From the Gavel

Greetings everyone! Hope you're starting to enjoy the warmer weather. It seemed like winter this year just would not end. I suppose that means we had a more normal winter. In any event, the birds are out, the days are getting longer and the air is starting to smell like spring. Bring it on!

March has come and gone and you know what that means? Another Ham-Ex is in the history books. The weather this year was perfect – for a polar bear! The morning started off with sub-zero temps and a brisk wind but the rising sun helped warm things up. The parking volunteers had a challenge this year as almost a quarter of our parking capacity was blocked by a snow mound leftover from a late-season snow storm three days before. Anyway, we managed to pack 'em in and the comments that I've heard from participants, vendors, and exhibitors have all been positive. I think that's a testament to the skills and experience of Rick, VE3IMG, and his counterpart at PARC, Rod, VE3WWP, in putting things together and wrangling so many MARC and PARC volunteers to make things run smoothly. A wrap up meeting was recently held and I understand the financial outcome this year was excellent. The funds we generate from Ham-Ex help run the club and allow us to undertake many unique projects going forward, such as the planned remote HF station, among others. A big THANK YOU to everyone involved for another successful hamfest!

Spring also means the return of fundraising walks. Bob, VE3XBB, will be looking for volunteers for upcoming events. On April 17 the MS Society Super Cities walk will be held at its usual locations of Streetsville and on the Lakeshore. Bob needs approximately six people for Streetsville and eight for Lakeshore. Our primary role is to provide end-to-end and en-route communications support for the walkers and organizers. MARC has been involved in the MS Society Super Cities walks for many years and our involvement is always

appreciated by the organizers. Please consider helping out on April 17.

Don't forget the MARC 25th Anniversary Banquet being held on April 27 starting at 6:30pm at Mandarin Buffet on Dundas Street West in Mississauga. You'll have one last opportunity to buy a ticket at the General meeting on Thursday, April 14. Tickets are $10 and each MARC member ticket holder will receive a $20 Mandarin gift card as a small token of appreciation. There will also be special prizes handed out at the dinner. So please, see Ed, VA3TPV, for your ticket to our anniversary shindig!

While still several weeks away, the Streetsville Founders Bread and Honey Festival will be happening on the weekend of June 4-5. Dan, VE3NI, will be setting up a special event station at his usual spot on the "island" in the Credit River. And, of course, we can't forget the BIG year-end event on June 25-26: Field Day. We will be operating from the Meadowvale Conservation Area again this year. Your Field Day manager is David, VE3MDX, who stepped up last fall to take over from Lorne, VE3CXT. Tom, VE3TWG, continues as co-manager and has worked his magic again to secure us the location and a few perks not usually afforded the general public: cordoned off parking, overnight camping, and being able to have our vehicles on the grassy areas. The next Field Day meeting will be on May 4 at the club station. Stay tuned for more details.

Finally, I'd like to step back for just a minute and thank my fellow Executive members Rick, VE3IMG; Ki, VA3PEN; and Asim, VE3XAP; for their service to the Mississauga Amateur Radio Club these past two years. As directed by our constitution, these three individuals and yours truly are wrapping up our terms of office. I want to also thank Jim, VE3JIW, for keeping track of our books this year and for agreeing to continue on as Treasurer for a second year. It's through the hard work of people like this that help make MARC one of the biggest and best clubs around!

73, Jeff, VA3WXM

Sunday Brunch
Sunday brunches are held on the first Sunday of each month. Time is 9:30AM at Symposium Restaurant, 6677 Meadowvale Town Centre Circle, Mississauga (at the corner of Winston Churchill Blvd and Battleford Rd). All are welcome to come out and have an opportunity to chat in an informal setting.

Club Nets
2 Metre Tuesday Night Phone Net Join in on the chatter starting at 8:30PM every Tuesday on the club repeater. Hosted by various net controllers. 145.430MHz Tone 103.5 Minus (-) offset. Contact our VHF Net Manager, **Lorne (VE3CXT)**, if interested in becoming a net controller.

75 Metre Sunday Night Net Starts at 8:30PM every Sunday. Hosted by various net controllers. 3.775 MHz +/- QRM. Contact our HF Net Manager, **Michael (VE3TKI)**, if interested in becoming a net controller.

Commentary

It is April. The winter cold is far behind us and the hours of daylight are increasing. Now is the time to get outdoors in the cool spring weather before it gets too hot. Now is the ideal time for that antenna work which you have consistently avoided during last fall and winter.

