The Tribander

The monthly Newsletter of the Northern Colorado Amateur Radio Club

Club Meetings are held on the 3rd Saturday of each month
At the Golden Corral, 901 E. Harmony Rd, Fort Collins, CO.

All are welcome and encouraged to attend.

Bring yourself and your appetite at 8:00 am.
The Meeting begins at 9:00 am.

NCARC Club Information

Club Officers

President	**Steve Henry**	**N7GN**	**(970)226-2817**	n7gn@arrl.net
Vice President	**Bill Beach**	**K0UT**	**(970)224-1958**	k0ut@earthlink.net
Secretary	**Dave Langenberg**	**KC9FOO**	**(773)612-8435**	dave@thelangenbergs.com
Treasurer **Membership Chair**	**Willis Whatley**	**WA5VRL**	**(970)407-6599**	whatley@frii.com
Interference **Coordinator**	**Mike Bates**	**N7DQ**	**(970)219-3225**	n7dq@comcast.net
Newsletter	**Willis Whatley**	**WA5VRL**	**(970)407-6599**	whatley@frii.com
Technical Chair	**Dan Magro**	**W7RF**	**(970)295-4200**	w7rf@radiodan.com
Hamfest Chair	**Matt Kassawara**	**KG0W**	**(307)220-3110**	battery@writeme.com

NCARC Repeaters

W0UPS: 145.115 MHz – (144.515 MHz Input) 100 Hz CTCSS Subtone (1* on, 0* off) Autopatch
(40-32.926N, 105-11.898W, 7229 ft) Horsetooth Mountain, west of Fort Collins, CO

W0UPS: 447.275 MHz – (442.275 MHz input) 100 Hz CTCSS Subtone Autopatch
(40-32.926N, 105-11.898W, 7229 ft) Horsetooth Mountain, west of Fort Collins, CO

W0UPS: 224.520 MHz – (222.920 MHz input) 100 Hz CTCSS Subtone IRLP 3902
(40-32.926N, 105-11.898W, 7229 ft) Horsetooth Mountain, west of Fort Collins, CO

W0UPS: 146.625 MHz – (146.025 MHz Input) 100 Hz CTCSS Subtone
(40-50.266N, 105-3.017W, 5600 ft) SW of the Rawhide Power Plant, 17.5 miles north of Fort Collins, CO

W0UPS: 146.850 MHz – (146.250 MHz Input) 100 Hz CTCSS Subtone (1* on, 0* off)
(40-25.341N, 104-44.182 W) Greeley, CO

W0UPS-5: 144.390 MHz – APRS Digital Repeater
(40-32.926N, 105-11.898W, about 7229 ft) Horsetooth Mountain, west of Fort Collins, CO

Nets

ARES District 10 Information Net	**Thursday**	**7:00 pm**	**145.115 MHz**
ARES Statewide Net	**Sunday**	**8:30 pm**	**145.310 MHz**
Central Colorado Traffic Net	**Daily**	**7:30 pm**	**145.310 MHz**
Tech Net	**Wednesday**	**7:00 pm**	**145.115 MHz**

Web Page

http://www.ncarc.net

Northern Colorado Amateur Radio Club	February 2008

New and renewing members for the current month: WA7NZE – John   WA0EYJ – Bob   KC9FOO – Dave
N0PT – David   KC0ZCC – Tim   K0DBC – David   N0HU – Max

The NCARC thanks you for your support.

TECH NET

This is a reminder that the 145.115 TECH NET in held on **Wednesday evening at 07:00 PM**.
It is hosted by **N0WIQ, Kerry**. All amateur radio operators (with 2M privileges) are welcome to check in.
It is an open forum net with Questions, Answers and Topics of interest.
If the 145.115 repeater is not available, the net will be held on the 447.275 repeater

220 MHz Net

There is an informal net that is being held every **Tuesday evening at 7:00 PM** on the 224.520 Repeater.
There is a 2 meter link to this net on 145.670 with a 67 Hz CTCSS access.
The 220 machine is located at the Horsetooth Mountain site along with the 145.115 and 447.275 NCARC Repeaters.
This repeater uses the standard offset for the 220 MHz band (input on 222.920) and a 100 Hz CTCSS.
Hosted by **KG6TDB**, the topics will change each week and all licensed operators are invited to check in.
For those who are interested, it also features IRLP capability (it is node 3902).

