide exclusive Amateur Radio allocation.

According to reports filed this month with DX Listening Digest <<http://www.worldofradio.com/index.html>>, the 14.260 MHz Firedragon signal was an effort by the PRC to jam the clandestine "Sound of Hope" transmission beamed to the Chinese mainland from Taiwan, with Amateur Radio operators being caught in the crossfire. The "parallel" signal on 18.160 MHz apparently disappeared earlier this week, and the jammer now has been appearing on 17.330 MHz. The signal also has been heard on 7.130 MHz, which is allocated to broadcasters in much of the world outside of Region 2 (the Americas).

Short wave listeners said the AM carrier, heard earlier this summer on various 20-meter phone band frequencies, would occasionally drop out at the top of the hour, apparently for a monitoring check, then reappear five minutes later.

Skolaut says he's received reports about the music jammer from all over the US. "I have one ham reporting it regularly from New Zealand," he said.

DXCC ANNOUNCES ACCREDITATION CRITERIA RULE CHANGE

ARRL's DXCC program has added language to its Accreditation Criteria to minimize difficulties stemming from online DXpedition logs. The change, recently approved by the ARRL Board of Directors Programs and Services Committee, limits the level of QSO detail that DXpeditions may provide on Web-based log sites, search engines or other public forums and still qualify for DXCC accreditation. ARRL Membership Services Manager Wayne Mills, N7NG, notes that it's become accepted practice for DXpeditions to post QSO information on the Web.

"Although this information is generally limited to call sign, band and mode, it has been useful in reducing the number of

duplicate contacts in the DXpedition log," Mills points out. "Publishing complete QSO information or information from which full QSO information can be derived, on the other hand, threatens the integrity of the QSLing process, and is unacceptable."

Mills says at least some key information a station provides when submitting a DXpedition contact for DXCC credit must be obtained solely by actually making the QSO. "If complete contact information can be derived from information based on the DXpedition log, the QSL manager's job can be much more difficult if busted calls are involved," he says.

DXCC ANNOUNCES ACCREDITATION CRITERIA RULE CHANGE cont'd

Section III, Accreditation Criteria, Rule 5, of the DXCC rules states:

"The presentation in any public forum of logs or other representations of station operation showing details of station activity or other information from which all essential QSO elements (time, date, band, mode and call sign) for individual contacts can be derived creates a question as to the integrity of the claimed QSOs with that station during the period encompassed by the log. Presentation of such information in

any public forum by the station operator, operators or associated parties is not allowed and may be considered sufficient reason to deny ARRL award credit for contacts with any station for which such presentations have been made. Persistent violation of this provision may result in disqualification from the DXCC program."

"In almost every case, the new accreditation rule will change nothing," said Mills, calling the new rule a "reasonable compromise" in terms of its impact on the program's integrity.

"Publishing band and mode information for each call sign -- as is now done -- is perfectly acceptable. It is only the rare case

where complete QSO information is published or can be derived from published data that we are concerned about."

ISS HAM RADIO "GO-TO" GUY EARNS NASA'S SILVER SNOOPY AWARD

NASA has honored ISS Ham Radio Project Engineer Kenneth Ransom, N5VHO, with its prestigious "Silver Snoopy" Award <<http://www.hq.nasa.gov/osf/sfa/snoopy.html>>. Ransom was tapped to receive the award for his role in helping International Space Station Expedition 12 Commander Bill McArthur, KC5ACR, complete and confirm Worked All States (WAS) and Worked All Continents (WAC), including Antarctica, from NA1SS, as well as logging some 130 DXCC entities. McArthur's duty tour ended in April.

"I am honored to have received the award and honored again by Bill McArthur's thoughtfulness at selecting such an Amateur Radio-appropriate Silver Snoopy," Ransom told ARRL. He explained that every Silver Snoopy has flown on a space mission. "The one that was awarded to me was flown on STS-58, which was Bill's first shuttle flight." The STS-58 mission, he said, not only was a SAREX (Shuttle Amateur Radio EXperiment) flight but McArthur's introduction to Amateur Radio from space. SAREX was the predecessor to the Amateur Radio on the International Space Station (ARISS) program <<http://www.rac.ca/ariss>>.

In his role as ISS Ham Radio Project Engineer, Ransom helps ARISS arrange opportunities for students to speak via Amateur Radio with the space station crew at NA1SS. He also coordinates with the ISS crew on the configuration and operation of the two ham radio stations aboard the space station.

At some point during Expedition 12, Ransom realized that McArthur had already logged 25 states, and he figured, "Why stop there?" Pretty soon, he was lining up contacts for McArthur in the other 25.

==>ARRL ON-LINE AUCTION GEARING UP

A big "Thank You" goes to the hundreds of ARRL members who have already contacted us about the first ARRL On-Line Auction, expressing their support for and interest in this exciting event. We have already begun receiving some very generous donations that will surely make the first ARRL On-Line Auction an event to remember.

How to Get The ARRL Letter

The ARRL Letter is published Fridays, 50 times each year, by the American Radio Relay League: ARRL--the National Association For Amateur Radio, 225 Main St, Newington, CT 06111; tel 860-594-0200; fax 860-594-0259; <<http://www.arrl.org>>. Joel Harrison, W5ZN, President.

