## FM BULLETIN

REPORTING

ON

**AMATEUR** 

FM

ACTIVITIES

Vol.1 No.5

**JUNE** 1967

#### OFFICAL FM BULLETIN STATIONS

_		Elmer Maher Jr.	P.B. 31, Newton, Conn.	426-4266
216	W9BTL W8GMS	Andy Fenoglio Dick Wolf	1649 Chestnut St., Desplaines, Ill. 1963 Brainard St., Lyndhurst, Ohio.	442-0261
_	K9CUR WA9CWY	Bob Wiberg Jim King	114 S. Jackson St., Crown Pt., Ind. 3140 11 Ave., Moline, Ill.	66 <b>3-</b> 0924
305	WA4JBI	Don Hayman	6301 S.W. 93rd. Ave., Miami, Fla.	271-9440
	K8WKE W8VCF	Gloria Sturm	2478 Howald Ave., Flint, Mich. 3226 Terry St., Trenton, Mich.	2 <b>35-</b> 6 <b>31</b> 8
-	W2ACM	Charles Myer Sam Craig	5812 Tilton Rd., East Syracuse, NY.	656-8885
	K9SVB	Dick Andrews,		Ind.
	K3SVo VE3AL	Bill Wallace Al Russell	Box 308, New Bedford, Pa. 2 Deanbank Dr., Thornhill, Ont.	96 <b>4-</b> 22 <b>3</b> 9 88 <b>9-</b> 2 <b>3</b> 06
419	w8bjm	Jim Bixler	1160 Craig Rd., Maumee, Ohio.	89 <b>3-1</b> 625
	WØQNO W2GHR	Keith Slack	2500 Boston Ave., DesMoines, Iowa	607 0153
-	K8WWK	Gordon Pugh Jack Sheldon	89 Trumbull Rd, Manhasset, NY. 1033 N. Water St., Owosso, Mich.	627-2153
_	W8BCI	Dan Harger	537 Woodrow Ave, Lansing, Mich.	
	K7JNK W8EYO	Ray Stofer Jule Fantaski	5537 N. 13 Ave., Phoenix, Ariz. 3020 Mansueto Dr., Stevensonville, M	274-0170 1429-4219
703	K4FSU	Seymour Paul Jr.	RFD 2- Waterlick Rd., Lynchberg, Va.	
714	WAGOSB	Ken Decker	3655 Billman St., San Diego, Calif.	58 <b>3-</b> 9208

#### FM BULLETIN

2005 HOLLYWOOD, GROSSE POINTE, MI. 48236 PHONE - 313-886 4116

Published monthly for the sake of promoting and informing on FM activity on VHF and UHF channels. This publication does not assume responsibility of statements made by our advertisers in business competition. All signed articles published here-in represent solely the individual opinions of the writer and not those of FM Bulletin. Deadlines for copy must be the 15th of the month for the following months issue. The sooner the better: Subscription is one dollar per year which includes 12 issues and a Call Directory of FM Society members. Offical FM Bulletin Stations are set via the long distance phone area codes.

The back bone of this publaction is the advertisers. Without their interest in out Bulletin it can not last. Please support them and mention to them that you saw their Ad in the Bulletin. This is a non-profit paper and it costs alot of money to print it.

Commerical Ads- \$2.50 per column inch. Individual Ham Swaping Ads- 10¢ per line or 50¢ per inch.

Articals, Stories and your comments are needed for print. Share your ideas and prodjects with your fellow FMers.

EDITOR & PUBLISHER......Michael Van Den Branden .....WA8UTB

## NAVY MARS FM REPEATER

Do not put off till tomorrow what you have to get done for this years Field Day operations. I hope that the F M channels will not be forgotten in the station planning. Well you only have till June 24th to get everything ready! Good Luck to everyone that is going out. I hope that the Clubs and groups that use FM will report to the Bulletin on their results. I am sure your fellow FMers would enjoy seeing your comments.

#### 1/3 KW FROM CLEVELAND

Power stations are poping up in Cleveland, Ohio. With two of the areas F Mers using 1/3 KW outputs K8QOT, Jim P r a c k e r operates—on 146.940 and has a 130 ft. tower. Jim also has a repeater from 52.525 to 146.94 MHz. Bill Hess, K8SGX is remoting a 1/3 KW on 52.525 from his Qth, which is about 8 miles from Jim's place. The base rig is located in Jim's garage and is connected via phone lines which handle 8 functions.

