Chapter 7 DX SPOTTING NODES

Section 5.F introduced the basic ideas of a DX spotting node. Examination of the characteristics of the DX nodes shows that each is a collection of servers. There is the core "Spotting Server" which is used to notify participants of DX station activity. In addition to that, there are other servers which carry out various functions. The presence or absence of these other servers depends on the particular software in use and the choice of the SYSOP. The spotting node software used as an example in this chapter is "PacketCluster" from Pavillion Software.

The other servers include antenna azimuth determination for DX destinations, dissemination of propagation forecasts, "mailbox", local time determination at DX destinations, weather reports, data base management and access, callbook lookup, and conference services. While the command "syntax" may not emphasize this "collection of servers" aspect of DX Spotting Nodes, it is, none the less, there and important.

It should also be pointed out that while these nodes are often networked together, a lot of work has been done to hide the fact from users. This is actually quite useful because it makes it easier to use. By and large, the users are folks who simply want to use packet radio as a tool for other interests. Thus, there is no obvious connecting from node to node. If you request callbook information from a server in the system which is not the one you are connected to, it happens whether or not you realize it is a distant node. It may be slower than your local node, but it still happens.

The author's special thanks go to Larry Johnson, K7LJ, for a lot of help on this chapter. Larry is one of the organizers of the "NW DX Spotting System" which extends from Vancouver, British Columbia to Eugene, Oregon.

One of the nodes in the NW DX Spotting system is used as an example for this chapter. DX-ers in other areas should be aware that this system is limited in its coverage. There are isolated (that is, not linked) spotting nodes scattered throughout the country as well as other networked systems. Some of these use the DX spotting facilities which are available in the MSYS node/BBS software; see Chapter 25 of Volume 2 for some more details if this is the case in your area. There may be other spotting software in use. See Chapter 26 (in Volume 2) for an international DX Spotting Node List. That which is shown here appears to be used by all of the nodes in the Oregon-Washington-British Columbia system.

7.A Use OF DX NODES

The usual use of DX nodes is quite different than the normal packet system. Please recognize that this is written from the perspective of a non-user of the DX system! Here, the DX nodes are just another tool for making contacts with HF DX stations.

The common way in which this system is used is that the local DX node is logged onto when HF operation starts. The connection is maintained during operation. Unlike the NetRom system, the DX nodes do not disconnect you after a period of inactivity.

Some special TNC settings may be appropriate. The "Pavillion Software" Spotting Node shown in the following example uses "control-Y" for several purposes. TNC2s use ^Y for the default "CANcel PACket" command character. You can tell if this is the case with TNC2s by sending the TNC *CANP[AC] (enter)*. If it responds with $19 (19 hex), then it is ^Y. If this is the case, you should change your CANPAC. ^A is suggested; again for TNC2s, the command is *CANP[AC] $01* to change it to ^A.

The "Pavillion Software" manual also indicates that your lines should be ended with a carriage return, only. TNC2s have a function *LF[ADD]* which adds a line-feed to each carriage return. Added line-feeds are rarely used now and you should make certain that it is off. Again, for TNC2s, the command is *LF[ADD] OFF.*

When a DX station is reported by one of the users, all others who are connected (throughout the system) are notified. Users may specify that

they wish only to be notified of certain call prefixes or groups of prefixes (called filtering).

If basic terminal software is used, then this information appears on the screen. Many users have special software which compares data on QSL cards already in possession. Using this software, if a needed country is reported, the terminal program notifies with beeps, flashes, etc. One of the programs which does this is CT, a DX contest logging program.

7.B LOGON

Here is a logon example for N7AVK, the DX node located near Salem, Oregon. The software used by this node is the same as all of the other linked nodes in Western Oregon and Washington. The author had logged on previously and had indicated name, etc. The example is artificially divided, just to make it easier to discuss. The font size used in this text is smaller than normal to get the normal screen width on a printable page.

7.B.1 INITIAL CONNECT: The initial connection goes like this.

```
cmd: *** CONNECTED to N7AVK
Hi Jim!  You've been Digitalized to Mother-Cluster Node N7AVK
ARRL Phone Test this Weekend.. Make a Q..!
Cluster:  4 nodes, 10 local/45 total users Max users 149  Uptime 3 16:58
KA7EHK de N7AVK     5-Mar-1993 0457Z    Type H or ? for help >
```

This logon messages tells you several pieces of information. First, there is the message of the day. This is followed by some very basic cluster information. In this case, there are 4 nodes which are currently linked. There are 10 users on this node and a total of 45 users presently in the system. Max Users appears to be the total number of different calls which have logged in since the node was reset; in this case, the last reset appears to have been 3 days, 16 hours and 58 minutes ago.

