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MONITORING TIMES

Volume 4-Number 10

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October, 1985

TUNE IN ON THE CRUISESHIPS

by Daryll Symington, N8EBR

CALLING PROCEDURE

"Whiskey Oscar Mike, this is Lima India Tango Alpha on four-one-two." The familiar sound of the gigantic luxury cruise ship, the SS Norway of Norwegian-Caribbean Line fame, once again graces the airwaves. Tonight she is making phone patches for her passengers and crew on the 4 MHz marine phone band, using the shore station WOM near Miami, FL. WOM is the busiest coast station for cruise ship traffic by virtue of its location near the Caribbean Sea.

Other busy cruising areas are the western USA/Mexico coastlines as well as the Mediterranean Sea, but cruise ships can be found just about anywhere there is water. No SWL'er can miss catching a cruise ship, especially in the evening hours, no matter where your radio is located! Just listen on the marine duplex phone frequencies and they'll be there.

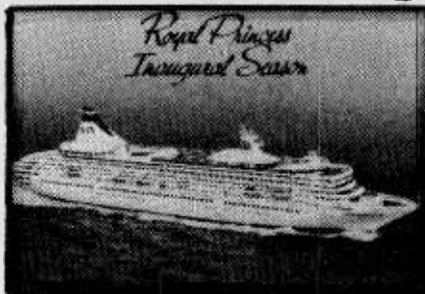
Several other excellent coast stations to guard for the cruise ship traffic are KMI near San Francisco and WOO near Ocean Gate, NJ. WLO in Mobile, Alabama, and Portishead Radio in England also handle cruise ship traffic, but to a lesser extent. You will also find that many other ships use these frequencies, such as fishing vessels, large pleasure boats, freighters, and tankers.

The ship makes contact with the coast station, using the mobile frequency assigned to that station; the coast station replies on the other frequency of the duplex pair. The coast station operator ensures that the radio contact is good, then turns the ship over to an AT&T high seas operator, who dials and obtains the desired party.

To hear both sides of the conversation, the SWL needs to switch between both the ship and the shore frequencies. However, on occasion, both sides can be heard on just one of the frequencies, so check that out with each contact.

The passenger making the call can usually stay right in the stateroom without having to make his way up to the radio room. After the parties are through with the call, the AT&T operator advises the ship's radio officer of the time and charges. Most domestic calls run about \$5-6 per minute, with a three minute minimum charge. I cringe when I hear a \$100+ charge for a 20-25 minute call! Most calls are of the five minute variety with charges around \$25.

When the ship has completed all its calls, the AT&T operator turns control back to the coast station operator. Any ships waiting on that channel are then called and the process



"No QSL card, but thought you might like this one!"

starts all over again.

The best cruise ship listening season is winter for good reasons: it's the best for propagation purposes and it's the most popular season for cruise ship passengers, particularly for cruises to the Caribbean, Mexico and South America.

VERIFYING YOUR CATCH

Cruise ships are above-average QSL'ers, too; the average rate of return for utility QSL's is about 2:3 or about 65%-70%. The cruise ships are averaging about 80% right now--40 back with 50 sent out.

There are several techniques that you may use to enhance your likelihood of receiving a cruise ship QSL. The first is to be polite and courteous in your letter --that radio operator you are writing to doesn't owe you anything and he is doing this as a favor to the SWL. Many RO's are SWL's, too, and some include personal letters when they return the card.

Another hint is to use a PFC (prepared form card).

Very few cruise ships have their own QSL card, so most serious utility SWL's have their own cards printed locally with spaces for the usual information such as date, time, callsign, frequency and mode, power, antenna, etc. There are many clever cards being used today; try your hand at designing your own.

Always include return postage--don't expect the RO to use his personal money to return your card. If the ship is ported in the USA, you can use a stamp on your return card or envelope. If not, always include at least one IRC (International Reply Coupon), available from most post offices.

Remember that actual conversations you may hear on the radio are protected under ITU regulations. Do not divulge the content of any conversation when writing your QSL request; your chances of receiving a return greatly decrease if you do. Include only that information which is needed to convince the RO that you actually did hear his vessel including time and date and coast station used, mentioning only that a phone patch was placed at that time.

The biggest request that I receive in regards to QSL'ing is, "Where do I send it?" That is one of the toughest challenges to a utility buff. Fortunately, cruise ship addresses are easier to obtain than most other utility stations. I

Cont'd on p.4



M/S Southward Radio Room

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MONITORING TIMES

Bob Grove.....Editor

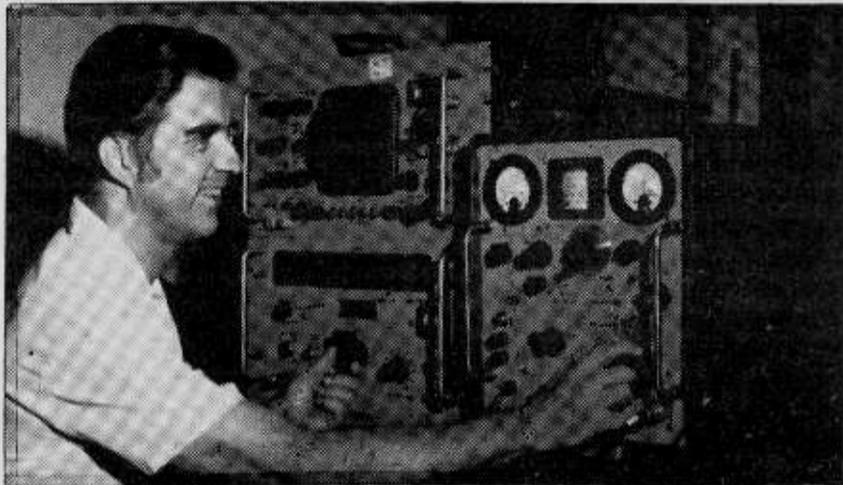
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FROM THE EDITOR



YOU WIN SOME, YOU LOSE SOME *or*, HOW TO OPEN A CAN OF WORMS... *or*, IT SEEMED LIKE A GOOD IDEA AT THE TIME

Apparently not everyone is in favor of helping the FCC clean up the spectrum. In our July issue, I mentioned the prospect of serious listeners being of service to the monitoring community by assisting the FCC in accumulating loggings of serious spectrum violations.

Such violations range from unlawful command of earth satellites to life-threatening bootleggers on the ship-to-shore and aircraft bands, and from identifying Russian jammers to documenting international broadcasters who intrude into unauthorized portions of the spectrum.

But what some of our more vocal readers saw red about was the erroneous notion that our purpose was to help the FCC catch pirate broadcasters. Not that there are many readers interested in pirate radio (about six percent according to our latest poll), but they are demonstrative!

But that's only half the story. While only a half dozen or so letters were received protesting our position, a mere four letters volunteered support--hardly enough to establish a reliable network of monitors. Most--if not all--of the protest letters came from members of the Association of Clandestine Enthusiasts (A*C*E), a small but

highly communicative group of pirate radio fans (see "Viewpoint" letters).

Those respondents who disfavored the effort felt that it was the Commission's responsibility to police the spectrum, not the private sector's. After all, continued the letter writers, that's what they're getting paid for.

In view of all of the foregoing, we have decided to abandon the project.

MT WEEKLY?

We often receive requests from our dedicated readers for more issues of MT. While we are already the source of the most accurate and timely information about monitoring the spectrum, many of you would like to see us in your mailbox more often.

We have given serious thought to the possibilities; certainly, the articles and news stories are ready to go at a moment's notice, but the increase in cost would be substantial.

Unlike other commercial publications, MT is supported by subscription, not by loading the pages with advertising. And the modest advertising we do have is limited to the monitoring field.

Additional mailings would require additional

Results of the MT Poll

by Bob Grove

A couple of months back we asked our readers to respond to a questionnaire regarding listening equipment and programs of interest. The results were mostly predictable, but some were surprising. For example, a full 52% of our respondents claim to be licensed hams! We would have guessed the number closer to 20%. Maybe hams are just more likely to

answer questionnaires!

Let's take a look at the tabulation for the rest of the questions and their respective responses. Remember, this is just a random sampling and may or may not represent the correct percentages of our readership.

FREQUENCY RANGES MOST OFTEN LISTENED TO: 2-30 MHz (88%); 30-1000 MHz (79%); 0.5-2 MHz (54%); above 1000 MHz (17%); below 0.5 MHz (16%).

MODE MOST LISTENED TO: Voice (86%); Morse (53%); RTTY (41%); FAX (10%); all (12%).

SERVICES MOST FREQUENTLY MONITORED: Police (54%); aircraft (39%); broadcast (39%); fire (34%); ham (33%); military (27%); weather (22%); government (21%); press (16%); ships (16%); space (10%); pirates (6%); numbers (3%); others--railroads, business, paramedics, etc. (1%).

COMPUTER OWNERS: C-64 (13%); TRS-80 (11%); VIC-20 (7%); 800XL (6%); IBM-PC (4%); TIS-1000 (4%); Apple IIE (3%); others--Kaypro, Columbia, Compaq, RS color, HP, Sinclair (1%).

RECEIVER/SCANNERS OWNED
Bearcat 300 (10%); Yaesu FRG-7700 (9%); ICOM R-70 (8%); Regency HX-1000 (7%); Kenwood R-1000 (7%); Bearcat 100 (7%); Bearcat 220 (7%); Kenwood R-2000 (6%); ICOM R-71A (5%); Uniden CR-2021 (5%); Bearcat 250 (5%); Radio Shack DX-160 (4%); Regency MX-5000 (4%); Bearcat 210XL (4%); Sony ICF-2001 (3%); Hammarlund HQ-160 (3%); Sony ICF-6500W (3%); Kenwood TS-930S (3%); Kenwood R-600 (3%); Regency MX-7000 (3%); Radio Shack PRO-2002 (3%); Radio Shack PRO-30 (3%); Bearcat 350 (2%); Bearcat 20/20 (2%); Bearcat 101 (2%); Radio Shack DX-300 (2%); JIL SX-200 (2%); others (1%).

NEW PRODUCTS REQUESTED

ANTENNAS: More in general (3%); RDF (1%); ham transmitting (1%); indoor scanner (1%); LW/MW loop (1%); outdoor scanner (1%)

RECEIVERS: Simple tunable (2%); HX-3000 type (1%); Grove Scanverter remanufacture (3%); scanners in general (1%).

ACCESSORIES: 1691 MHz WEFAX converter (1%); 800 MHz converter (1%); 100 kHz-30 MHz amplifier (1%); RTTY interface (1%); BCB filter (1%); scanner S-meter (1%); SWL software (1%).

KITS: SCA decoder (1%);

personnel, increased demand on our mailing equipment and increased postage. What would this do to your subscription costs? Probably double it if we went twice monthly, and that would assume a slightly reduced page count. A weekly would be prohibitive unless MT dropped down to a newsletter format like many of the club monthly bulletins are now.

But we're always ready to listen--your comments are invited.

FAVORITE COLUMNS

Our recent poll (see results nearby) was most revealing; although some of the data could be expected, others were surprising. It led us to question the balance of articles. Perhaps we should increase coverage in certain areas and delete or substantially reduce coverage in others.

How about some more comments from our readers? Which columns are your favorites? Which are your least favorite? No point in continuing to affront our readers with topics of little or no interest!

One of the most interesting facts to come out was that fully half of our respondents are licensed amateur radio operators. This is encouraging since our earlier estimates pegged that number closer to 20%.

We would like to think that the reason for our acceptance is MT's growing reputation for integrity and accuracy of reporting as well as breadth of content. Maybe the answer is simply that hams are more likely to answer polls!

In any case, your input is our guide. We like our readers and, apparently, you like us. We pledge to do everything we can be retain your confidence by continuing to provide the most accurate, comprehensive and timely coverage in the monitoring industry. Let us know what you would like to see.



Viewpoint

The Pirate Radio Debacle

(This month we end our three-month preoccupation with the pros and cons of our prospective FCC monitoring and reporting assistance program [see this month's editorial].)

Following a telephone call from John T. Arthur, editor of the Veried Response column of the A*C*E newsletter, we offered to print Mr. Arthur's unedited comments regarding his views of the MT proposal. His letter follows along with our response.)

MT POLL cont'd

code reader (1%); RTTY demodulator (1%); audio filter (1%).

INTERPRETATION

Frankly, I would hate to stake my reputation on proper interpretation of this poll! At first glance it would seem that most MT readers have scanners and listen to police calls; a sizable percentage are also short-wave utilities buffs. But I know that this isn't the case, at least so far as the general picture goes.

The vast majority of short-wave radio owners listen to the international broadcasters; utilities monitoring is a specialty. Does that mean that MT has cultivated a specialized audience of ute fans? I think not. Perhaps the poll is misleading and the spillover from scanner responses, a utilities mode, has flavored the short-wave responses.

But there are a few very obvious facts emerging from the poll: Pirate and number station listeners are a very small minority; public safety and aircraft transmissions are of sizable interest among scanner owners; Computers play a small role in the listening post; Greater selection of antennas is desired among listeners.

At least that's the way it looks to me.

Dear Mr. Grove:

In reference to our telephone conversation of July 10th, I regret that I did not find any clarification of your declared policy of organizing a Snitch Service for the FCC in the August MT, although you assured me that there would be such a clarification.

You claim that the aims are to assist the FCC in tracking down "intruders" in the "maritime and aeronautical bands", while stating that pirate broadcasters "are not a priority".

Come on, Bob, you, of all people, should know that the 48 meter pirate band is Maritime and the 41 meter pirate band is Aeronautical by federal designation. If, in fact, you do go after "intruders" in these bands you will be finking on your neighbors and friends, the pirate broadcasters. On this basis, you are guilty of publishing half-truths, or perhaps we should be upfront and call them half-lies which will undermine not only your journalistic credibility, but your economic base as well.

I question whether the Federal Communications Commission needs or wants your help in the first place. When one considers that the FCC is supplied with the most up-to-date equipment and financed by our tax dollars, one wonders what unprofessional hobbyists can do that professional government monitors cannot do. If the FCC doesn't take action against an intruder, one can assume that they don't care about it. All your "input" will do, in such a situation, is act as an official complaint, potentially causing much trouble and grief for the operator.

I am aware that you are a long-time amateur radio operator, and I am afraid that you are letting that fact cloud your judgement. The FCC gave up monitoring the ham bands - they turned enforcement over to the ARRL, with appointed "Official Observers" who have no more effect than the FCC did. If you wish to do something constructive, why not assist the ARRL efforts to clean up the amateur bands..? From my cursory monitoring I see no difference between most of the ham bands and the much maligned Citizen's Band. Everything done by the good buddies on 11 meters is also done on 40 or 80 meters and there are far more "appliance operators" on the ham bands in general. Further, my monitoring and input from others indicates that most

of the unauthorized operations within the ham bands comes from government, embassy and military transmitters, not pirates.

I think you are not only barking up the wrong tree, but you have exposed your Facism - rat on your neighbor for the good of the State, something Washington claims only happens in the Soviet Union or other totalitarian nations.

During our fonecon in July, I requested a refund of my subscription. Only because you assured me that there would be a "clarification" in the August issue did I not follow through on the request. Since no such clarification appeared, I demand a full refund at this time.

I am publicly ashamed and embarrassed to admit that I ever contributed to or supported you or your publication. And you have only yourself to blame if your action hurts the paper or your business.

Down with ALL Facism,
John T. Arthur, editor
Veried Response
A*C*E

The promised clarification did appear in the next edition of MT, the September issue which was distributed in August.

I cannot endorse pirates and other intruders who indiscriminantly poach in the middle of the aeronautical communications band, especially during these times of aircraft terrorism, hijackings and crashes. The safety of hundreds of defenseless persons--your family and mine--in flight should not hinge on whether or not a pirate decides it's time to go on the air.

Yes, I'm a long-time amateur radio operator, licensed since 1951. And if your monitoring of the amateur radio bands reveals no difference between that service and CB, I suspect that I may not be the only one with "cloudy judgement." Besides, we never mentioned the private radio services in any of our proposals.

As requested, we shall refund the remaining portion of your subscription to MT as we have done in every case where this has been asked because of this recent issue, now making in all, one.

"FREE RADIO" GETTING TIRESOME?

A*C*E is calling MT a "snitch service" now. Frankly, many of our members are getting tired of stupid pirates who do nothing but play music continually and use profanity over the air-

waves. This isn't "fun", it's just immature and stupid! I would agree and support free radio when the stations start taking some responsibility to serve their audience and not themselves. The frequency range they occupy is used by people/groups that have taken the time to get their licenses so that they may safely operate a transmitter that will not cause interference to other services. Some of the pirates do programme their services with some good quality and through-provoking programming. It is these stations which should represent the pirate community and work towards deregulation of some FCC rules, not just the campus-based idiots who are on the air just to impress their friends.

We mustn't allow what happened to the CB bands happen to shortwave, where things are bad enough already.

Regardless of pirate radio, which I could usually care less about, both I and our 100 members love MT! and whatever the outcome of this, we will still support your excellent work.

DX Radio Network
Phillip M. Dampier,
Director General

>>>><<<<

Your sample of the September 1985 issue was so interesting to read that it almost made me ignore my policy of not subscribing to radio magazines...

What made me revert to my established resolve? The evident fact that your readers thought unlicensed radio operation was not only acceptable but commendable! Now, I'm not free of sin; I did my share of unlicensed operation in 1921-23, first on spark, then on CW telegraphy and telephony. But in these days of frequency shortage and strict international plus national agreement on frequency assignments, there's no valid excuse for the ancient sport of "bootlegging."

Carl Drummeller, W5JJ
Warr Acres, OK

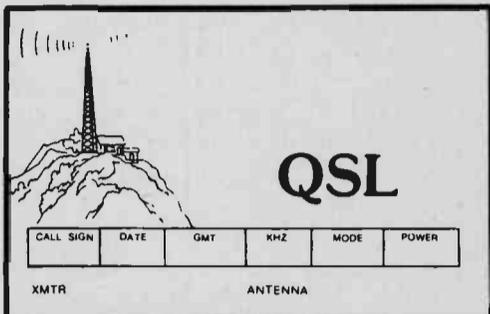
NEED TECHNICAL HELP?

We are always pleased to offer assistance to our readers who need more information about our products and services. All we ask is that you include a self-addressed stamped envelope to help offset our cost of return postage.

If you would like to speak with Bob Grove directly, call 1-704-837-9200 Monday through Friday, 8am-5pm.

CRUISESHIPS cont'd

have included a few of the most popular ones at the end of this article. You may need others and all you have to do is go to your nearest travel agency, pick up a brochure for the cruiseline and glean the address from it. Address your letter to the ship, attention of the Chief Radio Operator, in care of the cruiseline at the address you obtained.



At the end of this article are two lists containing the raw data that you will need to hear and QSL some of the various cruiseships. The first one includes a brief list of the most popular 4/8 MHz frequencies used by cruiseships along with the coast stations on those frequencies and the channel designator. A more complete list is obtainable from short-wave directories like Grove's SHORTWAVE DIRECTORY or Gilfer's CONFIDENTIAL FREQUENCY LIST.

WOM has the use of several other frequencies which it uses when the "normal" frequencies are busy. They are in 3 kHz increments from 4529 to 4538 kHz, with the ships on 5079 to 5088 kHz. They also have 7392 to 7398 kHz with the ships on 7974 to 7980 kHz.

The second list contains the names, call signs, owner, and addresses of some of the most often heard cruiseships. As far as I can determine, this is the first time this information has been printed in a hobby publication. Additional information can be obtained via the travel agency route mentioned above or by going to your local library. They may have a current copy of LLOYD'S REGISTER OF SHIPPING which lists all ocean-going vessels by name. It also gives the call sign and parent company. It is about \$200 a copy, so try the local library before trying to purchase a copy!

Satellite systems are being installed on some cruiseships and it was in use on the M/V Southward on which I had the pleasure of sailing last April. The cost at that time was about \$10 per minute vs. the \$5-6 per

minute on the HF system, but prices may be going down.

I heard two RO's talking on one of the 4 MHz channels not too long ago, and they mentioned a price of \$6 on the satellite system. It offers a better quality phone patch and is

much more secure than the HF system. It is definitely the mode of the future as far as ship communications go and finding cruiseships on the HF frequencies may become more difficult as satellite systems become more commonplace.

CRUISESHIP FREQUENCIES			
Channel:	Station:	Coast:	Ship:
401	KMI	4357.4	4063.0
403	WOM	4363.6	4069.2
410	WOO	4385.3	4090.9
411	WOO	4388.4	4094.0
412	WOM	4391.5	4097.1
416	KMI/WOO	4403.9	4109.5
417	KMI/WOM	4407.0	4112.6
422	WOO	4422.5	4128.1
423	WOM	4425.6	4131.2
802	WOM	8722.0	8198.1
804	KMI	8728.2	8204.3
805	WOM	8731.3	8207.4
808	WOO	8740.6	8216.7
809	KMI	8743.7	8219.8
810	WOM	8746.8	8222.9
811	KMI	8749.9	8226.0
815	KMI/WOO	8759.2	8238.4
824	WOM	8793.3	8269.4
826	WOO	8796.4	8272.5
831	WOM	8811.9	8288.0

CRUISESHIPS AND COMPANY ADDRESSES	
Bahama Cruise Line 4600 West Kennedy Blvd. Tampa, FL 33609	3FMG2-Bermuda Star 3FAQ--Veracruz
Carnival Cruise Line 3915 Biscayne Blvd. Miami, FL 33137	HOKL-Carnivale 3EQN-Mardi Gras HPFG-Festivale ELBM9-Tropicale ?? -Holiday
Commodore Cruise Line 1007 North America Way Miami, FL 33132	H9CK-Boheme 3EIC2-Caribe One
Cunard/NAC Lines 555 Fifth Avenue New York, NY 10017	GUNP-Cunard Countess GCCG-Cunard Princess GBTT-Queen Elizabeth II C6ZU-Sagafjord C6ZV-Vistafjord
Fantasy Cruise Lines 1052 Biscayne Blvd. Miami, FL 33132	3FIH2-Amerikanis HPEN--Britanis 3FIP2-Galileo
Holland-America Line 300 Elliot Ave. West Seattle, WA 98119	PJCH-Nieuw Amsterdam PJCO-Noordam PJSU-Rotterdam
Norwegian-Caribbean Lines One Biscayne Tower Miami, FL 33131	LITA-Norway LKQH-Skyward LCKF-Southward LCJK-Starward LESS-Sunward II
Princess Cruises 2029 Century Park East Los Angeles, CA 90067	GBBM-Island Princess GBCF-Pacific Princess GBRP-Royal Princess GBBA-Sea Princess GBFT-Sun Princess
Royal Caribbean Line 903 South America Way Miami, FL 33132	LAPJ-Nordic Prince LENA-Song of America LNPV-Song of Norway LIZA-Sun Viking
Royal Viking Line One Embarcadero Center San Francisco, CA 94111	LECK-Royal Viking Sea LADE-Royal Viking Sky LILY-Royal Viking Star
Sitmar Cruises 10100 Santa Monica Blvd. Los Angeles, CA 90067	ELMQ-Fairsea ELDK9-Fairsky ELPH-Fairwind

German Regional Short-Wave Stations

by Ed Soomre

When the SWL thinks of hearing West Germany on short wave, the first thought in mind is the powerful Voice of Germany or Deutsche Welle. They are the international voice of the Federal Republic of Germany with many transmitter sites in West Germany as well as relay stations overseas.

But between the international broadcasters, other voices from the Federal Republic of Germany exist--small regional stations who relay broadcasts on short wave from their long wave, medium wave and even FM broadcast band services. Although with they operate with less power than their big brother, they are being heard here in the U.S.A. Since they are regional stations, most programming is in the German language.

The Bayerischer Rundfunk is located in Munich and operates on 6085 kHz (transmitter at Isamaning near Munich) with 100 kW (which runs parallel to their MW and FM broadcasts). The short-wave outlet relays the first program BR1 (there are four types of programs). Broadcast time is from 0430 UTC (0450 UTC on Sundays) to 2308 UTC (0000 UTC on Saturdays and Sundays).

Best time for reception in the eastern U.S. is from 2100 UTC to sign off because, although propagation might be good at sign on the Deutsche Welle uses this frequency for broadcasts to North America.

Secondly is Radio Bremen operating on 6190 kHz with 50 kw, running parallel programming with their medium wave and FM broadcasts. Broadcast time is from 0800-1100 UTC Saturdays and 1400-1700 UTC Sundays through Fridays. They broadcast some language lessons in English and French and relay the Sender Freies Berlin (Radio Free Berlin) broadcasts the rest of the time.

I have been unable to hear this one, but the best time might be Saturdays between 0800 and 1100 UTC. The 1400-1700 UTC time is almost useless for North America, although possible in the winter time.

RIAS (Radio In American Sector) Berlin is not easy to hear due to a number of international broadcaster using the same frequency--

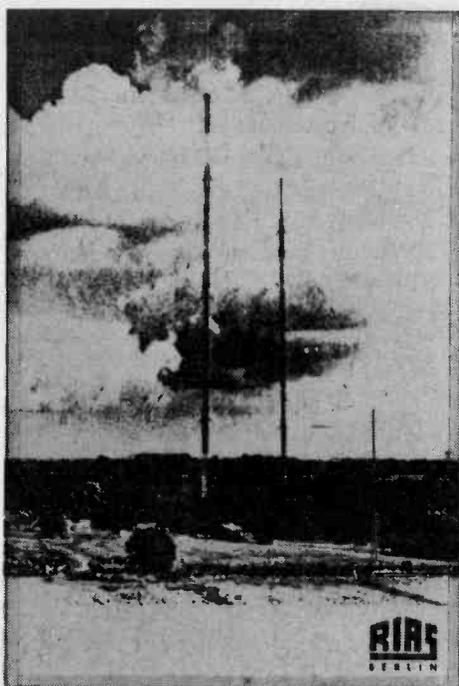
GERMAN REGIONAL SW cont'd

6005 kHz. They now run 100 kw with the transmitter located in Berlin. They used to run less power with two sites, one in Munich and one in Berlin.

Broadcast schedule is from 0325 UTC (0400 UTC Sundays) to 1315 UTC daily. Programming is relayed from the RIAS program 1 (mostly news). This station is funded by the USIA (the parent organization of the VOA). Best time is around sign on and for a few hours thereafter. This is much QRM from the BBC on the frequency.

Sender Freies Berlin (SFB) broadcasts on 6190 kHz when Radio Bremen is not broadcasting; they actually use Radio Bremen's transmitter site to relay SFB program 1, a commercial service from medium wave and FM. Best time in eastern U.S. is early mornings around 0530 UTC, accepting some QRM from CBC Northern Service.

The Sddeutscher Rundfunk (Southern German Radio) located in Stuttgart broadcasts on 6030 kHz from a transmitter site in Muhlacker with 20 kw. SDR program 1 is broadcast from 0425 UTC (0455 UTC Sundays) to 2305 UTC daily. Best time is around 2200 UTC with a fair signal.



Because of the use of 40 meters by U.S. amateur radio operators, QRM is high. Best time for reception is in the early morning for eastern North America around 0600 UTC.

Over the border in the German Democratic Republic (East Germany) another station broadcasts a round-the-clock home service program: Stimme der DDR (Voice of the German Democratic Republic) on 9730 kHz from Leipzig with 50 kw. Two other transmitters located in Berlin relay these programs on 6115 and 7185 kHz with 50 kw.

The German regional stations are good verifiers and will generally acknowledge reception reports with QSL verification cards. Most will send program schedules, stickers and pennants if requested. Reports can be written in English. Even if the listener does not understand the German language, using the names of songs, people, places and events can help in the verification of these stations. UTC time can be used.

In most cases (RIAS is an exception) return postage in the form of mint stamps or an IRC should be sent. The time for replies can be as quick as a few weeks to as slow as three months.

Another part of DXing German regional stations are their high power long wave and medium wave stations. They are heard in the U.S. during the winter months. Some of these powerhouses are relayed on short wave, others are not. One example is the Deutschland Funk

(German Radio) which broadcasts on 155 kHz and 209 kHz using 500 kw. Other stations they operate are on medium wave: 756, 1269 and 1539 using powers of 800, 600 and 700 kw respectively. Another one is the West Deutsche Rundfunk (West German Radio) which operates on 1593 kHz with 400 and 600 kw. The split European frequencies makes them easier to hear in the U.S. A good hf receiver and longwire (with antenna tuner) or loop antenna will receive some of these stations.

One final note: Rumors persist about these regional short wave stations being closed down due to the technological advances in their medium wave and FM stations offering better signal coverage on existing outlets. So now is the time to verify them before they fade into history.



TEN METER BEACON EXPERIMENT

Hams love to experiment, and with good reason. Amateur radio operators are credited with a sizable number of discoveries and new concept developments in the world of electronics.

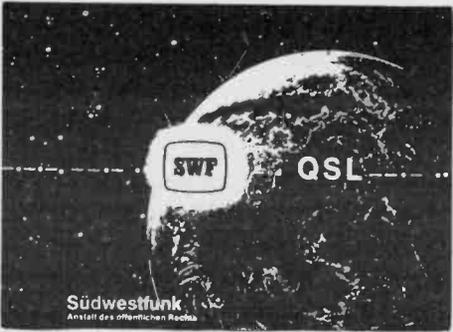
John Mahagan (WB4JHS), 220 Covington Avenue, Apartment 73, Thomasville, GA 31792, is now running a seven watt CW beacon continuously on 28.253 MHz for propagation experiments. He would appreciate reports from monitors regarding signal strengths at various times of day and night as he changes the elevation of his antenna.

His present antenna is a ground mounted quarter-wave vertical with a ten radial counterpoise.

John invites anyone who is interested in learning more about amateur beacons to write, enclosing an SASE for his postage.



Lastly we have the Südwestfunk (Southwest Radio) on 7265 kHz running 20 kw from Rohndorf with studios located in Baden-Baden. This station broadcasts from 0425 UTC (0500 UTC on Sundays) to 2305 UTC daily. Programs are relayed from SWF program 3.



VOA Greenville ...Not really?

by David L. Wilson

A year ago I was in North Carolina visiting a brother. Passing through Greenville, I decided to try to locate the VOA transmitters. After a brief time of hunting for antennas, a series of signs led to an antenna farm and building. The sign said "Voice of America, Site C."

Turning on my short-wave radio in the car, I found no VOA transmissions coming from that facility. Although puzzled, it was already dark and three hours from my motel. For the time-being I had to give up the search for the transmitter facilities.