Jeff Stewart, VA3WXM, our president, in From the Gavel, has given a good summary of Ham-EX. Please read the Gavel for how you can help MARC by helping out with some of the various fundraising walks.

There is a reminder this month that the MARC 25th Anniversary Banquet is being held on Wednesday, April 27th. See this article on page 4 for details.

This month, there have been additional recipients of the MARC DX Award Certificate and two club members returned to receive an additional endorsement for there DX Award. See the DX Award Update article for details.

Daniel Goodier, VE3NI, has written the Mississauga ARES Update for the previous month, March.

The ARES Training Course is being held in April. If you are interested in ARES Training and have as yet not signed up, see the ARES Training article for more details.

If you are an avid 6M DXer you may be interested in the article Maidenhead Grid Square Locator. The method described uses Google Maps to find your grid square.

The article Understanding Fldigi for Ecomm Use will be of interest to both ARES and other Fldigi users. See this article for more details.

The Communicator is one of MARC's methods for communicating information to club members and is your newsletter. Let me know what you would like the newsletter to be and what type of articles you would like it to include. I solicit your input on topics for articles i.e. antennas, kits you have built, great operating experiences, operating tips, book reviews, etc. for consideration by the technical committee.

Without your constant support in the form of ideas, suggestions and article submissions, we would not have such a fine newsletter month after month

I can be reached at any club meeting or via email at va3tpv@rogers.com

73, Ed Spingola (VA3TPV)

Executive Directors

President	Jeffrey Stewart, VA3WXM
1st Vice President:	Rick Brown, VE3IMG
2nd Vice President:	Ki-Hup Boo, VA3PEN
Treasurer:	Jim Brampton, VE3JIW
Secretary:	Asim Zaidi, VE3XAP
Past President:	Rick Brown, VE3IMG

Club Managers

Membership Manager	Brad Thomas, VA3ZRT
Education Manager	Earle Laycock, VE3XEL
House / Visitor Host Manager	Murray Yewer, VE3JMY
Newsletter Editor	Edward Spingola, VA3TPV
Net Managers HF Net	Michael Brickell, VE3TKI
VHF Net	Lorne Jackson, VE3CXT
Repeater Manager	David Shilling, VE3XDS
Assistant	Michael Brickell, VE3TKI
Assistant	John Lorenc (Sr), VA3XJL
Trustee	John Duffy, VE3DRZ
Club Station Manager	Rick Brown, VE3IMG
Assistant	Stefan Bejusca, VA3OBR
Assistant	Asim Zaidi, VE3XAP
Field Day Joint Chairman	David Kingsland, VE3MDX
Joint Chairman	Thomas Godden, VE3TWG
FSV Manager	David Malar, VA3MLR
Assistant	John Duffy, VE3DRZ
Program Manager	Thomas Bernard. VA3TMB
Assistant	Lorne Jackson, VE3CXT
Webmaster Manager	Rick Brown, VE3IMG
Assistant	T.B.D.
Legal Consultant	Lorne Jackson, VE3CXT
Public Info/ Media Relations	Tony Champion, VA3QC
Education Basic Course Prime	Earle Laycock, VE3XEL
Advanced Course Prime	Thomas Bernard, VA3TMB

Audit Committee

Auditors Coordinator	Basil Burgess, VE3JEB

Public Service

ARES Emergency Coordinator	Dan Goodier, VE3NI
Assistant	Thomas Bernard, VA3TMB
Assistant	Michael Brickell, VE3TKI
Assistant	David Malar, VA3MLR
Assistant	Bob Boyer, VE3XBB
Assistant	John Duffy, VE3DRZ
CANWARN Manager	Peter Mosher, VA3PKM
Special Events / Walks Manager	Bob Boyer, VE3XBB

Special Interest Groups

Contests Manager:	Asim Zaidi, VE3XAP
Assistant	Rick Brown, VE3IMG
QSL Manager	Michael Brickell. VE3TKI
Project Group:	Michael Brickell, VE3TKI

CLUB CALENDAR FOR 2010 - 2011

April, 2011
03 Sun Sunday Brunch – Symposium Restaurant
03 Sun HF - 75/80 Meter Net
05 Tue VHF/UHF - 2 Meter Net
07 Thu Exec Meeting
10 Sun HF - 75/80 Meter Net
12 Tue VHF/UHF - 2 Meter Net
14 Thu Club Meeting - Speaker's night
16 Sat Ontario QSO Party
17 Sun HF - 75/80 Meter Net
19 Tue VHF/UHF - 2 Meter Net
21 Thu ARES Meeting
24 Sun HF - 75/80 Meter Net
26 Tue VHF/UHF - 2 Meter Net
27 Wed MARC 25th Anniversary Banquet
28 Thu Club Meeting - Speaker's night

