

Packet Radio Frequency Recommendations of the Committee on Amateur Radio Digital Communication

On page 54 of September 1987 *QST*, recommendations for packet radio frequencies below 225 MHz were printed as approved at the July 1987 Board Meeting. At that meeting, the Board referred the frequencies above 225 MHz back to the Digital Committee for coordination with the VHF/UHF Advisory Committee and the VHF Repeater Advisory Committee, and resubmission to the Board via the Membership Services Committee. Packet radio frequencies resulting from that coordination process were approved by the Board in Minute 31 and are detailed below.

1. General considerations

The following general considerations were noted regarding packet frequencies in the VHF/UHF region:

a. There is a need for 100-kHz-wide channels in order to make use of the 56-kbit/s modems which have recently become available. This data rate is permitted only above 220.5 MHz.

b. At the Computer Networking Conference several papers were presented which dealt with duplex vs simplex operation for packet radio. The conclusion is that in many situations, duplex operation is more efficient. For wideband systems, it is very difficult to build filters that provide adequate isolation for duplex operation in-band. Therefore, there is strong motivation toward crossband operation for the high-data-rate links. The favored approach is to pair frequencies for crossband links in the following manner: 220-420, 420-902, 902-1240, etc.

2. 70 centimeters

a. The 70-cm (420-450 MHz) band presents the most difficult situation of any band in trying to recommend frequencies for packet radio. Existing heavy usage of the band in almost all US metropolitan areas makes it impossible to recommend frequencies that would be applicable nationwide. After discussing the wide variations in packet frequencies in various parts of the country, the committee concluded that the 70-cm frequencies recommended in the committee's report were as good as any as a starting point. If they are available in a given area, they should be the first choice of the local frequency coordinator. If they are not available, then it is up to the local packet-radio operators to work out the best arrangement they can with the local coordinator. Digital operation will have to be fit in where it can, depending on the local situation. Since many of the links (especially the high-data-rate ones) will be point-to-point links, frequency-sharing arrangements should be possible by proper choice of antenna beamwidth, polarization and power levels.

b. The committee recommended and the Board adopted the following operating frequencies if they are available in a given area:

(1) 100-kHz-bandwidth packet channels at 430.05, 430.15, 430.25, 430.35, 430.45, 430.55, 430.65, 430.85 and 430.95 MHz. Use of 430.75 MHz is not recommended in order to minimize interference to/from a distant ATV aural carrier. (There was no suggestion that these channels could be used at the same time as an ATV transmission in the same service area.)

(2) 25-kHz packet channels at 440.975, 441.000, 441.025, 441.050 and 441.075, plus an additional narrowband channel at 431.025, which could serve as a buffer for the wideband packet channels listed above.

3. 33 centimeters

a. There were some difficulties in the 33-cm (902-928 MHz)

band created by Automatic Vehicle Monitoring (AVM) Systems and by industrial, scientific and medical (ISM) devices centered at 915 MHz. Nevertheless, there are a number of advantages associated with the band. Japanese Personal Radio Service equipment (available from Japan, but not yet imported into the United States in any significant quantity) is the only known source of transceivers, and they operate in the lower portion of the band. This band holds promise for ATV and for wideband data channels operated crossband with one at 70 or 23 cm. Relative to higher frequencies, it is easier to build and test equipment for this band because of the availability of components and test equipment.

b. Discussion of frequencies for digital communications on 33 cm began with the observation that the band plan published in the 1987 *Repeater Directory* is an interim one. The VRAC and VUAC are being requested to revisit this band plan in the light of a revised version recently adopted in Southern California. Among other things the Southern California plan reduces the weak-signal allocation to 902-903 MHz and moves most other allocations down 1 MHz. This results in the following differences in digital-mode allocations:

ARRL Interim	S California
904-906	903-905
916-918	915-917

c. Digital Committee members recommended that two 3-MHz-wide channels be allocated (to accommodate 1.5 Mbit/s links) with 10.7-MHz spacing. This could be accomplished with channels at 903-906 and 914-917 MHz. The Board adopted these frequencies as interim guidance pending conclusion of a study by the Membership Services Committee on revising the current interim 33-cm band plan.

4. 23 centimeters

a. The committee reaffirmed the earlier recommendations of the Digital Committee, which are consistent with the 23-cm band plan adopted by the ARRL Board, as published in the 1987 *Repeater Directory*. The recommendations are also in accord with the VUAC recommendations that a packet allocation be adopted in a portion of 23 cm available to Novices.

b. The specific 23-cm packet frequency recommendations adopted by the Board are as follows:

(1) 2-MHz-wide channels at 1249.0, 1251.0 and 1298.0 MHz.