Back home, 500 miles away, the World Radio Television Handbook was consulted. But this yielded only "Greenville" and a set of rounded coordinates.

Even the IRAC file listed only Greenville as the location of the VOA transmitter. But than an idea occurred; searching the 6000 and 7000 MHz region for microwave links, I soon found that the VOA had a microwave link system from Washington Greenville.

Starting in Washington, D.C., the links passed through Virginia to a microwave relay station in Scotland Neck, NC, and finally to Greenville. At that point, the abbreviated fiche file showed the system split into links to "SHELMRDN" and "LGTSCSDS." A look at a map revealed the first to be Shelmerdine, NC, which is southeast of Greenville. The second abbreviation was a puzzle.

This spring I had a chance to continue the search. When approaching Shelmerdine, a series of signs led me to VOA Site B. Immediately I found transmissions on 6190, 9455, 9515, 9650, 11890, 15195, 15205, 17780, 21610, and also 6873 LSB.

But where was Site A? I located a phone book which told me that Site C was the "Main Office" and gave an address for Site A, but I had no map. As a last resort, I stopped by the sheriff's office to locate the road, but he could not find it on any of his maps. Finally, he just called the facility and asked where they were.

VOA GREENVILLE cont'd

They are not even in the same county as Greenville! Site A is east of Greenville, just across the county line near Latham (I still cannot explain "LGTSCSDS").

The next morning, I drove by the facility and found transmissions on 6140, 15265, 21580, and also RTTY on 18602.

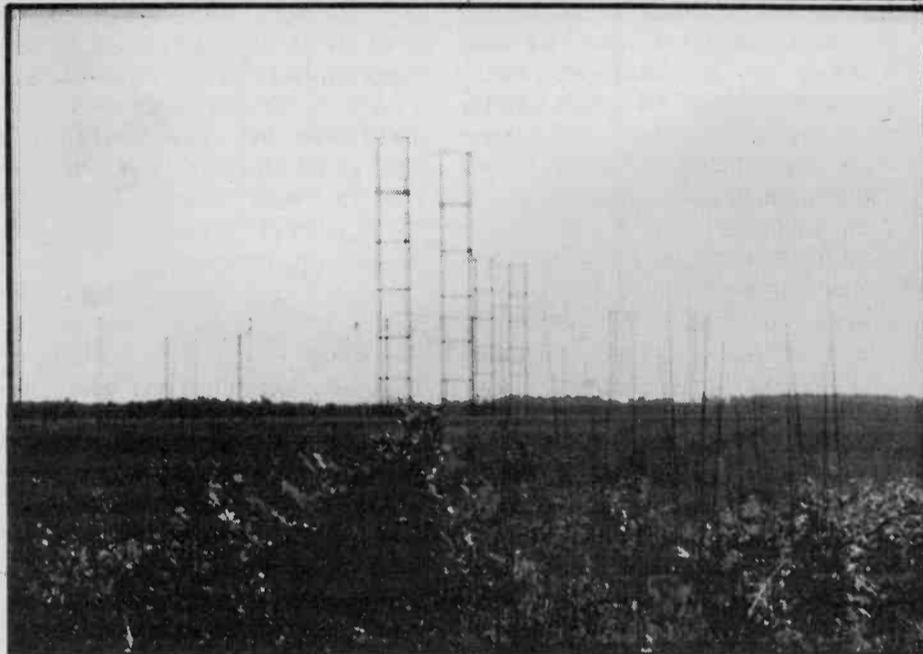
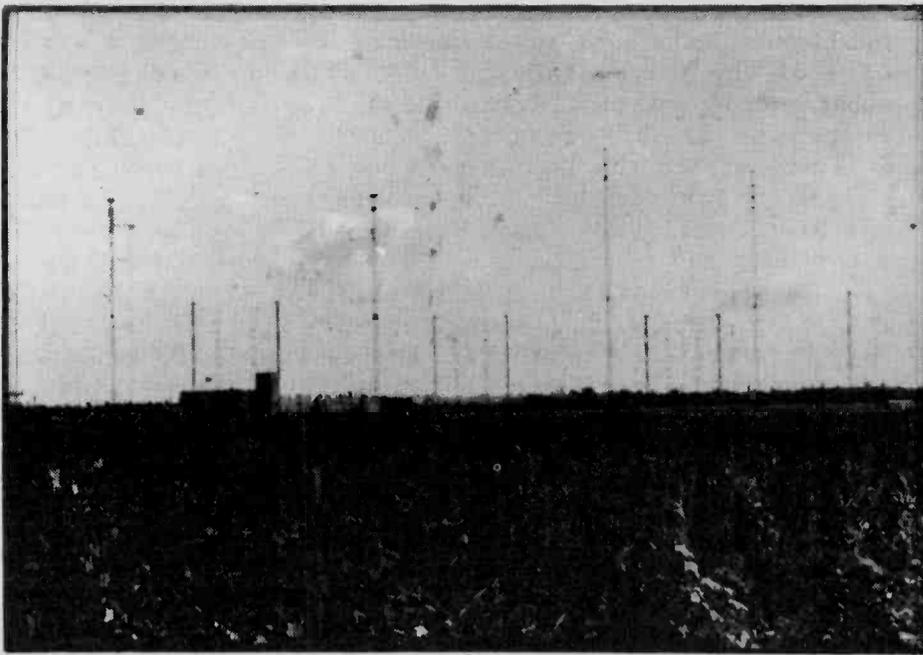
In summary, the "Main Office" is Site C in the northeast area of Greenville. It has no active transmitters on short-wave. The transmitter sites are Site A which is near Latham which is east of Greenville and Site B which is near Shelmerdine which is south-east of Greenville.

Later: A RTTY MESSAGE FROM GREENVILLE

A few months after my visit to the Greenville area, I noted spurs from the 15650 kHz transmitter on ± 100 kHz (i.e., on 15550 and 15750). This transmission uses the lower sideband for feeder operations and the upper sideband for 75 Bd, 85 Hz-shift RTTY for communications with relay stations.

I decided to give Site C ("Main Office") in Greenville a call to let them know. They had me call Site A where this transmission was from. Site A said they would look into the matter. Then came a pleasant surprise.

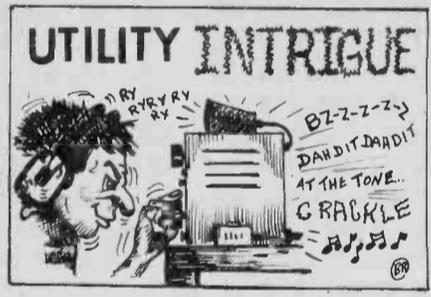
When I resumed my monitoring, the receiver was wired to my M-600A for viewing RTTY. Suddenly the VOA RTTY channel (on the USB of 15650) transmitted, "If the guy in CT state is still copying, I found the spur you called about. Sure is



VOA site B at Shelmerdine, NC

there, isn't it???"! I wonder if anyone else copied that message on June 22 to me.

A later message let me know that Site C was keying the transmitter at Site A. They were able to suppress the spur, but it returned the next day. In one of my phone calls to them they revealed that almost all of the equipment was from the 1950's.



by
Don Schimmel
516 Kingsley Rd SW
Vienna, VA 22180

Propagation apparently was just right 24 July for E/W and N/S reception as I observed three timing signals at 2320: NBS stations WWV Fort Collins, CO; WWVH Kekaha, Kauai, Hawaii; and LOL Buenos Aires, Argentina, were all heard on 15000 kHz.

Another unusual transmission was heard July 26 at 2352Z. A bubbly sounding CW string of dits was found to cover a 40 kHz wide section of the spectrum on 14739-14771 kHz. In going up the band the same type of signal was noted on 14945-14961 kHz.

During the summer months I picked up a number of catalogs and I really enjoy reading these "wish books." Often a mail order firm turns out to be a unique source of certain equipment items, so I go

through the catalogs quite carefully. Here are a few of general interest.

The first one has government and commercial surplus electronic equipment and parts: Fair Radio Sales Co., P.O. Box 1105, Lima, Ohio 45802. Another surplus equipment firm, this one with surplus computer items as well as electronic materials: John J. Meshna Jr., Inc., 19 Allerton Street, Lynn, MA 01904.

The next three carry SWL equipment and books: Grove Enterprises, P.O. Box 98, Brasstown, NC 28902; Electronics Equipment Bank, 516 Mill Street, Vienna, VA 22180; and the last one costs \$1.00, but this is refundable with your first order--Universal Shortwave Radio, 1280 Aida Drive, Reynoldsburg, Ohio 43068.

I never did obtain an identification of the following activity although I watched it for quite a while. The CW transmissions on 14419 kHz took place on 20 July at 1903Z. Station 515 was calling station 26T with the zero cut as T. The calling was prolonged and 515 kept telling the other end (unheard) to QSV because 26T was QSA 0.

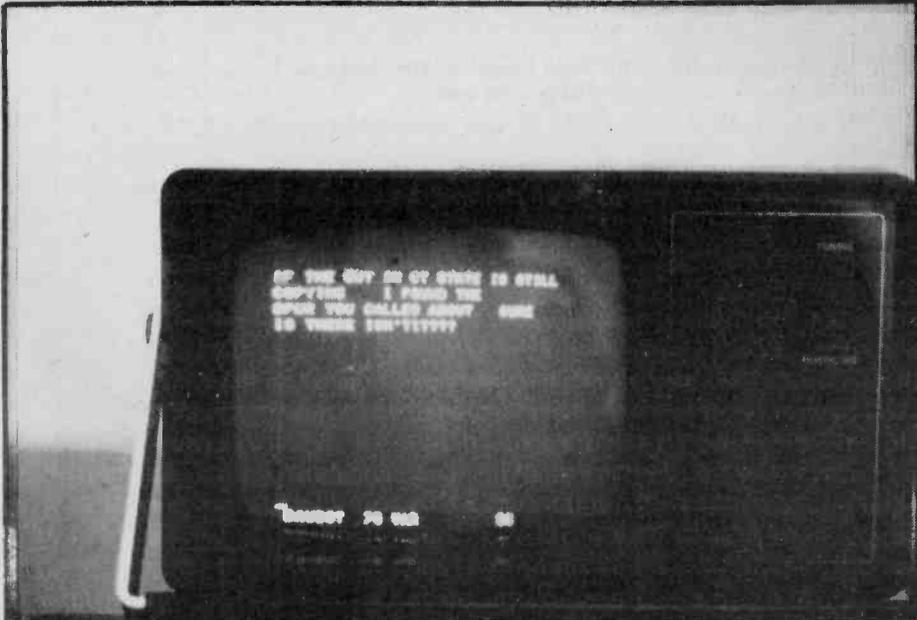
After many minutes of much calling, 515 started sending QSY signals, first QSY22 and then QSY34. Although I searched very carefully I did not detect any other activity related to the above.

A suspected training activity was intercepted on 4622.5 kHz on 19 July at 0309Z. The headings of the messages all had APR 85 after the Date-Time-Group. Each message, cipher texts of 5L groups, was repeated and all of the traffic was sent broadcast fashion with no out-stations observed requesting repetition of missed groups.

ZERO A call sign was again observed, this time on 4513 kHz on 19 July at 0125Z. The CW traffic was sent to A27 and M31 and the texts were 6F groups. All numbers were sent full.

Some more additions were made to my bookshelf this past month. "THE GUIDE TO MILITARY INSTALLATIONS" is a must if you monitor the transmissions of the U.S. Armed Forces. The book contains details on the location, size of the installation and information regarding the military service units assigned to that particular location.

Included in the GUIDE is info concerning installations within the U.S. as well as those U.S. military



"If the guy in CT state is still copying, I found the spur you called about. Sure is there, isn't it?!"

**OUR BEST SALESMEN ARE OUR CUSTOMERS--
TELL A FRIEND ABOUT MONITORING TIMES**

UTILITY INTRIGUE cont'd

bases located overseas. This is, indeed, a handy operator aid to have.

Two crypto titles have also just been added to my collection. "HISTORY OF THE USE OF CODES" by William F. Friedman was originally written during the 20s when the author was a Major in the U.S. Signal Corps Reserve. He served as a Technical Advisor to the U.S. Delegation to the International Radiotelegraph Conference of Washington in 1927.

The origin of codes is discussed along with information on code use in communications. The book is available from Aegean Park Press, P.O. Box 2837, Laguna Hill, CA 92654 and costs \$13.80.

Another of the excellent texts by Friedman, "MILITARY CRYPTANALYSIS, PART II," was recently declassified by the U.S. government and is also available from the above

publisher. This book covers some of the polyalphabetic substitution systems. It is priced at \$22.80 postpaid delivery within the U.S. For shipment outside the U.S. add \$1.00. California residents must add 6% sales tax.

Ask for a catalog from this firm because they have many more books, some in the cryptographic series as well as some in the intelligence series plus some miscellaneous titles.

I note in the current catalog that there is a title which apparently covers the same subject matter as "ROOM 40: BRITISH NAVAL INTELLIGENCE 1914-18," mentioned in David Kahn's letter in MT "Viewpoint" August 1985. The title in the Aegean Park Press catalog is "INTELLIGENCE AND CRYPTANALYTIC ACTIVITIES OF THE BRITISH NAVY IN WORLD WAR I, The Code Breakers of Room 40." This latter book costs \$19.80.

If you are maintaining a list of diplomatic loggings, here is another entry

for your records. A strong CW station was noted on 13377 kHz on 14 August at 2214Z. He was calling BOR and after establishing contact with BOR (not heard on 13377), he sent a message, believed to be Bulgarian plain text. WASH appeared in the heading of the message so it would seem that the transmission was from the Bulgarian Embassy in Washington, D.C.

I thought I heard the other end on 13935.5 kHz but was unable to confirm this as the station was requested to QSY. This time BOR was heard on 12297 kHz sending 5F groups. BOR again QSY'd and went to 11014.6 kHz and continued with the cipher traffic. These messages were followed by some traffic in Bulgarian plain text and SOFIA was noted in the signature line. After the Washington end QSL'd the traffic the stations went down.

An excellent list of diplomatic stations and frequencies may be found in Bob Grove's SHORTWAVE FREQUENCY DIRECTORY.

future date, the foundation will brief me with updated information on the communications plan and scheduled date of getting underway for the trip from the West Indies to Jamestown. These details will be published in the column just as soon as is possible so that any interested SWL'ers can follow the continuation of the historic trip of the GODSPEED.

By the way, due to the delays and subsequent postponement of the voyage, the associated costs have exceeded the amount forecast for the project. If any SWL'ers are interested in supporting this worthwhile endeavor, they can make checks payable to the Jamestown Commemorative Fund and forward their donation to the following address: Jamestown-Yorktown Foundation, Drawer JF, Williamsburg, Virginia 23187.

To identify your affiliation why not print "From an SWL'er" at the bottom of the check.



LOGGED JULY 1985		
KHZ	DTOI	MODE/IDENTIFICATION/COMMENTS
4220	280240	CW/DE GYU(GIBRALTAR NAVAL RADIO) V'S
4236	280242	CW/DE VAI(VANCOUVER CG RDO, BC, CANADA)
4515	290304	CW/JXG & MJV CALLED BY UNIDEN STN
4536	290419	CW/... DE LIA(APPEARS BE RELATED TO 4515 ACTIVITY)
5318.5	310114	CW/NO CALLS/NOTICE TO MARINERS IN ENG.
6388	290300	CW/DE CTP(OEIRAS NAVAL RADIO, PORTUGAL)
6591	250056	CW/83 83 83 DE T T T QSV K(UNIDEN)
7405	310101	RTTY 50-425/RC LA HABANA CUBA TESTING TO ITTWC NY(RY'S & QUICK BROWN FOX)
8517	290258	CW/DE 4XZ(HAIFA NAVAL RADIO, ISRAEL)
13122.8	271335	USB VOICE/WOM (MIAMI, FL) PLAYS TAPE OF NATIONAL WX SERVICE WITH WX FOR ATLANTIC AND GULF OF MEXICO.
13365	301332	RTTY 75-850/DE HDN (QUITO NAVAL RDO, ECUADOR) RY'S
13396	241212	FSK MORSE/7L1 DE DDO(UNIDEN)
13421	301336	RTTY 50-425/5F GROUPS, VERY WEAK SIG.
13508	291740	RTTY 75-850/CODED WX(NEW ENGLAND AREA)
13536	291738	RTTY 50-425/DE Y7A54(BERLIN, GDR) RY'S
13621	232316	RTTY 75-850/CODED WX
13675.5	251245	USB VOICE/TWO MEN IN ENGLISH TALKING ABOUT LIST OF PARTS FOR DIESEL ENGINE
13893	291731	RTTY-425/ARABIC PRINTER TEXT
14449.4	300015	USB VOICE/TWO MEN TALKING, ONE ASKS TO SPEAK TO MECHANIC AND WHEN MECHANIC ON AIR THEY TALKING IN SPANISH ABOUT NEEDING FINE THREAD SCREWS.
14495	250101	RTTY 50-850/DE CSY(SANTA MARIA, AZORES)
14640.8	271758	CW/5F GROUPS, ALL NBR'S SENT FULL, WEAK
14939	252306	RTTY 50-170/DE 5UA(NIGER ALLOCATION)
15873	262343	RTTY 75-425/PRESS ITEM RE INTERNATIONAL MONETARY FUND IN ENGLISH
15991	251256	RTTY 50-425/PRESS IN ENGLISH
16135	262325	RTTY 50-425/RCC LA HABANA CUBA TESTING TO ITTWC NEWYORK, RY'S ETC
16724	262328	CW/WOE DE LHTJ(LATANA, FL FROM NORWEGIAN SHIP)
16747	262332	CW/JCT DE JDFX(CHOSI, JAPAN FROM JAPANESE SHIP)
16870	262340	CW/WX IN ENGLISH FOR GULF OF MEXICO
17005	291939	CW/DE FCH61(SCHEVENINGEN, NETHERLANDS)
17398	262316	RTTY 50-425/HVA DE SHAI ROG CLN565 QRM PL TRY GA YR TFC ZHC (POSSIBLY HAVANA FROM SHANGHAI CHINA)
17450	262312	RTTY 50-425/DE CLN(HAVANA(BAUTA)CUBA) RYS

I have been in touch with the Jamestown-Yorktown Foundation in Williamsburg, Virginia, concerning the anticipated resumption of the voyage of the GODSPEED (See UTILITY INTRIGUE August and September 1985). At a



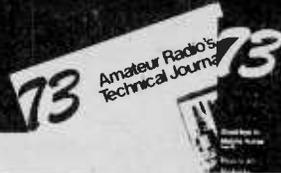
1985
*Godspeed
Sea Voyage*

5,955 Miles
-Hull: England to Jamestown 13,700 miles

Vessel's Characteristics

Length Overall	68' 0"
Length at water line	46' 6"
Beam	14' 8"
Draft	6' 11"
Displacement	62,575 T
Built	34,55 T
Sail Area	1128 Sq Ft
Water line to top of Flag Staff	55' 0"

MONITOR





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73: Amateur Radio's Technical Journal, PO Box 931 Farmingdale NY 11737

LOGGED AUGUST 1985		
KHZ	DTOI	MODE/IDENTIFICATION/COMMENTS
2759.5 3330	120222 120225	USB VOICE/CONVERSATION IN PORTUGUESE AM VOICE & MCW/RADIO CANADA TIME SIGNAL, ANNOUNCEMENT IN ENGLISH AND FRENCH, CHU (OTTAWA, CANADA)
4192.9 4359	120237 131108	CW/UNIDEN CALLING PPJ(JUNCAO, BRAZIL) USB VOICE/YL-EE GIVING WX FOR GULF OF MEXICO AND FLORIDA AREA
6221	121137	USB VOICE/UNIDEN SHORE STN WORKING BARGE RODNEY MITCHELL
6870 11570 12210	101149 101216 121659	DE CAI7E (CHILEAN ALLOC) RY'S RTTY 75-850/DE NBA (BALBOA, CZ US NAVY) RTTY 50-850/TANJUG BEOGRAD(YUGOSLAVIAN PRESS SERVICE) RY'S
13126.7 13300	142340 081139	CW/NO CALLS/5L GROUPS CW/4F GROUPS 3 4 5 6 7 SENT FULL, 1 2 8 9 Ø SENT CUT AS AUDNT.
13364 13370 13421 13422 13631 13997	062358 111416 081145 071313 070037 121207	RTTY 50-425/DE 5YD (NAIROBI, KENYA) RY'S RTTY 75-850/DE NBA(US NAVY BALBOA, CZ)RY RTTY 50-425/5F GRPS(FOSS N. KOREAN) RTTY 75-425/5L GROUPS RTTY 50-170/DE KB(?) RY'S THEN 5L GRPS RTTY 50-425/AGENCE FRANCE-PRESSE, PRESS ITEMS IN FRENCH
14432 14495 14498 14603	121152 112326 061520 091721	RTTY 50-425/5F GROUPS RTTY 50-850/DE CSY(SANTA MARIA, AZORES) RTTY 50-425/DE XJJ250 (CANADIAN ALLOC) RTTY 50-425/DE Y7K3Ø(FOSS GDR EMBASSY AT UNKNOWN LOCATION)
14617 14900	091744 131210	RTTY 50-425/DE Y7A54(BERLIN, GDR) RTTY 50-425/TASS(SOVIET NEWS SERVICE) PRESS ITEMS IN ENGLISH
16701.8	131149	RTTY 50-170/UJY(KALINGRAD USSR) DE LYEU (RUSSIAN SHIP)
16721.6	131137	CW/UNIDEN STN CALLING GKB(FORTISHEAD, ENGLAND)
16797.6 18415	131134 052155	CW/5L GRPS, SPEC CHARAC IM OE OT AA RTTY 50-850/AGENCIA DE NOTICIAS TELAM (ARGENTINE NATIONAL NEWS AGENCY) PRESS ITEMS IN SPANISH
19000	061325	RTTY 50-850/DE PWZ33(RIO DE JANEIRO NAVAL RADIO, BRAZIL)
19743	052128	RTTY 50-425/NOAA(NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION) 5F & 6F GROUPS INTERMIXED WITH PT ENGLISH
20095	061742	CW & RTTY 50-425/UNIDEN STN CALLS VVH/ SENDING 5F GRPS, 3 4 5 6 7 SENT FULL, 1 2 8 9 Ø SENT CUT AS AUDNT

- SCANNING ->

Monitoring the Talladega 500

by David Beck

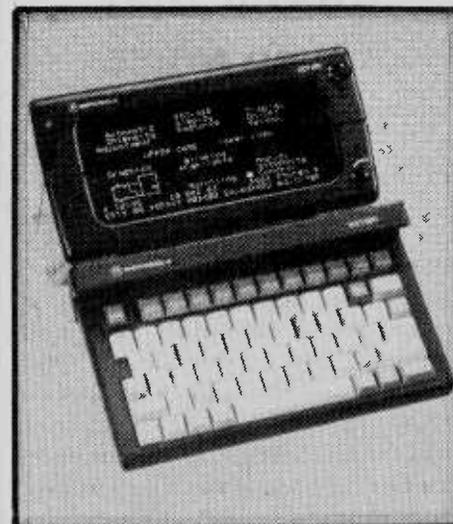
A recent trip to the Talladega Speedway on July 28, 1985, netted the following race car drivers and pit crews which I would like to share with fellow MT monitoring enthusiasts.

461.875 #44 Terry LaBonte	466.312
461.975 #33 Harry Gant	466.625 #74 Rick Wilson
463.462 #7 Kyle Petty	466.975
463.900 #27 Tim Richmond	467.112 #49 Trevor Boys
464.125 #8 Bobby Hillin	467.775 #00 Phil Barkdoll
464.300 #4 Joe Ruttman	468.562
464.337 #54 Bobby Wawak	468.900 #27 Tim Richmond
464.450 #55 Benny Parsons	(463.900 mobile)
464.537 #64 Clark Dwyer	469.125 #8 Bobby Hillin
(repeater)	(464.125 mobile)
464.600	469.962
464.800 #43 Richard Petty	464.775 Talladega Speedway
	officials & security
	465.687 NASCAR Track Judges
	464.500 NASCAR
	464.550 NASCAR
	CBS-TV 450.350 450.512
	450.800 450.850 455.012
	455.987
	(CBS-TV wireless mikes
	153.290 161.640 169.990)
	(Bill Elliot #9 is on the
	800 MHz band)

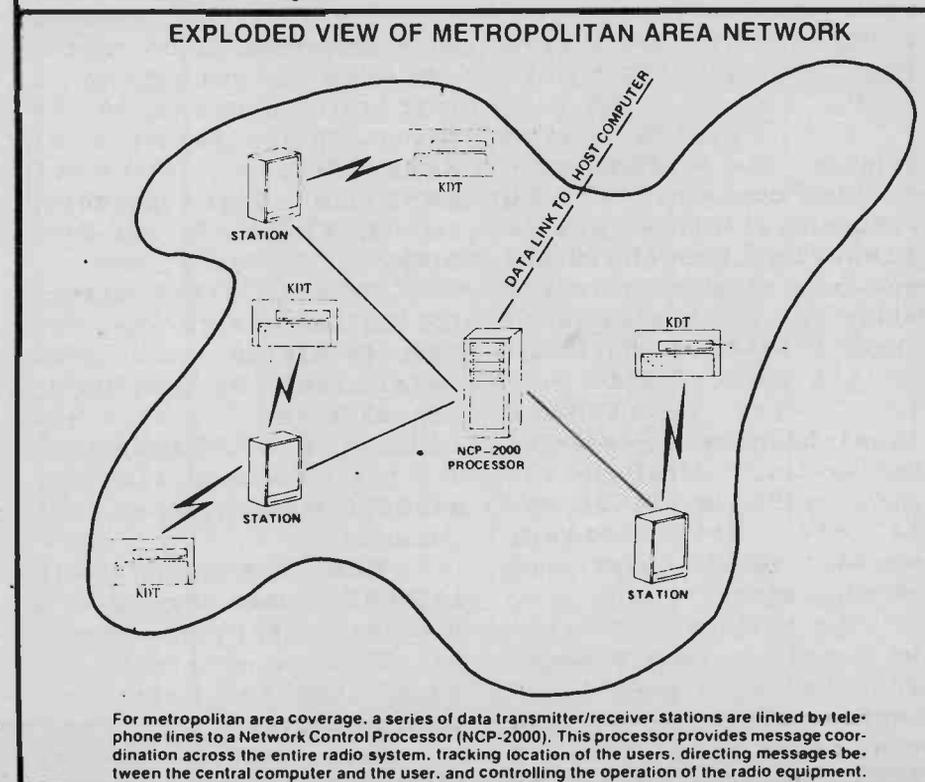
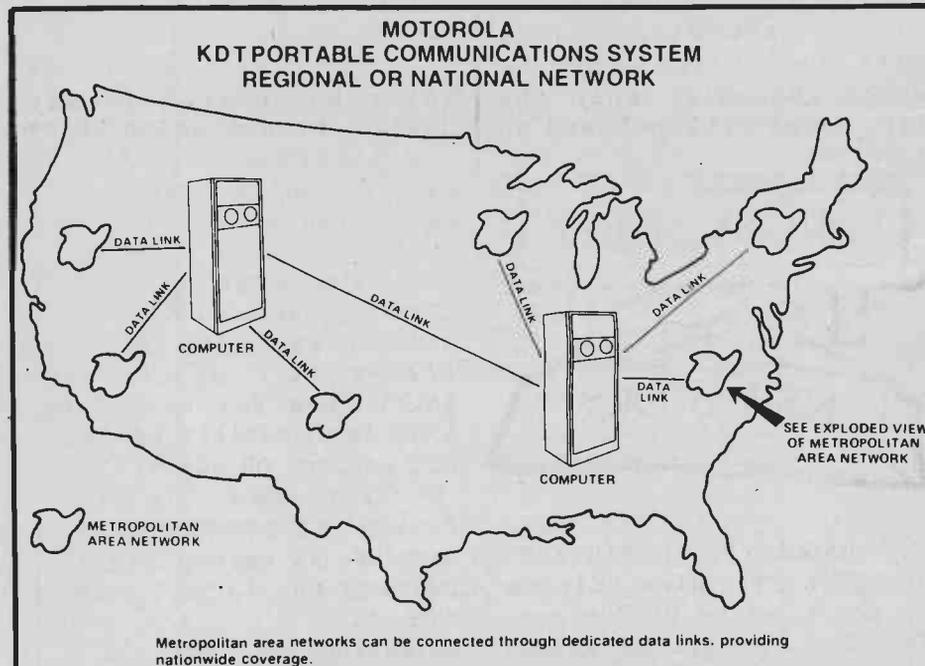
MOBILE AND PORTABLE DATA TERMINALS

Ever wonder what those raucous "buzzes" were which you hear on some police channels in larger cities? They are part of the mobile data terminal system whereby the officer on the road can exchange information with the dispatcher via keyboard, thus increasing accuracy and assuring security.

Shown here is Motorola's new KDT 480 designed for operation with 800 MHz radios as part of a metropolitan network (see accompanying illustrations). Since the tiny terminal has no cable, it radiates a signal to a nearby remote interface which is tied via a data link to the central computer.



Motorola's KDT 800 Portable Data Communications System



WHAT'S THAT WEIRD NOISE ON 1090 MHz?

by Bob Grove

Owners of the Regency MX7000 scanner who are looking for new frontiers in monitoring may wish to punch in 1090 MHz, AM mode. If you are anywhere near a commercial airline in flight, you will be treated to an entertaining array of raucous buzz-tones.

The emissions are part of the DME--distance measuring equipment--which tells the radar operator who he is watching on his screen. And when the pilot is asked to "Squawk 1202" he registers himself with the central tracking computer as being on a VFR flight plan (12__) and is climbing to 2000 feet (__02).

If the controller asks the pilot to "Squawk ident," he responds by pressing a button which, for ten seconds, causes his particular data block on the radar screen to "blossom" (grow larger) to call attention to his location in the cluster of other aircraft.

The squawk commands will all be heard on normal voice channels; only the data tones will be heard on 1090 MHz.



DALLAS/FT. WORTH FREQUENCY LIST, Third Edition by Ken Winters (152 pages, 8-1/2" x 11", spiral bound; \$19.95 from Basic Computer Services, P.O. Box 13193 Dept. MT, Arlington, TX 76013)

Now in its third revision, Ken Winters' compilation contains over 4000 frequency listings from 26 kilohertz through 10,000 megahertz receivable in the Dallas/Ft. Worth area (some are nationwide allocations).