7.B.2 NODE COMMANDS: The *h[elp]* command from the node gives this:

```
H
                  PacketCluster (tm) V5.4
            (c) 1986-1992, Pavillion Software

The available PacketCluster commands are:
A,A/F,BYE,CONFER,DE,DI,DI/A,DI/O,DX,SH/DX,H,R,REP,S,S/P,SET,SH,T,TY,UPL,UPD,WWV,SH/
WWV,SH/WX

ANNOUNCE  <A>   - Make a general announcement to local node  <A>
ANNOUNCE  <A/F> - Make a general announcement to all nodes   <A/F>
BYE       <B>   - Bye, disconnect from the PacketCluster     <BYE>
CONFERENCE      - Enter network conference mode              <CONFER>
DELETE    <DE>  - Delete mail message                        <DE MSG#>
DIRECTORY <DI>  - Show active mail messages                  <DI>
DIRECTORY <DI/A> - Show All active mail messages             <DI/A>
DIRECTORY <DI/O> - Show mail to or from yourself             <DI/O>
DX        <DX>  - Make a DX spotting info announcement       <DX FREQ CALL>
LIST      <L>   - Synonym for DIRECTORY                      <L>
Show DX  <SH/DX> - Show a DX spotting announcement           <SH/DX>
HELP or ? <H>   - Help (displays this listing)               <H>
HELP command    - Display help for a particular command     <HELP SHOW>
QUIT      <Q>   - Synonym for BYE                            <Q>
READ      <R>   - Read a mail message                        <R MSG#>
REPLY     <REP> - Reply to the last-read mail message        <REP MSG#>
SEND  <S> <S/P> - Send a private mail message <S CALL>  or  <S/P CALL>
SET       <SET> - Set user-specific parameters     Example: <SET/Name Tim>
SET/BEEP        - Set Bells on or off                       <SET/NOBEEP>
SET/DX          - Set DX announcements       <Default ON> OFF=<SET/NODX>
SET/WWV         - Set WWV announcements      <Default ON> OFF=<SET/NOWWV>
SET/ANN         - Set Announcements          <Default ON> OFF=<SET/NOANN>
SET/MAIL        - Set Mail announcements     <Default ON> OFF=<SET/NOMAIL>
SET/TALK        - Set Talk feature           <Default ON> OFF=<SET/NOTALK>
SET/LOGIN       - Set Login announcements    <Default ON> OFF=<SET/NOLOGIN>
SET/LOGOUT      - Set Logout announcements   <Default ON> OFF=<SET/NOLOGOUT>
SET/FILTER      - Filter any DXCC prefix     <SET/FILTER/CW/BANDS=40,20 JA>
                - Filter command continued   <SET/FILTER/SSB/BANDS=15,10 JA>
SET/NOFILTER    - Clear Filter settings      <SET/NOFILTER/CW/BANDS=40,20 JA>
SHOW   <SH/COM> - Display various PacketCluster Databases   <SH/COMmands>
SH/USERS        - Display local Cluster users/Show all users<SH/USERS/FULL>
SH/TIME Prefix  - Show local times of any DXCC prefix       <SH/TIME YI>
SH/DX freq1 freq2- Display DX between frequency ranges          <SH/DX
14150-14200>
SEND call       - Send a message to a single station        <SEND N6IXX>
SEND call,call  - Send a message to multiple stations  <SEND N6IXX,W6GO,K6LLK>
TALK      <T>   - Talk to specified station                 <T K6LLK>
TYPE      <TY>  - Display a particular file  Example: TY/BULLetin User.cmd
UPDATE    <UPD> - Update a database                         <UPD/Data>
UPLOAD/FILE     - Upload a general file                     <UPL/File>
UPLOAD/BULLETIN - Upload a bulletin file                    <UPL/Bull>
WWV       <WWV> - Make a WWV announcement  <WWV SF=xxx,A=xx,K=xx,Forecast>
WWV    <SH/WWV> - Show a WWV announcement                   <SH/WWV>
WX         <WX> - Make a Weather announcement               <WX>
SHOW WX <SH/WX> - Review recent weather announcements       <SH/WX>
KA7EHK de N7AVK   5-Mar 0459Z >
```

The first column gives a concise name for the command. In many cases, there is a second column with an entry such as <xx>; This is the short-hand command. The large column down the center gives a brief

word description of the command. The last column gives an example of an actual entry.

7.B.3 USERS: The *sh/users/all* command gives you a list of all of the current users of all of the Spotting Nodes (if several are linked). The *sh/users* command simply gives the list of the users on the node to which you are connected. Station calls in parenthesis, that is "( )" have given their node a *set/nohere* command which means that they are connected but not available for conversations. Station calls with a "+" indicates that they are using the conference server.

```
sh/users/all
Stations currently connected to the PacketCluster    Local node: (N7AVK)
   KC7EM  (WR7D)  (AB9O)   W7GUR   W7EYE   WA7UCJ
   W7QK   (N0JO)  (KA0EPR) K7RO    N7BSB   (W7XN)
   W7ZI   AA7EA   K7OZ     K7LJ    WA6SDR  (N7PKB)
   AI7B   AD7L    KB7DA    WB7SRW  (KO7N)  (WJ7S)
   (W7IL) (WJ7R)  (KB7IVU) (K7DBV) NK7L    W7ZR
   WA7EQL N7CWR   WK7Z     K7UN    W7RM    KG7ZK
   KA7EHK
KA7EHK de N7AVK    5-Mar 0718Z >
sh/users
Users connected to local PacketCluster node (N7AVK)
    KC7EM  WA6SDR  AI7B     W7ZR    WK7Z   K7UN
    KA7EHK
KA7EHK de N7AVK    5-Mar 0719Z >
```

7.B.4 CONFIGURATION: The configuration list shows which nodes are currently networked with the one to which you are connected. This list tells you nothing about the physical layout of linked nodes. But it does show which nodes are currently in the system and which stations are current users of each node. The list of current users follows the conventions of the user list described in section 7.B.3. There is also a *show/configuration/nodes* which the author does not find vary useful. The basic configuration list looks like this:

```
KA7EHK de N7AVK    3-Apr 2237Z >
sh/config
PacketCluster Configuration:
   Node                       Connected stations
(N7AVK)            W7AEP      KC7EM      WA6SDR      W7ZR       K7UN
                  (AI7W)       N6TR     (KC7EI)      AI7B       N7NHR
                   WK7Z        N7MCA     WA7GCS      KA7EHK
(WR7D)             W7QK       (AB9O)     W7EYE       WB7SRW     K7LJ
                  KG7FV       WA2TMP     W7BG        AA7AX      W7UZ
                   W7GUR
(N0JO)           (KA0EPR)     KB7DA       W7ZI       K7KJM        W7XN
                   K7RO        K9JF      (N7PKB)     K7IFG      KB7WW
                  (N7JB)       AA7EA      K7OZ        AD7L       NK7L
                   W7LI        N7CWR      W7IMP       KI7JA      KI7FG
                  KE7CX        W7KJZ
(NV6Z)           (KY7X)        W9ELB     (KA7MCX)     KA7CSE     WA0RJY
                   N6MZ        W7LZP      KF7GH       KQ4O       WA7GMY
                  WA7ECU       K7LXC       W7ND       K7PVV     (K7RIE)
                  KI7EK        KA7ZWO      W7WA       K7WTG      W7WT
                  NV6Z-9       N7IVM
(WY7I)            WB7RAL      KB7GUH      KD7IK       KF7QZ
(N7FSW)            K7LZJ       K7UU        N7EF       N7LTF      AA7FT
                  (W7OM)       N0AX        K7DS       W7JEN       K7QQ
                   K7RXV      AA7TC       NX7K        N7YQW
(VE7CQD)         (VE7CC)      VE7IO      (VE7FQN)     WB7PMV     KB7UG
                 (VE7SOL)     KA7AUH      VE7CON      VE7ADC      N7RO
                  VE7ON        N7MC        VE7AVM      WB7PMU     KB7TW
                  VE7HDE       W7KCZ       VE7CQ      (VE7IU)    (WA7ZWG)
                  KB7IGR      KB7MSU       W7EKM       KI7X       WB7CLU
                  WB7WQE       VE7EW       VE7SZ       VE7NIN      W7KCN
                  WB7CAO      (VE7VR)       W7SFF      VE7ASR     VE7SV
                  AA7KE       (VE7HNC)     VE7AGC
VE7GCE
VE7AV-5
VE7PL
KA7EHK de N7AVK    3-Apr 2237Z >
```

7.C DX SPOTTING SERVER

DX spotting consists of two components. One is the immediate announcement and the other is data base information.

