DMS-NEWS

The "Dreaded Mod Sheet" Newsletter!

COPY

8961 Magnolia Ave. Santee, CA 92071-3129

DMS-NEWS FIRST YEAR APRIL 1993

"THE SULTAN OF SANTEE"

APRIL! HAPPY SPRING !

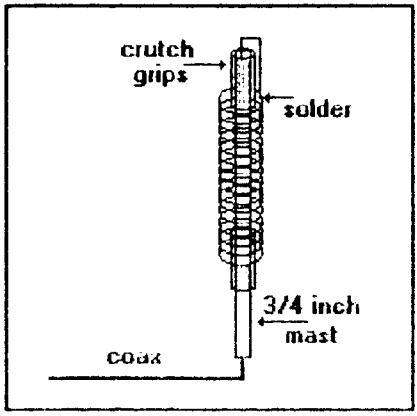
Well, we're a month older, and still growing verrrry slowly. I need your help!

The guy I really feel sorry for, though is the one at daylight saving time change who has to reset all those "little tiny time pills" in patent medicines!

Now is a good time to get out on the roof and tighten antenna elements, take a little steel wool to the oxidization and use a meter on your coax to make sure "Old man winter" hasn't found his way into your cable. Basically, a clear cable should show no more than about 20 ohms resistance. Any more than that, and it's off to the electronic supply shop! (Poor baby!) Often, doing these things will make you think you have a new scanner...

I've heard it said that in the spring, a young man's fancy turns to what the ladies have been thinking about all winter long.

While I have spring on my mind (or anything!) Here's an idea for an easy take-to -the -picnic antenna. Keep an eye out in the novelty stores for one of those small SLINKY TOYS. They make a model that is about 1 3/4 inches in diameter that is perfect for a "Pocket" antenna, superior to most "duckies". All you need to do at the most basic level is hang a string from a tree (or whatever) and use an insulated alligator jumper from the center terminal of your BNC to the SLINKY™. It's primitive, but it works good! I once built a helical antenna, using a metal mast, insulated with vinyl tape. and a couple of crutch handles to support the SLINKY™. I ran the coax from a hole in the bottom through the mast and grounded the braid to the mast, and soldered the center conductor to the SLINKY™ at the top end. The antenna is at this moment serving duty in a corner of my "lonely room" providing signal for the scanner I use to monitor news media, a PRO-2020. JP



BEARCAT LIGHT MOD
BC-200XLT/100 ?

This mod is right from the BC-200XLT schematic, and , although I don't have a schematic for the '100 ,I suspect it is the same. As always, plan to be able to "undo" your work.

The display light can be kept on, but a trade-off in battery life has to be expected. you will use about three hours operating time per charge with this mod unless you plan to add the switch option as shown in the drawing. It's a good idea to use a grounded wrist strap when working with this radio. Take off the battery pack and remove the antenna. Take out the two screws that hold the back, and remove the two silver screws that hold the contact spring in place. Ease up the bottom of the case and pull toward the bottom to to release. At the bottom of the circuit board, take out the two silver screws.

Separate the front cover from the frame. "Behind" keys 4,5,7,8, find chip1147A. At the lower left hand corner of this chip is the transistor that has to be removed in order to do this mod. Carefully remove this transistor, (I suggest an heat sink) and save it for "just in case". All you need to do now is run a jumper from pad "A" to pad "C". Note: I like to use circuit board wrapping wire for these mods, it loves solder and is very easy to work with, but of course the choice is yours. Another option is to "acquire" a chunk of multi-conductor wire from an old phone hook-up. The kind I look for has 24 pairs, and a few feet is a long time supply. It is stranded, color coded, and flexible enough for any electronic use.

To save your battery, being able to choose whether to use the light or not is essential. A mini SPST switch can be Inserted into this circuit as shown. Although the location of the switch is up to you, I have a note somewhere that suggests that a good location for the switch is where the letters "sq" are located at the squelch control.

Replacing the 150 ohm resistor (shown) with one of a higher value (220-470 ohm will extend battery life, at the expense of a dimmer display.

You can get chip resistors by the package from Radio Shack (3271-313) for about $5.00

Extra notes: Rather than risk drilling into a plastic case, with the risk involved (both physical and static charge) I use a "semi-retired" soldering pencil dedicated for that purpose. A touch with a tapered reamer to get the size hole I need, and a little clean up with a razor knife makes a nice job.