May, 2011
01 Sun Sunday Brunch – Symposium Restaurant
01 Sun HF - 75/80 Meter Net
03 Tue VHF/UHF - 2 Meter Net
04 Wed Field Day Meeting – Club Station
05 Thu Exec Meeting
08 Sun HF - 75/80 Meter Net
10 Tue VHF/UHF - 2 Meter Net
12 Thu Club Meeting - Speaker's night
15 Sun HF - 75/80 Meter Net
17 Tue VHF/UHF - 2 Meter Net
19 Thu ARES Meeting
22 Sun HF - 75/80 Meter Net
24 Tue VHF/UHF - 2 Meter Net
26 Thu Club Meeting - Speaker's night
27 Fri CQ WPX Contest – CW
29 Sun HF - 75/80 Meter Net

June 2011
02 Thu Exec Meeting
05 Sun Sunday Brunch – Symposium Restaurant
05 Sun HF - 75/80 Meter Net
07 Tue VHF/UHF - 2 Meter Net
09 Thu Exec Meeting
12 Sun HF - 75/80 Meter Net
14 Tue VHF/UHF - 2 Meter Net
16 Thu ARES Meeting
19 Sun HF - 75/80 Meter Net
21 Tue VHF/UHF - 2 Meter Net
23 Thu Club Meeting - Speaker's night
25 Sat ARRL Field Day Event
26 Sun HF - 75/80 Meter Net
28 Tue VHF/UHF - 2 Meter Net

NOTES
1. Meetings start 7:30PM at St. Thomas A Becket Church Hall, 3535 South Common Court unless otherwise noted.
2. Brunch is at 9:30AM unless otherwise noted.
3. Classes are from 7:00PM - 9:00PM at Meals On Wheels at 2445 Dunwin Drive

Visit our website: http://www.marc.on.ca for any updates of the calendar.

MARC 25th Anniversary Banquet

Sponsored by the Mississauga Amateur Radio Club

1985 - 2010

Mandarin Restaurant

3105 Dundas Street West

Mississauga, ON.

at 6:30 pm Wednesday, April 27th, 2011.

Join the fun. Door prizes. A night out!

Contact MARC Exec for any questions.

(MARC Members & Guests)

In commemoration of MARC's 25th anniversary, 1985 – 2010, the Mississauga Amateur Radio Club (MARC) is sponsoring a night out, for club members and guests. The event location is the Mandarin Restaurant, 3105 Dundas Street West, Mississuaga, ON.

The cost of the Mandarin evening buffet is $18.99 + taxes. Seniors (age 65+) receive a 20% discount.

This MARC 25th Anniversary Banquet is partially subsidized by MARC. MARC members are asked to pay an initial $10 towards the cost of the meal, for which they will receive a "Numbered Ticket." In return, MARC members will receive a $20 Mandarin Gift Certificate on the night of the banquet (one certificate per club membership, single or family) which is applicable against that night's dinner.

The "Numbered Ticket" will be used for a for "Door Prizes" to be held at the banquet.

Since the cost of the meal plus applicable taxes is likely to exceed the $20 gift certificate, MARC members are asked to pay any additional charges.

Remember to retain your "Numbered Ticket" and bring it to the banquet.

See you at the banquet.

The MARC DX Award Update

By Ed Spingola, VA3TPV

In commemoration of the 25th Anniversary of the founding of the Mississauga Amateur Radio Club (MARC), MARC has reintroduced the DX Award for the current club year running from September 1st, 2010, to June 30th, 2011. The DX Award rules were published in the October, 2010 issue of The Communicator and are also available on the MARC web site under Club Events/MARC Awards at http://www.marc.on.ca/marc/events/events_awards.asp .

This month we have a few more club members receiving their MARC DX Award certificates. Here is a photo of John Coones, VE3JOC, receiving a 50 QSO endorsement for his MARC DX Award at the March 10th, 2011 club meeting, from Ed Spingola, VA3TPV. John had previously achieved a level of 25 DX entities. John submitted a further log and received an endorsement seal for 50 DX entities. Good work to John in achieving this DX entity level.

The second photo is of Steve, VE3ECJ, and Daniel, VE3NI, with their MARC DX Award certificates. Steve had submitted a log with 56 DX entities and Daniel submitted a log with 53 DX Entities. Good work to Steve and Daniel in achieving this 50 DX entity level.