7.C.1 IMMEDIATE ANNOUNCEMENT: The immediate announcement is sent by any user who wishes to make an announcement. The announcement is made with the command:
DX frequency callsign information.

For example, if you wish to tell everyone that 9G1AA was just heard on 14020.0 (KHz) and that he said that he would be operating every day at 0100Z, you might type *DX 14020.0 9G1AA every day at 0100Z.*.

Everyone else who is connected (as long as they did not *SET/NODX* or have their callsign filter set to ignore

this call) would see the message. A typical set of announcements is like the following:

```
KA7EHK de N7AVK     1-Apr-1993 0357Z    Type H or ? for help >
DX de KS7P:       7005.0  9G1AA        Wid lotsa lids on him!   0405Z
DX de VE7CC:      3795.0  W5IJU/KP1    up 3                     0412Z
```

7.C.2 NODX: If you do not want to see the DX announcements, you would type *SET/NODX*. If you have turned off the DX announcements and wish to turn them back on, you may type *SET/DX*.

7.C.3 DX FILTERING: Filtering is a method of eliminating those announcements which are of no interest to you. It also reduces activity on the node frequency if you are going to ignore it anyway. The basic format is *SET/FILTER mode/BAND=(x,x,x) DXCC-prefix(es)*.

Valid numbers for bands are 160, 80, 40, 30, 20, 17, 15, 12, 10, 6, and 2. These are (obviously) the meter designation for all of our operating bands from 160 meters to 2 meters. The word "ALL" may be used for both band and prefix. Valid entries for mode include CW and SSB; other modes such AM or FM are not recognized. Digital is recognized on the basis of frequency; PACKET,RTTTY, AMTOR are not distinguished. If a mode designation is left out, it is assumed to be CW/SSB. For example, if you want to filter out all activity on 2 meters, 6 meters, and 10 meters, you could type

SET/FILTER BAND=(2,10,6) ALL or

SET/FILTER CW/SSB/BAND=(6,2,10) ALL

Similarly, to filter out all JA, VE, VK on CW on 80 meters and 40 meters, type

SET/FILTER CW/BAND=(40,80) JA,VE,VK

If you wish to clear a previously set filter, the command *SET/NOFILTER* may be used.

7.C.4 CALLSIGN PREFIXES: One of the frequent puzzles for filter and other DX related commands is the recognized prefix which is appropriate for the command. You can find out using the command *show/prefix prefix* where prefix is your best guess. For example, most of us know that KL7 is Alaska (hardly DX). But under DXCC rules, it counts as a country. Here is what the show/prefix says about KL7:

```
show/prefix KL7
    KL7   Alaska-Anchorage-KL7  CQ 01  ITU 01
    KL7   Alaska-Fairbanks-KL7  CQ 01  ITU 01
    KL7   Alaska-Juneau-KL7     CQ 01  ITU 01
    KL7   Alaska-Nome-KL7       CQ 01  ITU 01
KA7EHK de N7AVK    3-Apr 2110Z >
```

The preceding list shows how major cities in a country are designated with respect to prefixes. In an unfamiliar country, it helps to determine which is the prefix to use FOR DX SPOTTING LIST purposes.

Similarly, for the prefix VP gives:

```
   VP2E   Anguilla-VP2E         CQ 08  ITU 11
   VP2M   Montserrat-VP2M       CQ 08  ITU 11
   VP2V   Tortola-BVI-VP2V      CQ 08  ITU 11
    VP5   Turks-Caicos-VP5      CQ 08  ITU 11
    VP8   So-Georgia-VP8/G      CQ 13  ITU 73
    VP8   So-Orkney-VP8/O       CQ 13  ITU 73
    VP8   So-Sandwich-VP8/SA    CQ 13  ITU 73
    VP8   So-Shetland-VP8/SH    CQ 13  ITU 73
    VP8   Falkland-Is-VP8/F     CQ 13  ITU 16
  VP8/F   Falkland-Is-VP8/F     CQ 13  ITU 16
  VP8/G   So-Georgia-VP8/G      CQ 13  ITU 73
  VP8/O   So-Orkney-VP8/O       CQ 13  ITU 73
 VP8/SA   So-Sandwich-VP8/SA    CQ 13  ITU 73
 VP8/SH   So-Shetland-VP8/SH    CQ 13  ITU 73
KA7EHK de N7AVK    3-Apr 2106Z >
```

The latter list shows that VP8 applies to all of South Georgia, South Orkney, South Shetland, and the Falkland Islands. If you wish to specify a specific one of these, you would use, for example, VP8/F for Falkland Islands.

The 3rd & 4th columns go together, indicating the CQ Magazine Worked All Zone zone number. The 5th and 6th columns likewise go together, indicating the ITU zone number.

7.C.5 NEEDED COUNTRIES: When only a few countries are needed, it is much simpler to specify those few than all which are not needed. This is done with the *SET/NEED mode/BAND=(x,x,x) DXCC-prefix(es)*. Note that the format is essentially the same as FILTER.

To clear a previously set need list, send *SET/NONEED*.

7.C.6 DATA BASE: The DX data base is stored locally on each node. This is possible since all of the immediate DX announcements are sent to all nodes in a linked system.

