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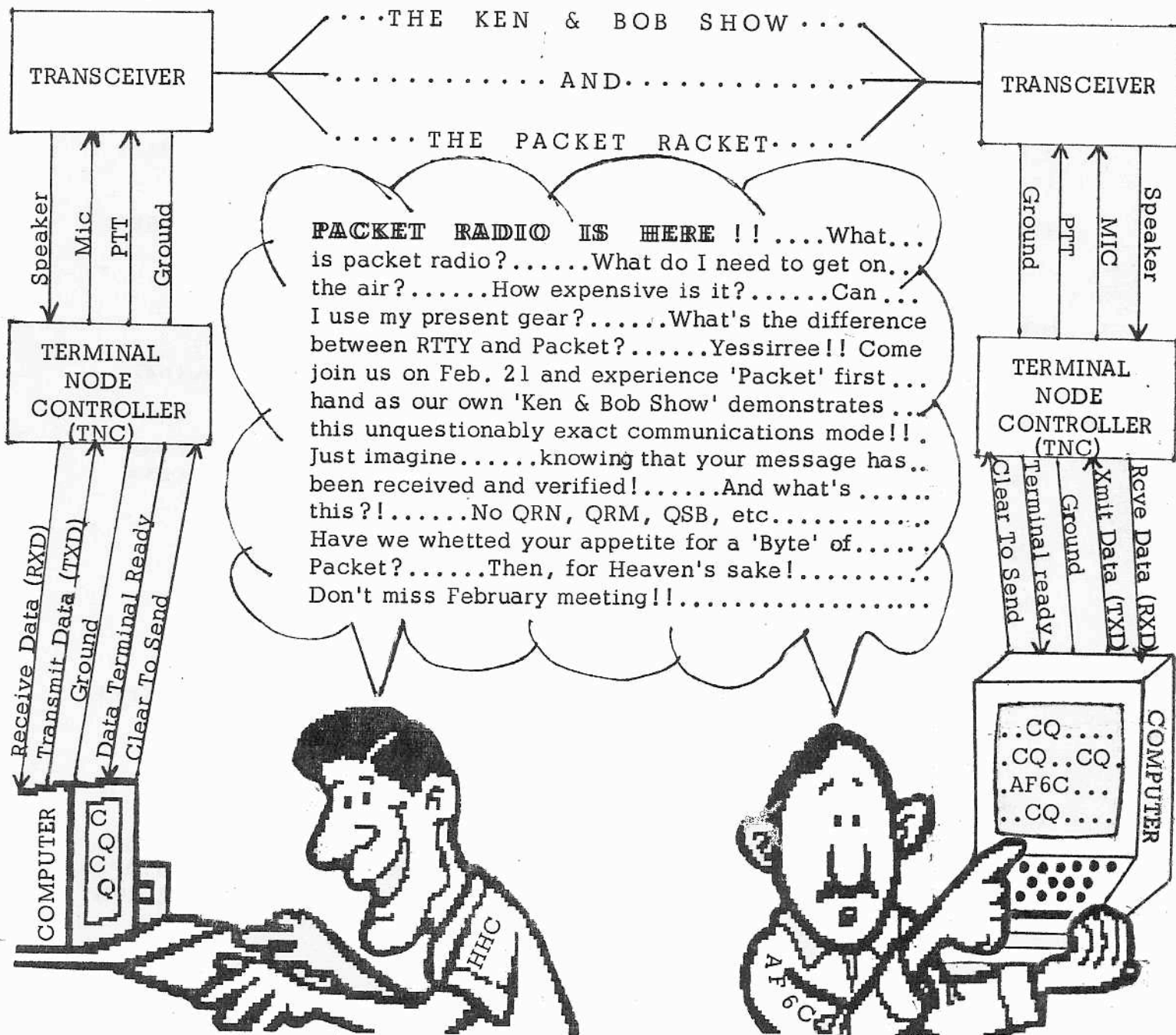


ORANGE COUNTY AMATEUR RADIO CLUB

VOL. XXVII No. 2

P. O. Box 1704, ORANGE, CA. 92668

FEBRUARY 1986



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W6ZE Trustee	Bob Eckweiler	AF6C	639-5074
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CLUB FUNCTIONS

MONTHLY MEETING: 3rd Friday of each month, 7:30PM at:
MERCURY SAVINGS & LOAN
Feb 21st 1095 Irvine Blvd. (4th St becomes Irvine)
Tustin, Ca. Talk-in on 146.55 MHz
Mar 21st
Apr 18th (Take the 4th St. exit to the 55 FREEWAY
and head east. Continue about two blocks
past Newport Blvd. on the left.)