(2) 100-kHz-wide channels at 1299.05, 1299.15, 1299.25, 1299.35, 1299.45, 1299.55, 1299.65, 1299.75, 1299.85 and 1299.95 MHz.

(3) 25-kHz-wide channels at 1294.025, 1294.050, 1294.075, 1294.100, 1294.125, 1294.150 and 1294.175. 1294.100 is designated the National packet calling frequency. These frequencies are available to Novice operators.

5. Frequencies below 225 MHz:

a. Upon recommendation of the VRAC chairman, whenever this band plan is published, it should clearly state that use of the recommended channels must be coordinated through the local frequency coordinator.

b. A note should be added to the HF packet recommendations (see sidebar on page 54 of September 1987 *QST*) to the effect that the FCC has not yet authorized 1200-baud operation below 28 MHz.

to include studies relating to Officers as well as Section Managers, Vice Directors and Directors. The Board was then (at 10:03 PM) in recess for the night, reconvening at 8:35 AM on the morrow with all persons hereinbefore mentioned present.

51) The Chair called attention to the written report of the VHF-Repeater Advisory Committee. In response to past Board assignments, the Committee recommended against adding a "coordination pending" category to listings in the ARRL *Repeater Directory* but had no opposition to proposed changes in beacon frequencies.

52) Mr. Kanode, as Liaison, presented the report of the Contest Advisory Committee. The Committee decided that a proposal for a new Field Day category ("Class F") for QRP stations was moot, since published results show that such operations currently receive a substantial score multiplier, except that published rules for Field Day should indicate the "Battery" category as an entry class.

53) Mr. Drake, as Liaison, presented the report of the DX Advisory Committee. It was moved by Mr. Drake, seconded by Mr. Heyn, that the following resolution be adopted:

WHEREAS, the DX Advisory Committee has polled the DX community regarding a "Fresh Start" to the DXCC program, and
WHEREAS, the nearly unanimous response has been one of continued support for the present basic DXCC program, while calling for some refinement

and modest expansion; therefore

The ARRL Board hereby RISES in sincere appreciation and thanks for the diligent and thorough efforts expended by the DX Advisory Committee and especially its Chairman, John Parrott, W4FRU, in its comprehensive efforts and deliberations in response to the Board's call for this review; and it is further RESOLVED, that:

1. The Executive Vice President is directed to proceed with implementation and appropriate announcement of the substance of the draft report, except as here amended.

2. Those DXAC recommendations that have been identified as having a cost over and above that already allocated in the 1988 budget are referred to the Membership Services Committee for further study and recommendation to the full Board.

3. The DXAC recommendation of field checking QSL cards is referred to the Membership Services Committee for further study.

On motion of Mr. Mendelsohn, seconded by Mr. Harrison, it was VOTED to amend the DXAC motion by deleting paragraph two and renumbering paragraph three. After further discussion, a Roll Call vote being ordered on request, the question was decided in the affirmative. All Directors voted in favor, so the resolution as amended was ADOPTED. During the course of the above, the Board was in recess from 9:58 AM to 10:37 AM.

54) Mr. Vydareny, as Liaison, presented the final

report of the Emergency Communications Advisory Committee. The ECAC recommended adoption of a year-long time frame for SET participation, additional information on operating during public service events and a resource survey of volunteers and membership. During the course of the above, Mr. Joe Butler assumed the seat for Mr. Harrison (at 10:55 AM).

55) Mrs. Gauzens, as Liaison, presented the final report of the Public Relations Advisory Committee (PRAC). The committee completed rewriting the PIO/PIA job guidelines. A Guidebook for PIAs and club publicity chairmen is underway; the PRAC recommends its completion by the new Public Relations Committee. The committee also recommended that a proposed slide presentation about emergency communications might be more useful as a videotape. On motion of Mr. Mendelsohn, seconded by Mr. Butler, the following resolution was ADOPTED:

WHEREAS, the Public Relations Advisory Committee has provided input and outstanding work for the League membership, and

WHEREAS, it has provided leadership and guidance with respect to the intricacies of a specialized field at a time when leadership and guidance was especially vital, and

WHEREAS, its members have given unstintingly of their time, training and talents for the benefit