Bob Koren W8GHO also has a repeater with outputs on 145.26, 146.940 or 52.525. The input frequency is keep confidential however. Ohio activity centers around 145.26 with 18 F Mers, 146.94 with 14 operators, 53.58 with-8 stations & 10 operating on 52.525, in the Cleveland area. Cleveland's C D repeater operates on 146.26MHz with inputs from 145.68MHz.

Dick Wolf, W8GMS

#### W. VA. 1800' HIGH RPT.

Don Barney, K8SXO in Ridgeley, W.Va controls his 1800 foot high two meter FM repeater by UHF links. It is using 447 as a up link & 449 MHz. as the down link. The repeater is presently being used on 146.76 MHz. but it will soon have capabilities on 52.640 MHz. and for mobiles, it will work 146.34 with 146.76 MHz. Output.

Bill Wallace K3SVO

Our FM VHF repeater system is now about 75% of the original designgoals completed. Approximately 70% of the 175 Wisconsin members are within the service area of an operational repeater site. About 30% of the total membership have capability of using the system. There are twelve hours of scheduled nets per month utilizing the system. The total system usage amounts to over 70 hours utilizing the system. per month. Presently there are four V H F Frequencies in use while the system is activated. One of the four is used by the stations working into the system. The other frequencies are used to link the repeater sites together and to talk back. All freqs involved are used simultaneously and therefore have the same usage time. Voice is the primary mode used. However, Radioteletype and Facsimilie have been used. The use of mobile equipment on the system increases overall operational capability.

The frequency of 150.090 MHz. was authorized for Navy MARS use in Nov. 1965 for Wide Band FM (36F3) usage. The new frequency enabled the design of a Duplex repeater system with the use of the Simplex Wide Band F M-Channel of 148.410 MHz. A repeater cannot have the same channel as the system input and output frequency even if separated by 150 to 200 miles. Conditions may extend range of the signals. A repeater which receives its own transmitted signal would remain on once activated until the path is broken. The separation of the two frequencies was enough to allow simultaneous use of the tw frequencies at the same location with design and installation care. Previously, the frequency of 148.410 MHz was in use in various localities in Wisconsin for local nets. 148.410MHz was chosen to be the system output frequency for compatibility with existing receivers. For reasons of

economy it was more suitable to modify the transmitters for 2-frequency operation rather than receivers.

As the individual repeater sites were put into operation, the input & output repeater frequency pairs were coordinated to be the same at all locations. The new frequency of 150.090Mc was used as the input frequency. Repeater stations in Milwaukee, Mt. Calvary and Baraboo, Wisconsin went on the Air in December 1965. Individual stations with two frequency transmit capability were able to operate on a local basis on 148.410 Mc as before or could switch to 150.090 Mc to activate the repeater to extend the range. A smplex link between repeater stations located at Milwaukee and Mt. Calvary was added on the frequency of 49.612 Mc using 6F3 emission. Stations within the service area of either repeater were able to communicate with each other. Mobiles had nearly constant communications while traveling between repeater sites. Nominal mobile to repeater station range is 30 to 50 Miles.

In June 1966 equipment was installed to link the repeater at Baraboo to Mt. Calvary (and Milwaukee). Techenical considerations require that the link frequency be at least 3 per-cent removed in frequency from the active frequencies of 150.090, 148.410 and 49.612 Mc at the Mt. Calvary site. The new frequency also had tobe one which was not in use within 200 miles of the proposed path. The frequency chosen was 142.860 Mc. The system then had three of the largest population centers in Wisconsin well covered. Greater than 70% of the Wisconsin NAVMARS members were within range of one of the repeaters.

A totally unexpected event took place in late January 1966. Strange tactical call signs & "TEN CODE" signals were being received by the Milwaukee repeater receiver & occasionally by receivers at Mt. Calvary and Baraboo. Investigation revealed that the Shore Patrol at Great Lakes, Illinois had put several mobiles and a Base station on 150.090 Mc. When atmospheric conditions permitted all of the mobiles and the base station, were being retransmitted by the repeater system. In general, the interference was minimal and occasionally it was reported that NAVMARS stations were heard at Great Lakes. In December 1966 Wisc. area Navy MARS members assisted the Shore Patrol change to another frequency.