Listings include just about every receivable signal imaginable, covering land mobile, federal government, space, maritime and aircraft, broadcasting, amateur, mobile telephone, and many more.

The book is split into two sections: a frequency order and an alphabetical licensee listing. Emission mode, class of service, and location are shown as

applicable.

An interesting center-leaf section provides some handy listening tips for monitoring cellular mobile telephone signals in the 800 MHz band.

THE ARRL ANTENNA COMPENDIUM volume 1 (175 pages, 8-1/2" x 11", paperbound, \$10 from the American Radio Relay League, 225 Main St. Dept. MT, Newington, CT 06111)

As always, the ARRL comes through with excellent data at reasonable cost to the reader. This latest edition to the League library is no exception.

Emphasis is on HF antenna arrays and, of course, on transmitting antennas for amateur frequencies. There is, nonetheless, some material on VHF, UHF and even microwave antennas and all of the theory and design considerations are of interest to the listener as well.

Some material is quite theoretical and mathematical, while other chapters are primarily descriptive. Antennas and arrays include the sloping diamond, quad, log-periodic, Yagi, x-beam, multiband, mobile, RDF, and rotary.

Additional chapters cover balun transformer design, transmission lines and polarization. All in all, a handy reference for the theoretically inclined.

FOX SCANNER RADIO LISTINGS, Arizona Edition by Norm Schrein (360 pages, 8-1/2" x 11", paperbound; \$9.95 from Fox Marketing, 4518 Taylorsville Rd. Dept. MT, Dayton, OH 45424)

Our own "Tune in Canada" editor Norm Schrein has done it again, this time editing the largest scanner directory yet for Fox Marketing.

Previous Fox editions have concentrated on metropolitan regions of a particular state; this one covers the entire state of Arizona with special emphasis on the Phoenix, Tucson, Flagstaff, and Yuma areas.

As with other directories in this series, the book is divided into cross references by service, alphabetized licensee and call signs. Extensive federal government listings, sensitive and routine, are included.

FOX SCANNER RADIO LISTINGS Kansas City Edition by Norm Schrein (165 pages, 8-1/2" x 11", paperbound; \$9.95 from Fox Marketing, address above)

Yep, another scanner directory from Fox. They now

lead the pack with some two dozen scanner frequency directories! This latest edition follows the same Fox format.

The book contains more than 6200 listings of radio licensees in a wide area around Kansas City including counties in Missouri and Kansas. As always, easy to read and easy to use. And now we learn that two more books are on the heels of this latest--Long Island and Denver!

RADIO ASTRONOMY: The Journal of the Society of Amateur Radio Astronomers (24 page monthly newsletter; subscription \$20 per year in the U.S. by writing SARA, Charlene Ponko, Secretary, P.O. Box 6020 Dept. MT, Wheeling, WV 26003)

Interested in really expanding your horizons? Then look into space with this informative monthly. Each issue is loaded with useful practical and technical information on radio astronomy and monitoring space objects.

Send \$2 for a sample copy and mention that you read about SARA in MT.

THE BOOKLIST from Radio Netherlands; Eighth edition, August 1985 (Free by writing Jonathan Marks, English Section, Radio Nederland

Wereldomroep, P.O. Box 222 Dept. MT, 1200 JG Hilversum, Holland)

No short-wave broadcaster disseminates as much free literature to assist the listener as does Radio Netherlands. Their latest publication, BOOK LIST; is a 30 page compendium of publications dealing with our hobby. When you write for you copy, be sure to mention that you read about it here in MT.

SHORTWAVE SOFTWARE from Radio Netherlands (see above for address)

There are a number of programs (software type) available to the computer hobbyist; a set of pamphlets from Radio Netherlands presents quite an array of them and the brochures are yours for the asking.

MODULATION TYPES (Tape recording) by Joerg Klingenfuss (20 German Marks--about \$7--includes postage from Klingenfuss Publications, Panoramastrasse 81 Dept MT, Hagellock, D-7400 Tuebingen, Federal Republic of Germany)

Joerg Klingenfuss is well known as the author of a variety of English language frequency directories and RTTY publications coming from Germany and this latest cassette recording is

Cont'd on p.30

SUBCARRIER DETECTOR KIT

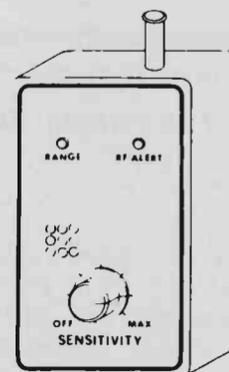
Tune in "secret" FM broadcasts. Kit covers the new 92 KHz subcarrier as well as the standard 67 KHz. Dual tunable filters in addition to adjustable automatic muting. Use with most any FM radio. Operates on 6 to 17 VDC @ 15 mA. 1 1/2" x 3" x 1" high.

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Creal Springs, IL 62922

Russian Skip

Over the past ten months extensive Russian communications have been logged on a number of UHF frequencies. Both frequency domain scrambling and clear voice are used on all channels (See list A). Emissions are NBFM.

LIST A	
29.800	36.000
29.940	36.190
29.950	41.990
31.295	42.000

The location of these operations is almost certainly Cuba, since Cuban businesses are always heard when the Russian skip is in. The Soviet Union maintains a combat brigade of about 3,000 soldiers, 2,000 military advisers, and some 8,000 civilian advisers on Cuba.

Also, a major Soviet intelligence - collection facility, their largest outside the U.S.S.R., monitors U.S. civilian and military communications. Frequent air and naval visits are also directed at the U.S. (See map for locations of Russian and Cuban naval bases).

I first began logging these intriguing communications during the December 1984 sporadic-E season. Scrambling was heard on 41.99 MHz several times, but no clear voice. Since these transmissions were obviously originating "locally" via E_s propagation, I entered the 41.99 MHz catch in the U.S. military section of my book, *LOW BAND SKIP DIRECTORY*. Boy, how wrong can you be?!

By spring 1985 clear voice was logged on 41.99 MHz, and it definitely wasn't Uncle Sam! The radio counts were what gave it away. Slavic number pronunciation is unique.

See list B for the Russian pronunciation of numbers one through ten. Also refer to the "Spy Centre" column in the March 1985 issue of *A*C*E* (Association of Clandestine radio Enthusiasts) for a comparative list of eleven slavic languages.

It has also been noted that some of the speakers seem to have a Spanish inflection to their use of the Russian language. Perhaps these are Cubans



attempting to speak Russian and doing a poor job of it!

If any of our Russian-speaking readers would like to translate the recordings I've made, please drop me a line and I'll send you a cassette.

Radio checks are made ten minutes before the hour and channel hopping is common. The 31.295 MHz channel is by far the most active and has been logged countless times!

If your scanner won't program 5 kHz frequencies on low band you'll notice considerable distortion on 31.29 or 31.30 MHz, especially during scrambling.

The channels 29.94 and 29.95 MHz are used for both simplex and semi-duplex, as are 41.99 and 42.00 MHz.

If only one of the frequencies is monitored during semi-duplex operation, half of the conversation will be weak and distorted. This may give you the impression one of the radio operators is using low power or is "far away." Always check 10 or 15 kHz above and below the frequency. The weak transmission may be on another channel and have a strong signal!

LIST B	
Russian Numerals	
1	ОДИН (adín)
2	ДВА (dvā)
3	ТРИ (trī)
4	ЧЕТЫРЕ (chītirī)
5	ПЯТЬ (pyät)
6	ШЕСТЬ (shēst)
7	СЕМЬ (syem)
8	ВОСЕМЬ (vósīm)
9	ДЕВЯТЬ (dyévīt)
10	ДЕСЯТЬ (deśitd)

NOTE: A similar tactic has been employed on the Central American military scene. Refer to the November 1984 *Monitoring Times* article, "Honduran Hotbed."

If you live within 1500 miles of Cuba, these comms can be heard by single-hop E_s propagation. Some F₂ skip openings will also occur this winter, allowing reception of Cuba from over 2500 miles away.

I'm sure there must be many more Soviet UHF channels in use on Cuba. In the months to come expect several new frequencies to be uncovered. If you have a good scanner and an outside antenna, then you're ready to join the world of intelligence-gathering! Where will the Russkies be spotted next?

MONITORING CUBA

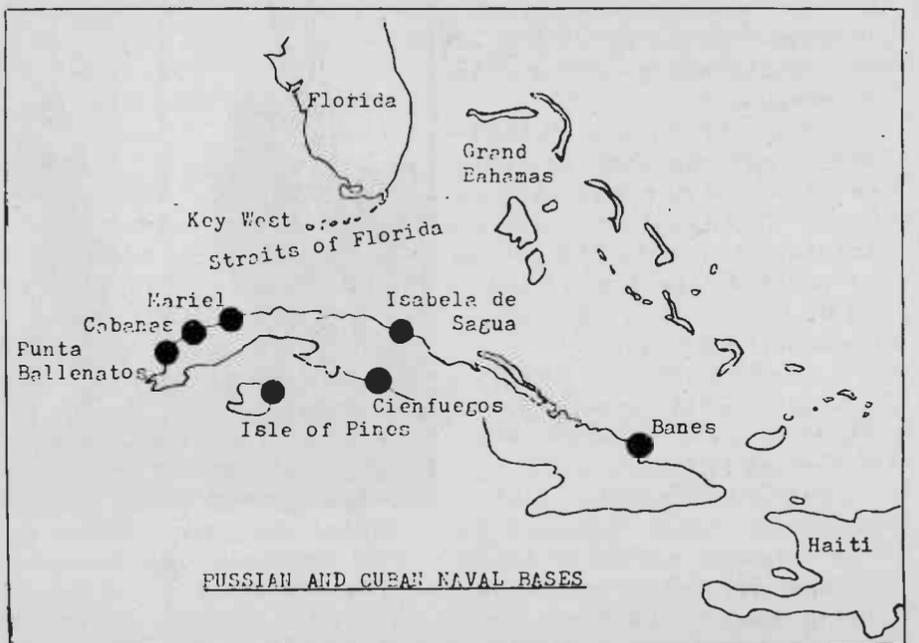
There are several very active Cuban business channels which can be used as indicators of band conditions between the U.S. and Cuba (See list C). The best frequency is 33.35 (repeater output). I've monitored this business late at night, so it's probably a 24-hour operation.

Dual alerting tones are sometimes used to get the attention of a distracted radio operator. These tones are actuated manually and may be rapid or slow depend-

"Soviet Military Power 1985," *International Combat Arms*, September 1985.



During March and April, 1984, the 23rd Soviet naval task force to the Caribbean included (L to R) the Leningrad aviation cruiser, a Soviet-built Cuban Koni class frigate, the Ivan Bubnov underway replenishment ship and an Udaloy class guided missile ASW destroyer.



ing upon the speed of the dispatcher.

LIST C		
33.35	Rptr	43.41
35.15	Rptr	43.435 Rptr
37.00		43.625 Rptr
41.84		44.00
42.125	Rptr	44.04
42.25	Rptr	44.33
42.60		45.02
42.76		46.28
43.20		47.59
43.25	Rptr	49.00 Rptr

Tropospheric skip from Cuba on VHF-high and UHF frequencies is also possible, especially for those in Florida and the Gulf states. Let me know what you hear!

FROM RUSSIA WITH LOVE

There is a great deal of Soviet VHF and HF communications going on within range of U.S. monitors. Covert and overt Soviet intelligence-gathering vessels operate regularly off the U.S. coasts. Some Russian "fishing trawlers" are involved in espionage and communications gathering. The closest they get to a fish is when a tin of sardines is opened!

Since all Soviet ships, including the merchant marine, are owned and operated by the U.S.S.R.,

VHF SKIP cont'd

any vessel may be involved in covert activities. Crews of tankers, freighters, whalers, or hydrographic research ships can be quickly exchanged or supplemented by KGB and GRU agents (GRU=Soviet Military Intelligence).

Additionally, periodic visits by Soviet naval reconnaissance aircraft, space support ships and task groups will provide an increase in communications. The Soviet Navy also maintains a salvage and rescue ship in Havana for emergency operations.

Next time the skip is coming in from Cuba put the scanner on "search," set back with your vodka and tonic, and be prepared: The Russians are coming!

FROM CUBA WITH LOVE

With help from the Soviet Union, Cuba has become a nerve center for Third World terrorism. Training and arming of Central American factions, for instance, has been well documented. The main export of Cuba is no longer sugar, it is revolution!

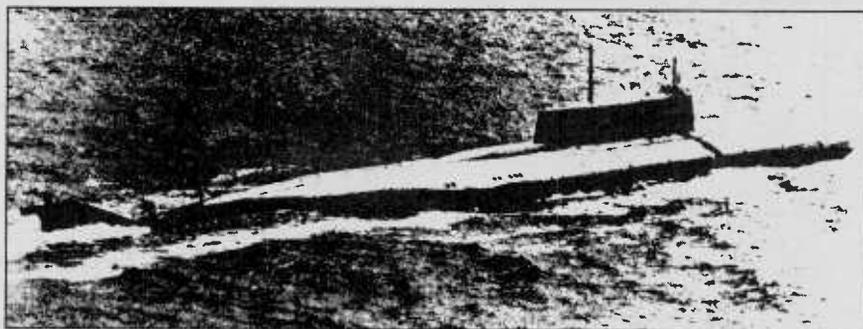
Back in the summer of 1982 I logged several periods of scrambling during evening hours on the frequencies 36.87 and 45.44 MHz. Clear voice was also heard and it was definitely Spanish.

On 45.44 MHz the radio operator repeatedly called for "Basa Cielo" (Sky Base). At the time, I assumed these comms were coming from Cuba (See the September 1982 RCMA Newsletter, page 55).

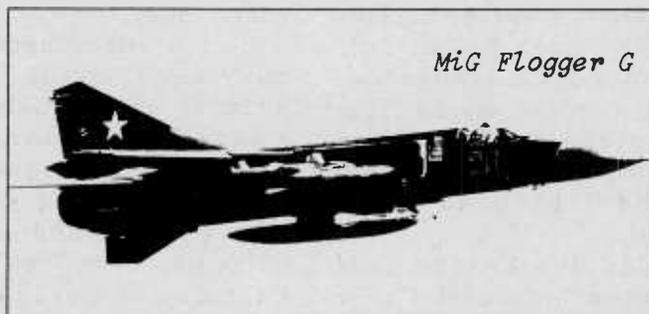
A year later I read an article in the September 1983 Popular Communications magazine ("Nicaraguan Rebel Communications") in which a native Honduran reported hearing scrambled and clear voice transmissions on 45.44 MHz. The article stated that the signals were originating from "contra" forces involved in the overthrow of the Sandinista government in Nicaragua.

Was it just a coincidence that the same frequency of 45.44 MHz was used by both Cuban and contra soldiers? Or were the people in Central America actually Leftists using Cuban (Russian) equipment?!

Multi-hop E_s skip coming directly from Central America is a possibility, but seems unlikely to me for a number of reasons. I suggest that what I heard in the summer of 1982 were Cubans or Cuban trainees using radio gear and frequencies which would later



RUSSIAN SUB
Oscar class cruise missile sub: nuclear powered



MiG Flogger G

be used in Central America.

It's common knowledge that Cuba has trained and armed Nicaraguan Marxists and El Salvadorean guerrillas. But Cuba has also trained Hondurans to supply arms to the Guatemalan Left.

With this in mind, there appear to be several possible contenders for the scrambling heard on 45.44 as reported by the Honduran national in the Pop Comm article. Did he hear contra forces? El Salvador rebels? Nicaraguan soldiers? Cuban advisers?

CRYPTIC COMMUNICATIONS

The type of scrambling heard coming from Cuba is thought to be time division multiplexing used simultaneously with frequency-hopping speech inversion.

In time division scrambling the audio is divided into time segments,

then shuffled. As an example, imagine taking a tape recording and cutting the ribbon into small slices. These slices are then pasted back together out of sequence and played. This basically is what time division does electronically.

With frequency-hopping speech inversion the system works much like single frequency speech inversion, the lowest form of security often used by law enforcement and businesses here in the U.S. and Canada. The voice frequencies--300 to 2500 Hertz--are turned upside-down by injecting a

heterodyne tone (usually around 3 kHz) into the audio mixer.

In the frequency hopping scheme, that injection tone changes frequency several times per second (multiplexing), making tracking with a standard speech inversion decoder impossible. However, if the scrambled comms have been recorded on tape, the small segments of speech can be individually reinverted and edited together for continuity.

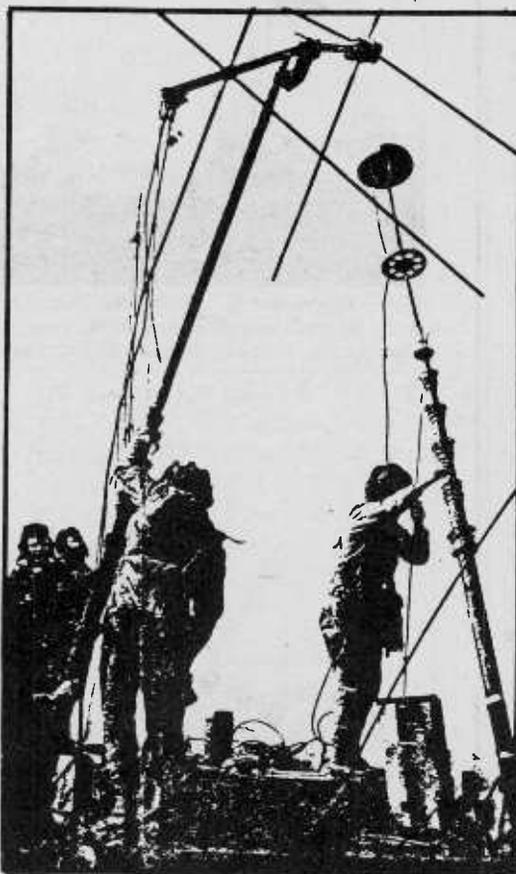
The multiplexing tones produce a kind of "diddly-diddly" sound as they change frequencies, very much like the sound of radio teletype.

The combination of "time domain" and "frequency domain" techniques make a very secure form of scrambling. But it's a long way from the digital (ciphered) scramblers used widely by the U.S. military.

THINGS THAT GO BUMP IN THE BAND

Here's an update on the mysterious and noisy RF sweeper.

In the December 1984 Monitoring Times article "Low Band Panorama," I reported finding an open carrier sweeping through the 29.96 to 30.36 MHz frequency



Soviet soldiers setting up a VHF antenna and a push-up pole for sloping HF antenna wires. These guys are obviously not in Cuba!

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by James R. Hay

The U.S. Coast Guard HF Emergency Network

PART I

Recently, the U.S. Coast Guard issued a document outlining plans for a new High Frequency Emergency Network and, with the following, it is hoped that the reader will get an idea of the plans for the network, its use, costs and implementation. As the system has not yet been implemented, no precise information was included as to frequencies to be used.

The High Frequency Emergency Network will be an expansion of the existing HF network which connects Coast Guard communications and radio stations throughout the world. According to operational need, other facilities, including Coast Guard Headquarters and area and district offices, will be added. In addition, other facilities such as computer centers and marine safety offices will also be added to the network.

The system will use single sideband voice, RTTY and CW, and voice and data encryption will be added according to need and availability. Wherever possible, point-to-point communications will be used; however,

VHF SKIP cont'd

segment. It could have been propagation studies conducted by some scientific group, industrial RFI, or "something else"!

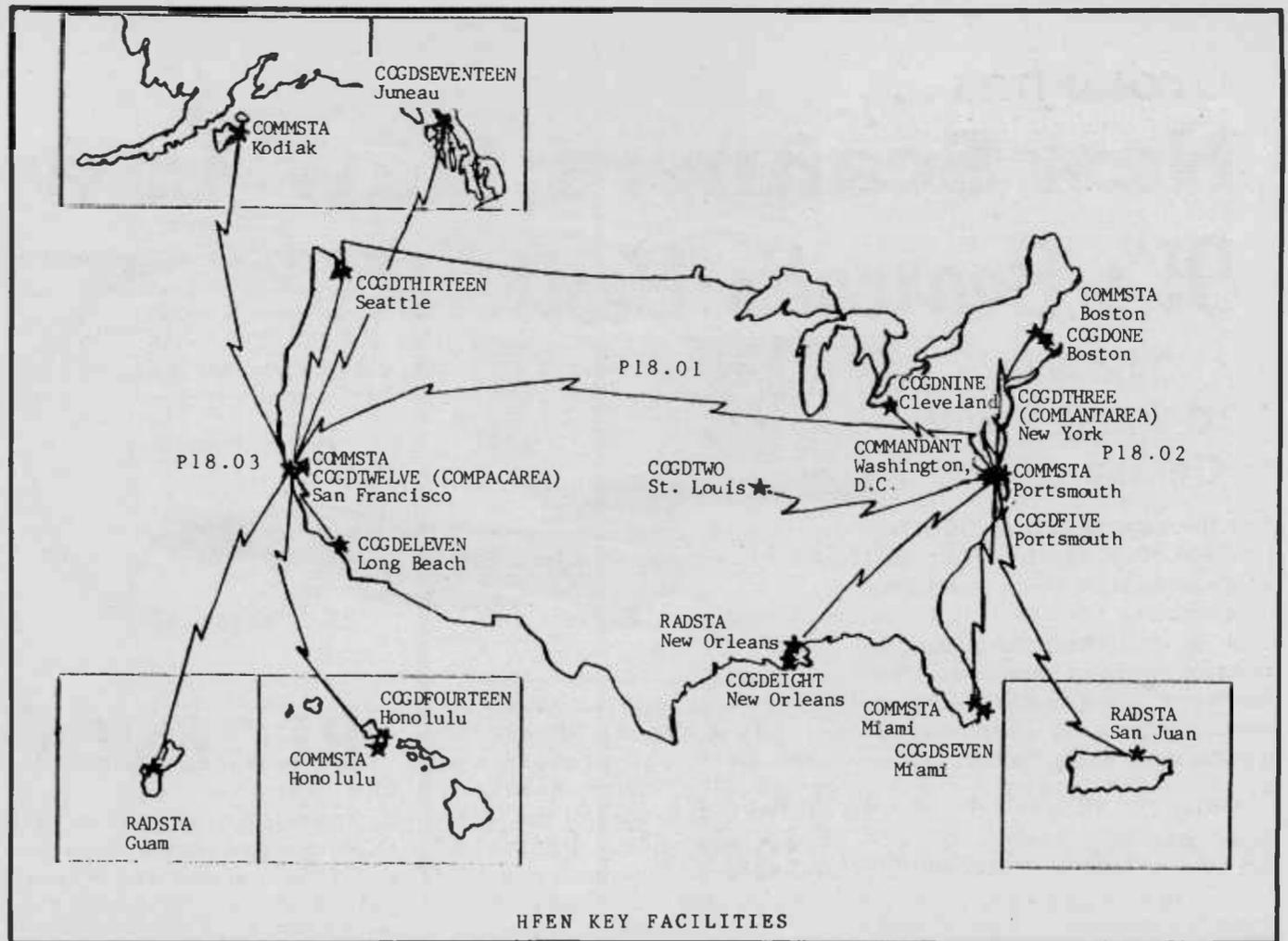
The sweeper has subsequently been logged covering other segments of the 29.80 to 32.00 MHz area:

- 30.00 to 30.60 MHz
- 30.12 to 30.38 MHz
- 30.71 to 31.15 MHz

Word comes from Dan Ramos, California, that he, too, has heard a similar carrier sweeping methodically through the CB band. At first he thought it might be a radio operator playing with an illegal VFO, but the sweeping was too synchronous to be produced manually.

Don says he's monitored the phenomenon over the last ten years during the summer months and only in the daylight hours.

I can't say if what Dan heard was one-and-the-same



HFEN KEY FACILITIES

where propagation conditions do not permit this, traffic can be relayed through an intermediate point.

The backbone of the system will be the existing communications and radio stations because these facilities have high power equipment, high gain antennas and multiple transmitters and receivers. In addition, trained operational and maintenance personnel are attached to these facilities permanently.

Coast Guard Headquarters and area and district offices will be equipped with single-channel, half-duplex equipment. In addition, Districts 5, 7 and 14,

operation, but his observation that the sweeping carrier was only heard during the daylight hours agrees with what I've monitored.

The sweeper could be originating outside the United States, propagated by the F₂ layer. This would account for the daytime reception, since F₂ propagation is a daylight skip mode. Or, it could be a "local" operation which only transmits during the daytime

To monitor the sweeper listen for a re-occurring "pip." This pip will be heard at different times on different frequencies, with sweeping proceeding from high to low frequencies. Toward the "band edge" the pip will sound "stacity." Using two or more scanners makes the job easier.

NEXT MONTH: We'll travel to the White Sands Missile Range--by way of E_s skip. ●

which currently have VHF links to nearby communications and radio stations, will continue to use these as part of the HFEN. HF equipment will be used to back up the VHF links and for direct point-to-point communications with area headquarters or Coast Guard Headquarters.

While other considerations may dictate other choices for antenna at certain locations, the general assumption made by the Coast Guard is that a 35 foot HF whip antenna will be used.

Existing equipment at communications and radio stations will form part of the network, as will a Sunair GSB 900 set currently used at District 8. Additional equipment will be installed at Coast Guard Headquarters and area and district offices. Actual transmitter power will be determined from propagation predictions made prior to installation of equipment.

The system will be designed such that it will have the capacity for expansion, both by the addition of Coast Guard facilities to

the network and also for technical improvement by the addition of such things as selective calling, independent sidebands, etc.

Long term plans call for the eventual addition of mobile stations, emergency relocation sites, logistics support centers such as Elizabeth City, inventory control points, computer centers such as the Marine Safety Information System and the Operations Computer Center, and Naval communications stations at Stockton, California, and Norfolk, Virginia.

The benefits are that the system will provide back-up to national and area landline circuits used for command and control purposes and will bridge the gap between national and area HF emergency networks and district networks. The HFEN can also provide a back-up to command within the district by ensuring continuity of communications from the district by providing back-up to existing land line circuits.

The HFEN will support both transportation and



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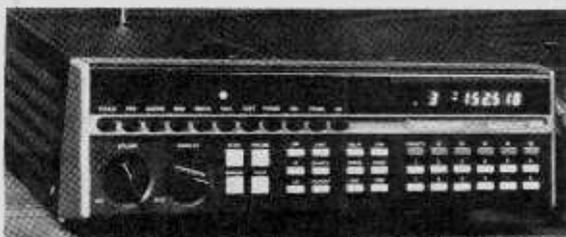
Yes, the eagerly-awaited BC800XLT is finally here. Wide frequency coverage: 29-54, 118-136 (AM), 136-174, 406-512, and 806-912 MHz with 40 channels of memory in two banks.

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Dimensions: 12½"W x 4½"H x 9¼"D; Weight: 7 lbs., 2 oz.

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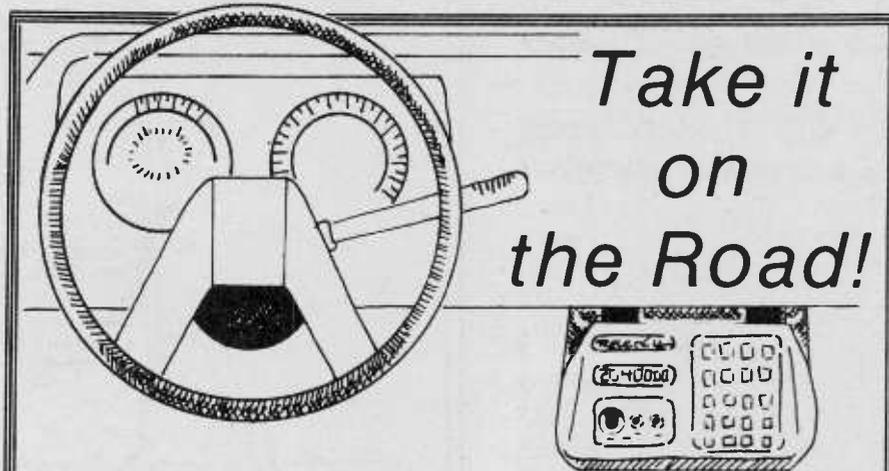
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HIGH SEAS cont'd

maritime activities during peacetime and national defense during times of war. The Automated Merchant Vessel Rescue (AMVER) System and the Maritime Mobile Distress and Safety System will be supported by the HFEN.

The latter includes the National VHF Distress System, the National Medium Frequency CW System, and the National Medium Frequency SSB System. Actual search and rescue coordination will not be supported by the HFEN but will continue through normal channels.

Ice warnings will be relayed via the HFEN between USCG aircraft on ice patrols and communications and radio stations should landline communications be disrupted. In critical areas the HFEN will support vessel traffic services and command and control of Loran C stations should landline circuits to these stations be disrupted for longer than the period during which the station can operate automatically.