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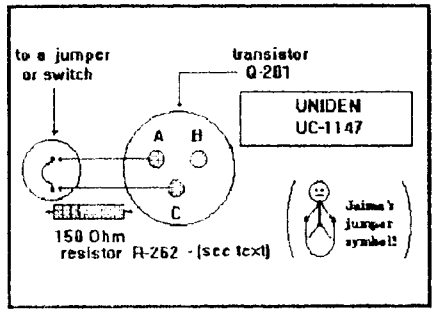
While commercial anti-static straps are available, you can easily make your own with a piece of "lamp pull" swivel chain. Just cut it to length,to comfortably fit your wrist, solder a piece of flexible wire to it, and connect the other end to the cover (center screw) of any electrical outlet.

JP



NEW EMERGENCY MEDICAL RADIO SERVICE

The FCC has approved a new radio service.(EMRS) that will make medical radio communications far more efficient than current, often "jammed" frequencies. Fundamentally, the previous systems allowed use by many other services, such as veterinarians, disaster relief organizations, beach patrols, communication emergency repair and other services not immediately involved in the direct transfer of emergency medical information. The new service will be implemented over a five year program, but many users will be active by the time this material is in print.

New 220 MHz frequencies:

220.9025	221.9025
220.9075	221.9075
220.9125	221.9125
220.9175	221.9175
220.9225	221.9225

Simplex frequencies:

150.775	150.790	
155.325	155.340	
155,355	155.385	155.400

New UHF pairs:

460.525	465.525
460.550	465.550

Base-Mobile frequencies:

Med-1	463.000	468.000
Med-2	463.025	468.025
Med-3	463.050	468.050
Med-4	463.075	468.075
Med-5	463.100	468.100
Med-6	463.125	468.125
Med-7	463.150	468.150
Med-8	463.200	468.200
Med-9	462.950	468.950
Med-10	462.975	468.975

"LINE OF SIGHT" RANGE

There is a very rough rule of thumb as to receiving range: It's "line of sight ", but can be as much as 30% more. It depends on the terrain at your location, the height of the transmitting tower (at the police station, for example) and the height of your receiving antenna. If you know these, there is a mathematical formula to apply which works if the terrain is fairly level. Take the transmitting tower height, in feet; Divide by 5 and then multiply by 9 Find the square root of the answer and that will give you a range in miles. Do the same thing with your receiving antenna, and add the two distances together. There is a "fudge factor of up to plus or minus 30%depending of the frequency band: the higher the frequency, the the less "fudge". Transmitting towers usually come in heights of 100 feet or multiples.

Gene Hughes

RUSSIAN ASTRO FREQS.

Heard any Russian transmissions on your scanner?You might if you listen to 143.625! It's the frequency popularly used by manned Russian manned space vehicles. They use the portion of the spectrum between 142.400 and 143.625. and appear to have a busy shedule,, so it might be fun to search there. Of course the transmissions are in Russian, and the Dialogue is pretty mundane according to the reporter. Still, it's "aliens from outer space"

American satelilte use downlinks at 137.10, 137.11, 139.056, 140.056, and 141.056. Mostly, the context is in data form. Try searching between 136.0 and 144 MHz and you will only hear them when they r'e overhead. Try your local ham repeaters for the shuttle flights. JP

RADIO SHACK'S 20-102 MAGNETIC MOUNT ANTENNA

Jesse Gray, Sr. GWGX73A

Here's a way to extend the useful range for this antenna, already more or less a standard scanner favorite. The antenna's magnet is adequate at speeds up to 60+MPH, comes with a 16 foot coax, and as well as being a mobile antenna, works as well as well for bases. The price is 29.95.

Although it is a good antenna as it is, it can be "range-extended" quite simply to work better in the low and mid frequencies.

By removing a 3/4 to 1 inch section of the area between the lower and upper loading coils, the frequency range between 150 to 170 MHz will be considerably improved, and it will also have a better match in the UHF-T band. I have taken out sections from a variety of antennas, and find that using a small modeler's tubing cutter does a nice job, and using the right size brass tubing inside will give a stronger antenna than you started with... It is likely you'll need to remove a little of the plating with a file to get a good solder joint, and rosin paste flux will make the soldering job much simpler. This is not a job for a little soldering pen, it needs a lot of heat. Get out the old soldering gun for this one!