Longmont Amateur Radio Club

LARCFEST

04/05/2008

Boulder County Fairgrounds in Longmont At 8 AM
Admission: $5.00   Table Cost: $15.00

VE Testing at 10 AM – Cost $14.00

E-mail to admin@w0eno.org
Longmont Amateur Radio Club, P.O. Box 86, Longmont, CO 80502-0086

Other Upcoming Area Swapmeets

May 24-25 Wyoming State Convention (Casper, WY)
August 2 Jackson Hole Area ARC Swapfest (Jackson, WY)
August 17 Denver Radio Club Swapfest (Golden, CO)
September 28 BARCFEST (Longmont, CO)

Amateur Radio Technician Class

Beginning: March 20, 2008
Location: **TBD** (possibly Loveland EOC)
Contact: Steve Henry N7GN

NCARC Volunteers Needed
Volunteers are needed on
April 26
for the
March of Dimes event
Contact: Steve Henry N7GN

W0LZR – SK

From the FORT COLLINS COLORADOAN, 20 FEB 2008:

William "Bill" Dirks, 89, passed away peacefully on Feb. 17, 2008. Born on Oct. 8, 1918, in Aberdeen, Idaho, he left his hometown as a young man to work in a radio station in Hilo, Hawaii just before World War II. After the war, he was employed by the FAA, work that took him on an adventure to the South Pacific, where he remained until a move to San Francisco in 1954. He and his family moved to Fort Collins in 1967, where he worked for the National Bureau of Standards at station WWV. After his retirement in 1976, he was able to spend time pursuing his hobbies as a ham radio operator (W0LZR) and building steam engines.

Edge of Space Science Flight Schedule 2008
Check http://www.eoss.org for details regarding times and frequencies of each flight.
The website is updated regularly.

Flight ID	Date	WX Delay	Comments	Balloon	Launch Site
EOSS-127 & EOSS-128	12-Apr-2008	+1	CO **SGC** DemoSat V	2 x 3000	**Windsor**
EOSS-129	26-Apr-2008	+1	Big Blue 6	1 x 3000	**Windsor**
EOSS-130	24-May-2008	+1	**NOAA** AirCore	1 x 3000	**Windsor**
EOSS-131 & EOSS-132	14-Jun-2008	+1	**USAFRL** SHOT II	2 x 3000	Deer Trail
EOSS-133	12-Jul-2008	n	**SGC** Workshop VI	1 x 3000	Deer Trail
EOSS-134 & EOSS-135	26-Jul-2008	+1	2nd **SGC** Demosats VI	2 x 3000	Deer Trail
EOSS-136	02-Aug-2008	+1	**GPSL**	1 x 1200	Kansas City
EOSS-137 & EOSS-138	??-Sep-2008	n	**NOAA** DropSondes	2 x 1200	**Windsor**
EOSS-139	??-Oct-2008	n	**JOTA**	1 x 1200	Pleasant Valley
EOSS-140	15-Nov-2008	+1	CU Gateway	1 x 3000	**Windsor**
EOSS-141	??-Nov-2008	n	Pawnee Boy Scouts Camporee		Crow Valley

SGC = Space Grant Consortium **GPSL** = Great Plains Super Launch **USAFRL** = United States Air Force Research Lab
NOAA = National Oceanic and Atmospheric Administration **JOTA** = Jamboree on the Air (Boy Scouts of America)

Weekly Contest Schedules available

For those operators who enjoy contesting, the website shown below maintains an 8 day calendar of upcoming Amateur Radio Contests

Contest website at http://www.hornucopia.com/contestcal/weeklycont.php .

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NCARC Meeting Minutes - Feb 16, 2008
Location: Golden Corral
Called to order by Steve Henry N7GN at 8:59 AM

There were 20 members and 5 guests present.

REPORTS

Secretary -- Approved as read

Membership - 4 new members -- we're experiencing a slow decline in the membership over the past several years.

Treasurer - Checking balance $12774.00 Savings $2155.17

Interference -- no new issues

Tech committee
* Rawhide move still being explored by W0AVV and K0JEF
* 2m/440 developments
* Echolink has been setup but is not officially operational
* thinking of keeping the 7k Controller as a backup
* planning on holding a meeting of the tech committee

Motion by W0FT -- We officially support echo-link as it currently is being maintained now on the 145.115 machine.
Seconded. Motion carried.

Control Op -- N7DQ is the new control op head.