There are several commands to access this data base. The basic form is *SH/DX*. This command returns the most recent 10 reports.

```
SH/DX
  7011.0  ON4ACG      30-Mar-1993 0603Z                    <NX7K>
  7005.0  KP1/NF6S    30-Mar-1993 0557Z  QSX UP            <NX7K>
  7001.3  J52AG       30-Mar-1993 0555Z                    <NX7K>
 14255.8  UI8QU       30-Mar-1993 0455Z  OBL#185 QSL K9FD  <W7EYE>
 14179.0  UI8ZAC      30-Mar-1993 0446Z                    <W7EYE>
 14020.0  9G1AA       30-Mar-1993 0350Z  UP 2/10           <N7TT>
 14194.5  W5IJU/KP1   30-Mar-1993 0326Z                    <N7TT>
 14020.0  9G1AA       30-Mar-1993 0300Z   wkd @ 034.2      <K7LAY>
 14020.0  9G1AA       30-Mar-1993 0244Z  Nw QSX 032.5      <W7HR>
 21020.0  9G1AA       30-Mar-1993 0220Z  up                <WA7BPI>
KA7EHK de N7AVK   30-Mar 0726Z >
```

This list is pretty straight forward. First column is the frequency, The second is the call of the DX station. Next come the date and time reported. This is followed by and information column and the last is the call of the reporting station.

It is possible to show quite a variety of combinations and selections from the DX data base. The next list is one which shows the reports over a specific frequency range; in this case, it is 21000 to 21999 KHz.

```
SH/DX 21000-21999
 21020.0  9G1AA       30-Mar-1993 0220Z  up                 <WA7BPI>
 21267.0  ZD7SM       29-Mar-1993 2029Z  ...sri...          <N7IXG>
 21267.0  ZD1SM       29-Mar-1993 2029Z  Maggie St. Helenia <N7IXG>
 21020.1  9G1AA       29-Mar-1993 2019Z  up 2/10            <N7EF>
 21267.0  ZD7FM       29-Mar-1993 1955Z  maggie st helenia  <KC7HS>
 21245.0  W5IJU/KP1   29-Mar-1993 1911Z  JA8RUZ OP          <NN7L>
 21005.0  C91J        29-Mar-1993 1842Z  JOHN               <W7KJJ>
 21293.2  9G1AA       29-Mar-1993 1631Z                     <WA6SDR>
 21021.3  HT1T        29-Mar-1993 1538Z  VIA SM0KCR         <W7AM>
 21021.3  ST1T        29-Mar-1993 1533Z  VIA SM0KCR         <W7AM>
KA7EHK de N7AVK   30-Mar 0728Z >
```

One may also search chronologically, by band, by prefix, by callsign fragment and by comment text. ***SHOW/DX/n*** lists the most recent "n" reports. By frequency range uses ***SHOW/DX/f1-f2*** where f1 and f2 are the upper and lower frequency limits in kilohertz (in either order); the previous example used this form. The prefix form is used to show where (frequency) a given prefix has been most recently heard; the

command is *SHOWDX prefix* where the prefix used is one of the prefixes from the SHOW/PREFIX list. For example, if one wants to find out where and when stations from the Pitcairn Island have been operating, one would send:

```
show/dx vr6
 10101.6  VR6BB        2-Apr-1993 0424Z                <N6MZ>
 14020.0  VR6BB        2-Apr-1993 0140Z                <K7LJ>
 14020.0  VR6BB       31-Mar-1993 0325Z                <W7KCN>
 10101.0  VR6BB       29-Mar-1993 0453Z                <N7JB>
 14020.0  VR6BB       29-Mar-1993 0137Z  up 3          <K7DBV>
 14020.0  VR6BB       29-Mar-1993 0137Z  qsx up 3      <K7DBV>
 28491.0  VR6JJ       28-Mar-1993 1953Z                <WX7R>
 28488.5  VR6JJ       28-Mar-1993 1814Z                <N7JB>
 14261.0  VR6BX       28-Mar-1993 0420Z  brian         <WA7GMY>
 28505.0  VR6JJ       26-Mar-1993 2320Z                <N7AVK>
KA7EHK de N7AVK    3-Apr 2206Z >
```

The usefulness of this list should be self-evident if you are looking for a specific country!

7.D CONFERENCE SERVER

The DX Spotting Network conference server is not greatly different from other conference servers except that it is a distributed server. This means that a conference may be spread over several nodes in a linked system.

Be aware that this server has several limitations. If several stations on the same node are in a conference, a packet must be sent to each participant. This may make the local user frequency quite busy. If users are on several different nodes, the throughput will drop if conference packets have to compete on the linking frequency with other packets.

There are two conference modes. The first is the one-on-one or talk mode. The second is the conference mode.

7.D.1 TALK MODE: The talk mode is directed to a single user on any of the nodes which are linked. You can find out who the current users are with the *sh/users/all* or *sh/users* commands (see section 7.B.3). The command is simply *T callsign.*

```
KA7EHK de N7AVK   30-Mar 0723Z >
tk7un
```

```
All further input will be sent to K7UN
Exit talk mode by typing a ctrl/Z or /EXIT on a new line
Don - are you there de KA7EHK
will leave msg for you on SRABBS.  Bye
/EXIT
Talk terminated
KA7EHK de N7AVK   30-Mar 0725Z >
```

This attempt was not particularly successful but it still demonstrates how TALK works. K7UN was on the user list, so the author sent *t k7un*. The node then responds with the message that all which is typed will be sent to K7UN. Another line indicates how to exit from TALK mode. Two lines were typed with no response from K7UN. Then talk is ended with an *EXIT* command. The node then shows that your talk is, indeed finished.

7.D.2 CONFERENCE MODE: There are two levels of conferencing mode. One is local (that is, limited to your local node) and the other is full (that is, extending to all other conference users on all linked nodes.

```
confer
*** Entering local conference mode ***
Exit conference mode by typing a ctrl/Z or /EXIT on a new line
/exit
KA7EHK left the conference
KA7EHK de N7AVK    3-Apr 2239Z >
confer/full
*** Entering cluster-wide conference mode ***
Exit conference mode by typing a ctrl/Z or /EXIT on a new line
anybody here?
/exit
KA7EHK left the conference
KA7EHK de N7AVK    3-Apr 2240Z >
```

The first try was with the local conference server. Nobody else was using the conference (as observed with the user list, not shown this time). This simply shows how to enter and exit a conference. The second half enters the cluster-wide conference. Again, there were no other users and no response to the query.