The Lacrosse repeater was installed in September 1966 on the top of Grand Dads Bluff. It was noted that fourth Harmonic energy from a commercial two way transmitter fell within 10 Kc of the repeater input frequency 150.090 Mc. The operators of the two way transmitter had agreed to install a trap on their transmitter which we would supply to attenuate the Harmonic over 30 Db.

Some of the advantages which have become evident during the first year:

1) Little or no interruption from other nets or electrical disturbances.

2) Improvement of each operators voice operating procedure on nets.

3) Guarding of other high freq. nets particularly Emerg nets & as intercom.

40 Distribution of traffic improved.

5) Reduction of traffic on HF nets & less refilling of traffic to Amateur net.

6) Stations with capability on more than one band increased. 7) Extending or limiting range for an emergency situation.

8) Flexibility thru the use of Auto-Start AFSK RTTY.

The disadvantages of a repeater system noted are as follows:

1) Burdens of maintenance 30+ relays 200+ tubes & 1000s of component parts.

2) Use of more than 3 freqs in VHF to pass traffic thru the system.

3) Freqs used in the system are not available for local use.

The system, which is comprised of older commercial equipment, has extremely high reliability when considering the total number of components in the system which could fail. Parts of the system are covered by back up equipment for use in event of failure. The system point to point path carrier to noise signal margin is great enough to provide nearly 100% reliability. Link point to point transmitter output powers are 10 to 40 watt range and coupled to directional gain ants. This provides for transmitters to fall off to less than 1/10th of normal output power and still maintain circuit continuity. Link receiver sensitivities range from 6/10 to 2/10ths of a micovolt for 20db signal-noise %.

In addition to voice, RTTY (AFSK) and Facsimilie (tone pulse width modulation signals can be sent over the system. Standard AFSK 850 cycle shift using 2125 CPS and 2975 CPS as mark and space signals. The ratt tones can be sent from

one end of the system to the other with some attenuation of the tones but with little loss in the performance. Use of teleprinters employing unattended automatic start feature at receiving locations provide for message delivery without regard to individual operator schedules.

The audio frequency pulse width, modulated 1800 cycle carrier of the Facsimilie equipment is usable on the system as determined by experimentation. The transmitter modulation must be carefully adjusted so as not to distort the modulated tome. The 35 to 50 Db signal to noise ratio of the system provides great enough tolerance for passage of the signals thru the system. A totally operational Fax system has been tested in one direction only and further adjustment to be made before being put inservice

to be made before being put inservice
When the Milwaukee to Lacrosse
circuit is completed providing East—
West continuity, the addition of side
links to the North and South will be
studied. Hookups with other systems
in Minnesota and Illinois can be made
when their systems become operational
NAVY MARS

Jack McLeland W9ATK/NØULP

### 1-ST IOWA FMER REPORTS ACTIVITY

I was the first one to appear on 2 or 6 meter FM in the State and have been active on FM since November '61.

We have about 39 stations here in Des Moines on 2 meters, a good deal of them being mobile and fixed. Most of us are on 146.94, although we have a fairly extensive RACES operation on 147.5 with all of the local hospitals and air-raid shelter communications on 147.300 MHz..

We have no repeater operation here as yet, but 1 or 2 are in the planning stages. Our 6 meter operation here is confined to 3 bases and 2 mobiles so far. The D.M. Club has only recently come into some low-band equipment and as yet not many are on 52.525 MHz.

We do anticipate, one of these days soon, that most of the fellas on two, will also be on six.

Keith Slack WØQNO

#### W8MRM LOGS

#### FORTY-NINE FMERS

May 6th was the eighth annual Old Timer's Night at Henry Ford Museum in Dearborn, Michigan. This event, attended by hams of all ages, honors the pioneers of amateur radio.

A part of each year's activity is the 24-hour operation of the Motor City Radio Club's station, W8MRM. MCRC members manned six rigs during all of May 6th (GMT). More than seven hundred stations were worked.

A special Old Timer's certificate will be issued by Henry Ford Museum to each station that QSL one of these contacts.

One of the W8MRM rigs, each year, operates on 146.94 MHz. WBFM. This 2 meter WBFM, as well as a 2-meter AM rig, gave the several young novice members of the Motor City Radio Club their first taste of phone operation; and they made the most of it.