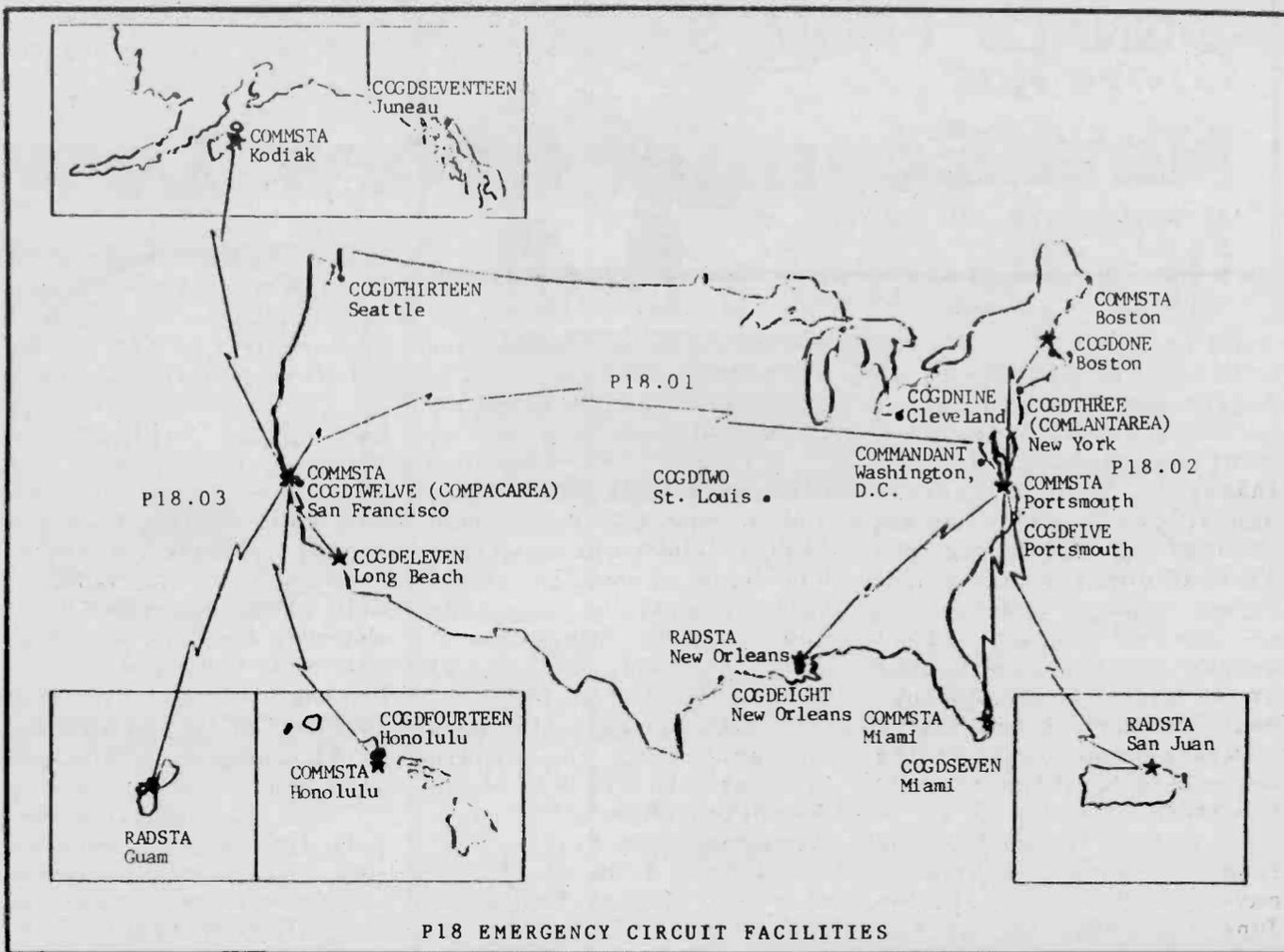
Law enforcement will be supported by the network, and will require secure communications. Co-ordination with other agencies will continue through normal channels. For environmental safety and ship safety, particularly related to anti-terrorist activities, the HFEN will be used; secure communications will be required for anti-terrorism activities.

A long-term objective of the network is the interoperation of various Coast Guard forces during military operations and military readiness, with the Coast Guard as a specialized unit of the Navy. Secure communications will be required during these activities.

The Atlantic and Pacific portions of the network will be under the control of the area commanders with technical control being provided by San Francisco and Portsmouth communications stations. Coast Guard Headquarters will control the National Command net and Portsmouth will act as System Control Station.

The two accompanying maps show the current circuits in the Coast Guard's existing network (P18 circuits) linking communications and radio stations, and also the key facilities which will form part of the High Frequency Emergency Network.

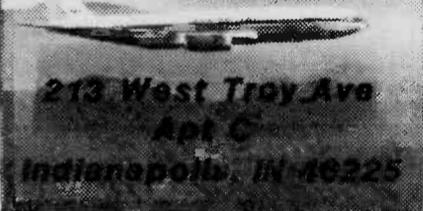
Next month we will take a look at the cost estimates for the system and the implementation of the network.



P18 EMERGENCY CIRCUIT FACILITIES

"PLANE TALK"

by Jean Baker



213 West Troy Ave
Apt C
Indianapolis, IN 46225

(Due to illness, Jean Baker's column will not be seen this month. She assures us, however, that she is making good progress on recovery and will have a very special illustrated article on ARINC in the November column. We all hope Jean's recovery is swift.)

**MONITORING
RUSSIAN VOLMET**

by Kevin Trummel

Those of us who enjoy perusing the short-wave spectrum often come across the VOLMET (French acronym for "flying weather") broadcasts, aeronautical weather transmissions, upper sideband mode, on a regular schedule.

Most VOLMET broadcasts we monitor are from well-known origins--New York, Gander (Newfoundland), Shannon; the Russians are harder to find. But they are out there and a little sleuthing by MT reader Kevin Trummel ferreted them out.

The list below was verified by several weeks of intensive monitoring; all frequencies are in kilohertz and times are given in minutes past each hour.

The likelihood of anyone in the West hearing

them will depend upon favorable propagation.

RUSSIAN LANGUAGE NETWORK A
3116, 6617, 8939 11279

RIGA	YL	H+00 / +30
LENINGRAD	YL	H+05 / +35
MOSCOW	YL, OM	H+10 / +40
KIEV	YL	H+20 / +50
ROSTOV	YL	H+25 / +55

RUSSIAN LANGUAGE NETWORK B
3407, 6730, 8819

TBILISI	YL	H+00 / +30
AKTYUBINSK	YL	H+05 / +35
KRASNODAR	YL	H+10 / +40
ALMA ATA	YL	H+15 / +45
TASHKENT	YL	H+20 / +50
BAKU	YL	H+25 / +55

RUSSIAN LANGUAGE NETWORK C
2869, 6693, 8888, 11319

SYKTVKAR	OM	H+00 / +30
SVERDLOSK	YL	H+05 / +35
YENISEYSK	YL	H+10 / +40
KUSMOCH	YL	H+15 / +45

RUSSIAN LANGUAGE NETWORK D
NOVOSIBIRSK 6638, 8990

NCA ENGLISH LANGUAGE NETWORK
3461, 4663, 5676, 10090, 13279

KHABAROVSK	YL	H+00 / +30
TASHKENT	OM	H+05 / +35
NOVOSIBIRSK	YL	H+10 / +40
MOSCOW	YL	H+15 / +45
KIEV	YL	H+20 / +50
VNUKOVO	YL	H+25 / +55

**THE SKY'S NO LONGER
THE LIMIT WITH AMSAT**

Hams, SWL's and scanner enthusiasts alike are discovering the unlimited communications available through amateur space satellites. The OSCAR (Orbital Satellite Carrying Amateur Radio) series has extended the frontiers into space.

Amateur radio voice and video transmissions from the Space Shuttle have gained international note recently, and several additional hams are scheduled to fly in coming months including one American and two Germans.

Scanner owners can tune in OSCAR 10 using an outside antenna; the beacon is on 145.810 (Morse identification) and other signals can be heard all the way up to 145.987 MHz.

Generally, you will find CW on the lower 1/3 of the band, SSB on the upper 1/3 and a mixture in between.

An excellent educational publication, THE SATELLITE EXPERIMENTER'S HANDBOOK, is available for \$10 in the U.S., \$11 in Canada and an additional \$5 for postage elsewhere.

A number of computer programs for orbit predictions and satellite coordinates are also available.

For more information about AMSAT, write them at P.O. Box 27, Washington, DC 20044 or phone 301-589-6062.

Elaborate stations aren't necessary. KB6DDQ worked coast-to-coast using her 2 m HT and gateways through OSCAR-10.



SIGNALS FROM SPACE cont'd

least is fielding a 30 GHz uplink and a 20 GHz downlink earth station. AMSAT has an ad hoc pre-proposal study team looking at some NASA documents to determine if a full scale experimental proposal is feasible. A decision on the matter is expected by the time this edition of Signals from Space goes to print (ASR No. 106).

- MT reader Lee Morar would like some help in locating tech manuals for some of the telemetry receivers and related components he has acquired over the years. Lee's equipment was manufactured by the late Nems-Clark-Vitro Electronics, Inc. of Silver Spring, MD. Lee is looking for the following tech manuals:
 Model R1037 F telemetry rcvr
 Model R103F G telemetry rcvr
 Model 1440 telemetry rcvr 128-142 MHz
 Model 1510A receiver
 Model 1907 receiver
 REU 300-C range extension unit
 SDU 200-C spectrum display unit

If any of the MT readers of Signals from Space can be of help please contact Lee via this column and I'll forward possible points of contact for these tech manuals to him.

- The following is a list of upcoming shuttle missions and payloads that they will be carrying:

SHUTTLE MISSION PAYLOADS	
Mission	Payload(s)
51-E	TDRS-B and Canada Anik COMSAT
51-L	TDRS-C AND AUSSAT COMSAT
51-I	Materials scientific lab, ASC-1, Hughes Syncom IV-4 (Leasat) and possibly another COMSAT
51-J	DOD mission to be launched from KSC
61-A	Spacelab D-1 (German amateur radio ops to fly)
61-B	Aussat COMSAT, Morelos Mexico-B COMSAT and RCA SATCOM (KU-1)
61-C	Western Union WESTAR-7, RCA (Ku) SATCOM and possible Gstar COMSAT
61-D	Spacelab 4 and deployment of the British Skynet 4A military COMSAT
61-E	Astro Telescope group, Intelsat 6-A
61-F	International Solar-Polar mission
61-G	Galileo Jupiter orbiter/probe
62-A	DOD mission, first to be launched from Vandenberg AFB

The USAF Teal Ruby satellite (AFP 888) will be launched from Vandenberg AFB. This shuttle-launched satellite will be put into a circular orbit of 380 nautical miles inclined 72°. No firm date has been given for the launch. Teal Ruby will have a space based sensor designed to evaluate the use of a storing mosaic focal plane array to detect aircraft in flight.

- For MT readers' information, the Vega 1 and Vega 2 instrumented balloon gondolas that touched down on the surface of Venus in June transmitted telemetry on 1.67 GHz. I believe the main platform that is now headed for Halley's comet is still transmitting telemetry around 928 MHz.

Two shuttle crews have been recently announced for upcoming shuttle missions. STS 61-F's crew include Navy CDR Fred Hauch, USAF Col. Roy Bridges, pilots; Marine Corps Maj. David Hilmers and Mike Lounge, mission specialists. The two day mission aboard Challenger will be used to launch the Ulysses international solar-polar explorer satellite. It will be the first use of the high-energy liquid-fueled Centaur upper stage.

The Galileo shuttle flight (61-G) will involve the second use of the high-energy Centaur upper stage and will be two days in length. This mission will use the shuttle Atlantis, commanded by Navy Capt. David Walker. Also aboard this mission will be USAF Lt.Col. Ronald Grabe, pilot; USAF Col. John Fabian and James Van Hoften, mission specialists. They will launch the Galileo Jupiter orbiter/probe towards the planet Jupiter.

MT SPACE LAUNCH REPORT

Information for this monthly feature is provided courtesy of the Spacewarn Bulletin, Goddard Space Flight Center; NASA Thirty Day Special Bulletins, Goddard Space Flight Center; "Communications Satellites" authored by the editor; and the editor's own monitoring during the thirty day period covered by this report, May 30, 1985-June 30, 1985.

1985-42A Cosmos 1656 was launched May 30 by the USSR. Orbital elements for the initial orbit were: apogee 215 km, perigee 190 km, inclination 51.5°. Mission for this satellite is unknown at this time. The satellite's launch system

finally placed the payload into a 867x808 km orbit inclined 71.1194°.

This mission closely paralleled the mission of Cosmos 1603 which also remains a mystery. Booster used is unknown and five other objects have been associated with this launch. Objects B, C have already decayed. Launch site was Tyuratam.

1985-43A Soyuz T-13 was launched June 6 at 0640 UTC by the USSR. Initial orbital elements were period 91.78 min, inclination 51.6°, apogee 338 km, perigee 304 km. Soyuz T-13 was launched from Tyuratam on an A-2 booster rocket.

T-13 has docked with Salyut 7 and carried cosmonauts Vladimir Dzhanibekov and Victor Savinykh aboard. Frequencies: 20.008 MHz 121.750 MHz (FM) and telemetry centered around 922 MHz.

1985-44A Cosmos 1657 was launched from the Plesefsk cosmodrome on June 7 by the USSR. Orbital elements were apogee 312 km, perigee 194 km, inclination 82.2°, orbital period 89 min. Launch booster was an A-2. 1657 was recovered on June 21 by the USSR.

Mission: 14 day photo recon. There are six other objects also associated with this launch.

1985-45A Cosmos 1658 was launched from the Plesefsk cosmodrome on June 11 by the USSR. Orbital elements were apogee 38,661 km, perigee 647 km, inclination 62.8° and orbital period 711 min.

Mission: Early Warning satellite. Launched by the A-2e launch vehicle. Frequencies: 2280-2304 MHz. There are three other objects associated with this launch in space.

1985-46A Cosmos 1659 was launched from the Plesefsk cosmodrome on June 13 by the USSR. Orbital elements were apogee 378 km, perigee 210 km, inclination 72.8°, orbital period 90.07 min. Satellite launched by an A-2 booster.

Mission: military photo recon. Object decayed on June 27. There are eight other objects associated with this launch in space (two of these have decayed).

1985-47A Cosmos 1660 was launched from the Plesefsk cosmodrome on June 14, by the USSR. Orbital elements were apogee 1536 km, perigee 1502 km, inclination 73.6°, orbital period 116.1 min. Launch-

ed by a F-2 booster.

Mission: Geodetic satellite. Frequencies: possibly around 150 MHz. Only one other object (rocket body) is associated with this launch.

1985-48A STS-51G was launched June 17 from the Kennedy Space Center aboard Discovery. Orbital elements were period 91.4 min., apogee 359 km, perigee 351 km, inclination 28.4°. The payloads included: Morelos-A, Arabsat-1B, Telestar-3D, and Spartan-1.

Crew members included: D. Brandenstein, J. Creighton, J. Fabian, S. Lucid, S. Nagel, P. Baudry, and Sultan Salman Al-Saud. STS-51G returned to Edwards AFB on June 24. Frequencies: 259.7 279.0 243.0 296.8 2106.4 2205.0 2215.0 2217.5 2250.0 2287.5 15000.85 MHz

1985-48B The communications satellite Morelos-A was launched from the STS shuttle Discovery on June 17, 1985, for Mexico. Morelos-A will be placed into geostationary orbit at 113.5° and carries 22 transponders (hybrid).

1985-48C The communications satellite Arabsat-1B was launched from the STS shuttle Discovery on June 18 for the Arab Satellite Communications Organization (ASCO). Details on this satellite can be found elsewhere in this column.

1985-48D The communications satellite Telstar 3D was launched from the STS shuttle Discovery on June 19 for the American Telephone & Telegraph Company (AT&T). This satellite will be located at 125°W.

1985-48E The Spartan 1 was launched from the STS shuttle Discovery on June 20. Spartan 1 is the first of a series of low-cost free flyers designed to extend the capabilities of sounding rocket class experiments. These satellites are designed by NASA to be deployed and retrieved by the orbiting STS Shuttle, using the Canadian-built Remote Manipulator System (RMS). Once deployed, the Spartan satellite will perform scientific observations for up to 40 hours.

All control commands are stored onboard in a microcomputer, and all data is recorded on a 10¹⁰-bit tape recorder. When the Spartan has completed its observing sequence, it secures all systems and places itself in a stable attitude to

SIGNALS FROM SPACE cont'd

permit retrieval by the shuttle and return to Earth for data analysis and preparation for a new mission.

The Spartan 1 experiment, which is a medium-resolution X-ray scanner over the energy range 0.5 to 15 keV, will make observations of the Perseus Cluster, Galactic Center, and Scorpius X-2. The instrument was provided by the U.S. Naval Research Laboratory.

1985-49A Cosmos 1661 was launched from Plesetsk on an A-2 booster June 18 by the USSR. Orbital elements were period 727.5 min, apogee 40139 km, perigee 611 km, inclination 62.9°.

Mission: Early warning satellite. Frequencies: 2280-2304 MHz. There were three other objects associated with this launch.

1985-50A Cosmos 1662 was launched from Plesetsk on a C-1 booster on June 19 by the USSR. Orbital elements were period 94 min, apogee 521 km, perigee 478 km, inclination 65.8°.

Mission: Minor military research spacecraft. There were two other objects associated with this launch.

1985-51A Progress 24 was launched from the Tyuratam cosmodrome on June 21 by the USSR. The spacecraft was launched by an A-2 booster. Orbital elements were period 88.8 min, apogee 268 km, perigee 194 km, inclination 51.6°.

Mission: To resupply the Salyut 7 and Soyuz T-13 cosmonauts with supplies, experiments, fuel, consumables, etc. Frequencies: 166/922.750 MHz.

1985-52A Cosmos 1663 was launched by an A-2 booster on June 21 from the Plesetsk cosmodrome by the USSR. Orbital elements were period 89.2 min, apogee 287 km, perigee 224 km, inclination 82.3°.

Mission: military photo recon. Satellite decayed on July 5. There are eight other objects associated with this launch and three of them have already decayed.

1985-53A Reports indicate three objects in orbit, launched on June 21, 1985, by the USSR. Confirmation has not been received from the USSR. No name at press time has been assigned to the launch and little else is known.

53A-Period 89.8 min, apogee 362 km, perigee 203 km, inclination 64.4°. Object decayed July 5.

53B-Apogee 244 km, perigee 168 km, inclination 64.4°. Object decayed June 24.

53C-Apogee 308 km, perigee 190 km, inclination 64.5°. Object decayed June 27.

I will try to find out more on these unknowns as info becomes available.

1985-54A Cosmos 1664 was launched from Plesetsk cosmodrome on an A-2 booster on June 26 by the USSR. Orbital elements were period 90.3 min, apogee 404 km, perigee 207 km, inclination 72.8°.

Mission: Short duration photo recon. There are six other objects associated with this launch.

And that is it for this month. Be sure to send in your comments, questions, intercepts (satellites and military aircraft) to Signals from Space, 160 Lester Drive, Orange Park, FL 32073.

Brush Fire Fighters Use Military Satellite

Several MT readers have reported hearing the California brush fire fighters communicating via the U.S. Navy's FLEETSATCOM communications satellite. Apparently, at least two

channels were in use in the narrowband FM mode, utilizing 12-watt hand-held transceivers.

The frequency reported, 269.95 MHz, was referred to as a secondary channel; the primary was not found. The HT's were on loan from the Navy.

It would seem that the wide area affected by the fires required reliable communications coverage, and a repeater at an altitude of 22,500 miles is hard to beat!

We would like to thank MT contributor Dave Beauvais for this interesting listening tip. Additional information from our readers on these unusual voice modes used on satellites would be greatly appreciated.

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SPACE SHUTTLE TRANSMISSIONS

REPORTED WORLDWIDE

The recent shuttle mission 51-F featured amateur radio, both in voice and video. A slow scan TV camera supplied by Panasonic relayed color images of on-board activities on the amateur 430 MHz band with voice downlink on 145.55 MHz FM.

Shown in the accompanying photos is mission specialist Anthony W. England.



medium, and shortwave listening. Membership is open to all. GCSS also exists to unite those SWLs active in the 1950s and 1960s who still enjoy using vacuum-tube radio equipment and who may have been issued WPE Shortwave Monitor Registrations."

Fittingly, their newsletter is now called "The WPE Call Letter," and if I may be permitted a bit of interpretation after reading the bulletin, their publication has that old-fashioned, nostalgic feeling regrettably absent from nearly all other clubs' publications.

If you're strictly into digital equipment, you might find the GCSS a little stuffy for your tastes, but if you've ever stayed warm next to an R-390A or an HQ-180 on a frosty night, you'd find the club just right for you. Annual dues are \$6.50, and you may contact them through President Vern A. Weiss, -WPE9GHF, 896 Park Drive, Kankakee, IL 60901.

In March, Ronald Pokatiloff decided that he'd try to help fill the void created by the passing of the founder of the INTERNATIONAL DXERS' CLUB OF SAN DIEGO, Larry Brookwell, by creating a newsletter which would concentrate on IDXCSD's forte, radio equipment. And so "Radio Equipment Review" was born.

Ron goes out on a limb to rate receivers against each other...a service badly needed for neophytes, especially, who may be looking for a receiver but who don't have a chance to try one out. He includes a classified ad section with his non-profit publication, and I find that his information on receivers is the quickest into print and most comprehensive available.

Like to find out about the Sangean Model ATS-803 portable rx? No one else that I know of has reviewed it! If you'd like to receive the next six issues, send him \$12, or \$2 for a sample issue. Contact Ron at 2661 Sheridan Rd., Zion, IL 60099.

And that covers most, but not all, radio organizations within one-hop distance of Milwaukee. Those I've missed...well, I hope your members will forward information to me as soon as possible.

Arthur Cushen sent me a nice long letter in response to my request for information about SPARC, the SOUTH PACIFIC ASSOCIATION OF RADIO CLUBS. Unlike ANARC, SPARC does not publish its own newsletter but sends copy to its five member clubs, who

CLUB CORNER

Paul Swearingen
P.O. Box 4812

Panorama City, CA 91412

Club conventions for 1985 are more or less history by now, and I hope you had a chance to attend one or more. I thoroughly enjoyed ANARCON '85 in Milwaukee this year, thanks to the committee members for their hospitality and the many club members whom I had a chance to meet and chat with face to face. It's more fun to trade ideas with a real human being than to stare at the cyclopean green eye of my computer CRT for several hours, believe me!

By any measure, the convention was a success, with over 260 individuals attending at one time or another. According to ANARC News Editor Dave Browne, next year's ANARC will be held in Montreal, with RCI's Ian McFarland as chairman.

Nearly all radio organizations headquartered within a hundred miles or so from Milwaukee were well-represented at the convention, and I was able to pick up much information about them from members there. So this month we'll highlight the north-central radio organizations.

1979 ANARC Convention host MDXC sent 12 of its members to the 1985 convention, not to mention nominating several of the award-winning individuals this year. The MINNESOTA DX CLUB is a regional DX/SWL club of about 40 active members who prefer to meet in order to share discoveries rather than through the print media. Therefore, their actual membership is limited to Minnesota residents. Dues are \$5.00 per year.

Their meetings are held on the second Friday of each month at various members' homes, and in October they

are to have a DXpedition. The November meeting will be at the Rarig Center in Minneapolis, and the December meeting will find MDXC'ers at Martin Croze's home in Edina. He's volunteered to pass along information about the club, so if you live in Minnesota, send him an SASE at 6017 Drew, Edina, MN 55410. If you join, you'll become a member of what ANARC officials term "the most active regional club in ANARC."

I goofed and failed to pick up any paperwork on the CHICAGO AREA DXERS and I deserve three lashes or more with a dusty dial cord for that lapse. However, if you'll send an SASE to very active member Robert Kramer, 6416 N. Richmond, Chicago, IL 60645, I trust that he'll pass along your request for information to the proper source. And thanks to Robert for allowing me to volunteer his services for that task.

I've mentioned the MICHIGAN AREA RADIO ENTHUSIASTS in this column before, but a second review is called for here. Their dues are \$3.00 and if you've a Michigander or a resident of a nearby state you can contact them through Don Hosmer, 24500 Union, Dearborn, MI 48124.

A second club I've written about, DX MID-AMERICA, publishes a fine bulletin and their "Wisconsin Scrapbook," a compendium of broadcasting stations in that state, is quite useful. John Rieger is the contact person at 1586 S. 82nd, West Allis, WI 53214. Send him \$12 and he'll send you 15 copies of "Hot Tips and Targets."

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CLUB CORNER cont'd

then publish it. SPARC does serve, like ANARC and EDXC, as an umbrella organization for member clubs.

Individuals cannot join SPARC but instead have their choice of joining: THE DOWN UNDER DX CIRCLE, 7 Donald Road, Burwood, Victoria, Australia 3125 (mw, sw); SOUTHERN CROSS DX CLUB, P.O. Box 1487, Adelaide, South Australia 5001, Australia (mw, sw, amateur, utility); DX AUSTRALIA, Box 285, Mt. Waverley, Victoria 3149, Australia (mw, sw); the NEW ZEALAND DX RADIO ASSOCIATION, 40 Craigleith Street, North East Valley, Dunedin, New Zealand (mw, sw, amateur, utilities); or the NEW ZEALAND RADIO DX LEAGUE, P.O. Box 1313, Invercargill, New Zealand (mw, sw, fm, tv). Stateside DX'ers interested in any of the five clubs should send five IRC's to the appropriate address.

A sixth club which is temporarily inactive is the DOWN UNDER DX CLUB, and Mr. Cushen mentions that he hopes that they will be in action "shortly." SPARC reports may be heard from Keith Barton of Adelaide on KTWR on the fourth Saturday of each month at 0830 UTC, and by Mr. Cushen on HCJB on the fourth Monday of each month at 0930 UTC in "DX Party Line."

North American DX'ers who may be a little hesitant about joining a foreign club should be aware that some of the most incisive reviews of new equipment I've seen have come from SPARC clubs and the current membership cost is relatively low; a year's dues to join the NX DX Radio League, for example, is only \$14.50 at the current rate of exchange (2 NZ dollars = \$1 U.S.). If nothing else, the Australian and New Zealand stamps are among the world's most beautiful, in my opinion, and if you're a collector you'd be assured of a regular source pasted on your bulletins!

A few more notes, thanks to Dave Browne again --The SOUTHERN CALIFORNIA AREA DX'ERS will meet Saturday, 10/3, at the Village View School Auditorium, 5361 Sisson Drive, Huntington Beach, CA. The program will honor the 12th anniversary of SCADS.

RCMA-CHICAGO was to meet September 21 and if you missed the meeting but would like more information, send an SASE to Edward Robert Sirovy, 311 S. Williams St., Westmont, IL 60559.

The WORLD DX CLUB, headquartered in Northampton, England, has reduced their dues to \$14 airmail or

BROADCASTING...

HANK BENNETT ON SHORTWAVE

... of turntable speeds
and movie films

An October Answer to an August Question

Back in the August issue, I asked our readers a question that had been given to me by The Boss, Bob Grove. The question, simply put, was why were the speeds of 78, 45, 33-1/3, and 16-2/3 rpm chosen for phonograph turntables?

I placed this question in the lap of our good friend and neighborhood pharmacist, Dr. Larry Bulk, over in Westmont, New Jersey. Outside of actually going to any official or semi-official source, I thought I'd ask Dr. Larry because I knew of his interest and experience in the subject. His reply:

"To begin with, I honestly don't know why the speed of 78 rpm was chosen. I do know that records at

the turn of the century ran somewhere between 70 and 82 rpm. I believe eventually when electrical recording came in they standardized on 78 rpm as a happy compromise. But even during the days of the 78 rpm records there were records made at various off speeds. Right up until the 1940's some were made too slow and others too fast but generally only on rare occasions. The official speed is 78.26 rpm. And it had a groove width of 85 grooves to the inch.

"Now the 33-1/3 rpm speed came in. That was actually the second more-or-less standard speed and it came in during the late 1920's. Motion picture films had been shown at various speeds. Nominally, silent speed was the equivalent of 16 frames per second but in actual fact a lot of projectionists of the day would show the films faster in order to empty the movie house more quickly and perhaps get an extra show in here or there. Instead of maybe two shows in an evening they could perhaps squeeze in three shows by speeding up the film.

"Incidentally, film speeding is also done today on television in order to get more commercials in. Even with sound films you'll be able to hear a pitch change with an increase in speed, sometimes to as much as ten percent. In any event, with the silent

films, it was easier to do that since there was no sound.

"Bell Telephone engineers who invented the two methods of sound film, sound-on-disc and sound-on-film, examined virtually every aspect of the motion picture industry as far as technical data was concerned and they found that the average speed of a motion picture film as projected in the theater was the equivalent of 24 frames per second.

"I'm not sure if that was 90 or 100 feet per minute, but I do know that it was 24 frames per second which was quite a bit faster --half again as fast, in fact--than the normal speed for silent film.

"It was found that when a common gear was connected between a shaft on the motion picture projector and a turntable, the turntable would rotate at precisely 33-1/3 rpm. The films at that time were on 1000 foot reels. This meant that one reel would run approximately 10 minutes at 24 frames per second.

A 16-inch transcription disc playing from the inside of the record to the outer edge--the exact reversal of a normal phonograph record--with the same 85 grooves per inch as for 78 rpm, but run at 33-1/3 rpm, would exactly match a 10 minute reel of film.

"Either Bell Telephone or Western Electric also invented sound-on-film which became known as Fox Movietone. They presented the two methods of sound film to various companies but nobody

Assistance for Handicapped Hobbyists

The Handicapped Aid Program (HAP-USA) has had its ups and downs over the years and now appears to be having its downs once again. Nonetheless, another service organization which presently boasts of 100 members and growing is Phillip Dampier's DX Radio Network.

DXRN specializes in services for the visually impaired and in radio program distribution. It is a non-profit organization which makes available cassette tapes of Monitoring Times and other publications of interest to the radio hobbyist as well.

For additional information send a self-addressed stamped envelope (SASE) with your inquiry to Phillip M. Dampier, Director General, DX Radio Network, 3176 Elmwood Ave. Dept. MT, Rochester, NY 14618-2535 (phone 716-473-0004).

\$8 surface. The North American Secretary is Richard D'Angelo, 2216 Burkey Drive, Wyoming, PA 19610.

The ONTARIO DX ASSOCIATION will convene in Scarborough, Ontario, on October 19-20. For details, send an IRC to 3 Camrose Crescent, Scarborough, Ontario Canada M1L 2B5.

And that's about enough from me; my deadline for the December issue will be October 10. 73. ●

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was interested in it. However, Warner Brothers, who were reportedly in some financial difficulty, decided to take a gamble with it.

"Their first film made with the 'Vitaphone' method (sound-on-disc) was 'Don Juan,' made in 1926, and starred John Barrymore. This had a musical score which played along with the movie.

"In 1927 the 'Jazz Singer' was tried with Al Jolson--it had parts talking and singing and the remainder was silent film.

"The reason that Warner's had chosen sound-on-disc was because it meant a minimal change in the equipment that was in use in the theaters. All one had to do was to connect a gear to a shaft and hook up a turntable. You could use existing projectors.

"The sound-on-disc method had one particular problem: If the film broke and you lost a frame or two you would have to splice in some black frames because the number of frames had to be exact, otherwise you would lose synchronization between the picture and the sound. The sound was on a record and couldn't be changed, of course. Sometimes if you see a film that was originally made with sound-on-disc you'll see some black frames. I have some in my own collection where a frame was lost.

"Sound-on-films don't have that problem. If a frame was cut out, the corresponding sound was also lost, but the synchronization was maintained. There was another problem with sound-on-disc. If the operator happened to knock the turntable or something else happened--perhaps a groove skip--the synchronization was lost for the entire reel. That, of course, did not happen with sound-on-film. But the 33-1/3 rpm speed came from that.