7.E MAIL SERVER

The mail server works somewhat similarly to that of the "store-and-forward" BBSs described in Chapter 6. Be aware, however, that there are generally no cross-connections between the DX Spotting Network and the store-and-forward BBS system. Thus, a message

addressed to someone who does not use the specific (linked) spotting system which you use WILL NOT BE DELIVERED!

7.E.1 READING MESSAGES: If you have a waiting message, you will be notified when you log on to the spotting node. An example is this one:

```
cmd: c n7avk
*** CONNECTED to N7AVK
Hi Jim!  You've been Digitalized to Mother-Cluster Node N7AVK
Cluster:  7 nodes, 16 local / 106 total users  Max users 154  Uptime
6 17:49
You have the following new mail:
 Msg   Size        To      From    Date  Time       Subject
286    200    KA7EHK     N7AVK   1-Apr 0508Z  Re: MODE IN SET/FILTER

KA7EHK de N7AVK     3-Apr-1993 2058Z    Type H or ? for help >
```

Similarly, if a message arrives while you are connected, a similar notification is sent to you.

Messages may be read several ways. A simple *read* reads all messages addressed to you, starting with the oldest first. A *read ###* reads the message with the number specified.

7.E.2 SENDING MESSAGES: The basic method of sending a message is the standard *SEND callsign*. When you do this, the node responds with a message number and a request for a message subject. Once the subject is entered, there is a prompt for the body of the message and information about how to end it.

```
KA7EHK de N7AVK    3-Apr 2100Z >
s n7avk
Message #325    Enter subject (29 characters)
help?
Enter text.  Finish with ctrl/Z or /EXIT or cancel with ctrl/Y.
```

Users should be aware that there are two classes of messages, private and non-private! It is possible for the Pavillion DX nodes to be set up so that messages are always private (unless specified otherwise) or are always non-private (unless specified otherwise). You may always specify a message to be private by using *SEND/PRIVATE callsign*. Any non-private message can be read by anyone. See section 7.E.5 for an example of a message & bulletin list containing both private and non-private messages.

It is also possible to send a copy of a message to somebody else. The original may be one you originated or it may be one which was addressed to you. In either case, the command is *SEND/COPY ####.callsign*.

A third method of sending a message is as a reply to a message sent to you. The reply is directed back to the station which sent the message to you. It applies to the message YOU JUST READ. The command is simply *reply.*

7.E.3 LISTING YOUR MESSAGES: Messages which are addressed to you or where sent by you may be listed with the *directory/own* command. Here is what happens:

```
KA7EHK de N7AVK    3-Apr 2330Z >
directory/own
 Msg   Size        To      From    Date  Time       Subject
326    620     N7AVK    KA7EHK   3-Apr 2136Z show/prefix
  325    447     N7AVK    KA7EHK   3-Apr 2104Z Lew -
  286-p  200    KA7EHK     N7AVK   1-Apr 0508Z Re: MODE IN SET/FILTER
KA7EHK de N7AVK    3-Apr 2331Z >
```

7.E.4 DELETING MESSAGES: Once read, messages do not automatically disappear. You have to command each message to be deleted.

```
delete 286
Message 286 deleted
KA7EHK de N7AVK    3-Apr 2332Z >
```

7.E.5 LISTING BULLETINS: Bulletins and non-private messages may be listed with the *directory* command. There are several common options. Section 7.E.3 showed how to use this command to list your own messages. The */new* option lists all the (non-private or your own) messages and bulletins since you last used the directory command. The */all* lists all active (non-private or your own) messages and bulletins. The */bulletins* lists bulletins, only.

```
directory/new
 Msg   Size        To      From    Date  Time       Subject
326    620     N7AVK    KA7EHK   3-Apr 2136Z show/prefix
  325    447     N7AVK    KA7EHK   3-Apr 2104Z Lew -
  324    240      KA6V    KB7IVU   3-Apr 1952Z 3c
  320    382     W6HCS    KB7IRQ   3-Apr 0338Z OK, sounds good.  Hope
286-p  200    KA7EHK     N7AVK   1-Apr 0508Z Re: MODE IN SET/FILTER
  269    381     N7SBI     KC7HS  31-Mar 1459Z hello roy
```

```
  264    223      WANT    WB7TGZ  31-Mar 0328Z ROHN "45" SECTIONS
  247     92      WANT     AA7UP  30-Mar 0822Z rohn 25-g sections
  162    110    WANTED     W7CQR  25-Mar 1537Z AEA Doctor-QSO
  142    117   FORSALE      KO7N  24-Mar 1600Z HD CREATE RC5a-3 ROTOR
  141     66   FORSALE      KO7N  24-Mar 1555Z KLM 40M-4
  140     71   FORSALE      KO7N  24-Mar 1554Z KLM 20M-6
  129    135     LOCAL      W7AM  23-Mar 0144Z DX LUNCH
   25    898     LOCAL      AB9O  14-Mar 2240Z thanks for sh/qsl
   19    621   FORSALE      W7ZR  11-Mar 2306Z COMPUTER STUFF
   18    131      WANT      WJ7S  11-Mar 0729Z XTALS FOR IC 22A
   16    348    KA7CYA      WX7R  11-Mar 0135Z hello tom!
KA7EHK de N7AVK    3-Apr 2327Z >
```

7.E.6 READING BULLETINS: Bulletins are read just like personal messages with a *read ####* command.

7.E.7 SENDING BULLETINS: Bulletins are sent just like messages. The only difference is how it is addressed. The directory list, above, gives an idea of how bulletins might be addressed.

7.F TIME SERVER

The time server shows the current local time and the time at DXCC prefix locations.

```
KA7EHK de N7AVK    4-Apr 0006Z >
show/time
 4-Apr-1993  0007Z
KA7EHK de N7AVK    4-Apr 0007Z >
show/time vr6
    VR6   Pitcairn-Is-VR6        Local (standard) time 16:17
KA7EHK de N7AVK    4-Apr 0007Z >
```

The basic *show/time* gives the local UTC. The *show/time prefix* shows the local time at the indicated prefix. Again, the recognized prefixes are those listed in the *show/prefix* command (see section 7.C.4).