CLUB BREAKFAST: 1st Saturday of each month, 8:00AM at:
MIMI'S CAFE
Mar 1st 17231 17th Street
Tustin, Ca. (714) 544-5522
Apr 5th (55 FREEWAY at 17th Street east.)

CLUB NETS

BAND	MODE	DAY OF WEEK	LOCAL TIME	FREQ MHZ
2 Meters	FM	Wednesday	2100 hrs.	146.550
15 Meters	SSB	Wednesday	2000 hrs.	21.375
15 Meters	CW	Sunday	2000 hrs.	21.175

(Listen for W6ZE, net control)

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XXX Message from WA6USE to 4MTHREAT entered Saturday 28-Dec-85 at 10:35 PM

XXX Subject: THREAT TO THE 4M BAND!!!

WARNING!!!!!!!!!!!! YET ANOTHER THREAT TO OUR AMATEUR RADIO SPECTRUM ALLOCATIONS HAS "REARED IT'S UGLY HEAD"!!!!!!

This time it's in the form of a petition filed by Donald L. Stoner, W6TNS, of Mercer Island, Washington.

Mr. Stoner proposes that the FCC should TAKE AWAY THE TOP 2.0 MHz OF OUR 6 METER BAND (52-54 MHz) for the creation of an exclusive allocation to a "PUBLIC DIGITAL RADIO SERVICE".

A thorough reading of Mr. Stoner's proposal will reveal that he grossly underestimates the present level of (amateur) activity in the 6 meter band, (do any of you REALLY believe that only 1,000 hams are active on 6 meters?) and furthermore that his proposal is rather naive in a technical sense in that he grossly underestimates the interference potential of such a service, particularly in the hands of untrained, unskilled, unlicensed operators. (as we all know, TVI from 6 meters is often tough to eliminate, even when the operators are licensed hams with some idea of how to go about it!)

PROBLEM IS THE FCC MAY BUY THESE ARGUMENTS IN THE ABSENCE OF VIGOROUS AMATEUR OPPOSITION ... IN VOLUME! BOTTOM LINE IS: FILE OPPOSING COMMENTS AND KILL THIS ONE EARLY BEFORE IT GETS UP ANY MOMENTUM!!!

FOLLOWS IS THE TEXT OF A PETITION FILED WITH THE FCC BY DONALD STONER, W6TNS, ASKING THAT THE FCC TAKE AWAY THE TOP 2 MHz OF OUR 6 METER BAND TO CREATE A (NON-HAM, ESSENTIALLY UN-LICENSED) "PUBLIC DIGITAL RADIO SERVICE" ... THIS PROPOSAL APPEARS CAPABLE OF PRESENTING A SERIOUS THREAT TO OUR ALLOCATION AT 6 METERS AND, IF SUCCESSFUL, COULD CREATE A FURTHER, DANGEROUS PRECEDENT (VIS A VIS THE TAKING OF OUR BANDS FOR NON-AMATEUR PURPOSES) IT IS HOPED THAT THE OUTCRY FROM THE AMATEUR COMMUNITY ON THIS PETITION WILL "KILL" THIS ILL-CONCEIVED SERVICE, WHOSE SOLE PURPOSE APPEARS TO BE THE ELIMINATION OF TELEPHONE CHARGES INCURRED BY PERSONAL COMPUTER MODEM USERS.