It is good to see club members participating in the DX Award program. It is through operating that we experience the opportunities in our great hobby.

Photo 1: John, VE3JOC, receiving a 50 QSO endorsement for his MARC DX Award from Ed, VA3TPV.

We are fast approaching the half way point in the club year, however, there is still lots of time left in the award period to submit your logs. Logs may be submitted to myself, Ed Spingola, VA3TPV, on paper, or via email (va3tpv@rogers.com)

Email submissions may be as an attached standard ASCII text format, or MS Word, or MS Excel file using standard MIME encoding. There is no need to submit QSL cards. If you need

Photo 2: Steve, VA3ECJ, and Daniel, VE3NI with their MARC DX Award certificates.

help converting your log from an ADIF file into an Excel spreadsheet for further editing, please let me know and I may be of some assistance.

73,

Ed, VA3TPV

ARES Corner

By Daniel Goodier, VE3NI

The ARES meeting on March 17, 2011, was held in the Ryerson Meeting Room at OZONE.

There were 8 members in attendance.

Dunant (Radio) Room:

VE3TKI and VE3NI talked to Rob Delahunte, the Red Cross Ozone Facilities Manager, and the key is back in the usual place; we have access to the room and the radio cabinet. At present there is no table in the room and the radio equipment is back in same location.

The VHF/UHF antennas were swept with MFJ-259B, one fine, other has a problem on UHF. It was decided that the FT8800 should be connected to bad antenna (packet radio), to be used on VHF only until problem investigated. The FT8100 was connected to other antenna that was working fine. The SWR on the 40m/80m antenna is high on 80m and will be checked when on the roof next.

OZONE Rotator:

Draft note to Red Cross regarding rotor repair and reconfiguration using a tower section reviewed and commented upon. Final note sent, Susan FitzGerald has agreed to proceed with tower section given no cost item.

Meals on Wheels:

Draft note to Red Cross regarding cable replacement reviewed and commented on. VE3NI and VE3TKI to measure the cable length on March 20 (done; 75 ft required, Susan FitzGerald has authorized expenditure). We will set a date to replace the cable before the May SET

VE3MIS-4 Packet BBS Update:

The executive has approved presentation of the proposed cost of the node upgrade (approx. $620) to the club. VE3NI made a presentation on March 24. This included a working demonstration at the meeting,. The use of AGW PE will be discussed. NOTE: testing shows can't connect to VE3MIS-4 with antenna inside the church building.

May 2011 SET:

We will do a tabletop SET in May.

Upcoming Walks:

Should we try to do something different? We are satisfying the served agencies as it is. Possibly APRS is a value added item for the future. It may be useful to have a runner at the main control station as well as the net controller. Dates are April 17 for the MS walk; June for Juvenile Diabetes. Mississauga ARES is in the annual publication by the City.

Liability Insurance Coverage:

VE3NI received a query from ARES Ontario re liability insurance coverage. Volunteers are not covered until they sign in. Currently there is no coverage through RAC or through the club while we are involved in ARES activities. Daniel will keep us apprised if he hears anything.

Upcoming Training:

Dates are April 16 and 30, 09:00 to 16:00. Limit of 12 participants. Location is Meals on Wheels. Cost is $25.

The current ARES certificates are valid for 3 years.

Packet SET:

We would like to see how well the VE3MIS-4 works under stress, i.e., several stations trying to connect at the same time.

Proposed date: Tuesday March 29, 19:00

Future SET

Susan Fitzgerald (Red Cross) is thinking about doing a Region wide SET. This would involve getting Brampton Red Cross into the fire stations there, bringing out served agency people, getting shelter people involved etc. and other areas in the Region involved. This would be done in September or October 2011. ARES would be part of this SET.

The meeting ran a little late and concluded at 9:15 PM.

Mississauga ARES Training Course

By Daniel Goodier, VE3NI

Mississauga ARES presents ARES Operations Certification Training for members. Through interactive sessions we will discuss Emergency Operations, ARES roles and services, Preparation, Activation and mobilization, Net operation and etiquette, Emergency equipment and Digital communication.

This training is recommended for members who wish to obtain RAC ARES certification and for those who wish to renew their RAC ARES certification.