Interference -- W7LRY is the new committee head.

Events Center Repeater – The repeater has been checked out and a lot more "issues" have been discovered.
Recommendation by Virgil (W0INK) is to scrap the repeater. Plan is to use the spare Yaesu 440 repeater temporarily
and the tech committee will make a proposal on a permanent solution.

OLD BUSINESS

Training classes: To start March 20 @ 7pm in Loveland.

Club Leadership Change to board of directors: We're going to give it a try, slowly easing into it.

Motion by W7RF: club goes to business meetings separate from general meeting.
Business meetings will be held once a month by the Board. Seconded by Willis WA5VRL.

Motion by W0FT: The issue above is tabled for discussion by the officers. Seconded and carried; previous motion is tabled.

NEW BUSINESS

March of Dimes -- no volunteers.

Business Cards -- W7RF mocked up some NCARC business cards and passed them out at the meeting.
The idea is that members would carry them and pass them out to prospective members.
Please email dan@radiodan.com with comments about the design.

Jacket Patches -- Willie (W5WIW) has designed a patch that we could place on a jacket/vest. Patch is $17.
The idea is that during club events you could identify NCARC members by the patch and associated name tags.
Informal poll showed interest in proceeding with this.

Kids Day -- June -- Willie (W5WIW) would like to setup a club station in Eaton for kids day.
The station would be in a very public location. Willie would use the NCARC club callsign.

Motion by W7RF that the club sponsor Willie in Kids day at Eaton. Seconded. Motion carried.
Meeting Adjourned at 9:53 AM

Is it really a 6146 Vacuum Tube?

6146 Beam Power Pentode: A small, sturdy, glass-octal heater cathode type used as af power amplifier and modulator and as rf power amplifer and oscillator. May be used with full input up to 60 MHz and with reduced input up to 175 MHz.

The 6146 family of vacuum tubes was introduced in 1952 by RCA, before other manufacturers began production of this highly reliable transmitting tube. There are three variations of the 6146 tube: The 6146, 6146A, and 6146B. The only real difference between the original 6146 and the 6146A is the makeup of the heater filament. The 6146A has a "dark heater". This heater is claimed to be more resilient to vibration and that much is correct. The heater is also supposed to work better over a larger voltage range but that depends on the application in which they are used. Other than that, the 6146 and the 6146A are basically the same tube.

The military "ruggedized" version of the original 6146 was designated the 6146W. In the early 1960s, RCA also produced the 8298 tube, a heavy duty 6146A, for use in commercial mobile equipment. Later, when the 6146B was introduced, the commercial equivalent of it was manufactured as an 8298A. Many 6146B tubes were "cross branded" with the 8298A number in addition to the 6146B number.

All of the companies who were manufacturing 6146 series tubes for the military changed from the original 6146 to the 6146A and then to the 6146B as the military decreed. However, all of the tubes manufactured under the military contracts were known as "6146W" and nothing was done towards marking the tubes as being the equivalents of the 6146, 6146A, or 6146B. The only way to tell is by the "date code" which is printed on each tube (if it is visible). Even that is a problem because different manufacturers changed 6146 tube types at different times. The only thing that can really be determined is when the date code is before 1964, then the tube is a 6146 or 6146A. That is because no 6146B tubes were produced by any manufacturers prior to the middle of that year.

The 6146B is really a different tube from the first two. It was mid-1964 when RCA introduced the 6146B stating that it could handle about one third more plate power input than the 6146 or 6146A. The 6146 and 6146A had a maximum rated power input of 90 watts for CW and SSB operation while the 6146B had a rating of 120 watts for the same emissions.

RCA stated that the 6146B was directly interchangeable with the earlier members of the 6146 family. Collins, Heath, and other companies even issued various documents saying that the use of the 6146B in their equipment was "fine". This was soon found to be incorrect in most cases and the equipment manufacturers had to retract the statement that it was "OK" to use the 6146B. Equipment designes were changed to enable the use of the 6146B and such equipment could then use that tube as well as the earlier 6146 or 6146A tubes (as long as circuits using multiple tubes did not have a mix of the different types). It is "OK" to mix 6146 and 6146A tubes since the primary difference is in the design of the heaters. But never mix 6146 or 6146A tubes with a 6146B.