Carl - WA6USE

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PROPOSAL FOR THE CREATION OF THE PUBLIC DIGITAL RADIO SERVICE

FILED BY Donald L. Stoner, W6TNS October 28 1985

SUMMARY OF PETITION

This petition is to identify the need for a new class of radio service. This radio service is described in the petition as the PUBLIC DIGITAL RADIO SERVICE.

The petition shows that creation of the service and the allocation of spectrum is in the public interest, convenience and necessity.

Presently, computer-to-computer communication by the general public is confined to the telephone network. Millions of computer owners find that it is increasingly expensive to utilize this network to satisfy their communication needs.

Establishment of the PUBLIC DIGITAL RADIO SERVICE would permit the owners of personal computers to communicate by radio. Instead of a traditional channelized scheme, the petition describes a radio Local Area Network (LAN). The PUBLIC DIGITAL RADIO SERVICE permits an infinite number of local area radio networks to be interconnected into a national packet radio network.

The PUBLIC DIGITAL RADIO SERVICE would allow computer owners to exchange messages, bulletins, computer programs and other information by radio, and at no cost.

The petition describes how the Commission could create the PUBLIC DIGITAL RADIO SERVICE, which will adequately serve the needs of the public for at least the remainder of this century.

BACKGROUND OF PETITIONER

I have been a radio amateur (W6TNS) since 1954. A large part of my career has been devoted to the field of writing. For an extended period, I was the Novice and Technician editor of CQ Magazine. I have written hundreds of articles and authored several books on the subject of amateur radio and computer communications. I was also responsible for the idea which grew to become the OSCAR satellite, and I was able to make useful contributions to the program during its early stages. I have been an educator and taught at Chaffey College in Southern California.

This experience provided an opportunity to observe and study personal motivation, goals, effort versus reward, and so on.

During the 70's I was involved in the manufacturing of Citizens Band communications equipment. Thus, I was able to write about CB initially and then participate in its "self destruction". The experience afforded the opportunity to see what "went wrong" and, with hindsight, to realize how to avoid these mistakes in the future.

In 1983, I made a reply comment to PR Docket No. 83-28. This was the controversial "No-Code" document. As part of my reply, I proposed "THE CREATION OF A COMPUTER HOBBYIST LICENSE CLASS".

It was (and is) my contention that this license class would have brought in literally millions people into amateur radio. However, the amateur fraternity decided that no amateur radio licenses should be granted, under any circumstances without a Morse code examination.

Clearly, the proposal for a "computer radio band" received considerable attention on the part of the Commission. In its decision relative to Docket 83-28, the Commission left open the possibility of a radio service for computer hobbyists. However, radio spectrum was not allocated for such a service.

It is the purpose of this document to further amplify the need for such a service, to make a recommendation on spectrum allocation, and to outline technical specifications which will ensure the successful introduction and usage of the PUBLIC DIGITAL RADIO SERVICE.

The accumulated knowledge of the writer has provided certain insights, many of which have contributed to the preparation of this document. A careful and serious consideration of my petition by the Commission is sincerely appreciated.

THE PETITION

Why Is A Computer Radio Band Needed? The increasing popularity of personal computing is well known. There are presently more than 18 million of these devices in the hands of the public. Today, a computer can be purchased for less than \$100. Thus any American, rich or poor, can afford to own a personal computer. Many experts feel there will be a ten-fold increase in the acquisition of computers by the end of this decade.

The Commission recognized the growth in the personal computer market and regulated interference levels before an untenable situation occurred.

The Commission is also aware of the popularity of computer communications via the telephone network. As a result of the "Carterphone Decision", there has been an enormous increase in type acceptance applications for telephone modem devices. According to Creative Strategies International, a Cupertino Calif., research firm, the modem market will reach \$555 million by the end of 1985 and is expected to top \$1.5 billion by 1988. The bulk of these telephone modem sales are to the owners of personal computers. It is presently possible to purchase an FCC approved modem for as little as \$29.95. If one assumes an average price of \$100.00, there will be 15 million modems in use by the end of this decade.