Also related to the time server is sunrise and sunset information. The basic command is *show/sun*. Without any prefix, this command returns the local sunrise and sunset IF YOU HAVE GIVEN YOUR LATTITUDE/LONGITUDE with a *set.location* command. The *show/sun prefix* option gives the sunrise and sunset at the prefix specified in terms of UTC.

```
show/sun
*** No prefix specified and no location information for you was found
***
KA7EHK de N7AVK    4-Apr 0008Z >
show/sun vr6
VR6   Pitcairn-Is-VR6   Sunrise: 1450Z   Sunset: 0236Z
```

7.G HEADING SERVER

The standard command to obtain the heading to a prefix location is *SHOW/HEADING prefix.* The short great-circle route is given as the primary heading and the long great-circle route is given as the reciprocal heading.

```
KA7EHK de N7AVK    4-Apr 0008Z >
show/heading vr6
VR6 Pitcairn-Is-VR6: 187 degs - dist: 4848 mi, 7801 km  Reciprocal
heading: 5 degs
KA7EHK de N7AVK    4-Apr 0009Z >
```

7.H WWV SERVER

7.H.1 WWV DATA BASE: The WWV server displays WWV propagation information which has been entered by users. This information includes the date and time of the announcement, the three index numbers which WWV broadcasts, and the descriptive forecast. The meaning of the indices and descriptive forecast are given in magazine articles about propagation forecasting and in the ARRL Handbook. A typical example is:

```
show/wwv
   Date      Hour  SFI   A   K         Forecast
 4-Apr-1993  00   117   1   1  low, quiet !!!!!          <VE7CQD>
 3-Apr-1993  21   117   2   0  SA LOW,GMF QUIET          <W7GUR>
 3-Apr-1993  18   121   5   0  low/quiet                 <N6MZ>
 3-Apr-1993  15   121   5   2  Low / Quiet               <N7VZF>
 3-Apr-1993  00   121   5   2  low, quiet                <KA7MCX>
 2-Apr-1993  21   121   4   1  SA LOW,GMF QUIET          <W7GUR>
 2-Apr-1993  18   124   8   0  low, quiet                <KA7MCX>
 2-Apr-1993  15   124   8   1  low/quiet-unset           <N6MZ>
 2-Apr-1993  12   124   8   2  low/quiet-unset           <N6MZ>
 2-Apr-1993  03   124   8   2  low, quiet to unsettled   <KA7MCX>
KA7EHK de N7AVK    4-Apr 0125Z >
```

7.H.2 WWV ANNOUNCEMENTS: Each time a WWV announcement is made, it also appears along with the DX announcements unless you have disabled these announcements with the command *set/nowwv_announcements*. The WWV announcement turnoff may be turned back on with *set/wwv_announcements.* An example of a WWV announcement is:

```
KA7EHK de N7AVK    4-Apr 0009Z >
DX de WK7Z:      14030.0  A71CW        WORKING SEVENS           0022Z
DX de W7OF:      14196.5  4N5ET        LOUD                     0019Z
DX de N7IXG:     21295.0  9G1AA        werking simplex by ###'s 0052Z
WWV de VE7CQD <00> :   SFI=117, A=  1, K= 1, low, quiet !!!!!
```

7.H.3 MAKING A WWV ANNOUNCMENT: WWV announcements may be made by anyone who hears WWV broadcasts. The format is *wwv SF=xxx, A=yy, K=zz, forecast*. You simply type out this message and replace the xxx, etc with the numbers from the broadcast.

7.H.4 MUF INFORMATION: A byproduct of the WWV information is the ability to compute MUF (Maximum Usable Frequency) for the path to a specified location (ie, prefix). The command is of the form *show/MUF prefix.* Another example for Pitcairn Island is:

```
KA7EHK de N7AVK    4-Apr 0125Z >
show/muf vr6
Pitcairn-Is-VR6 Propagation:  Flux: 117  Sunspots: 67  Rad Angle: 7
   Dist: 7800 km   Hops: 3   MUF (90%):18.4  (50%):21.7  (10%):26.5
KA7EHK de N7AVK    4-Apr 0301Z >
```

The MUF figure given is in MHz for the path to the specified destination. The preceding example says that the MUF will be at least 18.4MHz 90% of the time, it will be as high as 21.7MHz 50% of the time, and it will be as high as 26.5MHz 10% of the time.

7.I DATA BASE SERVER

The Pavillion DX Spotting Node software has the ability to function as a distributed data base and as a server to that data base. Earlier sections of this chapter have already considered some functions which really are aspects of data base service. These include show/prefix, show/wwv, and show/dx. A few will be described in later sections of this chapter.

7.I.1 DATA BASE LIST: The data bases which are available are listed with the simple *show* command:

```
show/commands
SHOW/OBLAST
SHOW/WVDXC
SHOW/CLUB
SHOW/BUREAU
SHOW/FLUX
SHOW/ZONE
SHOW/CONTEST
SHOW/QSL
SHOW/QSLNEW
SHOW/IRC
SHOW/RULES
SHOW/ALLOC
SHOW/HELP
SHOW/DXNODES
SHOW/DEALER
SHOW/DXCC
SHOW/BAND
SHOW/FCC
SHOW/OPINFO
SHOW/COORD
SHOW/IOTA
SHOW/TODAY
SHOW/PUB
SHOW/COUNTY
SHOW/LADDER
SHOW/QSLREC
SHOW/BUCKMASTER
SHOW/MIC
SHOW/SCORES
KA7EHK de N7AVK    4-Apr 0519Z >
```

This list really contains recognized *show* commands for data base access. If you enter any of the above commands, the response will first tell you if it is accessing a remote data base. Then there is a short answer if the data base is present . This answer tells you how to obtain the information which is stored within the data base. Many of the data bases listed above appear to be third-party data bases; that is, they were assembled by a person somewhere else and distributed to DX Spotting Node SYSOPS. It is quite likely that not all of these are available on all systems or that the list above contains all of the possible data bases. It is also likely that this list will change over time.