There is another "6146 family" tube that is better for operation at least through 10 meters. That tube is labeled as a 6293. The 6293 was designed for "pulse" service and is rated at 1KW pulse power input. The primary difference between the 6291 and the normal 6146 is that the plate is much heavier in its construction. The 6293 life expectancy in normal amateur service is at least 5 and often more than 10 times the life of the 6146, 6146A or 6146B tubes.

The 6146 tube used a 6.3-volt heater but there is also a 12-volt heater version of the 6146. It is the 6883. Likewise, the equivalent of the 6146A is the 6883A and the 6146B is the 6883B. There are also 12 volt filament versions of this tube that were manufactured for FM commercial service. The "commercial" 6883A was the 8032, the 6883B was the 8032A and the 6883B was labeled as an 8552. Most of these are also "cross branded" with all of the tube numbers that are equivalent.
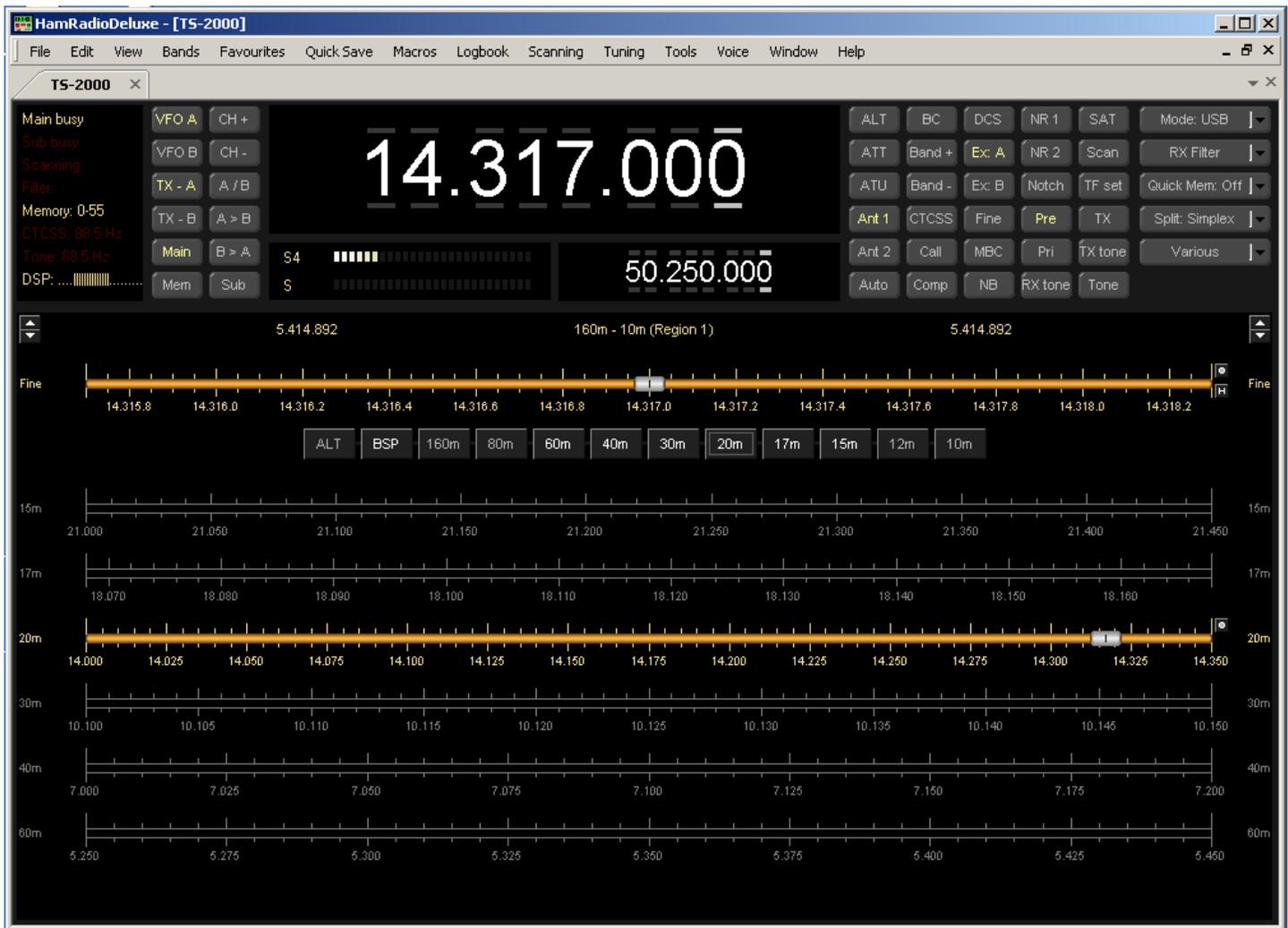
In a number of transmitters and transceivers the heaters of the pair of 6146 tubes are connected in series and run from a 12.6-volt filament supply. In these rigs, it is very easy to change the heaters from series to parallel and substitute the 6883, 8032 or 8552 tubes. The 12-volt equivalent tubes are often available for much less than the 6-volt tubes because of the vast number that were used in the commercial FM market. Just remember that you must be careful when dealing with the various tubes of the 6146 family, otherwise you might be in for some very interesting problems.