Why do owners of personal computers utilize modems? The desire to communicate with others having like interests does not diminish with the acquisition of a computer. Computer owners like to play interactive games, exchange messages and software, assist others having like computers, and so on. This desire to communicate has provided the basis for a number of national information utilities such as The Source, CompuServe, PlayNet, Delphi and The Shuttle. These organizations allow computer owners to interconnect and exchange all manner of information via the national telephone network. These services are extremely popular. CompuServe, for example, claims to have 250,000 members.

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The exchange of information between computer owners is not free, however. These information utilities charge hourly fees varying between \$3.00 and \$20.00, depending on time of access and the data rate.

More relevant to this discussion is the cost for the transport medium, the telephone network. In the previous decade, the cost of a computer was relatively high while telephone costs were relatively low. In this decade the situation has reversed. Telephone companies are beginning to implement charges based on time and distance for local calls. Thus the cost to the public for computer communications will increase significantly.

Recently, a number of telephone companies attempted to impose a surcharge on those using modems. Some modem users have added an expensive second telephone line. Without this alternate path, the telephone is essentially out-of-service while the user is on-line with the computer. Thus the user is unable to receive emergency calls. At the slow data rates prevalent on telephone networks, these periods can be quite lengthy.

It should be stressed that much of the existing and future computer communications could be handled by suitable radio devices. Recently there has been a significant increase in the interest and use of radio waves to transport computer data. The trade press regularly mentions companies trying various approaches which avoid the use of telephone lines for data communications. The most common activity seems to be the use of FM subcarriers for point-to-multipoint networks.

Motorola has been a leader in the area of point-to-point data communications. They offer a wireless data system which allows portable-computer owners (possessing Motorola cellular-radio telephones) to transmit data at speeds up to 1200 baud.

Motorola has also supplied a hand-held terminal for IBM field engineers. It allows two-way communication with a central transmitter and computer.

Finally, Motorola has recently petitioned the Commission to share satellite frequencies in the 1.7 ghz. range to create local area business radio networks.

All of the above products benefit the business community. They are designed to make businesses more profitable, productive and/or efficient by transmitting computer data via radio.

None of the products described above are intended to benefit the general public. The PUBLIC DIGITAL RADIO SERVICE can make personal computers more useful, interesting and/or productive to the general public. It is in the public interest, convenience and necessity that the public also have access to this precious resource called the radio spectrum.

While modem communications will continue to be popular, an alternate cost-free communication path should be available to the computer public.

This document describes such a service, called the PUBLIC DIGITAL RADIO SERVICE. It petitions the Commission to create such a service with suitable regulations and to allocate sufficient spectrum to insure the success of the service.

TYPE OF SERVICE PROPOSED

In the past, there has been some discussion of permitting computer communications on the Citizens Band. CB usage and channel loading is currently a fraction of what it was during the previous decade. Four additional CB frequencies, formerly used for the remote control of objects, are virtually unused. Other bands (in particular, 49 and 72 mhz) could accomodate computer communications.

In the above examples, a channel scheme is implied. The use of communication channels, however, leads to ham type operations ("send the data to me on channel X"). Channelized operation and shared services would probably not work for the PUBLIC DIGITAL RADIO SERVICE. The users of this service will expect operation and performance similar to that of a telephone modem. Telephone modems do not have channels.

The computer public is not interested in the radio aspects of communication other than as a means to an end. Thus there is no need or desire for voice communications as part of an equivalent radio modem. This precludes the "chit-chat" type of operation which was destructive on the Citizens Band.

Sharing frequencies with voice communication (such as on CB) would be unacceptable. Interference, caused by frequency sharing, would garble the received data. Since the interference is transparent, the typical user will assume that data errors are caused by equipment faults. Thus, it is essential that the frequency allocation for the PUBLIC DIGITAL RADIO SERVICE not be shared with any other service.

Channelized plans inevitably lead to a further problem. If the service becomes popular, there will ultimately be a need for more channels. This is exactly the situation which occurred on the Citizens Band. The Commission is well aware of the problems which resulted from the disruption of adding additional CB channels.