"In 1931 RCA Victor decided to try a new speed for records. They were going to come out with a 33-1/3 rpm record which had the normal 85 grooves per inch spacing. The first record that was made under this process was Beethoven's fifth symphony with the Philadelphia Orchestra conducted by Leopold Stokowski. No one in the orchestra was told what was happening but they knew something was afoot because they played the entire work with only one stop.

"Those records had the top capability of putting as

much as 15 minutes on a side; that record was released, but in 1931 we had depression times and there were very few people that were going to buy either new turntables or even adaptors for their old turntables to play 33-1/3 rpm records. People weren't buying records in the first place, so that experiment, which actually was sold in the United States for a time, in 1931 came to a halt.

"It wasn't until 1948 that the 33-1/3 rpm speed was rejuvenated, this time by Peter Goldmark of CBS Labs. He made another remarkable change: He used vinylite instead of shellac for the record material. CBS officers came up with a method of putting as much as 224 grooves per inch--almost two-and-one-half times what was previously gotten! Therefore, they could get as much as 23 minutes on a side of a record.

"Nowadays, using a direct metal mastering process they can get as much as 45 minutes on a side of a record. I have a couple of records in my collection which run for 80 minutes--40 minutes per side--with no loss in dynamics.

"The 45 rpm speed came out from someone's theoretical paper in the 1930's; I do not know who it was who came up with speed of a disc versus size, versus time. However, this same person came up with the idea that 45 rpm would be about the most ideal speed for a twelve inch disc. The fellow was evidently quite right in his theory; if you have ever heard one of those things, they are remarkable.

"A 45 rpm 12 inch record has both remarkable sound and remarkable depth. I have a couple of records on 33-1/3 rpm speed that were also issued at 45 rpm and the difference between them is like night and day. Obviously, you have to change the record more often but the sound quality makes it worth it.

As a matter of fact, a company in England called Nimbus has come up with 45 rpm, 12 inch records that can put as much as 29 minutes on a side--virtually the same as a long-playing record. I have several of these; the sound is remarkable and the quality of the side lengths is the same as a normal LP. Most normal LP's don't have much more than 20 minutes on a side anyway even though they can handle much more than that. That is about the extent of my knowledge of the three record speeds."

Editor: "You spoke of

an old 33-1/3 rpm record that ran from the inside to the outer edge."

Dr. Larry: "That was the movie transcription disc."

Editor: "I have an old WPA (Works Progress Administration) record that runs from the inside to the outer edge at 16-2/3 rpm."

Dr. Larry: "The speed of 16-2/3 rpm was designed for talking books and all 16-2/3 rpm is, is half of 33-1/3 rpm. That was mostly designed for talking books and the fidelity was terrible. It didn't succeed and the speed has been abandoned today. It no longer exists."

Editor: "What was the speed of the old Edison cylinder records?"

Dr. Larry: "I'm sorry, I do not know. They went pretty fast and usually held about two minutes on a side with the exception of the Blue Amberol series which held four minutes on a side."

Editor: "One last question. Do you know why 8, 16 and 35 mm were the speeds chosen for movie film?"

Dr. Larry: "Yes, at least partially. I don't know why 35 mm was picked but it was for home movie use. Kodak wanted something half the size, so in 1923 they came out with a home

movie camera that was far smaller than a 35 mm camera. Now the logical size to use would be half of 35 mm or 17-1/2 mm, but Kodak decided not to use that size because they were afraid people would try to buy surplus nitrate film. The nitrate film that was used in professional motion picture theaters was very good for imaging but it was very highly inflammable.

"Kodak developed safety film which was adequate for the purpose but not adequate for motion picture or theatrical presentations, so they came out with 16 mm which was less than 17-1/2 mm and it had no relationship with 35 mm whatsoever so that the consumer could not try and buy cheap 35 mm film and have it slit. They would have to buy the 16 mm film all the way or they wouldn't be able to use it in their home movie cameras.

"8 mm film was, of course, only half of 16 mm. Super 8 mm film was actually an entirely new format which was developed in 1964 or 1965 by Kodak in order to try and get more image area on the 8 mm film."

Other comments are welcomed. Please address your letters directly to the editor, Hank Bennett, P.O. Box 3333, Cherry Hill, NJ 08034.

SWL WORLD WATCH



by Ken Wood

Can it really be that we are sneaking into fall already? Summertime's improved nighttime reception on the higher frequencies will be sliding downhill before long. But on the other side of the ledger, conditions should become quieter on the lower frequencies as the semi-annual propagational trade-off occurs. We can hope that this season will see the sunspot lowpoint achieved, leaving us nowhere to go but up.

Check 4.815 in the late afternoons or at 0530 in the evenings and you'll spot the new international service of Bourkina Faso (Upper Volta) which went into operation this June. It's still all in French and local languages but the signal strength is greatly improved. The power is reported to be 50 kilowatts but it sounds like at least 100 kW!

David R. Alpert of New York sends a press clipping on Voice of America developments. Agreements have now been signed with Morocco covering the new VOA relay station at Tangier. Other agreements for relay stations have been signed with Puerto Rico (meaning a new country in the future), Sri Lanka and Thailand. Marconi has won a contract to install a new transmitter at the VOA Greenville complex.

Dene Lynneberg reports in the New Zealand DX Times, via NASWA's Frenx, that the following Colombian stations are now, sadly, inactive: Caracol Bogota on 4.755, Radio Kennedy on 4.775, Radio Guatapuri on 4.815, Radio Buenaventura on 4.835 (never more than rarely active), Radio Neiva 4.855, La Voz del Norte 4.875, Emisoras Atlantico 4.905, Radio Santa Fe, 4.965, Radio Surcolombiana on 5.010, Radio Mira on 6.015, La Voz del Tolima on 6.040, Radio Melodia on 6.045, La Voz del Centro 6.095, Radio Vision on 6.105, Radio Super 6.120, Radio Continental on 6.125, Radio Reloj (La Voz de Huila) 6.150, La Voz de la Selva on 6.170 and La Voz de Cali, 6.195.

SWL WORLD WATCH cont'd

I believe 4.875 and 5.010 have been active since this list was compiled, while Tolima, Vision and Continental have been off the air for quite some time.

KCBI, the new U.S. religious broadcaster in Dallas, Texas, is reported to be running another series of tests although it has not been noted here in the northern midwest - yet! Keep an ear on 11.790 between 1900 and 2200 GMT.

OK, let's take the tour!

AFRICA AND THE MIDDLE EAST

ALGERIA - Radio Algiers heard at 2005 in English with news and review of the week's news on 9.640.

BOTSWANA - Radio Botswana, 3.356 in parallel to 4.820 heard from usual pre-0400 barnyard sign-on with fair signals. Into a program in Setswana.

CAMEROON - Radio Garoua on 5.010 heard at 0500 at poor to fair level with occasional utility QRM. In French.

EGYPT - Voice of the Arabs service noted on 7.150 from 0303 tune-in, all Arabic.

EQUATORIAL GUINEA - Servicio Internacional (Radio Africa) on variable 15.106 with English religious program heard at 2130.

GHANA - Ghana Broadcasting Corporation at 0605 on 3.366 at fair to poor level with news in English.

IRAQ - Voice of the Masses service in Arabic heard at 1830 on 11.750. Arabic music.

ISRAEL - Kol Israel changed its 9.440 frequency to 9.435 and it's well received in English around 0015.

MAURITIUS - Mauritius Broadcasting Corporation rarely observed, but noted occasionally in recent days on 9709 at 0405, but poor level.

NAMIBIA - Radio South-west Africa heard on both 3.270 and 3.295 with a variety of programming at 0305.

NIGERIA - FRCN at Kaduna noted on 4.770 at 0500 with and English language newscast.

SAUDI ARABIA - Broadcasting Service of the Kingdom of Saudi Arabia on 9.870 and 11.740 in Arabic heard at 2210.

SOMALIA - Radio Mogadishu in Somali with local music on 7.200 at 0335. Usually quite good.

SYRIA - Damascus heard on 12.085 with news in English and the program

"Welcome to Syria" from 2100 tune-in.

UGANDA - Radio Uganda on 5.026 but only fair at 0400 with ID in English and newscast.

ASIA AND OCEANA

COOK ISLANDS - Radio Cook Islands on 11760 doing very well during the summer months and heard in Maori and English with news, island music and such from as early at 0430. Listed for 500 watts but reportedly the power has recently been doubled.

INDIA - All India Radio heard with news in English at 2200 followed by Indian music on 11.6200.

KUWAIT - Radio Kuwait on 11.675 with an English segment at 1800. News and usual wide variety of music.

NEW ZEALAND - Radio New Zealand International on 11.780 with domestic service in English at 0510.

NORTH KOREA - Radio Pyongyang on 9.977 noted at fair level in English at 1205 with news and commentary.

PAKISTAN - Radio Pakistan poor on 11.810 at 1700 with news in English.

PAPUA NEW GUINEA - Radio East Sepik, poor in Pidgin with country western music at 1010 on 3.335. Radio East New Britain on 3.385 better at 1040 with pop music and English announcements.

SOLOMON ISLANDS - Solomon Islands Broadcasting Corporation heard on 9.545 as well as 5.020 at 0750 in local Pidgin with music and talks.

VIETNAM - Voice of Vietnam heard in Russian at 1130 on 10.040.

EUROPE

BELGIUM - BRT to North America in English at 0035 with talks on various subjects. 5.910.

CZECHOSLOVAKIA - Radio Prague on 5.930, 7.356 and 9.540 at 0100 with English service to North America.

DENMARK - Radio Denmark in Danish on 15.165 at 1500, after their English "service" which consists only of the station identification.

MONTE CARLO - Trans World Radio at 0800 in English with religious program on 9.495.

NORWAY - Radio Norway with Sunday English program at 2300 on 9.605.

POLAND - Radio Polonia in English at 0205 on 7.270 and 11.810.

PORTUGAL - Radio Renascenca at 2340 on 11.730, all Portuguese.

VATICAN - Vatican Radio with English to Africa on 15.120 at 1530. African news and features about Africa.

YUGOSLAVIA - Radio Yugoslavia's brief English segment noted at 2115 on 9.620, followed by French program.

NORTH AND CENTRAL AMERICA

COSTA RICA - Radio Impacto was on 6.140 for about ten days and heavily QRM'd there. Must have realized this as they returned to usual 6.150.

GUATEMALA - Radio Tesulutlan with marimba music to 0100 when ID in Spanish on 4.835.

UNITED STATES - Assemblies of Yahweh station WMLK at Bethel, Pennsylvania, still in test mode. Using 15.110 between 1700 and 1900 but the signal remains quite poor. Asking for reports.

SOUTH AMERICA

ARGENTINA - RAE on 9.690 with English program from 0100-0200, then into Spanish.

BRAZIL - Radio Nacional Tabatinga, heard just after 1000 on 4.815. All Portuguese and hooked into Radiobras network.

COLOMBIA - Ondas del Meta at 1010 in Spanish,

often IDing as just "Meta." Usually better mornings than local evenings. La Voz del Cinaruco on 4.865 at 0930 with LA pops, Spanish IDs and commercials. Ecos del Combeima at 1020 with Latin music, Spanish announcements on 4.785. Radio Nacional heard with classical music on 9.635 at 0155, all Spanish.

ECUADOR - Radio Catolica Nacional on 5.055 with religious program in Spanish at 0130. Radio Jesus del Gran Poder in Spanish at 1048 on 5.050.

FRENCH GUIANA - RFO Cayenne on 5.055 at 0105 with variety of music, all French announcements.

PERU - Radio Huanta 2000 on 4755 at 1015 with huaynos. Radio Nueva Cajamarca on variable 6.960 sometimes fairly strong in the static around 0200. Weaker and less consistent is the new Radio Norandina on 4.460 around 0300. 5.199 has Radio Imagen in evenings and early mornings.

SURINAM - Radio Surinam International, via Radiobras transmitters in Brazil, with English and Dutch from 1800 on 17.755.

VENEZUELA - Radio Turismo on 6.180 with LA pop music at 0950 tune-in, all in Spanish. Radio Nacional



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ENGLISH LANGUAGE BROADCASTS

by Tom Williamson

This month we will review a special type of program not previously covered in this column. I am referring to programs especially produced for the short-wave listener which used to be exclusively "DX" programs, that is to say, for the avid "long-distance" fan who likes to capture new and remote small stations anywhere on this planet!

Such a "dyed-in-the-wool" enthusiast is not as interested in the content of the broadcast as in identifying the station and often writing to them for a QSL verification card or letter.

However, these special programs have changed quite a bit over the years and they are now much wider in scope and appeal, although they do provide info on the latest exotic stations being heard. Coverage of technical advances, radio club activities, special broadcasts, and reviews of radio equipment including the latest receivers, are now among their program material.

I really don't know which station first started these programs, although I suspect it was Radio Sweden; however, way back in the early days, around 1946, there was a famous regular

program that cheered the souls of all short-wave listeners, "OTC CALLING DXERS" from the Leopoldville station in the Belgian Congo (now Kinshasa, in the Democratic Republic of Congo).

O.T.C. operated with 50 kW and put in a good signal around the world! But let's take a look at what is on the dial today.

RADIO SWEDEN INTERNATIONAL

Stockholm has still its famous weekly "SWEDEN CALLING DXERS" which is surely the granddaddy of all these programs! In the old days it was hosted by that famous gentleman of Swedish Radio, Arne Skoog; nowadays it is under the guidance of George Wood. The program is still basically aimed at the DXer, with numerous up-to-date tips on what is being heard.

I note, however, a tendency to rely on material from radio club publications as opposed to individual listeners; at least this seems more pronounced than in earlier times.

This program is of high quality, but the problem is getting a good signal from Stockholm; I find them best in the morning at 14.10 (Tuesdays) on 15 MHz.

They also present some

extracts of recordings from overseas stations. Another excellent feature of SCDX is that you can get a copy of the script by writing to Radio Sweden. Everything is in English, of course.

HCJB QUITO ECUADOR

The Voice of the Andes has had a program of this type for many years entitled, "DX PARTY LINE." This one is somewhat of a surprise--you never quite know what to expect! All sorts of material may be presented from station tips to receiver reviews or how to put up an antenna.

Some weeks it can be quite dull; at other times you may get an item which is invaluable! At one time they presented tape recordings of station interval signals which were very helpful for identifying broadcasters. Currently, DX tips are heard from the U.S. West Coast radio club "SPEEDX," but all sorts of other clubs have been presented and no doubt will continue.

Station profiles are another type of feature; yours truly recently heard one about the Republic of Chad. They also may include news about medium-wave broadcasting and "ham" or amateur radio.

HCJB also has an excellent listeners' club called "ANDEX" which one can join for a small subscription and then receive their monthly club leaflet. All things considered, this is an interesting presentation, and lately they have used the "open-line" program format experimentally, so you can call in with questions or comments. However this is not a regular event!

BBC LONDON ENGLAND

The current "listeners' program" is called "WAVEGUIDE" and can only be classed as a BBC advertisement! Perhaps that's a bit unfair, but it did replace an honest "DXers" program called World Radio Club. Nowadays, the current offering is simply an update of frequency changes and suggestions for improving your reception of the BBC--which certainly may be helpful, but is NOT a DXers show! They will answer your mail enquiries on the air.

RADIO EXTERIOR DE ESPANA

Spanish Foreign Radio has a weekly DX program which must be one of the shorter ones timewise, and is not quite up to its competition! All sorts of mixed fare is presented, from sunspot numbers to ham radio news, mixed with SW broadcast tips from the

Italian DX Club. It's not really comprehensive, but give them a try; you may find some interesting material. The signal is usually a powerhouse!

BRUSSELS CALLING

The English service of B.R.T. has a regular "RADIO WORLD" program with both broadcast band (medium wave) and short wave tips; they seem to be very Europe-oriented with lots of material coming from listeners in that continent. And why not, of course? They are serving a considerable audience in that part of the globe. To you and me, however, this is less helpful as far as the possibility of logging the stations mentioned. Naturally, there is no perfect station presentation in this respect.

RADIO CANADA INTERNATIONAL

RCI presents the weekly "SWL DIGEST," one of the best programs on the air. They have interviews with experts of various kinds, DX tips, equipment reviews, club news, and so on. Well-known personalities such as Larry Magne, Noel Green, Arthur Cushen, Glenn Hauser, Harold Sellers, and others are heard over this station.

Drawing information from such diverse sources as Radio Database International, ANARC, EDXC, in addition to the above experts gives a very comprehensive outlook on the SW world. Don Jensen is another "world class" DX personality who may be heard on RCI.

WRNO WORLDWIDE

The Rock of New Orleans presents "WORLD OF RADIO" by the well-known Glenn Hauser, who writes the "listeners Notebook" for "FRENDEX," club bulletin of the North American Shortwave Association. This background guarantees a detailed comprehensive coverage of SW news...but the problem for yours truly is when are they on the air? They seem to change time and frequency rather frequently, but out table gives the latest presumed correct data. WRNO is usually a most reliable signal...so keep listening!

VOICE OF AMERICA

Under the guidance of Gene Reich VOA now has a DXers program entitled "WORLDWIDE SHORTWAVE SPECTRUM," a short time period, indeed, and I think it is too early to judge this one. So far it gives the impression of being very up-to-date on its information. If you've had the pleasure of meeting Gene, I'm sure you

SWL WORLD WATCH cont'd

on 5.020 still operating, still usually good level around 0100, all Spanish.

CHALLENGER

This month there's nothing at all tough about hearing the station we're highlighting. The challenge is in discovering clues as to its identity and location.

The station is the mysterious, so-called "Nat King Cole" unidentified which has been operating regular as clockwork since May. There are no announcements, just a one hour music tape repeated once during the two hour transmission. The signal strength is way above S9 here in the north midwest.

It's running a schedule from 0000 to 0200 on 7.400 (signing off just in time to free the frequency for the start of the La Voz del CID broadcasts there). It also runs 1300 to 1500 on 9.920. Any info on this one--deviations from the format, schedule changes or other bits and pieces that might aid in an ID--would be welcome.

JEEVES SAYS -

What are these stories about a Radio Marti-type station supposedly to be built by Pakistan by the United States? Some reports say Radio Free Europe/Radio Liberty is looking to set up a station here, others say it's to be a "Radio Free Afghanistan" type of operation. Anybody have any info on this supposed coming broadcaster?

If you prowl the tropical bands you'll want to have a copy of the annual Danish Shortwave Clubs International's Tropical Band Survey. This is an excellent and comprehensive guide to the broadcasting stations operating between 2.000 and 5.900 MHz. The 32 page 11th edition is now available for 8 IRCs (for airmail shipment) from DSWCI, Tavleager 31, DK-2670 Greve Strand, Denmark.

There's a meeting of area DXers scheduled for later today and Ken wants the Rolls washed before we leave so I had better roll up my sleeves and pant legs and get on with it.

Good DXing and til next month, 73 from Ken and me. ●

ENGLISH LANGUAGE cont'd

would agree with me that this is the kind of guy one would want to see producing our type of program. Worth watching!

RADIO NEDERLAND

Yes, I've left the best to the last! "MEDIA NETWORK," hosted by Jonathan Marks, stands in a class by itself. This is an incredible program for its ORIGINALITY! The "mostest" with the "latest" is perhaps the best summary of the Dutch effort. Satellites, SSB, Flevoland, computerized on-air broadcast tests to listeners...what more can you want?

Add to this reports from Andy Sennit (WRTVH), Victor Goonetilleke, Richard Ginbey, from Asia and Africa respectively (where, to put it mildly, we don't have too many active DXers!), and you begin to see that this program has real world "class" about it.

No doubt about it, Media Network has taken us ahead from the older, simpler "DX tips" type of program. If you listen to nothing else, try out this one!!

That ends this survey; there are a few other such programs, but I list below the main times and frequencies of those mentioned above.

WHO'S ON FIRST?

by Patrick O'Connor
Plain Road
Hindsdale, NH 03451

PART V

AMATEUR RADIO

Modern amateur radio seems to be a contradiction --one of the oldest of all radio services, it is still on the cutting edge of modern technology. Transmission modes vary from the oldest (Morse code) to the newest (computer to computer transmission).

License holders vary in age from pre-teens to well over 80. Amateur radio encompasses the smallest area in the high-frequency spectrum (1.8-30 MHz)--3.65 MHz out of a total of 28.2 MHz--yet has the largest number of license holders--over 800,000 worldwide.

THE BANDS

Amateur ("ham") radio occupies eight separate bands of frequencies in the HF spectrum, with a ninth to be added by the end of the decade. These frequencies are:

- 160 meters - 1800-2000 kHz
- 80 meters - 3500-4000 kHz
- 40 meters - 7000-7300 kHz
- 30 meters - 10100-10150 kHz
- 20 meters - 14000-14350 kHz

- 17 meters - 18068-18168 kHz: (future use)
- 15 meters - 21000-21450 kHz
- 12 meters - 24890-24990 kHz
- 10 meters - 28000-29700 kHz

THE MODES

With the exception of 160 and 30 meters, all bands are subdivided into code (CW) and voice subbands. CW is always found at the lower edge of the band. 160 meters has no OFFICIAL subdivision, but common usage has the 1800-1825 kHz section set aside for CW use. 30 meters is limited to non-voice transmission modes.

There are several modes of transmission used by hams, including Morse code (CW); single-sideband voice (SSB); radioteleprinter (RTTY); slow-scan television (SSTV); facsimile (FAX); narrowband FM (NBFM); and, occasionally, amplitude modulation voice (AM).

THE HUNT

One reason DXers listen to the ham bands is the aura of mystery--what will be heard today? Unlike broadcast stations, there are virtually no set schedules (except for nets); stations come and go. It is possible (but not too likely) to log 100 countries in one weekend of concentrated listening; DXers have logged over 300 separate countries on the ham bands.

One reason overseas listeners DX the ham bands is more practical--several countries require that would-be hams provide proof of ability by logging and verifying a certain number of overseas hams; until this is done they cannot be issued a license.

It is not unusual to have a rare station interfered with (QRM'ed) accidentally (or on rare occasions, deliberately). There are times when it seems like all 800,000 hams are trying to use the same frequency at the same time!

Band conditions open and close at times in a truly bizarre manner, with no apparent rhyme or reason. One-way propagation is not that common, but when it occurs, it can be truly frustrating!

To receive ham transmissions, you will need a sensitive communications receiver capable of receiving SSB signals. This is NOT a job for a cheap portable; most just don't have either the sensitivity or selec-

tivity needed.

Hams operate with a maximum power of 2000 watts (most operate at about 200 watts) and many use homemade antennas. Compared to international SWBC stations with their hundreds of thousands of watts of power and specially-designed directional antenna systems, this is real "flea power"!

The antenna is critical. If you intend to listen to all the HF bands, an outside wire antenna, preferably with an antenna tuner, would be your best bet. If you intend to DX only one or two of the bands, dipole antennas for these bands would be a good idea. And, if the sky's the limit, you might invest in a tower and beam antenna.

Special equipment is needed to receive RTTY, FAX and SSTV; NBFM (normally found in the 29-29.7 MHz area) can be received on a standard AM receiver by a method known as "slop tuning," but audio quality isn't all that great. Many newer general coverage receivers offer FM detection.

WHEN TO LISTEN

Here is a closer look at the patterns of the bands:

160 meters: Open mostly at night. Better conditions prevail in years with lower sunspot counts. Noisy in the summer, better in the winter. A path of darkness is needed between transmitter and receiver. Best time to listen: late night, in the winter, during low-sunspot-count years.

80 meters: Better at night, but can provide a range of up to 300 miles during the day. Better in low sunspot years, but usable at other times. This band is rather noisy--the 3900-400 kHz segment is shared with broadcast stations.

40 meters: Another nighttime band, but capable of providing daylight range of up to about 500 miles. Another noisy band, with broadcast stations sharing the 7100-7300 kHz portion.

30 meters: Limited to non-voice transmission modes; best described as a "twilight" band, with propagation characteristics of both 40 and 20 meters.

20 meters: THE DX band. In summer the band is commonly open 24 hours a day; it does close on some winter nights, especially if the sunspot

STATION/PROGRAM	WEEKDAY	REPEAT
HCJB DX PARTY LINE 15295/9745/6095	Monday 2130 0230	Wednesday 2130 0230 Saturday 2130/0230
RSI SWEDEN CALLING DXERS 15345/11705/9695	Tuesday 2130 2315 0245 0345	
RCI SHORTWAVE DIGEST 15325/15260/11945/ 11710/9755/5960	Tuesday 1905	Friday 1925 Sunday 2305/0405
BBC WAVEGUIDE 15400/12095/9915/9590/ 9510/6175	Tuesday 0430	Wednesday 1735 0130
BRT RADIO WORLD 15590/9880/5910	Wednesday 0030	Sunday 0130
R.N. MEDIA NETWORK 9715/9590/9895/6165/ 6020	Thursday 1045 2045 0145 0245 0345	
VOA WORLDWIDE SW SPECTRUM 15205/11580/9650/ 9455/6130/5995	Thursday 0230	
WRNO WORLD OF RADIO 11965/7355/6185	Friday 0530	Sunday 1400
REE (SFR) DX PROGRAM 11880/11690/9630/ 6125	Sunday 2250 0050 0150	

WHO'S ON FIRST? cont'd

- count is low.
- 17 meters: Not yet in use.
- 15 meters: Activity is somewhat dependent on the sunspot count. The present low count has affected this band, but occasional openings still pop up. A daytime band, but high sunspot counts can cause around-the-clock activity.
- 12 meters: Recently opened, this band will not see full utilization until the sunspot count starts to rise in 3-5 years.
- 10 meters: Virtually dead at this time. In periods of high sunspot counts, 10 meters can provide high-quality DX from around the world. Affected by propagation factors common to both HF and VHF. A daytime band, but occasional around-the-clock openings are not unknown.

VERIFICATIONS

QSL'ing hams can be rewarding--and aggravating. There are no set QSL policies--it's every man for himself. A good report will give you about a 50% chance for a QSL if reply postage is enclosed.

A good report can fit onto a postcard, but there isn't any room for reply postage. A good report to a ham should include: the call signs of the stations in contact; date and time IN GMT; mode used; quality of reception; receiver and antenna used. Legally, you can mention what was discussed, but some hams might consider that tacky.

Hams do not use the SINPO code for reports; they use the RST code: R (Readability) between 1 (almost inaudible) and 5 (perfectly readable); S (Strength) between 1 (extremely weak) and 9 (extremely strong); T (Tone; CW only) between 1 (very rough and broad) and 9 (pure note).

Reply postage, especially for DX (foreign) contacts, is a virtual necessity. IRC's (international Reply Coupons) may be all right, but mint stamps of the country are preferred. For some reason, some post offices in remote areas will not redeem IRC's.

It is also a good idea to use plain stamps; if you use colorful commemorative stamps, the envelope may be stolen by a post office employee who takes a fancy to the colorful stamps.

Addresses are quite easy to come by. THE RADIO AMATEURS CALLBOOK, published yearly, contains the addresses of all licensed

amateurs at the time of publication. It comes in two editions--the North American Edition which lists hams in the United States, Canada and Mexico; and the DX Edition which lists all other countries.

Some DX hams use "QSL managers"--another ham in (usually) another country who handles the QSL's for the station. Most ham radio publications have some information on QSL managers and there are publications that list nothing but QSL managers.

Some hams request the QSL's go "via the bureau." There is a list of QSL bureaus in each "Callbook"; simply send the card to the ham via the bureau in his or her country.

Most public libraries have some information on ham radio available. The main source for ham radio information in this country is the American Radio Relay League (ARRL, 225 Main Street, Newington, CT 06111). Full membership is available to hams only, but others are eligible for associate membership.

Only one SWL club at present has a regular ham radio column, the Association of DX Reporters (ADXR, 7008 Plymouth Rd., Baltimore, MD 21208). The monthly column, "Amateur Section," contains information on stations received, late information on upcoming operations, QSL's received by members, and QSL managers.

There are several weekly or twice-monthly DX bulletins containing "hot" information, including "QRZ DX," "DX Report," "DX News-sheet," and others. Besides these, there are several monthly publications and magazines--"73," "QST," "CQ," "Ham Radio," "Long Skip" and others. These contain technical information, construction projects, tips, information... Serious ham DX'ers should investigate these publications.

Oddly enough, ham band DX'ing by SWL's in the U.S. is at an all-time low. This is a challenging field, well worth the effort. It isn't easy at times, but the rewards--both satisfaction

at a job well done, AND a nice collection of colorful QSL cards--make it well worth the effort.

NEXT MONTH: A little higher in frequency!

Tune in on the Ham LEF Beacons

There is a license-free band on which hams and non-hams alike may communicate over hundreds or even thousands of miles, any mode. It is the 1750 meter band--160-190 kHz. Since allowed power is very low and electrical interference is usually very high, special techniques and skills are necessary to get the most out of this unusual piece of spectrum.

Since most general coverage receivers now on the market include the low frequency part of the spectrum, usually beginning at 100 kHz, there is no trick to try to hear these stalwart experimenters. In order to maximize their communications opportunities, many of them utilize automatic beacons to test propagation.

If you should happen to catch a transmission from one of the beacons listed below, how about writing to the Longwave Club of America (45 Wildflower Rd., Levittown, PA 19057) and let them know?

The following list appeared recently in The Lowdown, the official publication of the LWCA, and was compiled by "On the Air" columnist Mitchell Lee.

INTERESTED IN HAM RADIO? Monitor the W1AW Transmissions

A recent poll of MT readers revealed that fully one half of those who responded are licensed ham operators; we had previously guessed the number at only about 25%. Obviously, there is considerable interest in ham radio among our readers.

The American Radio Relay League (ARRL) is "ham headquarters" here in the United States and regular transmissions from the

League may be monitored throughout the week for those interested in learning more about the state of ham radio or for code practice to build up their copying speed.

The following schedule of W1AW operating times is good through October and was provided by QST Magazine, the League's amateur journal.