Forty-nine different stations were worked on WBFM and many checked back two or three times during the day to see how things were going.

WN8UMK, WN8URN, WN8VIF, WN8VLE and WN8VOG were amoung those who operated the 2-meter FM rig at W8MRM.

Stations worked on 146.94 MHz. during the Old Timer's Night operation were K8AIZ, WA8ALL, WA8ARA, K8AMA, W8BEZ, W8BJM, W8CQB, K8EGK, K8EHE, K8EOC, W8FWF, WA8GNU, W8HKL, W8HKO, K8HWW, K8ICZ, WA8KIR, W8KUL, WA8LAV, WA8LBE, K8LNV, W8LPA, WA8LQU, W8LXE, W8LZY, W8MPD, K8NHE, K8NUI, K8ODW, WA8OXK, WA8OYG, W8PCA, W8PCF, W8PPG, WA8PSD, K8ROA, W8RZJ, WA8SDC, WA8TPE, W8UM, WN8UMK, WA8UTB, W8VCF, WA8VIN, WN8VOG, WN8VRJ, W8WXO, K8ZJU & K8ZKZ.

73- Marion Stoner W8VWY

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#### COMING - HAM EVENTS

JUNE

- 4 Starved Rock's Annual Hamfest at Ottawa, Ill. Write for information and tickets to G.E. Heith RFD. 1. Ottawa, Ill.
- DARA HamFest- Delaware County Fair Grounds,
  Muncie, Ind. Industrial Bldg.- 10AM to 3PM
  Prizes include- National 200, Portable Color
  Television. Adv. Registration \$1.00 or esle
  at gate its \$1.50 Write: Bob Brandon
  2705 W. Jackson St., Muncie, Ind.
  FM talkin on 52.525 MHz.
- Angola FM Picnic & HamFest- Sponsored by the TRI-State College ARC. Steuben Co. 4H Park on Coorked Lake, Angola, Ind. FM Bulletin will surely cover this event and hopes to see all the FMers that can make it--show themselves! Talkin on 52.525 & 146.940 MHz. Swimming, Prizes, Swap & Shop, Refreshments
- 18 SCARC Hamfest, 0900-1800 near Mountain Playhouse Route 219, Mile North Jennerstown, Write: K3PQK Box 17, Ursina, Penna.
- 24-25 Field Day, try the FM too!
  - 30 16th National ARRL Convention at the Bonaventures Hotel, Montreal, Cananda. Convention & Banquet tickets are available from Doug Shaw VE2BSX 7401 Mount Ave., Montreal 16, Quebec. Registrations------\$6.00 ea. Banquet (July 2)------\$10.00 ea.

A UG.

- HamFesters Radio Club's 33rd Hamfest-Santa Fe Park, 91st & Wolf Rd., Willow Springs Ill. Contact; Greg Purtock for tickets 2916 W. Marquette Rd., Chicago, Ill.
- Outside open trunk- Flee Market from 0900 to 1130 in Wyandotte, Mich. Just South of Detroit Boat for Boblo will load at 1145, and return to Wyandotte at 1830. Free Parking..... Children under 6 Free From 6 to 12 years .80¢ ea.