Ham Radio Deluxe

For those Amateurs who have not already used Ham Radio Deluxe program, below is a brief synopsis of this very useful application.

Ham Radio Deluxe (HRD) is a free suite of Windows programs providing CAT control for many commonly used transceivers and receivers. HRD also includes DM780, an excellent software application for sending and receiving numerous digital modes using the computer sound card. Both are fully configurable by the user. These applications have been developed by Simon Brown, HB9DRV, Laax, Switzerland. He has dedicated the program to Peter Halpin (PH1PH) who worked with him on the program from its conception in 2003 until Peter became a silent key in 2005. Simon is constantly adding more features to the HRD and DM780 applications.

The suggested minimum requirements are 1 GHz CPU and 512 MB of RAM. HRD and DM780 are designed for Windows 2000 or higher (XP, Vista); also Internet Explorer 6.0 or higher is required. As stated on the website: "The software will *not* be ported to any platforms such as Macintosh or Linux. *Don't even ask.*" This is understandable since the work required just to develop, update and maintain the application is significant and he is providing this extremely well done software for free. HRD is known to run under Wine on Linux and with PC emulators on Macintosh operating systems. The Ham Radio Deluxe home website can be found at http://hrd.ham-radio.ch/
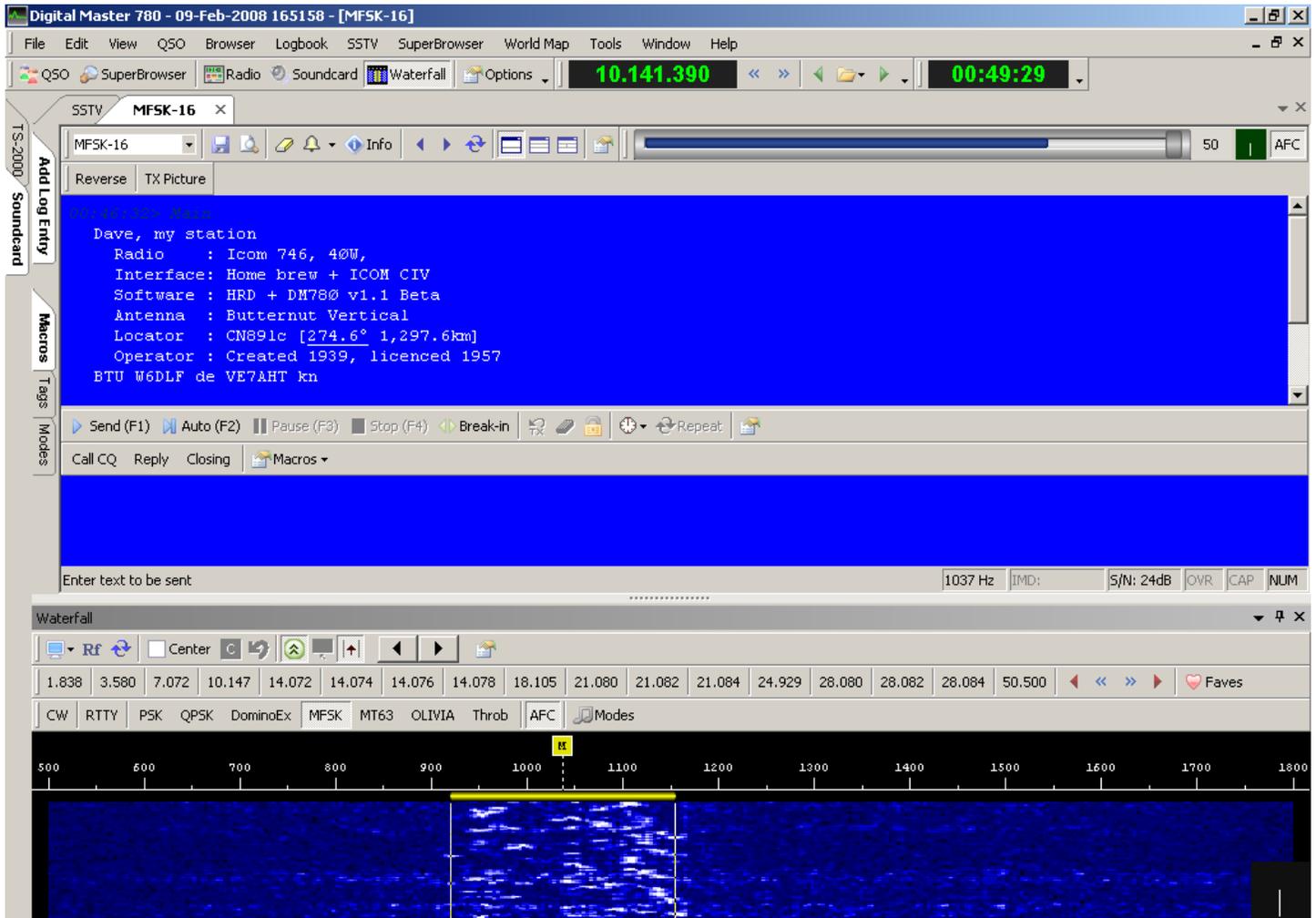