W1AW Schedule

April 28 - October 27, 1985

MTWThFSSn = Days of Week Dy = Daily

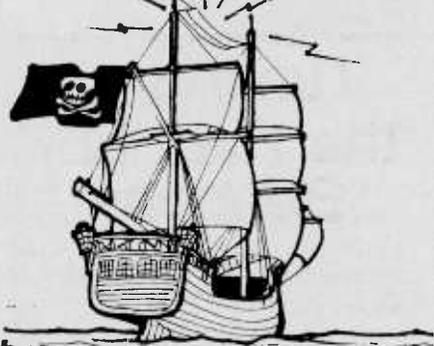
W1AW code practice and bulletin transmissions are sent on the following schedule:

UTC	Slow Code Practice	Fast Code Practice	CW Bulletins	Teleprinter Bulletins	Voice Bulletins
	MWF: 0200, 1300, 2300; TThSSn: 2000; Sn: 0200	MWF: 2000, TTh: 0200, 1300; TThSSn: 2300, S: 0200	Dy: 0000, 0300, 2100; MTWThF: 1400	Dy: 0100, 0400, 2200; MTWThF: 1500	Dy: 0130, 0430
EDT	Slow Code Practice	Fast Code Practice	CW Bulletins	Teleprinter Bulletins	Voice Bulletins
	MWF: 9 A.M., 7 P.M.; TThSSn: 4 P.M.; 10 P.M.	MWF: 4 P.M., 10 P.M.; TTh: 9 A.M.; TThSSn: 7 P.M.	Dy: 5 P.M., 8 P.M., 11 P.M.; MTWThF: 10 A.M.	Dy: 6 P.M., 9 P.M., 12 P.M.; MTWThF: 11 A.M.	Dy: 9:30 P.M., 12:30 A.M.
CDT	Slow Code Practice	Fast Code Practice	CW Bulletins	Teleprinter Bulletins	Voice Bulletins
	MWF: 8 A.M., 6 P.M.; TThSSn: 3 P.M.; 9 P.M.	MWF: 3 P.M., 9 P.M.; TTh: 8 A.M.; TThSSn: 6 P.M.	Dy: 4 P.M., 7 P.M., 10 P.M.; MTWThF: 9 A.M.	Dy: 5 P.M., 8 P.M., 11 P.M.; MTWThF: 10 A.M.	Dy: 8:30 P.M., 11:30 P.M.
MDT	Slow Code Practice	Fast Code Practice	CW Bulletins	Teleprinter Bulletins	Voice Bulletins
	MWF: 7 A.M., 5 P.M.; TThSSn: 2 P.M., 8 P.M.	MWF: 2 P.M., 8 P.M.; TTh: 7 A.M.; TThSSn: 5 P.M.	Dy: 3 P.M., 6 P.M., 9 P.M.; MTWThF: 8 A.M.	Dy: 4 P.M., 7 P.M., 10 P.M.; MTWThF: 9 A.M.	Dy: 7:30 P.M., 10:30 P.M.
PDT	Slow Code Practice	Fast Code Practice	CW Bulletins	Teleprinter Bulletins	Voice Bulletins
	MWF: 6 A.M., 4 P.M.; TThSSn: 1 P.M.; 7 P.M.	MWF: 1 P.M., 7 P.M.; TTh: 6 A.M.; TThSSn: 4 P.M.	Dy: 2 P.M., 5 P.M., 8 P.M.; MTWThF: 7 A.M.	Dy: 3 P.M., 6 P.M., 9 P.M.; MTWThF: 8 A.M.	Dy: 6:30 P.M., 9:30 P.M.

Notes

Code practice, Qualifying Run and CW bulletin frequencies: 1.818, 3.58, 7.08, 14.07, 21.08, 28.08, 50.08, 147.555 MHz.
 Teleprinter bulletin frequencies: 3.625, 7.095, 14.095, 21.095, 28.095, 147.555 MHz.
 Voice bulletin frequencies: 1.89, 3.99, 7.29, 14.29, 21.39, 28.59, 50.19, 147.555 MHz.
 Slow code practice is at 5, 7½, 10, 13 and 15 WPM.
 Fast code practice is at 35, 30, 25, 20, 15, 13 and 10 WPM.
 On Monday, Wednesday and Friday, 1300 through 2100 UTC, transmissions are beamed to Europe on 14, 21 and 28 MHz; on Wednesday at 2200 UTC they are beamed south.
 Code practice texts are from QST, and the source of each practice is given at the beginning of each practice and at the beginning of alternate speeds. For example, "Text is from July 1985 QST, pages 9 and 77" indicates that the main text is from the article on page 9 and the mixed number/letter groups at the end of each speed are from the contest scores on page 77.
 On Fridays, UTC, a DX bulletin replaces the regular bulletin transmissions.
 On Wednesdays at 2230 UTC, an IARU Region 2 bulletin in English and Spanish on 45.45-baud Baudot is sent on the regular teleprinter frequencies, beamed to Central and South America.
 W1AW CW and voice bulletins are sent on OSCAR 10, Mode B, when the satellite is within range. Look for CW on 145.840 MHz and SSB on 145.962 MHz.
 Teleprinter bulletins are 45.45-baud Baudot, 110-baud ASCII and 100-baud AMTOR, FEC mode. Baudot, ASCII and AMTOR (in that order) are sent during all 1500 UTC transmissions, and 2200 UTC on TThFSSn. During other transmission times, AMTOR is sent only as time permits.
 CW bulletins are sent at 18 WPM.
 W1AW is open for visitors Monday through Friday from 8 A.M. to 1 A.M. EDT and on Saturday and Sunday from 3:30 P.M. to 1 A.M. EDT. If you desire to operate W1AW, be sure to bring a copy of your license with you. W1AW is available for operation by visitors between 1 and 4 P.M. Monday through Friday.
 In a communications emergency, monitor W1AW for special bulletins as follows: voice on the hour, teleprinter at 15 minutes past the hour, and CW on the half hour.
 W1AW will be closed on September 2.

PIRATE RADIO



by
John Santosusso
P.O. Box 1116
Highland City, FL 33846

Havana Moon, I discovered that the 1300 GMT transmission had shifted frequency from 9920 to 7400. It was monitored several mornings in July.

From Minnesota Martin Croze writes to say that he had also been hearing this with good signals, but that it did not appear August 1. In the August 1 edition of *DX South Florida*, Terry Krueger reports that in July he heard 0000 transmissions of Radio Nat King Cole on 9920, including a July 19 broadcast which played an entire side of the Prince "Purple Rain" album.

So, it appears that there have been both transmitter problems and frequency changes involving Radio Nat King Cole. However, like Martin Croze, I have heard nothing from this station since the end of July. Both 7400 and 9920 have been silent in the morning and evening.

It may, of course, have been strictly coincidence, but it is interesting to note that at the very time Radio Nat King Cole went silent the Contras began what may be their biggest offensive ever against the Sandinista government of Nicaragua. Was its work done, at least for now?

If you missed it, be sure to read last month's column for further information on Radio Nat King Cole. Loggings or comments about this unusual operation would be especially welcome.

VIETNAM: Several months ago we printed a report about a pirate known as Radio First Termer, which operated out of Saigon during the Vietnam War. Alexis Muellner, who sent us the information, writes again to tell us that her research project on radio during the Vietnam conflict is still continuing. If you have any material on Radio First Termer or any other broadcaster involved in Vietnam, please contact me and I will pass it along to Alexis.

THE NOTHING-IS-DEPENDABLE-ANYMORE DEPT.: As I write this, the baseball players have just gone on strike and the BBC is playing nothing but music from *Passage to India* because most of its staff is also on strike. It seems they objected to pressure from the Home Office which resulted in cancellation of a TV documentary featuring a well known IRA terrorist. Perhaps in the world in which we live the abnormal is now the norm. But hang in there--we may not know where we are going, but the ride should prove interesting!

KGB: For those who enjoy monitoring Soviet stations and following Soviet affairs, a fascinating newsletter has now appeared. It's entitled *KGB* and is edited by Ryan Quade Emerson, who is an outstanding expert on international terrorism. As its name indicates, the newsletter is devoted to discussing the operations of the KGB, the Soviet intelligence organization.

Emerson has an elaborate network of sources who have provided him with a wealth of information. There is an eye opening discussion of the role the KGB played in bringing Mikhail Gorbachev to power, and in another report Emerson tells you the best places in Key West to find Cuban intelligence agents (the DGI) who have been trained by the KGB.

At \$100 for twelve issues, this obviously is not for everyone, but for the would-be expert on Soviet affairs and intelligence, it may prove to be essential. For further information or a subscription you may write the International Research Center, P.O. Box 126, Purcellville, VA 22132.

Ryan Quade Emerson is

also the author of *Who's Who in Terrorism--1984*. The book is difficult to find and I have no information on the price. If you can locate a copy it will prove quite interesting.

The extensive list of terrorist organizations operating in almost every country in the world provides quite an education by itself. Some of these organizations have been known to operate clandestine broadcasting stations. It may be possible to obtain one of the few remaining copies by contacting the author at the address above.

OUR GRATEFUL THANKS DEPT.: Our sincere thanks to Phillip Dampier and all the members of the DX Radio Network for voting us the third most popular column in *MT*. Anytime we come in behind "Los Numeros" and "SWL World Watch" we feel we are in good company, indeed! There has been at least one contribution for this column from DX Radio Network, and we invite all its members to contribute whenever they possibly can.

Thank you is inadequate to express the gratitude I feel for all that John T. Arthur has done to make "Pirate Radio" a success. In addition to passing along whatever information he could, John has contributed every month with his entertaining "Program Perspectives." He has also generously permitted us to reprint his "Pirate QSL Directory."

Now it is my sad duty to report that John will no longer be writing "Programming Perspective." John, all I can say is that you will always be missed and thank you so much for an outstanding job. You are in a class by yourself.

If any of our readers would like to write John and personally thank him, he can be reached at P.O. Box 5074, Hilo, HI 96720.

MT AND THE FCC: One letter was received here in response to my letter in the August *MT* protesting cooperation with the FCC. Martin Croze feels that the FCC should not make their problems our problems. Whether you agree with Martin and me or not, I urge you to write publisher Bob Grove and let him know how you feel on this matter. We do not all have to agree, but we all can be heard.

CANADIAN PJRATE: From John T. Arthur comes news of a new Canadian pirate announcing an address in British Columbia. It is KQRO Shortwave 74, and it made it all the way to Hawaii July 6



Mitchell Lee "On the Air" (The Lowdown)

freq	ident	st	city	schedule
163.138XX	TYP	CA	San Jose	sporadic
163.93	AVV	OR	Independence	24hrs weekends
164	D	IA	Des Moines	24hrs. A2, 440Hz
165.67XX	Z2	CA	San Simeon	weekends, 11am to 1pm Wednesdays
169.8VK	1SUN	OK	Durant	24hrs
170.626XX	NEL	CA	San Jose	24hrs
170.1X	WEECUERTA	CA	SanLuisObispo	24hrs (QRP)
171.0XX	MGR	ME	Kittery	24hrs 5 baud CCW
172.38V	1LM	MA	Plymouth	24hrs
174.60X	8TXT	OH	Sandusky	occasionally and by request
174.8VK	7FS	WA	Belfair	weekends for sure, maybe 24hrs
175.0XX	DBQ	PA	PortWashington	24hrs
175.3XX	4WL	FL	WinterGarden	24hrs
175.388XX	KRY	OH	Chardon	weeknights, 24hrs weekends
175.43X	RB	NM	Roswell	by request
175.9XX	8LXJ	OH	Morrow	by request
176.0X	HDO CCW	CA	Morro Bay	24hrs 10 baud CCW
176.75X	BA	IL	Lancaster	weekends
177.0V	DA	MA	Braintree	occasionally. Up to 182kHz.
177.0SK	KJ	IL	Chicago	24hrs
177.49X	UCP	CA	Saratoga	6:30 to 9:30am
178.0XX	NV	NV	Pahrump	24hrs (Mercury)
179.191X	D	NJ	Vernon	24hrs
180.330X	U	NJ	Vernon	24hrs
182.8	FPV	CA	GranadaHills	sporadic, frequency varies
183	AAAAA	CA	Simi Valley	testing (reported)
183	PLI	CA	N.Hollywood	sporadic SSB QSOs
183.16XX	PRK	CA	Saratoga	24hrs
183.78XX	9RSF	IN	Anderson	24hrs
184.02XX	EK	CA	Sunnyvale	24hrs
184.185X	QYV	PA	Donora	testing, will QSY soon
184.5V	1ZZ	MA	Dighton	occasionally
184.750XX	1SNW	MA	Waltham	sporadic
185.00X	KC	NY	Rush	7pm to 9am
185.0	ZYK	CA	Redway	24hrs (reported)
185.380VK	CAP	NJ	Ramsey	24hrs
185.5V	UM	MA	Rehoboth	occasionally
185.8	OHH	ONT	Willowdale	24hrs (QRO operation)
186.370XX	HRM	NJ	Oakland	24hrs
186.5X	RE	OH	Newport	weekends, weeknights
186.525X	SD	CT	East Haven	weekends, weeknights
186.634X	IZJ	CA	San Gabriel	4am to 12am[sic]
186.85XX	WJM	DE	Wilmington	testing. QSY to 189.72 soon
187.0V	MSG	CA	Paso Robles	most weekends
187.0X	OMG	FL	Seminole	24hrs
187.25V	BIL	NJ	Jackson	occasional weekends, +/-0.4kHz
187.385SK	1A	MA	Marshfield	nights when not at sea
187.39XX	1A/HH	**	East Coast	**Maritime mobile, CT to TX
187.47X	NI	NJ	Howell	24hrs. sounds like T E I
187.5X	QZL	CA	San Jose	sporadic weekends
187.53X	KEN	NJ	PtPleasantBch	weekends, some days
187.846XX	XY	NJ	Kearny	24hrs
187.930XX	CHAS	NM	Los Alamos	by request
188.47X	9HDQ	IN	Daleville	24hrs
188.75X	WI	MD	Owings	24hrs 10 Baud CCW
188.808XX	MOO	NJ	Monroeville	weekends
189.3X	NTD	FL	Oakland	24hrs
189.400VK	TH	NJ	Colts Neck	24hrs
189.834X	ABC	SC	HiltonHeadIs.	24hrs. 5 Baud CCW
189.920XX	UPA	PA	Unionville	24hrs

PIRATE RADIO cont'd

from 0618 to 0800 and on July 8 from 0640 to 0737 on 7435 kilohertz. The station claims 100 watts of power into a "longwire-dipole," but John says it sounds much stronger. Perhaps some of our readers in Western Canada as well as the American Northwest will have success in hearing this one.

ODDS AND ENDS DEPT.: The summer slump must have set in because we are rather short of news this month. However, John T. Arthur's mailbox has been blessed with a few QSLs. He received a full data "boarding party" paper QSL from Radio USA signed by Mr. Blue Sky. Mark Taylor of Union City Radio sent him two full data sheets.

From Jack-in-the-Green of environmentally-oriented Radio Woodland International came a full data one-of-a-kind "Canadian geese on pond" photo QSL. Phil Muzik of KNBS sent along one of their classic "cannabis green" cards.

This writer heard from Captain Willy aboard the USS Sphincter. He sent a full data card verifying reception of Radio North Coast International, the Voice of the Great Lakes. Captain Willy says the good ship Sphincter can put out 500 watts. I don't doubt him. The signal was pretty strong here.

Unfortunately, the shack has been relatively empty of pirate signals after some success in early July when Zeppelin Radio Worldwide, Radio Nova International and WMTV were all heard. However, there is one tentative log to report. KKMO may have been briefly heard just at sign-off on August 4 in the 41 meter band. This is a fairly new station if it was, in fact, they.

Please send along your loggings, newspaper clippings and anything else that would be appropriate for this column. We will keep your name confidential if you request it, and don't be too concerned about whether an item really "fits" this column or not. If we think it would be of interest to readers we will print it. Let us hear from you soon.

SAD NEWS DEPT.: Finally we must note that KPF-941 out of Yonkers, New York, appears to have lost round two with the FCC. From various sources we have learned that, once again, it has been forced off the air.

KPF-941 had been operating on 1622 kilohertz as a community station

"Los Numeros"

32444 69213 88816 52196 63811 94216

Havana Moon



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THANK YOU

A very big THANK YOU to Director General Phillip Dampier of the DX Radio Network. Your vote of confidence is very much appreciated. How about letting us know more about your worthy endeavors, Phillip.

While You Slept

or

The Saga of 5135 kHz

10 AUGUST 1985

I have a 5135 kHz story for you. It's all about the "Let's Make A Deal" 5-digit Spanish transmission as detailed in the August edition of MT. It's also about a rather mysterious and frightened "milkshake Mademoiselle" that, for lack of a better name, I'll call "Sandy."

More about Sandy--not Conchita--and the 0600Z 5-digit Spanish transmission after a few related paragraphs.

The beginning was innocuous enough. Only a few weak and unmodulated carriers were noted from about 0100 to 0130Z. A weak CW station with a 4-digit call was heard using various "Q signals" pertaining to signal strength and transmitter adjustments.

Another weak CW transmission at 0200Z was of 5-character groups made up from the now familiar 10

serving the Yonkers area with a power of 100 watts. Last fall it was forced to shut down when the FCC claimed it was not authorized to provide such a service. It returned a few months later as a "production tool" for two affiliated stations in Maine.

Now we understand all three stations are being threatened with loss of their licenses. Our best wishes go out to everyone at KPF-941. You had a dream, perhaps someday it may still become a reality.

character crypto alphabet that was published in last month's issue of MT.

Transmission speed was "FEMA-slow" and began as follows:

DWN AUT BT

WDNTG RDGDU AMTAW...

Shortly after this transmission began, QRM became very heavy.

All of this was a somewhat curious state of affairs for a frequency not generally noted for any particular importance. The one exception being that 5135 kHz is adjacent to a FEMA channel. Also, some years back, this frequency was used for a short time for daytime 5-digit Spanish transmissions.

Shortly before 0600Z, I became especially concerned when one individual appeared to be frantically attempting a "jump-start" of a Korean vintage transmitter.

Let me ask you this fella: Just what the heck were you trying to prove?

LET'S MEET SANDY

0600Z. A YL TRANSMITTING IN THE AM MODE WITH A LIVE 5-DIGIT SPANISH TRANSMISSION! The transmission was as follows:

940 100

34970 08124 20108...

NOT EXACTLY WHAT WAS REQUESTED.

There was, however, another transmission underneath this signal. Perhaps monitors in other areas were able to copy this other transmission. Nothing heard on 6500 kHz.

My guess is that Sandy was simply reading a list of pseudo-random number groups generated by someone's Commodore. Sandy seemed a bit frightened and was about as Hispanic as Cyndi Lauper.

Care to respond, Sandy?

11 AUGUST 1985

Frequency back to normal.

ANOTHER LIVE TRANSMISSION

This one was on 5250 kHz at 0100Z on 8/2/85. This particular YL had a masculine sounding voice and might well moonlight as a Roller Derby queen or maybe a mud-wrestler. I really don't care to find out.

THE FARM

Had a nice letter from Bob Love just the other day.

The views expressed in this column are those of Havana Moon and do not necessarily represent the views of the MT management, staff or readers.

Bob says that he's just about ready to get the antennas up and do a little listening. What sorta antennas are you planning on growing on that farm, Bob? A rhombic here and a dipole there...

Bob relates a very strange intercept that I'm not certain I understand. Seems that Bob was playing around with a scanner when the unit stopped on 161.550 and (these are Bob's words): "...lo and behold--NUMBERS! Could it be? A numbers station on VHF? A few minutes later again I heard the 4-digit group. Explanation became obvious with the mechanical female voice. "Call extension 6114..."

Bob says that the voice is very familiar and that he will provide further details. I'll use the other information Bob provided at a later date.

One other thing, Bob: stay away from Harpo's...

Thanks very much for the letter and don't wait so long between letters.

BELATED THANKS

Thanks to Robert Smith of Nanaimo, B.C., for the Radio Marti information and the clipping from the Times-Colonist of May 23. How about a few "numbers" reception reports from Canada, Robert? Would really like to know just what you guys are hearing up there to the north.

Another belated thanks to Sig Hoffman of Flushing, NY, for the clipping in regards to Dr. David Kahn and his latest publication, Kahn on Codes. Dr. Kahn is also author of The Codebreakers, and Hitler's Spies: German Military Intelligence in World War II. All are must reading.

Thanks also go out to Bob Russ of Walworth, WI. Bob provides us with a great amount of unique crypto material.

Thanks are also long overdue to Al Smith of Wamsutter, WY. Thanks for taking the time to write, Al. Am very glad you enjoy the column. Sorry that I have no information on the AN/UHK-22 (V) crypto unit.

THE INTELLIGENCE MUSEUM

A colleague handed me a very interesting brochure that he says was passed to him by one of his col-



LOS NUMEROS cont'd

leagues. This could get confusing if one more person gets involved. It seems that there is a group in Washington, D.C., that is soliciting funds for a National Historical Intelligence Museum.

On the inside of this brochure you'll find a real neat photo of a World War I radio detection van. This van was an early American example of field signal intelligence support to fighting forces.

Here's just one of the questions contained in this very informative little brochure: "What code name was given by our government before and at the time of Pearl Harbor to intelligence from intercepted Japanese diplomatic messages?"

The answer: "MAGIC"

For further information, send an SASE to: National Historical Intelligence Museum, Suite 1005, Washington, D.C. 20006, Attn: Martin Cramer.

THE FIRST ON YOUR BLOCK

While not electronics or "numbers" related, I think that "Los Numeros" readers will be interested as well as a little shocked at one of the publications available from the U.S. Government Printing Office. For the paltry sum of \$17 you can--with no questions asked--obtain the plans for the BOMB!

The publication, titled The Effects of Nuclear Weapons tells all according to a colleague that is familiar with such matters. On page 15 in the chapter on the "Scientific Basis of Nuclear Explosions" you'll find out everything you wanted or didn't want to know.

This publication was compiled and edited by Samuel Glasstone and Philip J. Dolan and is available from: Supt. of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Now that "Los Numeros" has the bomb...

HIDE AND GO SEEK

Wondered where a lot of the "numbers" transmissions are hiding? Try the tropical broadcasting bands. Who would ever think to check those frequencies.

ANOTHER CHANCE?

Do you think that "numbers" station operators deserve another chance at a transmission? As far as I'm concerned, it can wait a while. I do, however, have another ace up my sleeve. Let's let these (expletive deleted) misfits wonder for a few months.

I am, however, very interested in just what YOU heard on 5135 kHz and 6500 kHz on 10 August at 0600 and 0630Z. It is very likely that YOU heard transmissions that I did not hear.

WELL DONE

To Jean Baker and "PLANE TALK." Darn nice job, Jean. Drop me a card or a letter and I'll forward you some interesting aero frequencies.

THE OPERA

The "numbers" opera will not be over till the fat lady sings. And it just might be that the fat lady is waiting for her cue.

THANKS TO

Sandy of 5135 kHz fame, John Santosuosso, Phillip Dampier, the DX Radio Network, Farmer Love, Robert Smith, Sig Hoffman, Bob Russ, Al Smith, CA and those that wish to remain anonymous.

The very best to all of you.

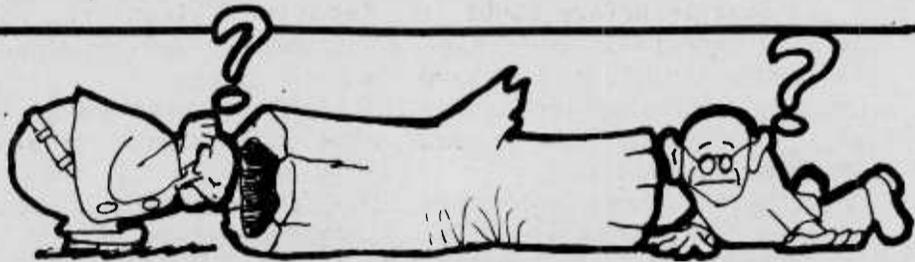
WATCH FOR

MIAMI SITES

Coming soon.

Time now for--and thank goodness--a Tecate and...

Adios, Havana Moon y Amigas



listener's log

OWENSBORO, KY, SCANNING by Jim Danton

Table of Allocations

30.0000 - 30.5100	Federal government
30.5100 - 30.6400	Special industry
30.6600 - 31.9800	Business, industry
32.0000 - 33.0000	Federal government
33.0000 - 33.1200	Highway maintenance, sp. emergency
33.1800 - 33.3800	Petroleum
33.4200 - 33.9800	Fire
34.0000 - 35.0000	Federal government
35.0000 - 35.2000	Business
35.2200 - 35.6800	Mobile telephone B, special industry
35.7000 - 35.9800	Business, special industry
36.0000 - 37.0000	Federal government
37.0200 - 37.4200	Police, local government
37.4400 - 37.8800	Power utilities
37.9000 - 37.9800	Highway maintenance, sp. emergency
38.0000 - 39.0000	Federal government
39.0000 - 39.9800	Police, local government
40.0000 - 42.0000	Federal government
42.0000 - 42.9400	State police
42.9600 - 43.1800	Business, special industry
43.2200 - 43.6800	Mobile telephones M
43.7000 - 44.6000	Busses, trucks
44.6200 - 45.0600	State police, forestry
45.0800 - 45.6600	Police, local government
45.6800 - 45.8600	Police, highway maintenance
45.8800 - 46.0400	Fire, police, special emergency
46.0800 - 46.5000	Fire
46.5200 - 46.5800	Local government
46.6100 - 46.9700	Portable telephones
46.6000 - 47.0000	Federal government
47.0200 - 47.4000	State highway maintenance
47.4200 - 47.6800	Special emergency, special industry
47.7000 - 48.5400	Power utilities
48.5600 - 49.5800	Forest, petroleum
49.6700 - 49.9900	Portable telephones
49.6600 - 50.0000	Federal government

50.0000 - 54.0000	HAM
118.0000 - 121.4000	Air traffic control
121.6000 - 121.9250	Flight service st.
122.7500 - 123.5875	Federal government
123.1250 - 123.6900	Flight test
123.6750 - 123.8250	Air traffic control
128.8500 - 132.0000	Commercial airlines
132.0250 - 135.9750	Air traffic control
135.8500 - 136.0000	Federal government
136.0000 - 138.0000	Satellite downlink
138.0000 - 144.0000	Federal government
144.0000 - 148.0000	HAM
148.0000 - 149.9000	Federal government
149.9000 - 150.0000	Satellite/radionavigation
150.0000 - 150.8000	Federal government
150.8000 - 150.9700	Auto emergency
150.9900 - 151.1300	Highway maintenance
151.1400 - 151.4800	Forestry
151.4900 - 151.6000	Special industry
151.6100 - 151.9900	Business
152.0000 - 152.2400	Mobile telephone B
152.2700 - 152.4500	Taxi bases
152.5100 - 152.8100	Mobile telephone B
152.8700 - 153.0200	Film crews, special industry
153.0300 - 153.4000	Forestry, petroleum
153.4100 - 153.7300	Power utilities, petroleum
153.8000 - 154.4600	Fire, local government
154.5000 - 154.6300	Business
155.3250 - 155.4000	EMS units
154.6500 - 156.0300	Police, EMS, local government
156.0400 - 156.2400	Highway maintenance
157.0000 - 157.1900	Federal maritime
156.2550 - 157.4250	Maritime channels
157.5500 - 157.7100	Taxi mobile
157.7700 - 158.0700	Mobile telephones M
158.1300 - 158.2700	Power utilities
158.2800 - 158.4400	Forestry, petroleum, business
158.4900 - 158.6700	Mobile telephones M
158.7300 - 158.9700	Police, local government M
158.9800 - 159.4900	Forestry
159.4900 - 160.2000	Trucks
160.2150 - 161.5650	Railroads
161.6400 - 161.7600	TV & radio press
161.8000 - 162.0000	Ship-to-shore telephone B
162.0000 - 173.2000	Federal government
173.2250 - 173.3750	Newspapers and film
173.4000 - 174.0000	Federal government
220.0000 - 225.0000	HAM
406.0000 - 420.0000	Federal government
420.0000 - 450.0000	HAM
450.0000 - 451.0000	TV and radio press
451.0000 - 451.1500	Power utilities

LISTENERS LOG cont'd

451.1700 - 451.7500 Power utilities, telephone maintenance
 451.7200 - 452.3000 Special industry, taxi bases
 452.3250 - 452.4750 Railroads
 452.3000 - 452.5000 Taxi, truck, railroad
 45.25200 - 452.6000 Auto clubs base
 452.6000 - 452.7750 Trucks
 452.7750 - 452.9500 Railroads
 452.9750 - 453.0000 Newspaper press
 453.0500 - 453.9500 Police, fire, local government
 454.0200 - 454.5400 Mobile telephones B
 454.6750 - 454.9750 Ground-to-air phone
 455.0000 - 455.9999 TV and radio press
 459.6750 - 459.9750 Air-to-ground phone
 457.0000 - 460.0000 Mobile to bases
 460.0000 - 460.5500 Police bases
 460.5700 - 460.6300 Fire bases
 460.6500 - 460.8800 Airline operations
 460.9000 - 461.0000 Alarm companies
 461.0000 - 462.4500 Business
 462.4700 - 462.5300 Forest, petroleum, telephone, bus.
 462.5500 - 462.7500 GMRS
 462.9200 - 463.1750 EMS units rprr, out
 463.2000 - 465.0000 Business
 468.0000 - 468.1750 EMS units rprr, in
 465.0000 - 470.0000 Mobile and h.t. units
 470.0000 - 512.0000 UHF T band