The alternative to a channelized scheme is to send the data at high rates using packet technology. A single wideband channel can be thought of as a digital highway with addressed packets entering and leaving the route in a highly organized manner (see "What Is A Packet Radio Network?").

AN ALLOCATION OF SPECTRUM FOR THE PUBLIC DIGITAL RADIO SERVICE

A wideband digital channel can only be accommodated within the VHF band or higher frequencies. To keep the cost of equipment low, a band between 30 and 300 mhz is ideal. Some readers may feel that a service as described should be placed in the UHF or SHF range. This might be true if a suitable allocation within the 30-300 mhz band did not exist.

However, within this frequency range there is a band, 2 mhz in width, which is virtually unoccupied and therefore unused. I refer to the spectrum between 52 and 54 mhz. Radio amateurs are permitted to operate on frequencies between 50 and 54 mhz (the six meter band). For a number of reasons, this band is "underoccupied".

It is estimated that out of 400,000 radio amateurs in the United States, less than 1,000 are active on the six meter band.

Due to the potential for interference with adjacent television channel 2 (54-60 mhz), virtually all six meter users operate between 50 and 52 mhz. For all practical purposes the radio spectrum between 52 and 54 mhz is wasted.

The radio spectrum is a precious natural resource much the same as our beaches and national parks. The public access to the radio spectrum resource is severely limited. The entry fee is an amateur radio license. This can be justified in instances where the resource is severely limited or where national security is involved. It cannot be justified by any stretch of the imagination when the beach or park is totally deserted!

POTENTIAL FOR TV INTERFERENCE

The Cause of Interference- Radio amateurs have not used the 52.0-54.0 mhz portion of the six meter band due to the high risk of television interference. This interference problem occurs through no fault of the amateur or the transmitting equipment.

A typical ham six meter transmitter can induce several volts of radio frequency energy in a nearby television antenna. The induced voltage can be thousands of times stronger than the television station being received. Thus, the strong signal from the ham station can overload the TV receiver.

This effect is called crossmodulation and can cause interference on all channels. The level of interference can vary in intensity from "cross-hatching" to a total loss of the picture.

Radio amateurs have access to many bands of frequencies throughout the radio spectrum. None of the other bands share the close proximity to television channels as does the six meter band. Clearly, amateurs have resolved the problem of television interference simply by not using this portion of the six meter band.

To date, no one has addressed the problem of using these frequencies in a manner which will not cause television interference.

This portion of the spectrum could be utilized by reducing the power output of the transmitter below the point where television interference can occur.

Eliminating Interference- It is the opinion and experience of the writer that no television interference can occur from a radio modem operating in the 52.0- 54.0 mhz band if the following conditions are met:

1. The signal strength of the TV station being received exceeds 100 uvolts.
2. The effective radiated power of an adjacent radio modem does not exceed one watt.
3. The separation between the radio modem antenna and the television antenna exceeds 8 meters.
4. The radio modem antenna is vertically polarized with respect to the horizontally polarized TV receiving antenna.
5. All modulation and spurious products which fall outside the authorized bandwidth conform to the FCC 43 plus 10 log10 rule.

If these conditions are met, the 52.0- 54.0 mhz band will be suitable for the PUBLIC DIGITAL RADIO SERVICE and no significant television interference will occur.

To be continued next month... (de AF6C)

*** 'MISTRESS OF THE DARK' BECOMES 'BEACON OF THE NIGHT' ***

It was during the Holiday season that ULU received a picture of Elvira from his harmonic. Caught by the magic of her charms, Lloyd was guided to the shack, where he placed her exotic 'bod' over the finals on the rig. Now, when ULU tweaks up his finals, her well-proportioned 'LEDs' glow in full brilliance!!