7.I.2 DATA BASE SUMMARIES: For those data bases listed above which are actually present, here are the access summaries. Note that in the portion of the DX Spotting System which is near the author (northwest Oregon), the data bases are distributed on at least four other

nodes. It is likely that other sections of the network have their own data bases to reduce data base message activity on portions of the network which join major metropolitan areas. Data bases which are absent are not included

```
KA7EHK de N7AVK    4-Apr 0519Z >
show/oblast
The SHOW/OBLAST command is used to provide the oblast number, CQ zone
and ITU zone for a specified Russian prefix.

  For UA1,2,3,4,6,8,9,0, use the number in the call, e.g.,
SHOW/OBLAST UA3N
  For others, use a hyphen instead of the number,  e.g.,
SHOW/OBLAST UH-W

You may also enter a number to get the oblast name and prefix:
  SHOW/OBLAST 111.

(Please report any corrections to and provided by K1KI)
7/2/89
```

Note that oblasts are Russian political subdivisions (like counties?)

```
KA7EHK de N7AVK    4-Apr 0528Z >
show/wvdxc
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK    4-Apr 0529Z >

   The SHOW/WVDXC command is used to provide info on the WVDXC
members.

To access info on the WVDXC members type SHOW/WVDXC Call .
Replace 'Call' with the call of the club member you are requesting
info on.

   To update your file in SH/WVDXC use the UPDATE/WVDXC  command.
   ? UPDATE   -  For additional info on update command.
   ? UPDATE/APPEND - For info on how to add more to ur file.

You will only be allowed to update your own file.  Anyone is welcome.
```

Note that WVDXC is the Willamette Valley DX Club. Thus, this file, if present, will have the name or abbreviation of a local DX club.

```
KA7EHK de N7AVK    4-Apr 0533Z >
show/qsl
Accessing remote database on WR7D...standby...
KA7EHK de N7AVK    4-Apr 0533Z >
QSL lookup data from the  W6GO/K6HHD QSL Manager List may be obtained
by typing  <SHOW/QSL call>,  where  call is the  callsign of the DX
station you  wish to look  up.   This  database is provided  as a
service to the W6GO/K6HHD QSL Manager List subscribers who use  this
Packet Cluster. If a local QSL database is  present and the  callsign
you have requested is present in the  local database,  the local
database  information will be sent to you before the information from
the W6GO/K6HHD QSL Manager list.
```

~

KA7EHK de N7AVK 4-Apr 0534Z >
show/qslnew
Accessing remote database on WR7D...standby...
KA7EHK de N7AVK 4-Apr 0534Z >
Please place new QSL information into QSLNEW. QSLNEW is a database which you create. It is searched in addition to the W6GO/K6HHD QSL Manager list whenever you ask for a QSL route. To add or correct a QSL route, please TYPE UPDATE/QSL and enter the data as prompted. When you have completed your entry, on a new line type /EXIT<ENTER> or <CTRL-Z><ENTER>.
~
If you wish to add information to what is already in QSLNEW, you may append additional data to an existing entry by typing UPDATE/QSLNEW/APPEND rather than typing UPDATE/QSLNEW.
~
Your SYSOP will forward this information monthly for use in updating the QSL database. 73 de W6GO and K6HHD. 14-Dec-90 W6GO

KA7EHK de N7AVK 4-Apr 0536Z >
show/rules
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK 4-Apr 0538Z >
The SHow/RULES command is used to display sections of FCC Rules and Regulations, Part 97, covering the Amateur Radio Service, and sources for information on FCC Rules and Regulations publications. [12/31/91]
~
   SH/RULES [sect #] to read a Section number Ex: SH/RULES 97.115
   SH/RULES INDEX to list Subparts/Sections
   SH/RULES PUB to list Rule publications
   SH/RULES AUTHOR to provide comments, corrections, updates

KA7EHK de N7AVK 4-Apr 0539Z >
show/alloc
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK 4-Apr 0539Z >
The SHOW/ALLOCATION command is used to obtain the country which is allocated the specified ITU prefix block. The qualifier should be a two character prefix. Valid characters are A-Z and 0-9 (two numbers are not valid). If a single valid character is entered, all allocated blocks for the character will be displayed.
~
   Syntax: SHow/ALlocation xx or x
~
This database was provided by K3ARV of the Melbourne, FL PacketCluster node.
Please send updates and corrections to K3ARV. Distributed by W6GO/K6HHD

KA7EHK de N7AVK 4-Apr 0541Z >
sh/help

```
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK    4-Apr 0541Z >
The SHOW/HELP [file] will provide some system and operating tips
on using the DX PacketCluster network.  Most of these files have
been messages previously uploaded by K6PBT and now contained in a
database.  If you have any comments or suggestions that you think
would be of help to other users in using this network, please send
them to K6PBT to be added to this HELP database.
~
SH/HELP [file]; files are: CONNECTED, CANCEL, TIPS, COMMANDS,
NETWORK,
TNC and NEWUSER.


KA7EHK de N7AVK    4-Apr 0542Z >
sh/dxnodes
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK    4-Apr 0543Z >
This database lists DX Nodes by STATE: SH/DXNODES VA
and by AFFILIATION:                    SH/DXNODES PVDXSN
-
For a list of Affiliations type SH/DXNODES AFF
-
Please send changes/updates to your SYSOP for forwarding to NV6Z
-
This Database is Distributed by W6GO/K6HHD.
```

The preceding data base is the source for Appendix 11.

```
KA7EHK de N7AVK    4-Apr 0546Z >
show/band
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK    4-Apr 0548Z >
TO FIND THE OPERATING PRIVILEGE FOR A CLASS OF LICENSE DO THE
FOLLOWING:
~
1. TYPE SH/BAND DIR THEN ENTER.
2. LOCATE THE BAND AND LICENSE CLASS FOR INFORMATION YOU NEED
3. FIND KEYCODE FOR BAND AND LICENSE CLASS IN ITEM 2
4. TYPE SH/BAND KEYCODE (USE THE KEYCODE LISTED) THEN ENTER
~
HOPE YOU DON'T GET A PINK SLIP NOW!
~
Updates/corrections to KE5IV.      5/90 - Distributed by W6GO/K6HHD


KA7EHK de N7AVK    4-Apr 0550Z >
show/coord
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK    4-Apr 0550Z >
The SHOW/COORDinates command provides the longitude and latitude of
various cities in the United States and DX locations.  You may use
this information to set your location (SET/LOCATION).  Enter SH/COORD
[key] where key is a 2-letter state designator, example SH/COORD CA;
or SH/COORD [pfx], example SH/COORD VK.  A plus (+) indicates
airport/VOR location.
```

~
Your updates and comments are welcomed. Type SH/COORD AUTHOR for info.
Database by: K6PBT Distributed by W6GO/K6HHD via DX-BBS and GODISK.