160.7700 "
 161.3800 "
 161.5200 " dispatcher
 160.4400 " Howe yard
 161.3700 " main
 130.1500 MAC helicopter SAR
 349.4000 MAC SAR
 156.3000 Maritime SAR ch.6
 143.1550 MARS rprr input
 154.4600 " output
 143.9500 MARS simplex
 155.3400 Mercy hospital KY paging
 157.7400 Messenger-Inquirer newspaper
 122.9000 Multicom SAR
 462.2000 NSA
 156.3500 " dock
 463.2500 " h.t.
 463.2500 " Exec system output
 158.4600 " h.t.
 462.2500 " h.t. rprr out
 450.4500 NBC News
 455.0500 "
 455.1500 "
 455.3500 "
 455.7500 "
 455.8500 "
 455.4125 NBC News radio
 162.4000 NOAA weather - Bowling Green KY
 162.5500 " - Evansville IN
 162.4750 " - Louisville KY
 168.0500 NRC
 168.2000 "
 168.6000 "
 168.6250 "
 169.1000 "
 170.0000 "
 36.7100 Nuclear - Army escort
 36.3000 " - Army nuclear team
 38.3000 "
 40.9000 "
 49.7000 " - E.O.D.
 49.8000 "
 36.8900 " - escort net
 40.1900 " - special investigations
 40.1700 " - USAF
 460.6500 Owensboro Cable maintenance
 129.0500 Owensboro KY aero radio
 130.8500 "
 154.2500 Owensboro KY fire
 155.7300 Owensboro police
 153.4100 Owensboro municipal utilities
 155.1600 Owensboro-Daviess Co hospital
 129.7000 Pan American Airln
 169.1720 Railroads operational fixed
 406.4130 "
 450.4700 "
 463.7750 Red Adair fire-fighters
 131.7500 Republic Airlines
 37.6200 Rural Electric Assoc.
 282.0000 SAC SAR
 123.1000 SAR unicom
 165.7875 Secret Service (Baker ch.)
 165.3750 " (Charlie ch.)
 145.5500 Shuttle downlink (HAM)
 145.4100 Shuttle uplink (HAM)
 160.8300 Southern RR dispatcher
 160.2450 " PBX
 160.9500 " road
 161.4900 " yard
 155.6100 Spencer Co. IN sheriff
 383.3000 TAC SAR
 163.5625 "
 35.1600 Telephone maint.
 43.1600 "
 151.9850 "
 166.2500 TV & radio press
 170.1500 "
 155.3700 US wide inter-agency assist
 129.5000 United Airlines
 160.6100 US Inauguration Committee
 150.6500 "
 143.1250 US VIP transport.
 342.500 USAF weather
 344.6000 "
 237.9000 USCG SAR
 282.8000 " nationwide
 282.2000 " primary
 381.800 " secondary
 140.1000 USMC crash crews
 140.2200 USN crash & fire net
 383.9000 USN SAR
 149.4750 "
 142.0000 USN transportation
 461.3000 WEHT-TV 25 Evansville IN
 450.1125 WFIE-TV 14 Evansville IN
 161.7300 WOMI radio Owensboro KY
 463.2250 WTVW-TV 7 Evansville IN
 161.6400 WVJS radio Owensboro KY
 161.7600 "

Alphabetical Listing

(Note: NSA means National Southwire Aluminum Co.!)
 450.1125 ABC News
 450.1500 "
 450.2875 "
 450.3875 "
 450.4125 "
 450.5875 "
 450.6125 "
 450.8750 "
 455.0875 "
 455.1500 "
 455.2875 "
 455.3875 "
 455.5875 "
 455.6125 "
 121.5000 Air Emergency Guard
 243.0000 "
 460.7750 Air France
 123.4500 Air-to-air informal communications
 155.2200 Ambulance to hosp.
 129.2000 American Airlines
 46.5000 American Red Cross
 47.5800 "
 47.6600 "
 173.2037 Big Rivers Elec.
 451.0750 "
 451.2500 "
 120.8500 CAP SAR
 143.9000 CAP SAR backup
 148.1500 CAP SAR pri rprr
 450.2875 CBS News
 450.3500 "
 450.4875 "
 450.5125 "
 450.6125 "
 455.8000 "
 450.8000 CBS News radio
 155.8200 Civil Defense
 157.1000 Coast Guard ch. 22
 156.7500 " " envrn. bltn. ch. 15
 130.9000 Continental Airlns
 155.0400 Daviess Co KY
 155.8950 " fire
 453.6500 " road maintenance
 155.2500 " sheriff
 129.5500 Delta Airlines
 130.9500 Eastern Airlines
 41.6300 EPA
 163.4375 "
 165.4125 "
 154.1900 Evansville IN fire
 155.1300 " police
 165.1740 FAA NTSB investigations
 165.7500 "
 163.9250 FBI
 163.9875 "
 131.9250 Federal Express Airlines
 169.8750 FEMA
 152.4250 FEMA h.t.
 142.4250 "
 142.9750 "
 142.9750 "
 143.0000 "
 143.2250 FEMA mobile
 138.2250 FEMA rprr (141.8750)
 139.2500 " (143.2500)
 158.1300 " input
 153.2250 " output
 453.5250 " output
 141.7250 FEMA simplex
 142.9250 "
 151.6250 Goodyear blimp
 161.6400 "
 37.6200 Green River Elec
 451.1000 "
 451.5250 "
 146.5200 HAM rprr?
 147.1500 HAM rprr, Evansville IN
 147.1050 " Hawesville KY
 146.9400 " Louisville KY
 147.2100 " Owensboro KY
 146.9100 " Reo IN
 154.4450 Hancock Co fire
 39.1800 Hancock Co KY
 153.9050 "
 155.2650 Hancock Co Rescue Squad
 161.2800 ICG RR
 161.2050 ICG RR agent
 161.1900 ICG RR ch. 1
 160.9200 ICG RR ch. 2
 42.1200 IN state police - backup
 155.4750 " - emergency
 155.4450 " - h.t.
 42.4200 " - main
 42.1600 " - TAC
 154.6500 Justic dept surveillance mike
 47.1400 Kentucky Comm.
 47.2600 "
 47.2600 KY roads maint.
 155.2800 KY hospital assoc.
 46.5800 KY roads maint.
 453.6000 KY state police - Henderson
 453.3000 " - mobile
 160.3800 L&N RR

PIGEON FORGE, TN, Resort Area

contributed by R.D. Lunsford

I am a long-time radio enthusiast and police officer in the resort town of Pigeon Forge, Tennessee. Our county focuses on being the gateway to the Smokies and, as such, we have thousands of visitors each year. I thought that since many of those visitors are apt to be radio buffs you might be interested in this list for "Listeners Log."

460.025 Sevier Co sheriff's dept, Gatlinburg, Pigeon Force, and Sevierville PD's
 460.400 Mutual Aid
 37.260 Inter-county sheriff's band
 154.175 All local fire depts
 462.950 Sevier Co ambulance service
 463.000 Ambulance-to-hosp
 37.900 Sevier Co Rescue Squad (shared w/all surrounding co's)
 167.150 US Nat'l Park Serv (same as 436.725)
 148.150 Civil Air Patrol
 42.560 THP dispatch (Knox)
 155.505 THP mobiles (Knoxv)
 45.700 THP "chit-chat", car-car, sometimes • TAC team channel
 147.300 Amateur 2-meter rprr & 464.700 - Silver Dollar City theme park
 436.675 TVA public safety

LISTENERS LOG cont'd

NORTH CAROLINA FIRE SERVICES

by Bill Butt, Whiteville, NC

Alamance County

154.220 Main channel
154.385 Secondary channel

Burke County

154.355 Primary
154.310 Channel 2 fire scene

Durham County

154.13 Channel 1
154.31 Channel 2

City of Hickory

46.1 Single alarm fires
46.26 Assistant chief
46.4 Command post

City of High Point

153.77 Transmit
154.28 Receive from 153.77
154.355 Inter-city to Greensboro

City of Kinston

460.625 Central dispatch for city or county

154.130 Not in use

City of Lumberton

153.77 Stations 183
154.235 Mobiles & station 4

Mecklenburg County

156.165 Dispatch
153.815 Fire trucks to dispatch

State of North Carolina

154.280 Fire mutual aid statewide

Orange County

155.4 Dispatch rural FD's-ch 1

153.77 Fire ground - Ch 2

Robeson County

46.14 Main channel-paging
46.48 Secondary

Rockingham County

46.44 Channel 2
46.46 Primary

Town of Rural Hall

154.205 Dispatch
154.235 Fire scene
154.430 Administrative

Scotland County

154.07 Dispatch
154.43 Dispatch

City of Southern Pines

453.150 Pagers
453.950 Secondary
155.235 Rescue

Wake County

154.19 Channel 1
154.295 Channel 2

Logging 170 Meters

by Craig Healy, Editor "Top End Yearbook"
(66 Cove Street, Pawtucket, RI 02861)

From Eric Thew, Ballajura, Western Australia; FRG-7700, FRT-7700 and random wire.

1629 1214 6/28 G369 and dash
1635 1140 6/25 R446
1638 2246-6 6/11 N349 and U160 on CW (A1). Alternate calls from one xmtr?
1641 1143 6/25 D472

Eric's loggings are interesting in that they are similar to what we hear on those frequencies around here. I wonder if the letter/number combination is only a serial number for the particular transmitter, and not a call sign. If so, maybe we could research the type acceptance for the manufacturer and ID these things that way...

From Bruce Conti, New Ipswich, NH; R-70, APT-3, LW

1783 1520-1533 6/28 30 pip per min stn, w/both

long and short pips. Long pip w/lkHz tone, short pip at higher frequency.

September 1985...A few loggings of mine:

1610 ANGUILLA 0224-0232 8/25 R. Anguilla
1617.5 0406 8/25 Cubic Argo
1627 0407,0412 8/25 KA83780
1635 0422 8/25 V383 and dash

Since the new season is upon us, a review of what we can and can't use might be in order. No loggings of carriers without modulation (AO), no cordless phones, no pirate stations, and nothing above 1800 kHz except harmonics of BCB stations. Anything else is fair game.

That's it for now. Please listen and report. The best conditions have been early in the season the past couple of years. Don't miss it!

FREQ.	CALLSIGN	LICENSEE	LOCATION
9115.500	VGC 871	Raven Society of BC	Taklaldg, BC
9115.500	VGD 335	Raven Society of BC	Telegraph Ck, BC
9115.500	VGH 918	Raven Society of BC	Toosey, BC
9115.500	CJL 593	Raven Society of BC	Ucluelet, BC
9115.500	VGC 883	Raven Society of BC	Unionbar, BC
9115.500	VGD 665	Raven Society of BC	Vancouver, BC
9115.500	VGD 666	Raven Society of BC	Vancouver, BC
9115.500	VGE 822	Raven Society of BC	Victoria, BC
9115.500	VGC 881	Raven Society of BC	Ware, BC
9115.500	VGD 339	Raven Society of BC	Williams Lake, BC
9115.500	CJL 589	Raven Society of BC	Yaculta, BC
9115.500	VGC 853	Raven Society of BC	Yale, BC
9115.500	XOY 542	Dene Nation	Colvill, NWT
9115.500	XOY 546	Dene Nation	Ft. Smith, NWT
9115.500	XOY 526	Dene Nation	Ft. Franklin, NWT
9115.500	XOY 535	Dene Nation	Ft. Goodhope, NWT
9115.500	XOY 522	Dene Nation	Ft. Resolution, NWT
9115.500	XOY 528	Dene Nation	Ft. Wrigly, NWT
9115.500	XOY 529	Dene Nation	Hay River, NWT
9115.500	XOY 541	Dene Nation	Kakisa, NWT
9115.500	XOY 534	Dene Nation	Llamart R, NWT
9115.500	XOY 527	Dene Nation	Rae Lake, NWT
9115.500	XOY 536	Dene Nation	Snowdrift, NWT
9140.000	VFB 9	Min. of Transport	Baker Lake, NWT
9148.500	VGJ 97	Bama Industries Ltd	Langley, BC
9154.500	VCY 651	Steltner Dev & Mfg	Scathrns, ON
9154.500	VCY 652	Steltner Dev & Mfg	Pond Inlet, NWT
9163.500	CJR 591	Imperial Oil Ltd	Collensb, SASK
9163.500	VGD 513	Imperial Oil Ltd	Fish Lake, NWT
9163.500	CJS 552	Trigg,Woolett&Assoc	Great Lake, NWT
9163.500	XOZ 887	Trigg,Woolett&Assoc	Mountain Lake, NWT
9163.500	XOV 644	Trigg,Woolett&Assoc	Natla River, NWT
9163.500	XOZ 912	Titan Drilling Co.	Great Bear Lke, NWT
9163.500	XOZ 913	Tital Drilling Co.	Great Bear Lke, NWT
9163.500	XOV 682	BP Minerals Ltd.	Hainby B, NWT
9163.500	XOV 683	BP Minerals Ltd.	Hainby B, NWT
9163.500	XOZ 924	BP Minerals Ltd.	Hainby B, NWT

That's it for this time until my next column when we check frequencies above 30 MHz--Good Monitoring.



TUNE IN CANADA

by

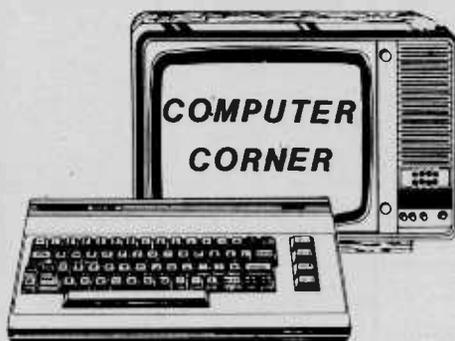
Norman H. Schrein

FOX MARKETING, INC., 4518 Taylorsville Rd., Dayton, OH 45424

Welcome to another "Tune in Canada" column. This time we are going to once again look at frequencies below 30 MHz. One interesting note was the licenses indicated for the Victoria PD in Alberta. Can this be correct, or is it a DOC typo?

All frequencies are in kilohertz.

FREQUENCY:	LICENSEE:	LOCATION:
50.000	Ontario Hydro	Burlington, ON
50.000	Ontario Hydro	Detwltts, ON
50.000	Ontario Hydro	Keith GS, ON
50.000	Ontario Hydro	Mooselts, ON
50.000	Ontario Hydro	Sadmbkgs, ON
50:000/54.000	Quebec Hydro Commission	Laurndy, QUE
50.000	Bowater Power Ltd.	Deer Lake, NFLD
50.000	Bowater Power Ltd.	Mllssno 1, NFLD
50.000	Bowater Power Ltd.	Mysdrvss, NFLD
50.000/54.000	N. Canada Power Comm.	Twingrgs, NWT
51.000/63.000	BC Power & Hydro	Galiano, BC
52.000	BC Power & Hydro	Inglwss, BC
52.000	Victoria PD	Edmonton, AL
52.000	Victoria PD	Sarcee, AL
52.000	Victoria PD	Shrdwprk, AL
52.000	Victoria PD	Wabamun, AL
52.000	Ontario Hydro	Qesjchms, ON
52.000	Ontario Hydro	Hanmerts, ON
52.000	Ontario Hydro	Minden, ON
52.000	Ontario Hydro	Thunder Bay, ON
52.000/44.000	Quebec Hydro Commission	Manicogn, QUE
52.000	Twin Falls Power Corp.	Churchll Fls, NFLD
52.500	Macmillan Bloodel Ltd.	Stillwater, BC
53.000/50.000	N.Canada Power Comm.	Ft. Smith, NWT
54.000	BC Power & Hydro	Portgmtn, BC
54.000	Saskatchewan Power Corp.	Bondrydm, SASK
54.000/62.000	Saskatchewan Power Corp.	Cndswstn, SASK
54.000/62.000	Saskatchewan Power Corp.	Kindslyr, SASK
54.000/62.000	Saskatchewan Power Corp.	Kndysstn, SASK
54.000	Saskatchewan Power Corp.	Nobtlfrd, SASK
54.000/46.000	Manitoba Hydro	Minitons, MAN
54.000	Ontario Hydro Commission	Alyndrss, ON
54.000	Great Lakes Power Co.	Anjigami, ON
54.000	Ontario Hydro	Atikknts, ON
54.000/42.000	Ontario Hydro	Ftfnests, ON
54.000	Ontario Hydro	Prartrts, ON
54.000/50.000	Quebec Hydro Commission	Abitibi, QUE
54.000	Quebec Hydro Commission	Lesbouls, QUE
55.000/59.000	BC Power & Hydro	Inurmrs, BC
55.000/83.000	BC Power & Hydro	Nicolass, BC
55.000	Churchill River Power Co	I Falls, SASK
55.000	Churchill River Power Co	Flinfon, MAN
55.000	Churchill River Power Co	Mile 13, MAN
55.000	Churchill River Power Co	Snow Lake, MAN
55.000	Ontario Hydro	Hncnbkss, ON
55.000	Ontario Hydro	St. Lawrence Ts. ON
56.000	BC Power & Hydro	Goward, BC



by

C.W. Ellis
P.O. Box 202
Ulster, PA 18850

Defeat in the Face of Victory

While I have received a number of letters of various subjects discussed in recent columns, more were equipment related than were computer related. Bob Grove also assures me that many listeners are down on computer for varied reasons. In a way this disturbs me, as there is nothing to fear about a computer. I thought I might take some time this month to wax a little philosophical about computers, and I promise this is the biggest word I'll use!

About the time I got out of high school (more years ago than I like to think about), vacuum tubes were in full swing, but on the horizon was a new device just beginning to come on strong.

Although the transistor was an American discovery, it took the Japanese to develop cost-effective miniaturization. Soon the battle cry was, "My radio has more transistors than yours!"

Just as there was slow and grudging acceptance of the transistor, more and more people are coming to accept a personal computer as an everyday event. Today no one thinks twice about the lowly transistor that started the solid state revolution.

Stop for a moment, if you will, and imagine how large your video recorder would be if it were fashioned of tubes. I

LIBRARY SHELF from p.9

filled with interesting noises off the air along with both a printed identification and a recorded indexing so that the listener will know he has the right key.

Some 26 separate recordings feature variations on radioteletype, Morse code, independent sideband, multichannel telegraphy, television (video), facsimile, and radiotelephony.

wouldn't want to carry it far. Battery operation of such a device would be difficult.

Even as recently as two or three years ago the sales of home computers were nothing to brag about. The old story about "using it balance my checkbook" didn't cut much ice. Why buy a \$1000 computer when a pencil and paper would do the job?

Then came a new ripple in the home market; video games. A veritable explosion of games threatened to crowd the adults right out of the living room. Then came the inevitable progression from dedicated video games at \$150 to a home computer that "plays games in addition to..." The public at large started to become computer oriented.

A businessman discovered that he could do some inventory control on his son's computer, and do it faster than he could with all his books and papers. Next he wanted one for the office. Then a co-worker wanted one. Then the co-worker wanted one for home.

Video computer companies began devising fiendish simulations like Flight Simulator and Night Vision Pinball...and take it from me, Flight Simulator is about the closest thing to actually flying there is short of a Link simulator. I would love to have a nickel for every hour an employee fiddled around with the company computer instead of doing the job he or she was getting paid for!

If you read MT regularly then you probably have an interest in radio. The big boys use computers extensively in many facets of radio from aiming giant radio telescopes to logging calls in a police, fire or emergency center. Many radio amateurs use a computer to calculate satellite orbital paths, design antennas, simulate filters, as well as log contacts or keep club mailing lists.

In my own work I use two personal computers. One is on my desk and is used for memos, proposals, schematic layouts, and all the other odd jobs electronic development entails like program development, debug and terminal emulation (a personal computer that is hooked to a large computer and acts like the original terminal for that computer).

My second work computer sits in a development lab and talks to itself for as much as 24 hours a day, for many hours unattended by a mortal soul. Yet there is no doubt that barring power

line or hardware failure, when I come to work in the morning there will be a printout of the night's activity waiting for me.

In all of the above instances, with possibly the exception of game playing, the computer is being used to do a job that it can do faster, or more often or better than its human counterpart. This brings us to the most important concept in this discussion: the computer, no matter how large or small, is a TOOL and what it does depends on who is using it.

There are some people who will never need or want a computer. I have a colleague who can design rf circuits to do anything he wants, and he can fix his own TV, make his own coffee and a hundred other things without a moment's pause. Set this guy in front of a computer keyboard and in ten minutes flat he is banging the keyboard, slapping the display, and quivering in rage. Mumbling something under his breath about user friendliness and coffee, he disappears. With luck he shows up at quitting time to shut the machine off.

* Quite often I am asked, "What type of a computer should I buy?" or "I want to learn about computers; what do I need?". The answer is far from simple. Usually I advise people to do a lot of reading and get familiar with the terms used in computing.

Visit a friend who has one and just watch him for a while; don't ask for a demonstration, just see what he does with it. Then decide what your biggest tasks might be. If all you need is to balance your check book forget the computer and buy a \$4.00 calculator. But if you can identify areas where a computer can help you do your job faster or more efficiently, go for it.

As you dig into computing, in addition to harnessing the power of the electron in a new and different way, you will discover many lesser-talked-about facets. People who compute for a hobby are, for the most part, very willing to talk computers, pass on hints, help out with a problem, etc.

Computer nuts are no different than hams, short-wave listeners, video freaks, or whatever. And when you can tie your computer into another hobby, both aspects benefit. One hobbyist I know is really into model airplanes. He can spot a model across the room

and immediately reel off all kinds of facts and figures like who made it, who flew it, what wars it won, what colors it wore for which air force, and so on. His problem was cross referencing so much data that much of his hobby time was spent digging through notebooks, magazines and other references.

After he purchased a personal computer and a supply of diskettes, he spent several months logging and cross referencing all the articles, magazines, reference books, and periodicals into one huge data base. In just a few months work his data base is worth thousands of dollars and, to him, priceless.

* In closing, I'd like to comment on another data base of sorts. Scan Magazine published by the Scanner Association of North America (SCAN) has some interesting articles on monitoring. While not as wide ranging as Monitoring Times, it does have scanner frequency listings, short articles on various incidents involving scanners, etc.

Most interesting are the member benefits available such as free insurance programs, car rental discounts, reports on legal questions arising from scanning, etc. Founded in 1978 to support the Bearcat brand of scanners (although it is a non-profit organization) it claims over 32,000 members.

Scanner Association
of North America
240 Fencil Lane
Hillside, IL 60162

APPLE OWNERS: Here's a Catalog for You!

A recent flyer brought in the mail from Electrovalue Industrial prompts this tip to Apple Computer owners. While it is risky to do business with unknown (and even some known) mail order firms, it is always a pleasure to be able to recommend companies who show integrity.

Webb Linzmayer, owner of Electrovalue (P.O. Box 376-F7 Dept. MT, Morris Plains, NJ 07950; phone 201-267-1117), is well known in the computer RTTY field as the co-writer of the late Perry Ferrell's Guide to RTTY Stations.

Apple computer fans may wish to write Webb and request his latest flyer for some attractive values.

TUNE IN WITH Ed Noll

HAM BAND DX LISTENING 20 Meters

You'd like to copy a lot of countries and zones in a brief period of time? Try the 20-meter ham band from some excitement. Tune in some sideband signals from distant countries; these stations operate with average powers of less than one kilowatt, most considerably less.

Compare these low-power transmissions with the high-power short-wave broadcast stations. It is most revealing. Note that in a fade, speech quality does not change. Give a listen to music quality as received from a SWB station and how it distorts as the signal fades up and down. How much better do you think a 500 kW sideband signal would fare if the sideband mode of transmission were used for international broadcasting?

The 20-meter band in the USA extends between 14000 and 14350 kHz; sideband is allocated between 14150 and 14350. However, many foreign countries permit sideband operation below 14150 and you can tune down the band looking for signals.

Much DX activity between U.S. hams and the rest of the world can be heard between 14150 and 14250. Often you will only hear the foreign station but, at other times, both the U.S. and the foreign signal can be copied. Occasionally you will tune into a pile-up during which you will hear both U.S. and foreign stations trying to contact a rare DX station.

Twenty meters is a daytime DX band and signals from all parts of the world can be received consistently from dawn to several hours after sunset and sometimes longer. There are very poor days during low solar-flux years but openings of some sort arise almost each day.

Directions of DX signal arrival change through the day in a very general way; early morning signals may peak toward the southwest and west, swinging to the south as the day progresses, then to the east, then to the north. Later in the day and on towards dusk the path shifts back toward the south and west again.

Here in eastern USA one

might hear down yonder signals (New Zealand and Australia) early in the morning, Europe at noon, and South America mid-morning and early evening. We emphasize that this is very general and timings and conditions change with the seasons and with sunspot activity.

There are various networks and contests that can be monitored on the 20-band. If you tune into any DX network note the frequency and listen there for a short while. Notice how various U.S. and other country stations take turns in making contact with long distance stations under the supervision of a network control station. During one session you may be able to hear scores of long-distance stations. Keep the frequency in mind and come back from time to time.

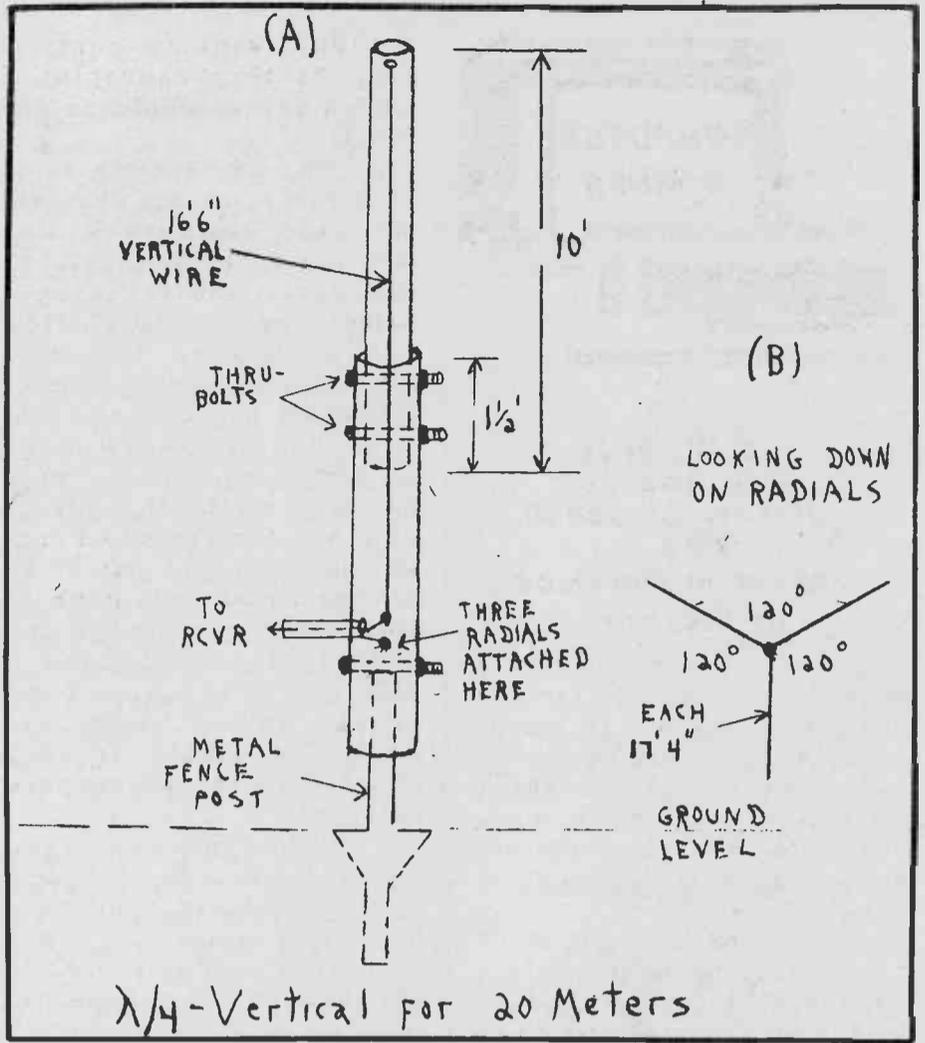
Throughout the year there are a number of week-end DX contests. Activities are concentrated on this band because of its consistent DX capability. Copying calls during a DX contest represents a fast way of adding countries to your DX list.

You can perk up your listening pleasure with an antenna cut for operation on 20 meters. It need not be an elaborate one; in fact the basic low-angle DX antenna is a simple quarter-wave vertical with three or more resonant radials. DX signals arrive at low vertical angles and the vertical antenna is a favorite for picking up signals during band openings to various parts of the world. The vertical is a truly omnidirectional antenna as well and can receive signals from all compass angles.

A simple quarter-wave vertical for 20-meter reception can be constructed economically using two ten-foot sections of PVC piping telescoped together about 1-1/2 feet. The quarter-wave vertical itself can be constructed of number 14 or 16 vinyl-insulated wire.

Use a length of 16-1/2 feet of wire which corresponds to a quarter-wavelength at approximately 14.2 MHz. As shown, this wire can be taped to the PVC piping, starting at the very top of the mast. The opposite end connects to a bolt and nut terminal as shown.

Another through bolt and nut terminal is positioned about two inches below the previous one. Three 17-1/2 foot radial wires are attached to this terminal, stretched out and spaced by 120 degrees. The inner conductor of the



coaxial line back to the radial room is attached to the top bolt; the braid of the line to the bottom terminal.

There are five through-bolts. Two of them join the two sections of PVC piping. Two serve as terminals for the vertical antenna wire and the radials. The fifth rests on top of the metal fence post. The coaxial line attaches to the two antenna terminals, inner conductor to the top terminal and coaxial braid to the lower one.

Telescoped ten-foot

sections of two-inch and 1-1/2 inch diameter PVC piping are self-supporting. All you need do is slip the antenna mast over a stake such as a five-foot metal fence post driven straight into the ground at least two feet or just to the top of the fence-post triangle.

Simple verticals of this type can be used for various high-frequency ham and SWB bands. They are low-cost and occupy a minimum of space. Tune your receiver to 20 meters and listen to the world!

BEHIND THE DIALS

THE NEWEST FROM BEARCAT

BC-800XLT

Essentially a marriage of BC-20/20 and BC-300 technologies, the new BC-800XLT has a great deal to offer and very few drawbacks.

The Good News

Featuring handsome, new styling utilizing a vinyl-textured, wrap-around steel cabinet, the scanner produces excellent 2-watt audio--crisp, loud, undistorted sound with a "fullness" to it--and from a front-mounted speaker.

Frequency coverage is 29-54 (FM), 118-136 (AM), 136-174 (FM), 406-512 (FM), and 806-912 (FM) MHz. A large-format keypad allows easy commands and frequency entry with full-stroke keys. Extremely easy to pro-



gram (automatic decimal placement and fewer strokes necessary than on many competitive models) the BC-800XLT features pre-programmed weather channel search of the seven NOAA allocations (162.400-162.550 MHz, direct channel access (no channel stepping necessary), 40 memory channels (may be subdivided into two banks of 20 channels), rapid scan (15 channels per second) and search (15 increments per second with manual up/down stepping if desired), and selectable four-second delay and lockout for each channel.

The scanner offers very



high sensitivity (0.3-0.8 microvolts on all ranges) meeting or exceeding that of any other scanner on the market. The squelch is very positive and offers an automatic threshold set if desired.

Rear panel connectors include an external antenna jack (Motorola type), DC power terminal and an access door for the memory backup batteries (two AA cells required). The scanner comes with a one year warranty.