The other half of the job is simpler yet. Since this antenna was designed originally to be a match for six meter ham, it works very well at about 51 MHz., not the best for scanner use. if your area is typical, the highway patrol, or possibly your local police is somewhere in the low 40's and this antenna can be re-configured to put your antenna length right on the button. The top end of the antenna needs to be lengthened to suit your needs.

In place of the original 17 inch piece, by using an automobile replacement antenna , preferably a stainless steel whip for the low cross section, (wind load) and then cut it to a length to suit your needs.

For 45 MHz use, cut it to a total length of 21 inches, for 42 MHz, cut to 25 inches, for 39 MHz, use 29 inches, for 33 MHz, cut to 44 inches. Depending on your driving habits, at the much greater lengths, you might want to look at a stronger magnet, or a different mounting arrangement

A note about the source for this. to give credit where it's due... On of the people who bought my San Diego frequency book called me, and said he had a friend with the data. Later the friend contacted me through Prodigy, and about one in the morning, after he got off work he took the time to pass along the information, which originally came from the November '92 issue of the Radio Communications Monitoring Assoc., Note by Steve Donnel.... The reason that I'm sharing this is to give you the idea that the data in this newsletter comes from many sources, and I want to extend my thanks to all.

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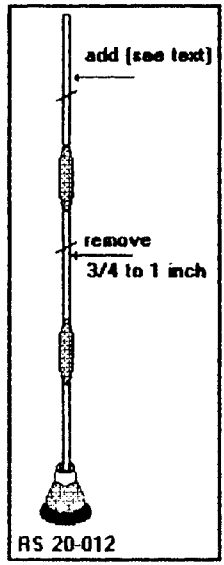
How about your ideas? Help us grow! Mention the DMS-NEWS on your localBBS



PROFILES

From the letters I get, the centerfold profiles are the most popular section. They are my favorite too, because they give us all a chance to get acquainted. Throw modesty to the wind and tell us about yourself, give us your ideas, show off, say your opinions, etc. Remember, this is your newsletter!

JOE SPARACINO

33 years old, I'm employed in the medical profession and have been an avid scanner enthusiast since my first scanner at age 15. It was a Realistic PRO-? 8 channel crystal, VHF band only. It was a great radio for its limited capacity (and a scan rate of about 5 ch/sec. Excellent sensitivity. This scanner took care of all my needs for several years in the suburbs of Washington D.C. (Prince George and Montgomery Counties) where everything was on 154-155 MHz. Then theP-6 /Mongomery county police moved up to the UHF-T band, 494-495, and I needed a new radio. I didn't have much money and I was just a kid without an income. I needed a cheap radio and Radio Shack had a 16 channel UHF-VHF hi-low scanner that they had discontinued. It was the kind thatthat was programmed by setting thechannel buttons in either the on or off position. It came with a book with a code for each frequency. What a pain! No wonder it was discontinued! The radio used to lose the freqs I programmed all the time, fresh batteries or not. I hated it, but it was only $100. My next scanner was a Regency, again I don't knowthe model, but it was impressive,(to me at the time.) It had a back-lit soft-touch pad to enter frequencies. I think it was 30 channels, 3 banks of 10, and pre-programmed groups of frequencies to search. Then I wanted a hand-held. Another 6 channel cyrstal radio. I still have it, too. It doesn't work. I used to modify my radios when I knew I was going to buy a new one. Finally n 1987 or '88 , I bought the PRO-2005. I've done the cellular mod and the hyperscan speed-up to the radio. I needed a hand-held so I went with the BC200 XLT, which I use mobile.

Nowadays I live in San Diego. My main scanning interests are in local police, aviation, military aero band , and federal law enforcement. I also listen a lot to the news media frequencies.

I was recently in Washington D.C. for the Clinton Inaugural and the scanner (XLT) was bursting with chatter. Not much on the Secret Service channels except encrypted data bursts, but the U.S Park, U.S. Capital, Metropolitan D.C. police were very active, as was the local news media. One exceptionally enjoyable channel I listened to at parade time was the CBS News remote broadcasts.(StudioRemote Communi -- cations) I listened to the program director give instructions to the 20 or socamera crews out on the streets as to what he was putting on line next. It was rather comical at times as things didn't quite go as he hoped. Very stressful, and very fast-paced job, very neat to listen to as you watched it actually happen on TV...