Duration: 14 hours, spread over 2 days

Time: Saturday, April 16 and Saturday, April 30, 9:00 am to 4:00 pm

Venue: Meals on Wheels, 2445 Dunwin Drive, Mississauga Fees: $25 (towards copy of training material, Official RAC ARES Id, refreshments. Any surplus funds will go to MARC general revenue fund)

Class size: 12 people max

Please contact Thomas Bernard/VA3TMB (va3tmb@rac.ca) or Daniel Goodier (ve3ni@rac.ca) for further information or to register for the course, before March 26, 2011.

Maidenhead Grid Square Locator

By Ed Spingola, VA3TPV

Have you ever wanted to find out your Maidenhead Grid Square? What is a Maidenhead Grid Square?

The Maidenhead Locator System is a geographic coordinate system used by amateur radio operators. Dr. John Morris, G4ANB, originally devised the system, and a group of VHF managers, meeting in Maidenhead, England in 1980, adopted it.

Maidenhead locators are also commonly referred to as grid locators or grid squares, despite having a non-square shape on any non-equirectangular cartographic projection.
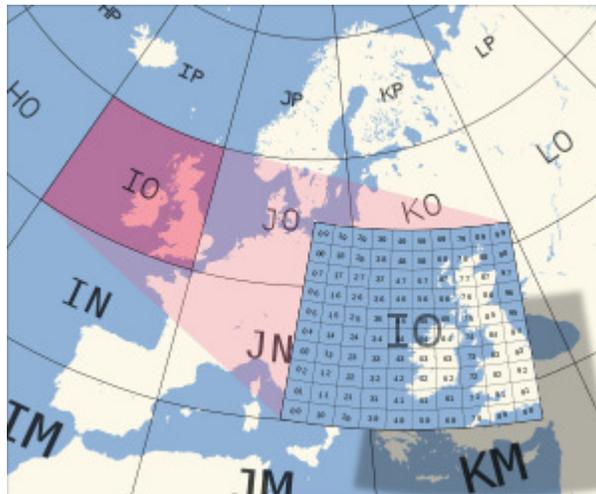

Figure 1: Maidenhead Locator System

Maidenhead locators are used as part of the formulas for scoring in many VHF amateur radio contests. Grid locators are also the basis of earning many awards like the American Radio Relay League's VHF/UHF Century Club, URE TTLOC, etc. operating award.

The Maidenhead Grid Squares are used by HF/UHFers and satellite enthusiasts to define their location on our mother planet, earth. The Maidenhead Grid Square is part of the exchanged by those chasing DX above 30 MHz.

There are numerous internet sites where you can determine your Maidenhead Grid Square using your latitude and longitude as input.

However, I have found the following URL site by Laurent Haas, F6FVY, which uses Google Maps to be the most useful and convenient:

> http://f6fvy.free.fr/qthLocator/

or the full screen version

> http://f6fvy.free.fr/qthLocator/fullScreen.php

First, find your location on Google Maps via the street map view. Then change to the Google Satellite and find your location. Once you have found your location, simple click on the, for instance of your antenna, and your Maidenhead Grid Square will appear.

This process also works in reverse. If you know a grid square and wish to find out where it is located, input a Grid Square in the entry field at the bottom of the screen and click Locate. F6FVY's Google Maps Maidenhead Grid Square locator will jump to that location.
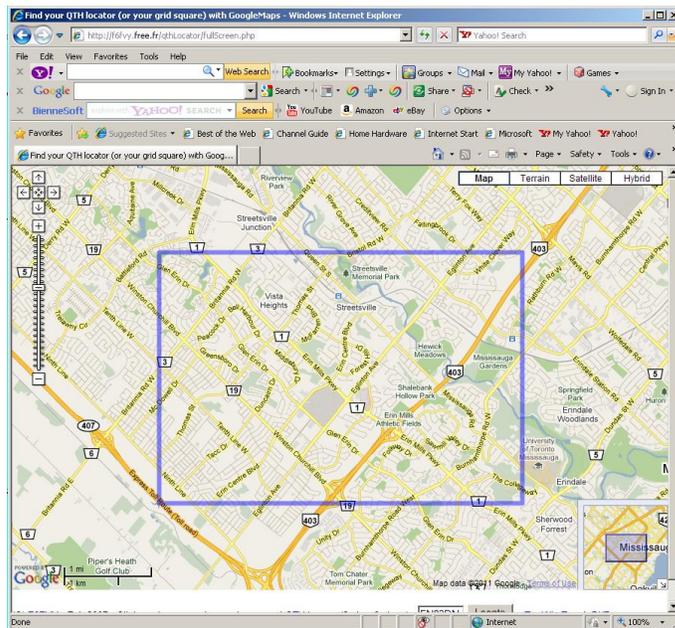

Figure 2: Maidenhead Grid Square Example FN03

Understanding Fldigi For Emcomm Use

Submitted By Daniel Goodier, VE3NI

The following article started out as an email to the paNBEMS yahoo group to which I subscribe. The email was well received and Andy, K3UK cleaned the content up and made it available on his web site, at http://www.obriensweb.com/fldigiemcomm.html.