The ARRL Letter offers a weekly e-mail digest of essential and general news of interest to active radio amateurs. Visit the ARRL Web site <<http://www.arrl.org>> for the latest Amateur Radio news and news updates. The ARRL Web site

"It was an, 'I know a friend who knows a friend who knows a friend' sort of thing," Ransom explained. "There are a lot of folks eager to talk to an astronaut."

And the feeling was mutual.

"Different crews do different things as pastimes," Ransom said. "Bill enjoyed talking on the radio. It gave him someone else to talk to besides CAPCOM, the voice of mission control."

By the end of the mission, McArthur not only became the first astronaut to earn WAS from space but put lots of DX -- routine and exotic -- in the NA1SS log on both VHF and UHF. Overall, he made more than 1800 contacts during his approximately six months in space. He also established a new ARISS milestone by completing 37 school group contacts.

"None of that would have been possible without the work Kenneth did," McArthur said. "He alerted radio operators in some pretty obscure places -- places that rarely have contact with the space program."

To show his gratitude, McArthur recently presented Ransom with the Silver Snoopy Award -- a silver lapel pin featuring the famous "Peanuts" comic strip character Snoopy in a spacesuit. NASA's Astronaut Office presents the award to those who have significantly enhanced the space agency's goals for human exploration and development of space. Fewer than one percent of the space program's workforce receives it annually.

McArthur is still working to confirm DXCC from space. So far, he has approximately one-third of the necessary contacts confirmed.--NASA provided some information for this report

The auction will run from Monday, October 23 through Friday, November 3. Individuals who wish to participate will need to register on-line approximately one week prior to the event. An update announcement will appear on the ARRL Web site when the ARRL On-Line Auction site "goes live."

<<http://www.arrl.org/>> also offers informative features and columns. ARRL Audio News

<<http://www.arrl.org/arrlletter/audio/>> is a weekly "ham radio newscast" compiled and edited from The ARRL Letter. It's also available as a podcast from our Web site.

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registered members should click on the "Member Data Page" link (in the Members Only box). Click on "Modify membership data," check or uncheck the appropriate boxes and/or change your e-mail address if necessary. (Check "Temporarily disable all automatically sent email" to temporarily stop all e-mail deliveries.) Then, click on "Submit modification" to make selections effective. (NOTE: HQ staff members cannot change your e-mail delivery address. You must do this yourself via the Members Only Web Site.)

ANTENNA RAISING INCIDENT

Here is an old story that comes my way from time to time. A cute story, but it should also remind us that we should pay careful attention to details as we exercise our hobby.

"I'm writing in response to your request for additional information for block number 3 of the accident reporting form. I put "poor planning" as the cause for my accident. You said in your letter I should explain more fully, and I trust the following details will be sufficient."

"I am an amateur radio operator and on the day of the accident I was working alone on the top section of my new 80 foot tower. When I had completed my work, I discovered that I had, over the course of several trips up the tower, brought up about 300 pounds of tools and hardware. Rather than carry the now unneeded tools and materials down by hand, I decided to lower the items down in a small barrel by using a pulley, which fortunately was attached to the gin pole at the top of the tower."

"Securing the rope at ground level, I went to the top of the tower and loaded the tools and materials into the barrel. I sent back to the ground and untied the rope, holding it tightly to insure a slow decent of the 300 pounds of tools. You will note in block number 11 of the accident reporting form, I weigh only 155 pounds."

"due to my surprise at being jerked off the ground so suddenly, I lost my presence of mind and forgot to let go of

the rope. Needless to say, I proceeded at a rather rapid rate of speed up the side of the tower. In the vicinity of the 40 foot level, I met the barrel coming down; this explains my fractured skull and broken collarbone. Slowed only slightly, I continued my rapid ascent, not stopping until the fingers of my right hand were two knuckles deep into the pulley."

"Fortunately, by this time, I had regained my presence and mind and was able to hold onto the rope in spite of the pain. At approximately the same time, however, the barrel of tools hit the ground and the bottom fell out of the barrel. Devoid of the weight of the tools, the barrel now weighed approximately 20 pounds. I refer again to my weight in block number 11. As you might imagine, I started a rapid descent down the side of the tower. In the vicinity of the 40 foot level, I met the barrel coming up; this accounts for my two fractured ankles and the lacerations on my legs and lower body."

"The encounter with the barrel slowed me enough to lessen my injuries when I fell onto the pile of tools, and fortunately only 3 vertebrae were cracked. I'm sorry to report, however, that as I lay there on the tools, in pain, unable to stand, and watching the empty barrel 80 feet above me, I again lost my presence of mind....I let go of the rope."

A Solution: A 7pf capacitor was installed across C5. The value was selected by a combination of availability and educated guess. The additional component was installed under the circuit board with the leads cut as short as possible. After adjusting the circuit as directed the crystal was installed. The resulting output was acceptable; however, fine tuning C5 resulted in an output within 50Hz of the crystal marked frequency (assuming accuracy of the frequency counter used).