It is powered by either the internal 120 VAC supply or an external 12 VDC battery. An optional CL-12 mobile accessory kit includes mobile mounting bracket, mounting screw and cigarette lighter power adaptor.

...And Now the Less Good News

Even diamonds have flaws, so don't begrudge the few compromises on the BC-800XLT. A separate antenna is required for 800 MHz-band reception and that band is rife with birdies (the remaining ranges, 29-512 MHz, are birdie-free!). We noticed them on the average every two megahertz with some areas near 844 MHz resplendent with them--every few hundred kilohertz.

We decided to give the unit a lab test for sensitivity and image rejection. Sensitivity was well within that specified in the manual. Image rejection on most bands was about average for programmable scanners--aircraft transmissions in the 130 MHz range came in loud and clear on the 150 MHz band (the IF is 10.8 MHz). Approximate rejection was 35 dB @ 30 MHz, 19 dB @ 160 MHz, 9 dB @ 480 MHz, and 5 dB @ 870 MHz. Par for the course and better than the BC-220 which showed the same rejection at 30 MHz, 5 dB @ 165 MHz and only 2 dB @ 480 MHz.

Incomplete coverage of the 806-960 MHz band may be disappointing to some users. The keyboard is slightly slower in response to commands than some other Bearcat modes; lightning-fast repeated strokes won't take.

All in All...

I like the scanner. Its handsome styling, ease of use and excellent signal capturing characteristics on nearly all frequency bands makes it a hot contender for Bearcat.

Available from Grove Enterprises for \$349/5\$ UPS.

The BC-100XL

Some two years ago the Bearcat rumor mills were hinting of the development of an improved version of the famous BC-100, the world's first programmable hand-held scanner. The new unit was to include aircraft coverage as well as the usual low, high and UHF land mobile bands.

Only one hundred or so of these units were ever produced; after this pilot production Electra was purchased by Uniden and all new product development was shelved indefinitely.

But it's obvious that Uniden has no intention of letting the Bearcat name drop by the wayside; quite an array of new products are being unleashed on the public this fall, and the BC-100XL is among them.

Improvements in design are immediately apparent upon removing the unit from its carrying case. The cabinet is tightly fitted and there are cosmetic highlight changes as well. The performance is the key as the whether or not the new 100 will survive in the marketplace, so let's take a look.

Our Lab Test

We fired up the signal generators and ran some random frequency checks on sensitivity and image rejection. Unsquelled, sensitivity was on par with most scanners--better than one microvolt and agreeing with the published figures. Bearcat is good about that.

The squelch circuit on the BC-100 series has always had significant "hysteresis" (no, that's not a sex operation); that is, the setting is loose. You must back the squelch threshold back further to squelch background noise then you would advance it to unsquelch it. This characteristic, purposely designed in by many manufacturers for more "solid" squelch, results in a poorer overall sensitivity to signals that must break squelch--on the order of one or two microvolts.

Image rejection is quite reasonable for a hand-held scanner. Since unit-to-unit variances can be expected, the following measurements should be considered approximate: 28 dB @ 30 MHz, 22 dB @ 174 MHz and 0 dB @ 480 MHz--that's right, you will hear signals when tuned to one frequency that are actually being transmitted 21.6 MHz lower (the radio's I.F. is 10.8 MHz) just as clearly as though they were right on



channel.

But this is nothing new; UHF image rejection on scanners has traditionally been miserable; some scanners actually show better sensitivity on image frequencies than on the primary frequency at UHF!

Audio quality is also typical of hand-holds; tinny and low volume--no improvement here. But as with its predecessor, the BC-100XL is the best-looking hand-held on the market, extremely easy to program and now has aircraft band and an illuminated LCD display to boot. Frequency coverage is 30-50, 118-136 (AM), 136-174, and 406-512 MHz.

The proprietary Electra-designed multiband rubber duckie is included--the best compact scanner antenna for portables around, but range can be increased somewhat by replacing the antenna with a full-size telescoping whip like the Grove ANT-8. A BNC connector allows affixing to an external antenna.

Rechargeable NICAD batteries and charger/AC adaptor are included; alternatively, the BC-100XL can be operated--and recharged--directly from an automotive 12-volt electrical system. Also provided are a rugged leather carrying case and an earphone.

Other functional considerations include 16 channel memory with 15 channel-per-second speed, search with up/down stepping, priority, channel-programmable delay, priority, channel lockout, direct channel access, and low battery indicator.

The scanner is traditionally BC-100 except for minor cosmetic changes. It works well and should be competitive in the hand-held scanner foray.

Grove price: \$249/\$5 UPS

NEW ARRIVALS

Subliminal Code Practice?

A novel approach to learning the Morse code in preparation for the amateur radio examination has entered the market in the form of a subliminal message on tape.

Vince Luciani (K2VJ) offers two tapes, one for learning the code and the other for building speed. Luciani recommends both tapes be used in cases of particularly stubborn code learning problems.

Originally developed and narrated by Dr. Jonathan Parker of the Institute for

The BC-175XL

This compact new entry will find a strong market. A total departure from previous Bearcat products, the BC-175XL is quite compact (9-1/2"W x 2-1/2"H x 7-1/8"D), lightweight (1 lb., 10 oz.) and wrapped in a vinyl-textured cabinet.

With expanded frequency coverage (29-54, 118-136 (AM), 136-174, and 406-512 MHz (FM), 16 direct access memory channels and pre-programmed weather search, this new entry provides 1 watt of high quality sound from its front mounted speaker.

Scan and search speed is approximately 13 increments per second (or slower with a toggling speed key); average sensitivity is 0.5 microvolts and selectivity is -55dB at ± 25 kHz.

Powered by an AC wall adaptor, it would appear that the unit could also operate from 12 volts DC, although no such specification is listed in the manual.

Rescan delay is channel-programmable. Other functions include priority and autosquelch.

The BC-175XL comes with a plug-in whip and a standard Motorola jack invites the use on an outdoor antenna.

The manufacturer's suggested retail price is \$249.95, although it is presently in stock at Grove Enterprises at a discount for MT readers (\$199 plus \$5 UPS shipping).

THINK YOUR FRIENDS WOULD LIKE MT? CALL OR WRITE FOR A FREE SAMPLE AND GROVE CATALOG

NEW ARRIVALS cont'd

Human Development, the tape reputedly offers enhancement of code learning when used along with traditional code learning techniques; they cannot teach code while you are asleep!

Side A is an affirmation message intended to instill a desire to learn; side B contains the subliminal code practice behind a delightful background of soothing music mixed with refreshing rain sounds. It's quite an experience to hear!

Luciani recommends at least four weeks of regular use for the tape(s) to be effective. And if you are an insomniac or suffer from arthritis or other distracting malady, the relaxing motif of the sounds on these tapes is better than aspirin and doesn't upset your stomach!

(SUBLIMINAL CODE LEARNING; \$10.95 per tape plus \$1.50 shipping or both tapes for \$20 including shipping

from Cologne Press, P.O. Box 682 Dept. MT, Cologne, NJ 08213, 609-965-5163 or write for further information.)

Illustrated Catalog

Shows How to Recognize

Mobile Antennas

Antenna Incorporated (CELWAVE) has just released a pictorial catalog sheet, a large poster illustrating dozens of different land mobile antennas and their frequency ranges. It can be very helpful to scanner radio buffs who wish to learn how to recognize antenna designs on vehicles to help determine what frequency range the mobile radio is using.

Send a self-addressed stamped envelope with your request for the free antenna pull-out chart to Antenna Incorporated, 26301 Richmond Rd. Dept. MT, Cleveland, OH 44146.

TECHNICAL TOPICS by Bob Grove

This month we take an in-depth look at the contents of two letters from MT readers. There is enough material in those alone to fill the column!

Q Is it possible to have a "one-mast" antenna system to service the following equipment?

1. TV (UHF and VHF--3 sets)
2. FM radio
3. AM radio
4. Bearcat 220 scanner with these frequencies: 32-50, 118-136, 144-174, 420-512 MHz
5. Sony ICF 2001 short-wave receiver with a frequency range of 150 to 30,000 kHz (also has FM)

Jack Roestel
Poynette, WI

A First of all, I would recommend that you consider the TV reception and FM radio (broadcast) reception as a function separate from your communications. Your best bet here would be simply to go to Radio Shack and acquire a TV antenna which is designed for VHF/UHF/FM (page 94 of their 1986 catalog). You will also need the splitter shown in the photo for your FM radio reception.

Since you are interested in driving three TV sets from one antenna, you will probably need some form of preamplifier and you may wish to consult the catalog: the 15-1124 on page 98 looks like it would do the job

just fine. In fact, you could use just this preamplifier to feed your three TV sets and your FM receiver! That way you would not need the FM splitter!

Naturally, the larger the antenna you use, the more signals you will receive. I have used a VU190 and find that it produces excellent signal strength. It would be difficult to suggest which of the lesser antennas will work adequately for your area--ask your Radio Shack dealer and hope he gives you a knowledgeable answer.

In choosing your down lead, be sure that you use low loss coax if you are not using twin lead. And don't forget, you'll need to use a balun transformer anyplace coax changes to twin lead such as on the antenna, balun transformer or the preamp.

I recommend RG-6/U coax like the Grove CBL series both for your TV reception as well as the communications.

Now on to your communications reception. The best solution for short-wave and scanner reception would be two separate antennas: Try our high performance Scanner Beam for the BC220, fed down with our coax cable to your scanner; for short-wave reception use our ANT2 Skywire which, because of the size of your land, could easily be supported for its 66 foot stretch. If not, the ends can bend down or drop if necessary. It would then

need a separate coax cable (virtually any type) to lead into a Grove TUN-3 Minituner to remove intermod and images, and from there into your Sony receiver.

The simplest communications antenna is the Grove ANT-9 Spectrum Probe, a wideband active antenna. But it is a compromise, offering extremely high gain and small size in exchange for some vulnerability to strong signal intermod (overload) and reduced scanner range (local only).

The Spectrum Probe package does come with all hardware, an AC adaptor, a control box with separate short-wave and scanner connectors, and 50 feet of low loss cable with connectors.

The Scanner Beam would be mounted above the rotor so that it would turn along with your TV antenna and only far enough below or above the TV antenna so that the elements won't bang together; since they are in two different planes they will not interfere with one another.

- Q**
1. How do you find out what bands use AM or FM?
 2. What good is a scanner if what you want to hear is in the wrong mode?
 3. What is in the gigahertz range?
- Are there new scanners designed to cover those higher ranges?

D. B. Hansford
Santa Barbara, CA

A 1. The FCC specifically prescribes what modes are to be used in various VHF/UHF bands, although many segments of the spectrum can use nearly any mode provided the frequency bandwidth occupied by the signal is no greater than some specified amount. Actual usage of AM or FM is largely the result of agreement and development of equipment by the industry. It goes like this:

- 30-50 MHz, virtually all narrowband FM (NBFM) with some older wideband FM military gear still popping up and occasional nationwide AM paging (35.22, 35.58, 43.22, 43.58 MHz)
- 50-54 MHz amateur NBFM, SSB
- 54-108 MHz TV channels 2-6 and commercial FM broadcasting, all wideband FM

There is a small 72-76 MHz narrowband FM segment used for low power industrial communications and some police

and fire repeater lengths.
108-118 MHz aeronautical navigational beacons (VOR) AM; occasional voice weather and terminal information.

118-136 civilian aircraft band, exclusively AM

136-138 satellite downlink, mostly FM; no voice, all telemetry, mostly weather satellites

136-144 military land mobile on bases, mostly FM; military air-to-ground mostly AM

144-148 popular 2-meter amateur band, almost exclusively NBFM with a tiny bit of RTTY, packet radio (ASCII databursts from computers) SSB

148-174 all NBFM land mobile
174-216 TV channels 7-13, all wideband FM

216-220 inland and coastal navigation signals (some NBFM voice beginning here)

220-225 amateur NBFM and SSB
225-400 MHz military aeronautical communications; exclusively AM except for some communications satellite downlinks (240-270 MHz FM)

400-406 MHz satellite telecommand and weather radiosonde beacons and telemetry; mixed modes

406-512 MHz land mobile services, all NBFM

512-806 MHz UHF TV, all wideband FM

806-960 MHz the "cellular" band, all NBFM

2. Not much; fortunately, most scanners know the band plan and are so programmed for the appropriate mode. Those newer scanners with selectable AM/FM mode are best.

3. Above cellular mobile (above 960 MHz) radio signals are more short range, line-of-sight. Directional antennas are used almost exclusively here and the modes are primarily narrow and wideband FM, but little voice is found except for point-to-point telephone relay and satellite communications. Most is industrial and commercial telecommand, datalinks and that sort of thing. Naturally, the actual use varies and the frequency allocations change in chunks just like on the lower frequencies.

4. At this time only the Regency MX7000 which goes up to 1300 MHz and the Icom R7000 which goes as high as 2,000 MHz with reduced performance are capable of that coverage without external converters.

HELPFUL HINTS WHERE HAVE ALL THE SHORT WAVE SIGNALS GONE?

GROVE OMNI IMPROVEMENT

Summertime invites antenna experimentation and that's just what happened recently at Bob Grove's house in Brasstown, North Carolina.

Although Bob's OMNI antenna was working satisfactorily (in fact, he had just heard the Space Shuttle astronauts loud and clear on 259.7 MHz), some questions kept going through his mind.

Did the lower section really have to be 48" long? What would happen if it were shortened to 18" to enhance the land mobile services? What other length combinations would yield better results?

After about 14 hours of experimentation in a makeshift backyard picnic table laboratory, a very simple modification of the OMNI brought slightly improved characteristics.

By removing the last 30 inches of the lower element, making it 18 inches long, the antenna showed some modest improvement in range on some frequencies without any apparent loss in signal strengths anywhere in its measured spectrum.

Additionally, signal attenuation from the nearby mast appeared to be reduced as well.

IS YOUR OMNI UPSIDE DOWN?

Yes, there really is an "up" and "down" to the Grove OMNI scanner antenna; in most installations it won't make much difference how it's mounted, but if you're about to cut 30 inches off one end, you had better know which is the right end!

With the OMNI in its vertical position, hold the horizontal offset pipe in your left hand (or visualize it that way on the mast); if the white connector block is facing you, you have it rightside up. If, however, the connector block is on the other side of the antenna, it is upside down.

All OMNI antennas now being shipped from Grove enterprises have this modification. Owners of the previous OMNI-II (ANT-5B) may make the modification on their antennas very simply: Measure 18 inches down from the center insulator and break off the remaining 30 inches of the lower element.

YOUR FRIENDS IN THE
RADIO BUSINESS--
GROVE ENTERPRISES

A call at our offices a short while ago prompted this short article. Band conditions above 10 MHz or so, especially during the daylight hours when the upper reaches of the short wave spectrum are supposed to be hot, have been absolutely dismal. On more than one occasion lately I have wiggled the coax connector on my ICOM R71A just to make sure it was still connected!

The reason for such miserable HF reception is that we are in the middle of the 11 year sunspot cycle. Remember just a few short years ago how the CB channels were so busy that no

one could hear anyone else? They still can't, but for a different reason: Signal propagation is so poor that "skip" is virtually non-existent.

But cheer up; this winter conditions will improve somewhat (not enormously, but somewhat) and in the next couple of years our beloved HF spectrum will pop back to life, burgeoning with signals from every part of the globe.

And by 1990 or so, the question you will be asking will be, "Where on earth did all these signals come from?!"

WEATHERFAX AND MX-7000

It was all right there in the manufacturer's own literature--the MX-7000 was capable of receiving weather facsimile pictures when used with appropriate recording gear. Well, it isn't! At least not without some clever additions on the outside.

The problem is that although the MX-5000 and MX-7000 are capable of picking up the 135.50 and 137.62 MHz NOAA satellite transmissions, the scanners have no product detector (BFO) to allow a tone to be added to the received signal.

The tone is necessary, just as with receiving Morse code on short wave, to hear variations in the signal which correspond to contrast

changes in the facsimile scan.

But inveterate experimenters may wish to improvise and there are a couple of ways to do this, both by external additions to the antenna jack.

A crystal controlled oscillator on 135.50 and 137.62 MHz, tuned by a trimmer capacitor in series with the crystal, can be used to heterodyne the incoming signal can produce the required tone. Alternatively, a stable signal generator may be employed at the receive frequency or, better yet, set at a higher signal level and injected at the intermediate frequency (455 kHz, near 46 MHz or 5.5 MHz depending upon bandwidth selectivity chosen).

THE FCC MASTER FILE AND STATE INDEX

-What's the difference?

The Grove Enterprises FCC microfiche collections still continue to be a hot item among monitoring enthusiasts. And well they should, for the information contained on the two sets is exactly the same as kept on file in Washington.

So why are there two sets? How are they different? Let's take a closer look at these fiche and the difference will be quite apparent.

The Frequency Master File contains all the technical data on the FCC records for every non-federal-government transmitter (except ham and CB) in the country. Such details as transmitter power, mode of operation, street address of licensee, height and geographical coordinates of the antenna, as well as call sign, frequency and so on. The list is arranged by

frequency, starting at 9 kHz and going into the hundreds of gigahertz.

The State Index is a highly abbreviated form designed for rapid look-up; it is arranged alphabetically by state with a brief frequency sort included for each state. Data include frequency, city and state, service, name of licensee, and call sign.

Because the entire United States is available at reasonable cost, individual state lists are not provided separately.

Most serious listeners (including the FCC's own monitoring and enforcement teams) find both lists indispensable; the professionals look up the station in question on the State Index first, then consult the Master File for complete data.

POWER ANT/SIGNAL AMP/SPECTRUM PROBE USERS...

Another performance tip

If you are one of the many users of Grove preamplified products, this tip may mean better performance.

Many of the Grove powered accessories come equipped with an adjustable voltage AC adaptor; if yours is one of those, when it is set at the 12 VDC switch position, the actual voltage present may actually exceed 15 volts.

While the overvoltage will not harm your accessory, it may slightly degrade its performance. This is confirmed by turning the gain control fully clockwise ("wide open"), then turning it back slightly. If the signal improves when it is turned slightly back, the overvoltage is taking its toll on performance.

The remedy is simple: Merely set the voltage control switch on the adaptor one position lower (9 volts), thus making the actual voltage present on the device closer to 12 volts.

MONITORING

HURRICANE NETWORKS

The saga of Hurricane Elena brought renewed interest in listening in on emergency radio communication related to the storm. While narrowing down the actual frequencies used at any one time would be virtually impossible because of storm location, time of day and propagation, there are some good hunting grounds which short wave listeners may wish to come up on. All frequencies listed below are in kilohertz, upper sideband except for the 3 and 7 MHz ham frequencies which are lower sideband.

AMATEUR FLORIDA EMERGENCY NETWORKS: 3935 3940 7247 7268 14320 14325
COAST GUARD: 2670 3123 5320 5696 8984
NOAA HURRICANE HUNTERS: 5562 6673 8876 13354
MARITIME: 2182 2206 2598 4125 4419.4
PETROLEUM PLATFORM SERVICES: 4455 4550 4634.5 4637.5 7552 8070

This partial listing proved among the most active for the Gulf of Mexico hurricane preparation. For a more complete list of these and other short wave frequencies, consult Bob Grove's SHORT-WAVE DIRECTORY.

EXPERIMENTER'S



WORKSHOP

THE BEDSIDE SCANNER COMPANION for the hospitalized scanner enthusiast

by Pete Haas

I am a hospital patient fairly often and, being a scanner enthusiast, I like to bring along a radio or two to help pass the time. Reception inside such a large building (in this case Cleveland Clinic) of steel and brick is a challenge with signal levels anywhere from poor to very good depending on where your room and window are located.

Through trial and error I've learned to make the best of any given physical

location. Scanner reception will be much easier if you have a bed by the window. If you can get an extra hospital tray/desk you can put a couple of radios on it and wheel the whole works up to the "RF hole."

Getting a window bed is basically a 50/50 proposition. Sometimes the hospital will allow you to transfer over to a window side once it becomes vacant. Barring this you can still get by with a homebrew antenna taped to your roommate's glass and some coax.

The antenna I use is shown in figure 1; it can easily be put up and stored coiled up when not in use. It's a 1/2 wave vertical on 155 MHz and also works well on its third harmonic (465 MHz UHF band).

LET'S BUILD IT

Here's how to fabricate the actual antenna. Cut off 19" of the outer plastic sleeve, copperbraided shield and foam dielectric from a 30' length of 58 or 59 coax cable so that only the center conductor is exposed (see illustration). Fold down about 1/2" of braid over the outer jacket making sure it doesn't touch the solid center conductor.

Strip a 19" piece of outer shield from another piece of RG-8; slide this braid down over the solid center conductor of your prepared coax, continuing

down the plastic outer jacket. Solder it to the 1/2" of folded down exposed shield. Solder in small spot areas and go easy on the heat or you'll melt the dielectric and possibly cause a short. Use a 25 watt soldering iron.

Dab a bit of paint or nail polish over the entire solder job for improved insulation. Hold down the other end of the braid with several wraps of electrical tape or heat shrink tubing. Attach a Motorola plug from most scanner on the other end of the cable and it's finished.

The antenna is first attached to the window using 2" wide pieces of adhesive tape cut into 6" long strips. Now, working backwards toward your side of the room, tape the coax against the wall about four feet above the floor using strips of adhesive tape at 2' intervals. Tape the excess coax into a coil and plug it into the scanner. Keep your scanner area neat and it won't draw as much attention.

Many hospitals won't allow patients to plug in appliances because of shock hazards. If this is the case ask to see a technician from the biomed department. They have test equipment available to detect electrical leakage. If none is found on your gear they will put an OK seal on it for you to use it. All modern equipment is transformer isolated so

there should be no problem here. If you bring in your own portable TV be sure to have it checked too. Hospital TV's run \$3-4 per day so you can save a lot of dough with your own set.

If the hospital is a stickler on user appliances you can run your equipment off rechargeable batteries. Gel-cells are the best with ni-cads running a close second. Recharge your batteries at night. Just tuck the batteries and charger in an out of the way corner or other place--perhaps inside a grocery bag. Powering your scanner with pure DC can result in less overall static and interference which might originate in the AC power lines.

For extra gain you can add a preamp ahead of the scanner; it will make the most difference in the UHF bands. But hospitals are full of computers, biomed equipment and a plethora of other sources of RF noise. In some cases reception may be better without preamping--so try it both ways.

When you do your listening it's best to use headphones or keep the volume very low--and use the squelch. You don't want to bother a nearby sick patient and keeping quiet about your equipment will discourage theft from an unscrupulous passerby or hospital employee.

Good listening--and get well soon!

NOISY, WEAK SIGNALS ON YOUR R390?

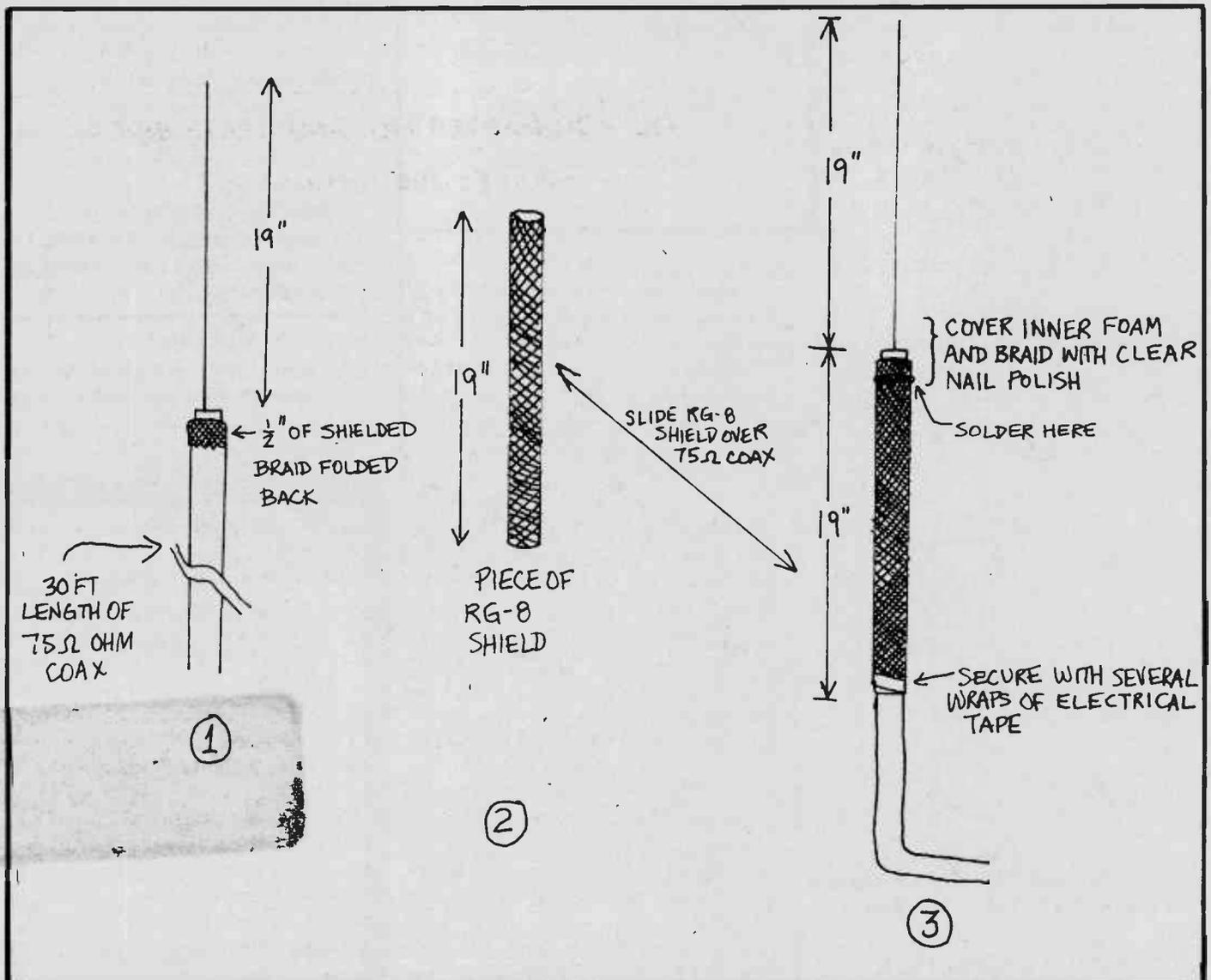
Try this fix.

MT reader Dale Konyha of Dearborn, Michigan, is a surplus radio fan. He would rather have the classic "guts" of an old military tube-type radio than a nifty new scanner.

One of his favorite radios (and a perennial favorite among serious radio enthusiasts) is the Collins-made R-390A general coverage receiver which tunes continuously from 500 kilohertz through 32 megahertz.

Recently, Dale noticed signals getting weaker and noisier. Upon examination he realized that the antenna relay contacts and related mini-coaxial cable were the culprits. He decided to fix the unit once and for all and passes on the details to fellow MT readers and R390A owners.

1. Remove the antenna block and related covers. Observe the set of internal points that make and break the antenna circuit.
2. Remove the wires to the relays and insulate them well--20 VDC is present.
3. Apply a drop of solder to the points to bind them electrically.
4. Reassemble the connector housing.



STOCK EXCHANGE

PERSONAL

NOTE: Monitoring Times assumes no responsibility for misrepresented merchandise.

SUBSCRIBER RATES: \$.10 per word, paid in advance. All merchandise must be non-commercial and radio-related. Ads for Stock Exchange must be received 45 days prior to the publication date.

DH 1000 SCANMEMORY EXPANDER for Bearcat 250, 300 and 350 for sale. Excellent condition with installation booklet. \$100 ppd (MO only). Pete Haas, PO Box 702, Kent, OH 44240 (Expands scanner to 1000 channel capability).

WANTED: Radio Magazines, club bulletins, electric trains, board games. Older the better. Bill Smith, RFD 238W3, Locust Street, Douglas, MA 01516.

Portable programmable scanner, REALISTIC PRO-30 with NiCads, charger, \$245.00. HAMTRONICS 800 MHz converter, \$50.00. UPS. No personal checks. Smith, 1448 Cole, San Francisco, CA 94117.

WANTED: UNIDEN CR 2021 SW receiver. Also looking for a cheap CB radio to convert to 10 meters. Tom Cannon KAGPJB, PO Box 110, Tahoma, CA 95733, (916)525-7416.

WANTED: IF transformers below 100 kHz (especially 50 kHz units). Prefer Slug tuned. Also, associated filters, crystals or IF strips at these frequencies. Tom Marquardt, RR2, Box 81, Sharpsville, IN 46068.

WANTED: GROVE "Scanverter". George Bailey, 600 West Kiehl, North Little Rock, AR 72116.

SELL: HAMMARLUND SP-600 with speaker and extra SP-600 for parts. Very nice shape. Best offer. Brad Hyde, 1106 Duvall, Killeen, TX 76541. (817)699-7817.

For Sale: BEARCAT 220 scanner, manual, bracket, original box. First \$100 takes, Ppd. L. D. Ferrill, 1057 Berwick, Waukegan, IL 60085.

YAESU FRG-9600 60-905MC receiver with AM narrow/AM wide/FM narrow/FM wide/SSB; can be computer controlled. \$450.

BEARCAT 220RC Canadian model with 32-50/118-136/138-170/406-490 MC bands \$260.

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COMMERCIAL

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* 1985 WORLD RADIO TV HANDBOOK Only 60 left! \$12.00 free bookrate shipping \$19.50 value

* BASIC RADIO ELECTRONICS Only 12 left! \$8.00 free bookrate shipping \$14.95 value

* See Grove Enterprises catalog for full description of all items.

* No charge cards accepted on above sales.

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GROVE ENTERPRISES
P.O. Box 98
Brasstown, NC 28902

sories \$625.

INFO-TECH M600A Multi-mode decoder with parallel printer option \$645.

HAL RS-2100 RTTY tuning scope \$225. Robert Coburn, RFD 4, Tinkham Lane, Londonderry, NH 03053. (603)432-2615.

SONY ICF-7600A 9-band AM/FM/SW portable. Nice travel radio. \$45.

AEA BT-1 Morse trainer. Learn the code or increase your speed \$45. I pay shipping. Jay Mathisrud, 4553 32nd Avenue South, Minneapolis, MN 55406 (612)724-0322.

JOIN A RADIO LISTENING CLUB. Complete information on major North American clubs and sample Newsletter \$1.00. Association of North American Radio Clubs, 1500 Bunbury Drive, Whittier, CA 90601.

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