Joe Sparacino

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Help keep the service manuals coming, I'm aware it costs time and money to send them, but they have already helped some, and you might be next!

BILL BUCHSBAUM

Better known as "Bill B" on PRODIGY, I'm a chief Master Sergeant in the Air Force. My interests in communications started as a kid when I inherited an old RCA Victor console radio from a neighbor in Saddle Brook, NJ.When I heard "television" on a "radio" I called WABC-TV in New York to find out how this could be. The resulting conversation with a station engineer got me hooked for good.

When I joined the Air Force, they furthered my interests by placing me in a field known as Communications Security, or COMSEC in the jargon. My duties consisted of monitoring military radio and telephone conversations, analyzing them, and preparing reports to assess the probability of compromises of sensitive material. Yes, I was getting paid for my hobby!

Somewhere along the line, I discovered scanner technology, and queried U.S. manufacturers on the possibility of "custom banding" programmable scanners for the military. The companies- now out of the scanner business, by the way-weren't interested. so, I bought a PRO-2020, and later a n Electra Bearcat 100 for testing, evaluation , and demonstration purposes, and the results were dramatic. The Air Force scrapped its plans for megabuck "milspec" radios for the COMSEC program. The planned $50,000 non-scanning monsters were replaced with $1000 ICOM scanners.

I'm now stationed in San Antonio Texas, and I manage traveling teams that conduct the monitor activities, along with our newest endeavor, Computer Security, or COMPUSEC. The closest I get to hands-on operation is editing the team's reports, though I've been "promoted" from technical work to management, so now the job has once again has become the hobby. The RCA Victor is long gone, but "his Master's Voice" remains in the form of the old Electra, a BC70 XLT, BC200 XLT, YeasuFRG-695, (the Japanese domestic version of the FRG-9600, and a PRO-2006. On the HF side , there's a Kenwood R-5000, an old Realistic DX-120, and a PK 232 that's connected toto the computer for reading many modes of digital traffic.

As I prepare for retirement from the military, my wife (Kim) and kids (Kathy and Billy) are hoping that there may be a way to once again transform the hobby into a career. Me too! *Bill B.*

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DMS-NEWS

Well, why not? I thought I'd use this space to let you know how this thing goes together. The entire DMS-NEWS is put together on a 286 IBM clone, with a pretty good printer and an adequate monitor. The "Administration Building" is a thoroughly messed up corner of my bedroom, which shares duty as a storehouse, workbench, and a lot of junk. (The junk is only that until I need to make something, or try out an idea!)

A very small part of the 'NEWS is imported from disk, the largest part of it is typed by the world's worst typist, me! I do most of the tech drawings in WINDOWS PAINT BRUSH, and the text is done in MS PUBLISHER...

Without the nit-picking and very valuable help of my long time and cherished friend, Jaime Carver, the DMS-NEWS would not approach the look it has, and without your contributions (both kinds) it would not exist at all! Thanks , all! Jerry P.

CELLULAR-PHONE DOOMSAYER DRAWS STATIC

By Ronald E. Yates

There was a time, back when radio was the newfangled thing, when doomsayers brooded about the effects of radio waves. The invisible signals, they insisted, did every thing from making their goldfish suicidal to destroying the appetites of their dogs and children. Technology evolves,and so do technological villains. The latest to emerge: the cellular telephone, that symbol of executive status that permeates corporate America and occupies the best leather briefcases While few scientists and researchers in the medical community are taking them seriously, charges made Thursday on Cable News Network's "Larry King Live" about a link between cellular phones and brain cancer nevertheless sent shock waves through the cellular industry. And when some people stopped to factor in last week's announcements that two high-profile corporate chief executives had come down with brain cancer. . . well, that was more than enough to send the stock prices of cellular manufacturers such as Motorola Inc. and McCaw Cellular tumbling Friday.

So, on Monday, industry bigwigs rolled out the heavy artillery. Motorola, the world's largest producer of cellular phones, led the way. The Schaumburg-based, communications giant attempted to pulverize concerns about the safety of the high-frequency, low-voltage phones that are used by more than 10 million people, saying no scientific evidence exists linking them to cancer or any other health problem.