HRD Radio Control screen

The features found in this application suite are far too numerous to even discuss in this synopsis but the download comes with complete User Manuals for both HRD and DM780 in PDF format. The current version that you should download is Version 3.5 Build 1764 Beta.

Started in September 2006, Digital Master 780 (DM780) is a multi-mode program supporting the most common digital modes including PSK, QPSK, CW, MCW, DominoEx, MFSK, MT63, Olivia, RTTY, Throb and even SSTV. Simon is looking into adding Digital SSTV and WJST modes in the near future. DM780 can be used as a standalone application without running HRD. It will also work very well for just monitoring the digital activity with a reasonably decent shortwave receiver. The only connection required for that is feeding the audio from the receiver to the "Line In" input on the computer sound card.

DM780 replaced the original "PSK31 Deluxe" which was included with the earlier versions of HRD and has been retained in the suite as a legacy program. DM780 (and PSK31) includes a "SuperBrowser" for viewing multiple PSK QSOs at the same time and a built-in Logbook.

The DM780 Screen running in MFSK mode

The HRD / DM780 suite also includes an application called "Mapper". Mapper is a standalone mapping program that also integrates with the other HRD applications. You can plot stations and country prefixes as well as print the maps over multiple sheets of paper. It was written because Simon couldn't find a freeware program that did what he wanted, and he objects to paying for Ham Radio software (the correct stance toward any software for use with Amateur Radio).

The program suite has become one of the most popular in all of ham radio and there is a Yahoo Group available (ham-radio-deluxe) that can quickly answer any questions regarding the setup and operation of the program. Simon monitors and replies to issues on the group regularly since the modes that have been added recently, such as SSTV, are still in the Beta testing phase.

The program also includes the ability to check for updates since there are continuous improvements and features being added to the suite. It is user-friendly but you will need to plan on spending more than a short time with it since it is somewhat addictive like ham radio in general.

73…

Northern Colorado Amateur Radio Club Information/Application Form

____ I would like more information on Amateur Radio.

____ I want to join the NCARC. My payment is enclosed.

____ I want to renew my membership. My payment is enclosed.

Annual Dues:
Family Membership: $25.00
Full Time Students: $5.00

BEFORE FILLING THIS OUT, READ THIS MESSAGE -------------------------------------
↓

Name: _____

Callsign: _____

Street: _____

City: _____

State: _____

Zip: _____

Telephone: _____

License Class: _____

E-mail Address: _____

Receive Newsletter by E-mail?   YES   NO

Student?   YES   NO

ARRL Member?   YES   NO

You only need to fill in your name or callsign and anything that has changed. Any items left blank will be assumed to be correct in the NCARC database.

If you would like to receive the newsletter by E-mail, please indicate so here.
←

Please mail this form to: NCARC
                              P.O. Box 272956
                              Fort Collins, CO 80527-2956