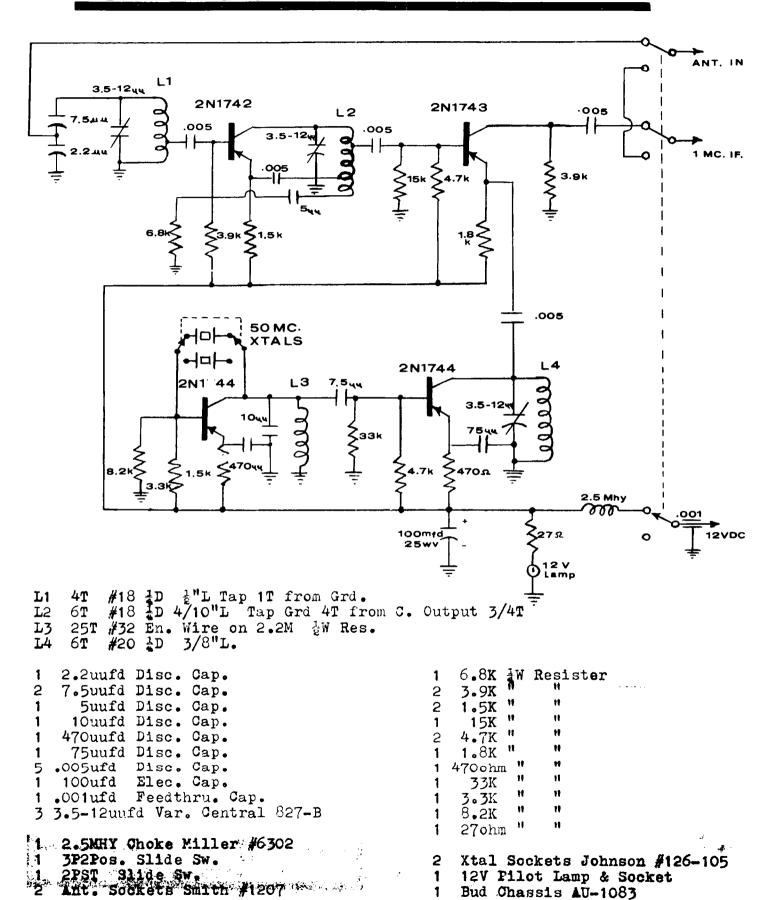
  13 and over \$1.75 ea.

  Much more information to follow in later FM Bulletins. I hope everyone will plan on this one. Tickets are available from the sponsore FM BULLETIN.

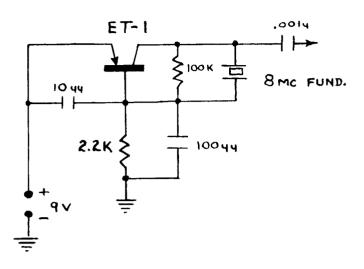
OCT.

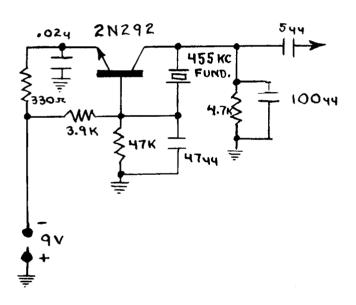
15 Ham-Boree Auction- Miami County Fairgrounds
Troy, Ohio. 10 AM till ? Prizes ETC.
Donation \$ 1.00

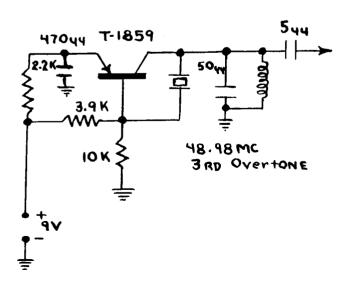
#### CAR RADIO CONVERTER by WASALL



#### 3 OSC. CIRCUITS FOR ALIGING RCVRS.







#### N.Y. MOUNTAIN TOP REPEATER

The Poughkeepsie Radio Club has a Repeater license under call W2CVT. It has 146.94 and 449.40 Output with Input from 146.34. The system consists of 5 control points & a remote rcvr. The station is located on Mt. Beacon, N.Y., sharing the facilites of Gordon Pugh W2GHR, the Offical F M Bulletin Station from the #516 area.

#### FLINT, MI.'S GREENKEYS

The greenkeys at my station pounded out signals by K8AQC, Ron Kittel, in Detroit. "Those fellows in Flint that are supposed to be on 146.70, were on .940 last night!" Well it won't be long and I will fire Ron's autostart and send a line feed tape. hi... Bear with us Ron, we are slow but we all want good stations when we get there.

At present, there are four stations copying 146.70 MHz. Of the four however only one is operating on the channel. This station is WASFYF, STU Fillingham, who has an excellent set up consisting of a TT/L, model 28 KSR, Model 14 Reperf., 30 BR and a 80 BY on 146.94 and 146.70 MHz.

I have an 80 BY and 80 BF for the several frequencies monetered at my QTH. My model 19 right now is taking up space, however my TU unit is very close to completion and then Stu and myself will be on autostart here.

A longtime RTTY operator from the DC Bands, W8HRL, Cal Kasson, is expected to join us FMers on .70 in the near future.

73 & See you on the greenkey Al Schook WASAEE

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#### FM MOBILES A- GO GO

If you are planning a trip this summer or any time them send to the Bulletin via: Radiogram, Qsl card or letter the information so it can be posted here under this column. It is hope that this will work two ways; one thing we hope it will do is to help the mobiles make more contacts on FM. Second we hope it will be of interest to stations in the path of the mobiles as to advanced information on who to listen for, when and what frequencies. The following information is requested: Dates, Routes, and freqs. you will work.