Remember! We hear it all first on 21.375 on Wed. evenings at 8:00pm! Reporting in on the net for January were: ULU, NGO, AF6C, HHC, OOH, and IXN. And now for choice tidbits of gossip, net, ofcourse! NGO's mom passed away...AF6C finished his TNC...HHC audits the OCARC books...We've discovered that HHC has a cobwebbed 15m rig that's just crying to be fixed and active agn on 21.375. And if HHC has his way, off go the cobwebs, on go the finals, and 15m radiation will once again flood OCARC antennas from the QTH of HHC...On 1/22, K6RH from Hillsboro, Ore., reported into the net...The 1/29 net topic was the disastrous Space Shuttle flight. Such words as dynamic pressure, propagation velocity and metal fatigue pervaded the discussion...2/5 finds AF6C packing for England...Has Don, OOH, and XYL made a major decision on the wallpaper?...Should net times be flexible?...Should the 21.375 net move to Thursday eve?...Should net control on the 21.175 net be a novice?...Bob, AF6C, will conduct a survey at Feb. meeting to sound out OCARC members for answers, providing "wrong way Corrigan" gets back in fine shape after driving all over England on the wrong side of the road!!

RE and the West Link Tapes were featured on the 2m net, along with Ted, W6ORA from Lake Elsinore, ULU, BPX, and YCW, with thanks to AF6C for the report. (no IBR??!)

1/19 - 21.175 - CW net: Kevin, IND, informs IXN that he has the "AEA" program for sending and receiving morse code for his VIC-20 computer. The Jan. program paid off for Kevin!...

2/2 finds IXN handling the QNIs. ULU and IND report in. ULU's keyer was running around all over the desk (the influence of Elvira, no doubt!), and IND got his first taste of the crowded band on Novice Roundup before he had to help put the harmonics to bed.

If you're lounging around Sunday evenings doing nothing, why not warm up the rig on 21.175 and join us for a little ragchew and code practice! In fact, join the fun on any of the nets wid the W6ZE crowd!! Who knows? Maybe the 'Mistress of the Dark' will end up on your rig next!!

*** BOARD MEETING



MINUTES, DEC 1, 1985 ***

The Board meeting of Dec. 1, 1985, opened at 1520 hrs. at the Jane Watts residence. Present were: Pres. AF6C, Secy. VKZ, TVI. HHC, P.R. IBR, MAL. NGO, & MAL. IBP.

Christmas gifts for children should range between \$2.50-\$3.00.

Banquet will feature a no-host bar, pay at the door.

AF6C, Jane, VKZ, & IBR were assigned various areas to call club members to remind them of the Banquet and Club Breakfasts.

The new Novice class was discussed and meeting times & places are still open. Secretary records were transferred to the new Board, ie: insurance, rosters, minutes, etc. Deadline for "RF" will be the 1st Friday of every month.

MOTION: Article VII Constitutional Change: Any valid license (amateur) issued by F.C.C. fills the requirement for holding any office in the OCARC; 2 seconds by IBR & VKZ. (note: The 5 yr license requirement is dropped since all licenses are now 10 yrs. in length).