KA7EHK de N7AVK   4-Apr 0551Z >
sh/iota
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK   4-Apr 0551Z >
SHow/IOTA (Islands on the Air) displays requested IOTA island data and name cross-reference information. For official IOTA status/info, one should consult a current IOTA Directory. SH/IOTA DIR or NOTES for more.
~
* IOTA Ref Nbr   SH/IOTA OC-7, NA-113, etc.   (Continent plus -Ref#)
* Island Names   SH/IOTA EUA, ASB, SAC, etc. (Continent plus A - Z)
~
Your updates and comments are welcomed. Type SHow/IOTA AUTHOR for info.
Prepared by: K6PBT   Distributed by W6GO/K6HHD via DX-BBS and GODISK.

KA7EHK de N7AVK   4-Apr 0553Z >
show/pub
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK   4-Apr 0553Z >
~
The SHow/PUB command is used to display information on Amateur Radio publications from various countries. A simple process is provided for adding publications to this database.
~
SYNTAX: SHow/PUB KEY How to search for pubs from a specific country
        SHow/PUB ADD How to add a publication to this database
~
Your updates and comments are welcomed. Type SH/PUB AUTHOR for information.
Database by N6IXX   Distributed by W6GO/K6HHD   13-August-90
~

KA7EHK de N7AVK   4-Apr 0600Z >
sh/qslrec
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK   4-Apr 0600Z >
The SH/QSLREC command is used to display information on QSL cards received by users of this Cluster. You can easily update QSLREC with information on QSL cards you receive by using the UPDATE (OR) APPEND command (see below).
~
SHow/QSLREC (Call)   Check for QSLs received from a specific station
UPDate/QSLREC   Add NEW received QSL info to the QSLREC database
UPDate/QSLREC/APPend Add MORE received QSL info to an EXISTING QSLREC entry
~
Your updates / comments are welcomed. Type SH/QSLREC AUTHOR for information.
Database by N6IXX   Distributed by W6GO/K6HHD   1-September-90

```
KA7EHK de N7AVK    4-Apr 0601Z >
show/buckmaster
Accessing remote database on WR7D...standby...
KA7EHK de N7AVK    4-Apr 0601Z >
FCC records plus VE and some DX provided by ab9o, updated Oct. 92
```

This data base is discussed in some more detail in the next section.

```
KA7EHK de N7AVK    4-Apr 0519Z >
show/mic
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK    4-Apr 0523Z >
                          MicPlug Database
                   For Different TNC and for other uses
                          Rev: Oct 11, 1990
~
    This  database  is  to  search different types of Radios to see
how and where to connect your mic plug wires  to.   The  database
contains  direct instructions on MFJ, DRSI, PK232, PK88 and other
TNC's, but you can use the data  for  all TNC's as well.  To see
available radios in the database do a [SHOW/MIC  INDEX].  For
information  concerning  the  programmer  [SHOW/MIC AUTHOR]
```

The preceding data base is used as part of the information for Appendix 4.

```
KA7EHK de N7AVK    4-Apr 0525Z >
show/today
Accessing remote database on N0JO...standby...
KA7EHK de N7AVK    4-Apr 0525Z >
SHow/TODAY was inspired by a PC program called TODAY by Patrick
Kincaid. Enlighten your QSO's with a topic from a daily view of
TODAYs databank of history events.  For updates or comments, SH/TODAY
AUTHOR.
~
   SH/TODAY [date] - where [date] is a 4-digit number, 01-12 for
      the month, and 01-31 for the day; ie. SH/TODAY 0521  would
      display events for May 21st.
~
Included is a perpetual calendar covering the years 1970 to 2029.  To
find a day/date for a particular year/month, SH/TODAY CALENDAR.  Try
it!
KA7EHK de N7AVK    4-Apr 0526Z >
```

7.J CALLBOOK SERVER

Of the data base servers described in the previous section, the callbook server will be examined in a little more detail. This is primarily for comparison with the other callbook servers described in section 5.D.

Note that this particular data base includes Canadian and some DX. The following example shows the response to a request for the author's call and for for VE7DIE.

```
KA7EHK de N7AVK   30-Mar 0735Z >
show/buckmaster KA7EHK
Accessing remote database on WR7D...standby...
KA7EHK de N7AVK   30-Mar 0736Z >
HamCall (c) 1992, Buckmaster.  Licensed for non-pecuniary use only.
James D. Wagner, KA7EHK    License class: T    Born: '41
31677 N Lake Creek Dr
Tangent, OR 97389
KA7EHK de N7AVK   30-Mar 0737Z >
show/buckmaster ve7die
Accessing remote database on WR7D...standby...
KA7EHK de N7AVK   30-Mar 0737Z >
HamCall (c) 1992, Buckmaster.  Licensed for non-pecuniary use only.
Lawrence Micheal Joe, VE7DIE
4174 Cross Haven Close
Victoria Bc,    V8X 4H3     Canada
KA7EHK de N7AVK   30-Mar 0738Z >
```

7.K OTHER DX SPOTTING NODES

Recent versions of the MSYS BBS software includes a DX Server. Since MSYS is full-service store-and-forward BBS software, the mail service follows that of a normal BBS rather than the slightly different style described in this chapter. It is not likely that MSYS DX spotting would network easily with the Pavillion node software previously described.

In its simplest form, any of the converse servers can be used for DX spotting. While such DX spotting would be without all of the bells and whistles relating to callsign filtering and the like, there is no reason why it could not work. The distributed converse server found in JNOS and other NOS versions could also implement a distributed DX spotting system. While the author has no first-hand knowledge of such systems, there is no (obvious) practical reason why they should not work in this application.

7.L SUMMARY

This chapter has discussed one specific implementation of a DX Spotting Node. There are several commands such as *upload* and

download which have not been discussed. This is because both space is limited and it was not felt that these would be commonly used commands.

If you encounter other styles of DX spotting nodes, just be aware that they are likely to be fairly similar to what has already been described.