WASUTB/M June 11th, Will leave Detroit about 0600 with KSAIZ as co-pilot, headed for Angola FM Picnic. I 75 to Toledo then W. Will monitor 146.940 MHz. Return trip the same night

W8MPD/M June 19th, Stan Briggs, Will leave Detroit area inroute to Wessley, Mass., for 6 weeks. Plans include stops at W1AW, Rochester, NY., and maybe EXPO '67.

Stan plans on camping while travling with low freq. CW rigs and ofcourse 2 Meter FM on 146.940 MHz. In the mobile he monitors 146.94 also. Routes are mainly Eastern Turnpikes.

WASLBE/M Sept. 4th, Bob Ligon will be leaving Detroit area to see his son in Twenty-Nine Palms, Calif. Basic route will be #66 both ways. Bob will be operating on 52.525 and 146.940 MHz. Return is planned for Sept. 10th. Rumor has it that he might sneak some AM 6&2 meter gear in the car also.

Dont forget to let us know of your trips and dont forget to hop in the mobile and come for the Boblo Picnic on Aug. 26th 1967

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#### FMER'S AID BOY SCOUTS

Flint, Mich. / May 6
'Good Turn Day' is the name of the annual event to collect donated articles by the Boy Scouts and Goodwill Industries. Such articles as clothing, appliances, toys & ect. were rounded- up to provide employment for about 230 handicapped people. About 80.000 bags were collected & deliver-40 semi-trailers that were ed to parked at several schools throughout Genesee County. There were about 7500 scouts, 800 adults, 100 college students & about 700 automobiles involved in the project. FM equiped mobiles, on 146.94Mhz. aided in pickups & dispatching other cars. The calls of K8AOB, Homer Blumerich, WASUJE, James Hainer and W8CQB, Brother Jack, were heard as Base-relay stations. mobile units involded were:

Lee Tippett w8**rt**n Steu Fillingham WA8FYF Clifford Moody K8PKW Grace Moody K8PKG Donald Kingsley K8LZJ k8acn Dennis Sousa WASAEE Al Schook w8HRL William Kasson Walter Kalberg w8**v**gg **K8WKE** Gloria Sturm Donald Stevenson W8EFF Jack Williams K8GOW

Also several stations in Durand and Owosso, Mich. were involved but I am unaware who they were. We are very proud of the good job! our group accomplished.

An expirmental FM station will be installed at the U.S. Weather Station this month. During the Tornado Warnings we experienced an April, K8PKG, Grace Moody and K8PKW Clifford Moody, went to the station and assisted.

#### 50% SIGN UP FOR FM BULLETIN IN CALIF.

At the May meeting of the San Diego VHF Club almost 50% of those present bought a subscription to the FM Bulletin. Hope to get the rest signed up next month. A visitor from the L.A. area was present Dick Bremer WB6DNX and he showed us his very impressive FM system installed in his new Impala (with 2 alternators & batteries). A Progress-Line system, it has 4 Channels available on 2m & 4 in the 450 Mhz region capable of linking into various repeaters, Full Duplex on 450 & remote phone patch (touch tone) that he was able to demonstrate from S.D. about 100 - 120 Miles.

Several new stations on 2m F M in San Diego included are: Lyle Scrivner W6UPZ and WB6TYR.

The San Diego VHF Club and ARPSC conducts a net on the local FM Channel, 146.840 Mhz.every Sun. evening @ 2000 Local time. Check-ins over the past 4 years average 10-12 per week. By the way, the reason for the nonstandard channel is because this was assigned as a RACES frequency about 5 years ago & some of the local cities furnished the price of xtals. I suggest any area planning a New Channel (RACES or other) use the accepted, standard channels, as this will cut down , adjacent channel interference.

Finally, an opening on 52.525Mhz on April 25 I worked W5FJD, Eugene Demuth in Austin, Texas and on May 9 worked WØOII Richard Willard in Lamar, Colo. & WØOKH Vaughn Jupe in Phillipsburg, Kansas. Mobiling thru San Diego, was W5THI, Larry Chilton from Fort Worth, Texas. on 146.94 Mhz.