Andy has also authored:
Deconstructing the Digital Tower of Babel (November 09 QST, Contributor) JT65A on HF Bands (July 07 QST, Contributor)

Understanding Fldigi For Emcomm Use
ByAndy O'Brien K3UK
ARES EC, Chautauqua County, New York

This is NOT a comprehensive guide, if you want more details see any of the links below

> http://www.w1hkj.com/beginners.html
> http://www.pa-sitrep.com/NBEMS/fldigi_start.htm
> http://www.midcoastdigiham.belljar.net/vhf_digital_quickstart.pdf

A DVD of a live webinar conducted by the ARRL and members of paNBEMS can be ordered via www.atldiv.org/training

This brief article is intended to explain Fldigi and its use in emergency communication, mainly for those who have no clue what it is, or what is done with it.

Within the past few months, the use of Fldigi by radio amateurs involved in emergency communications has risen sharply. The average ham that uses HF digital modes is probably quite familiar with Fldigi , since its has been developed over the past few years and has joined Multipsk, Winwarbler, DM780, and MixW as a common application for digital operations. Listening to comments from some emcomm hams, it appears some have misconceptions about what Fldigi is. Within the past few weeks, I have heard some describe Fldigi as a new "mode", I also heard some recently described Flmsg as a "mode". Today, I heard someone on the air say that they needed to start a Fldigi node in their county. I have also heard a few references to NBEMS as a "mode". So, I thought I would write a few words for those who have no clue, make it a little easier to understand.

Fldigi is a multimode digital application that has versions that work under Windows and Linux. In many respect, Fldigi is no

different from Multipsk, Mixw, and DM780. It is an application that allows the ham to have QSOs using common digital modes like PSK31 and RTTY. It also has an extensive list of other , less common, digital modes, e.g. Olivia, Feld-Hell, MT63, THOR, Domino, MFSK16 and many more. The majority of Fldigi users use it for plain digital mode rag-chews and DXing. Within the past 3-4 years, Fldigi has gradually added some extra features that have excited the radio amateurs that provides emergency communications. Note, these are "extra" features, not really extra digital modes. The extra features started with a few new concepts in Fldigi. a concept called NBEMS (Narrow Band Emergency Messaging System (See http://www.arrl.org/nbems). NBEMS essentially added some point-to-point email and file transfer capability to existing digital modes. A special type of error correcting process was added using ARQ concepts, thus the ham could use common modes like PSK31, or MFSK16 in ARQ mode to send email, or text files. Like other ARQ modes, this involved sending the message and having the other station confirm reception of blocks of the text . So, this station and may others around the world had the capability to establish a QSO and send text error free. No new modes involved, just using what we normally use for everyday digital chats. No "nodes" are used, in fact those behind the project were opposed to the concepts of nodes that transmit frequently while unattended, The NBEMS FLARQ methods just needed a a regular QSO to pass "traffic".

As many hams began to experiment with FLdigi for emcomm operations, the Fldigi software began to add features based on the input of hams, especially groups in South Carolina and Western Pennsylvania, who held extensive experimental nets both on HF and VHF/UHF. In the past year or so, FLdigi added the capability to format text in a manner useful to MARS, RACES, and ARES members. The significant development was the addition of an adjunct called FLMSG. This seamlessly integrates with Fldigi and enables the hams to format text in a variety of ways common to emcomm. Specifically: NTS message templates, and many FEMA/NIMS message formats. So, the ham that is serving an agency like FEMA, Red Cross, or Salvation Army , can transmit messages in their original format. No having to transmit a raw ASCII file that looks unfamiliar to the served agency, it can be viewed in its original format.