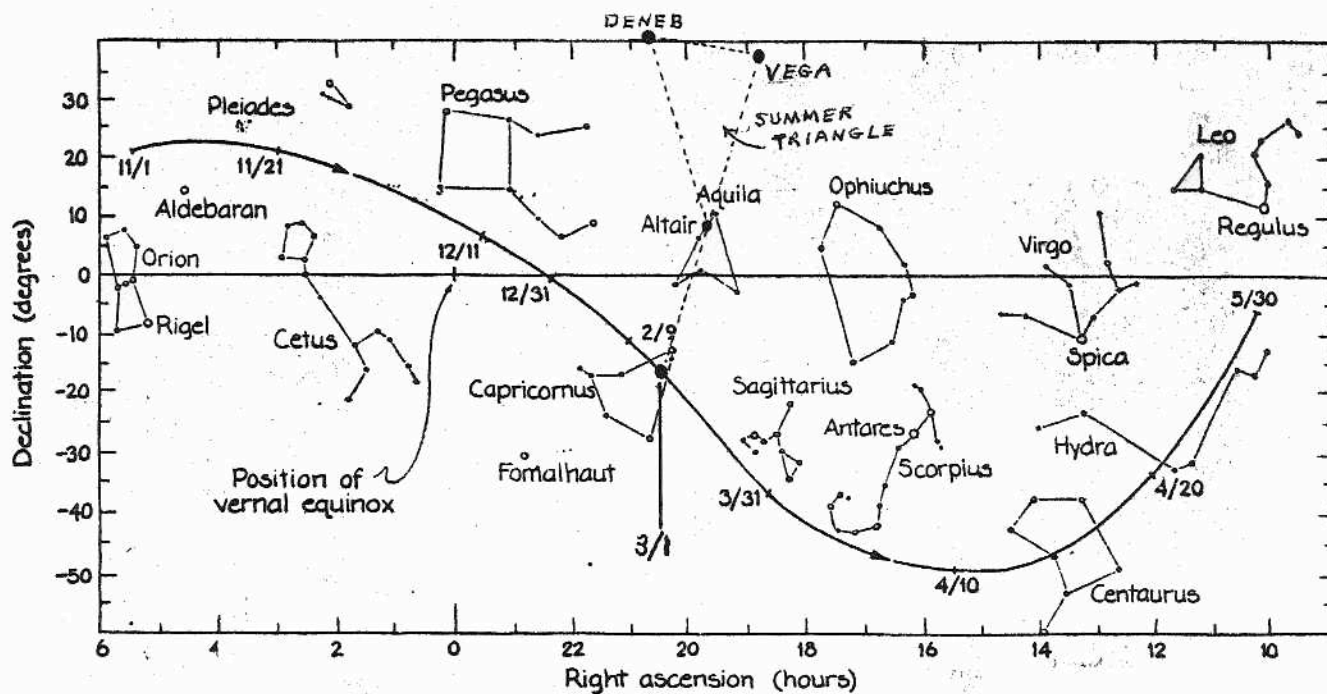
The 1985 "Good of the Club" award goes to Joe Partlow, KB6FZV, for a job well done.

Program for January: ??

Next Board meeting at the VKZ residence in San Clemente. Meeting adjourned at 1610 hrs.

Respectfully submitted,
Bob, IXN, for Frank, VKZ

*** COMETS.....COMETS.....COMETS ***



The comet among the constellations

(Comets cont'd)

Forget Halley's Comet for February! It swings around the sun this month and will begin appearing in the morning sky just before sunrise. Looking at the map, you will find the comet in the constellation Capricorn on Mar. 1st. At this time, Capricorn will be just above the horizon at 6:00 am. in an East-southeast position before sunrise. The bright stars, Deneb, Vega, and Altair make up the "Summer Triangle". This Triangle will be high in the sky during early March between 5:00 & 6:00 am. An imaginary line drawn between the star, Vega, and the star, Altair, will bring you to the leading point of the curved triangle of Capricorn, & very near the position of Halley's Comet!

*** AT LAST MEETING ***

We had a very nice turnout for the January meeting! Let's keep it up! And N6UC brought along oldtimer Dave Hollander, W6COJ. Welcome back, Dave!! And back with us again, looking 'fit as a fiddle', was Ted, LJA, after his bout with the surgeons! Also, we welcome on board our newest novice, Kevin Kent, KB6IND, who owns his own auto repair garage in Garden Grove. Chris Breller, IMP, came all the way from San Diego for the meeting! Also good to see Bill, YKH, back agn. Now let's try to get the '50s' gang back wid us agn...Hugh Davis, YBI, & Marinus Conway, UPP, and some of the other 'lunch' group that hangs around on 2 meters! By the way, old timer, Bob Hill, K6COE, still lives here in Santa Ana..phone542-0575. I predict we will be hearing him on the bands agn! See you all at next meeting and on the nets! (de IXN)

*** REPORTING TRAFFIC ACCIDENTS & OTHER FREEWAY PROBLEMS ***

1. Describe the problem.
2. Get location of problem before you report it. Use the next off-ramp for reference or use a call box number.
3. Are there any injuries?
4. Identify yourself! "This is an Amateur Radio Operator. My name is..."
5. Freeway lanes are numbered from the lane closest to the center, which is lane number 1.
6. A vehicle is not on a shoulder or center divider unless it is completely out of a traffic lane!
7. Objects in the roadway: Cardboard boxes, glass, nails, etc., will be gone before police can arrive on the scene. Report the following as non-emergency traffic: bricks, rocks, other immovable objects.
8. Live animals: Live animals should be reported particularly if located on the center divider. Dead animals, such as a medium-sized dog or larger, should be reported as a hazard, not an emergency!
9. Don't summon aid for a stranded motorist if the vehicle has already been tagged, or if the vehicle is on the right shoulder and a call box is nearby. Make the call if it is night & the vehicle is on the center divider or the driver is female!