73 & Remember to Monitor ".525"&".940" Ken Decker WA60SB

During the Death of my OM April 19 out Group held an "OPPERATION THANKS" of which they presented me with an unexpected generous monetary gift, for as they put 1t, "ALL THE THINGS AL, K8VLN & I HAD DONE FOR THEM." The gift was more appreciated than words can ever express. THANKS does not seem enough to say but I love you all as a family. I would also like to thank the many Hams who sent Prayers and words of sympathy during our bereavement. They meant so much to me and my 4 children. Thanks also to the Owosso group for your gift and acts of kindness. Gloria Sturm KRWKE Connie WN8UBK and Boys.

#### LETTERS

Dear Editor,

I have been reading your F M Bulletin, which you have mailed to Toledo Emerg. Amateur Radio Olub's Hqs. here

You will be happy to know that it is one of the best efforts in overall info on F M activity that I have seen. Please add my subscription to your list. James King K8DPE

#### Answer-

Tnx Jim for your comments. It was felt that a newsletter was needed and I am trying to do the best I can, and letters like your's make the effort seem worth while. —Editor

Dear Editor.

Due to recent local P O revision, please change my address as follows:

Jule Fantaski W8EY0 3020 Mansueto Drive

Stevensville, Mich. 49127

Re May 67 Bulletin - Good job. Only criticism is that listing of zone liaison stations not readable. Lots luck Mike, your making good progress.

Jule W8EYO

#### Answer-

If I would of had the time I would have reprinted it. I was very up-set, about it. I think it is OK now!

Please add my	name for membership				
to the FM BU	LLETIN				
Name					
CallClass					
Address					
City					
State	ZIp				
Other Calls at	same QTH:				
Check					
Base	FM Freqs:				
Mobile					
Portable					
RTTY					
ATV					
Fax					
One Dollar pe	er-years Sub.				

#### GRAB BAG

For Sale-- GE Coffin Box 12V on 146. 940 Mhz. Ready to go. \$65 Contact K8AIZ, George Trombly. FOB Detroit.

For Sale, Hallicrafters S-40A rcvr. working and in good shape \$20. By WASUTB. Mike

For Sale Motorola **%V** 110 v. AC. on 146.940 with trans. preamp. Contact Bob WA8LBE, Utica, Mich.

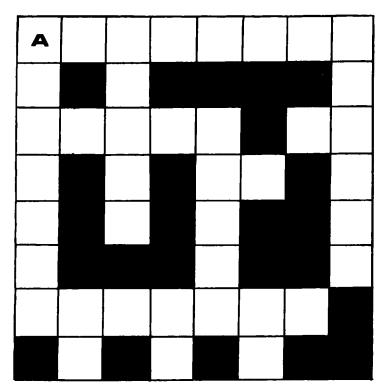
Wanted- Motorola 16V rcvr. 110 AC WASUTB, Mike

Wanted, Motorola 41V revr strip. Contact WASARA, Marv.

Wanted- Writers of articals on ATV, RTTY, Fax, and any FM relative subject for FM Bulletin. The pay is cheep and work is hard but the rewards are none except you would be hepling make this paper a good and interesting one.

Wanted- Ads on FM equipment. To best serve our readers it has been decided that ads on FM gear (only) will be run Free, all other gear at listed rate. This is only for privite sale not for dealers.







LAST MONTHS

#### US CITIES & ABV. STATES

#### FLASHS

SW Mich Navy MARS group has acquired a Motorola repeater system which will be activated soon on the Navy MARS 2 meter freqs. of 148.410 & 150.09 Mhz. Modifications and installation is by Dick Monroe, KSJKI/NØWTL in St. Joseph, Mich.

The tower has finialy arrived for the Detroit area repeater for 146.34 to 146.76 Mhz. under the call of WAROYE.

Near the 2 meter band Ray Newsome K8TJP, Trenton, Mich. is receiving some very good FAX pictures from US satellites.

The E. F. Johnson Co. has been reported on that they will have some FM gear later this year.

Watch for an artical in coming QSTs for a mobile 432. antenna by George Poland in Garden City, Mich. Works Good Too!

The next ARRL Handbook is reported to have info on converting FM gear for ham use.

FM BULLETIN 2005 HOLLYWOOD GROSSE POINTE, MI. 48236