So, Fldigi employs regularly used digital modes to transmit messages created in FLMSG. No special modes, on the contrary. . . almost any digital mode in common use can be used. Some modes are better than others under varying conditions. Some modes are very fast, some are very slow. The slow modes may not be very effective if large text files are being transmitted. ARQ modes in particular seem to slow down a lot due to all the "acks" and repeats requests. The fast modes are sometimes not very accurate if a band is noisy or in poor shape. In non-ARQ modes, message like

"Watson, come here" , may get decoded at the other end as "Hatsxn, come herm" or perhaps "Matson come here". So, based on input from users, and clever programming by the Fldigi development team, they added a method of devising a check-sum for messages being transmitted. If the receiving station compared the check-sum, they would know that the received message contained errors and could as for a repeat. This allowed the sending of a complete message without getting bogged down with ARQ-type repeats and acks. This method involved the use of the WRAP file system and was incorporated in to another FLdigi add-on . . . Flwrap.

Just to get everything clear, the above means that the multimode application , Fldigi, still did its usually digital mode rag-chew applications... but it also has the ability to send messages via modes like PSK31, PSK250, MFSK16 , MFSK32, in ARQ mode, or files in "regular" mode, with a check-sum , using any of the aforementioned modes, plus others like MT63. So if I wanted to send a emergency message and had Fldigi at my disposal, I take the same software I use everyday, use the same modes I use everyday, but I can add a few extra twists for accuracy, ARQ or WRAP messages. I do not look for known "nodes" or "server" stations. In emcomm work I will usually use pre-arranged sections of the HF band, or known repeaters.

The Western PA and South Carolina hams experimented with both HF and VHF/UHF use of digital modes. They knew that digital modes work well on a noisy HF band. They also determined that, just like packet radio on VHF/UHF, the relatively noise free VHF/UHF bands provided an opportunity to use several digital modes at higher speed. Using wider bandwidth just like the old packet days when 300 baud packet was boosted to 1200 baud on VHF. They also discovered that some modes, like Olivia and MT63, did quite well when simply holding a hand microphone to a speaker. Thus, in an emergency, some messages could be sent without extra equipment like a sound card interface.

Other hams in Europe and elsewhere also developed an email system via HF radio, PSKMAIL. This allows a ham to make contact with a "server" on a given frequency, and delivery mail for insertion in to the Internet. PSKMAIL support has also been added to FLdigi.

So, how does all this work for the ARES/RACES? The many uses of Fldigi work best if the average ARES/RACES member uses digital modes on a regular basis, using the modes for "fun", rag chews, and information exchange via local nets or simple QSOs. In the average RACES or ARES "drill", it is likely used to supplement voice communications, not replace them. Digital modes are likely used when an ARES/RACES station has already established voice communication with a desired target station (e.g. an EOC or shelter). During the event an agency may request that RACES/ARES send information that is very detailed, and accuracy is very important. Via voice, to ensure accuracy, NTS-style radiograms could be used effectively but the dictation speed needed for accuracy will

slow things down quite a bit. If voice is the only means available, it will still work well, but the ability to use error correcting or error checking digital modes will greatly assist the operations. So, in a real situation, the ham station may be having brief voice communication with an EOC or shelter and then decide to send a ICS-213 or Red Cross 5266 form via a digital mode. Fldigi gives you a very wide array of choices as to which digital mode will be used. The most common used are Olivia, MT63, or PSK. You would decide based on what conditions you are faced with and what mode you are "comfortable" with. If you use these modes as a regular part of your amateur radio operations, you will become quite familiar with the advantages and disadvantages of each mode. Olivia 500/8 is slow but very effective on HF when conditions are very poor, MT63 1000 (long interleave) is quite fast and also works well on a noisy HF band. MARS stations use MT63 a lot. MT63 2000 and PSK 250 or PSK500 work very well at high speeds on VHF or UHF. So the correct language for the emcomm ham to use is ... not that they are using "Fldigi mode" . . . they are using MT63 mode or PSK mode, or Olivia mode. They are using the Fldigi software to transmit and receive communication via several modes.

Anyway, lets get to the situation where that served agency asks the hams to send an ICS-213 or Red Cross 5266 (or any other information in text format). In this era of laptops or desktop computers, it is likely that the served agency has this information on their computer. They can simply give that file to you via a thumb drive, or some other file transfer method from computer to computer. You, the ham extraordinaire, can bring up Fldigi on you computer, import the Red Cross form or ICS form , choose which digital mode you and the other station(s) are using and transmit the form. You will have also decided whether you are sending as a check-sum encoded "Wrap file" or using NBEMS recommended modes that use ARQ methods. The thinking nowadays is that the Wrap file method is quicker, even if a re-send or two is required due to a bad checksum. By the way, if the served agency does not have an ability to give you the information from an already typed document, Fldigi with FLMSG allows you to type it yourself and then transmit it, all in the correct form format.