...cont'd on page 12

MARATHON COMMUNICATONS NEEDED

Los Angeles Marathon, Sunday March 9th

CHECK THE SPACES BELOW AS THEY APPLY TO YOU:

____ I will work the Los Angeles Marathon **SUNDAY MARCH 9th**

____ I would like to be the recruitment coordinator from my club for the Los Angeles Marathon.

Club Name _____

____ I have portable packet radio capability and would like to use it for the marathon.

____ I would like to be involved with the computerized data base operations.

____ I own a _____MHz repeater that I would like to see used for the Los Angeles Marathon

____ Our club sponsors a _____ Mhz repeater that we would like to see used.

The repeater control op/contact point is: _____ Phone: _____

I have the following capabilities:

145 MHz Capability ____ Mobile ____ Handheld ____ Packet Radio

220 MHz Capability ____ Mobile ____ Handheld ____ Packet Radio

440 MHz Capability ____ Mobile ____ Handheld ____ Packet Radio

____ Other Capabilities: (list on reverse)

Marathon starts at L.A. Colliseum, goes past Dodger Stadium, Hollywood, etc., 20 miles, ,000 runners, return to Colliseum. Need OPs for 8 different nets along 20 miles, abt 300 operators!!

The following is for all our handicapped amateur radio operators. We would enjoy having you to help at this event and would like to take what ever steps necessary to insure that you can participate. For instance, providing you with a position that has wheelchair access if needed or a position that is stationary for those that are unable to move from one position to another. Use the reverse side for any comments as you see fit.

____ I am in a wheelchair

____ I am blind

____ I am not that mobile

____ Other (list on reverse)

NAME _____ CALL _____

WORK PHONE _____ HOME PHONE _____

HOME ADDRESS _____

CITY _____ ZIP _____

RETURN TO:

**Scott Fraser
1406 E. 53rd Street
Long Beach, CA. 90805-6116**

Sign-up roster also at Ham Radio Outlet.

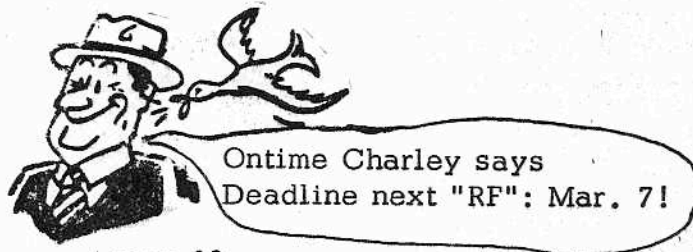
(de Alex, RE, and Bill, YKH)

Freeway Problems cont'd...

- 10. Report accidents if there are injuries or lanes blocked. Don't report accidents that look "old", ie: persons exchanging names, etc.
- 11. Don't get involved with drunk drivers! Don't follow the vehicle! Police do not want Amateurs involved in this type of call.
- 12. Hit & Run: Don't pursue the vehicle! Geth a description of the vehicle or the license number.
- 13. Fire emergency: Call the County Fire Dept.! Your call will be routed more quickly to the correct local agency than by calling the police first!

Always remember that your function is to observe and report! Never get involved in pursuit, investigation or other law enforcement action. These are the responsibility of the police! DO NOT ENDANGER YOURSELF IN ANY WAY!!

de Jan. QST



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ORANGE COUNTY AMATEUR RADIO CLUB

P. O. BOX 1704

ORANGE, CA. 92668

Vol. XXVII No. 2 - Feb. 1986

FIRST CLASS!