"Based on more than 40 years of our own research... and more than 9,000 independent studies, we are convinced there are no health hazards' associated with using cellular phones;' said Edward Staiano, executive vice president and general manager of Motorola's General Systems Division, which makes the company's cellular products.

Monday's move by Motorola was seen by industry analysts as an attempt to defuse the controversy before it gets out of hand and threatens Motorola's vision of a wireless world, in which people would communicate with one another anytime, anyplace via cellular phones, computers using wireless modems and other hand-held devices.

David Reynard, a St. Petersburg, Fla., resident, Thursday told Larry King's national audience that Reynard's wife's death from a brain tumor was the result of her persistent use of a cellular telephone, alleging that the tumor formed right next to where she held the handset. Reynard has filed suit against Japan's NEC Corp., maker of the cellular phone his wife used, as well as a GTE Corp. subsidiary that provided the service.

But few in the medical community agree with Reynard or believe he and his attorneys have a chance of winning in a courtroom.

"Electronic waves simply don't cause cancer... period," said Dr. Victor Levin, chairman of the department of neuro-oncology at the prestigious M.D. Anderson Cancer Center in Houston.

Added Eleanor Adair of Yale Laboratories' John B. Pierce Foundation Laboratories: "The power output from a cellular phone is just too low. . . It can't do that kind of damage

to tissues."
Staiano said that while Motorola takes cellular-telephone safety seriously,"to be perfectly honest, we aren't concerned."
He added that although some anxious customers have called Motorola seeking clarification, the number of queries hasn't been larger than is usual regarding product safety. He said there has been no noticeable effect on sales.
Motorola's confidence in the safety of its cellular products and in cellular technology in general "is rooted in scientific fact," Staiano said. "These questions have been raised from time to time, and they are legitimate questions. But if Motorola had the least concern that these products would cause health problems, we would stop selling them immediately."
Much of the concern stems from decades-old worries about the effect of electromagnetic fields and low frequency (15 hertz to 30 kilohertz) radiation produced by products such as video display terminals, electric motors and high voltage power lines. Unlike those devices, however, cellular phones use much higher frequency ranges (800 to 900 MHz) and much lower voltage (1/2 watt to 3 watts).
Critics contend that electromagnetic waves emitted at hundreds or thousands of watts can cause cataracts or heat damage to the body, but there are no definitive research data to support those claims, Staiano said.
"We know of no level of RF [radio frequency] energy at which there is any acceleration of tumors or any acceleration of the growth of tumors," he said. "And we have tested these products over a wide variety of frequencies."
While most researchers agree with Motorola's conclusions about safety including a panel brought to gather by the U.S. Labor Department some scientists in Germany, Sweden and the U.S. insist not enough research has been done with cellular phones to allay anxiety.
"Research into the cumulative effect of exposure in the cellular frequency band has been negligible," said W. Ross Adey, associate chief of research at the J.L. Pettis Memorial VA Medical Center in Loma Linda, Calif., who is conducting research into cellular safety.
In research data shared with Motorola, however, Adey indicated that thus far, results indicate cellular transmissions in the 800 to 900 megahertz frequency range have no demonstrable impact on cell formation or growth, Staiano said.

And by day's end, the stock market seemed to be siding with the industry, not the doomsayers. Motorola regained $2 of the $2.25 it lost Friday, to close at $61.13; and McCaw, which lost $2.13 Friday, regained every penny.

A reprint from:
The Chicago Tribune Tuesday, January 26, 1993

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COAST GUARD AIR

If you're in any kind of a coastal region, try these for lots of action!
Helicopters, 164.30 UHF -AIR- 237.90, 240.60, 275.20, 277.80, 282.80, 285.00, 342.20, 381.70, 381.80, and 381.90.

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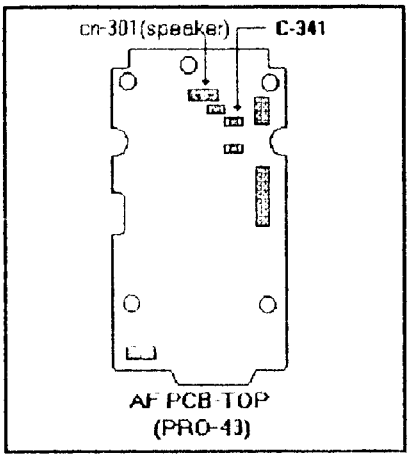
Your newsletter always needs data! More members means better news!