The actual transmission of information via digital modes involves a little equipment. At its most bare bones, you need a computer that will run the software (Windows or Linux), that computer should have a soundcard. You then can hold the microphone to a speaker, key the rig's microphone while transmitting your text, and press the TX button in Fldigi which will create the tones and send the information. I was very skeptical of this method since being an old HF digital operator, I was familiar with the usual method of feeding both transmit and receive audio via direct audio cables from computer to the rig. On HF this "acoustic coupling", holding the mic to the speakers, does not work well for weak or even moderate signals. On FM,

VHF, or UHF repeaters it works surprisingly well. Still, it will be "better" if you connect your rig and computer directly. Some modern radios have PSK31 and RTTY already build in, no computer or sound card is needed. However, most emcomm users will be using a radio that does not have built in digital modes. To receive digital modes, all you need is an audio cable that takes the sound OUT from your radio to an audio input on your computer (usually Line in or Mic In). Using a simple audio cable and software like Fldigi, you will then be able to decode the signals being received. However, when it comes to transmitting these modes via a direct connection between rig and computer, there are a few things you need to know. If you already have something like PSK31 in your station, you already know this, all aspects of Fldigi should work well with your existing set-up. If you have never tried digital modes, for transmission you will need to connect the audio tones generated by your computer/soundcard to the rig for transmission over the air. The connection is usually made from the Line OUT of the computer to a "transmit audio" pin on either an accessory jack, or mic connector on your rig. Directly connecting the computer and rig can introduce "hum" via ground loops and introduce RF in to your signal. This distorts your transmission and your signal is too distorted to be copied at the other end. So most hams use a circuit that "interfaces" both the received audio and transmit audio from rig to PC. The circuits facilitate control of your rig's TX/Receive PTT commands, and also include isolation transformers that reduce or eliminate ground loops . . . thus keeping your transmitted signal "clean". You can easily build an interface for less than $30.00, see http://sites.google.com/site/kh6tyinterface/ or you can buy one of many commercial interfaces. Some of the commercial interfaces include built-in sound cards, some do not. Some use VOX circuits and some have a choice of many methods to interface with your rig. They range from $50.00 to 500.00. I use a Microkeyer by Microham. Many use products by Signalink, Rigblaster, Donner, Tigetronics Navigator, and lots more. Google these products and read reviews that will enable you to make a choice. Signalink is popular since is includes a built-in soundcard and is quite inexpensive. Signalink is also in wide use by HF Winlink users that utilize RMS Express and the Winmor software. Those considering HF ALE operations my want to be aware that the Signalink interface has some limitations when using PC-ALE or MAR-ALE

Any questions, feel free to ask via k3uk@arrl.net or k3uk@winlink.org. Also consider using the following Yahoo groups and ask more questions

http://groups.yahoo.com/group/digitalradio/
http://groups.yahoo.com/group/panbems
http://groups.yahoo.com/group/win-fldigi/
http://groups.yahoo.com/group/NBEMSham/

You can also see youtube videos of Fldigi

http://www.youtube.com/watch?v=SWZ2vKWSilE
(Setting up MT63 for FM use)

http://www.youtube.com/watch?v=-r_62rX1GPM
(RSID with NBMES / FLDIGI - Advanced Settings for Unmanned Monitoring Stations)

http://www.youtube.com/watch?v=lG6_-wIi1E0
NBEMS FLDIGI WRAP Checksum Demo

http://www.youtube.com/watch?v=gfYXneVlrCo
demo of MT63 on a repeater with Tigertronics interface

http://www.youtube.com/watch?v=4J-e7u4wxmc Fldigi with ICS-213 form

http://www.youtube.com/watch?v=PWCufvaEwS4
PSKMAIL

MARC Repeaters

VHF Repeater at 145.430 MHz (-600 kHz) (CTCSS Tone 103.5Hz)

UHF Repeater operating on 444.575 MHz (+5.0MHz) (CTCSS Tone 103.5Hz)

6M Repeater operating on 53.250 MHz (-1.0MHz) (No CTCSS Tone)

All repeaters except 6M use a CTCSS tone squelch of 103.5Hz

MARC Members Yahoo Group

The MARC_Members Yahoo Group is the primary way to disseminate club information about upcoming events.

Join the MARC_Members Yahoo Group to receive club related communications and to contact other club members.

http://groups.yahoo.com/group/marc_members/

On the web site click on "Join This Group!"

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Donation to the Amateur Radio Emergency Service (ARES) Programme enclosed	**$**
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