PRO-43 AUDIO AND CELL MOD

Together again for the first time! Since the PRO-43 audio mod requires the alteration of an unmarked cap and it's hard to find, I thought the drawings underneath this text might help. Principally, this information comes from Roy Cloutier, with input from a couple of other sources...

Since the mechanics of this mod are in the "DMS" I won't persue them here except to say that I may have been a little unclear about removing both the "first and second" boards as you progress through the scanner. The second board is the one that the controls are attached to. I have heard about a couple of the logic board shields being spot welded rather than soldered, but they were "friend of a friend" reports so I'll wait and see. If you do run across one, based on other radios, the welds are quite easily popped, using tiny wedges to start ,then with thicker wedges, gradually increase the pressure. (The "wedges" I used the one time I had to do this were a set of those cheap precision screwdrivers. JP.



The **audio mod** is to clear up the "mushiness" in the PRO's audio. The copies of the mod I've seen just say removing the cap (C-341) is sufficient to do the mod, but this results in a harshness and hiss that is unpleasant. By experimentation, Roy C discovered that replacing the original cap with a .002 uF gives a crystal clear sound with very little hiss. As you can see from the drawing the cap is on the audio board. This is the second board of three as you dis-assemble the radio. There is also a mod to add an "S" meter and a scan-speed increase to to the '43. When I get to those drawings I'll cover those, probably in the next issue. JP

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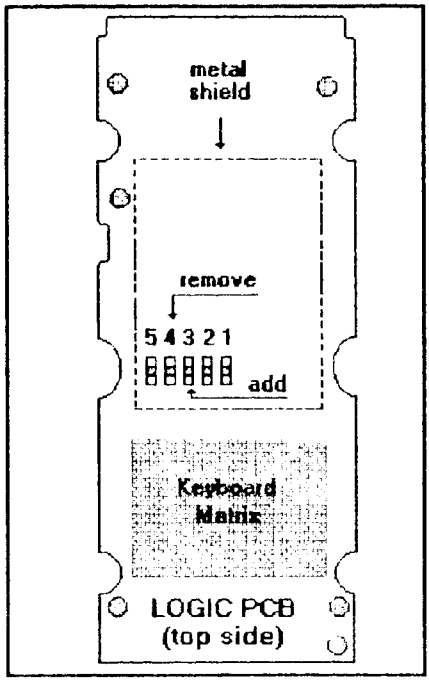
Hey Roy, we miss you on the P board, and also in the mailbox!



FAVORITE AIR FREQS

Sooner or later, if you have a scanner, the aircraft bands beckon. Here's a list of nationally used frequencies, to plug into your scanner any where in the U.S,

Search and Rescue

(Includes Emergency Location Ttrans - mitters, and secondary or temporary use frequencies.

121.500 - 121.425-121.475- (121.600-121.925 , Utility and ELT test) 123.100

Unicom, Aircraft

(Includes uncontrolled airports, private airports, controlled air ports, (tower) and air to air.

122.700-122.725-122.750-122.775-122.800-122.825-122.875-122.950-122.975-123.000

Unicom, Heliports

123.050-123.075 **(helicopters air to air,123.050)**

Multicom

(Includes special use, and Natural Resource.) 122.850-122.900-122.925.

FIIGHT INSTRUCTION

123.300-123.500 Gliders
121.950 Aircraft

FLIGHT TESTING

123.125-123.275-123.325-123.475-123.525- 123.575

AIRCRAFT ADVISORY

121.975-122.025-122.675 Private Air
122.000 enroute flight advisory service
123.600-123.650 Air Carrier Advisory
128.825-132.000 Op Control (AIRINC
126.200- 34.100 Military ATC

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This year is the 25th anniversary of scanning! James A. Lovell devel - oped the first true scanner for Electra-Bearcat in 1968. In 1971, he sold the company to Masco Corp. In 1984, the company was sold to Uniden Corporation.

MINNESOTA REVISION?

Five Minnesota legislators are backing a bill that would dis-allow amateur radio operators from having mobile scanners. Formerly, Minnesota statute-section 299C.37-subdivision 1 allowed peace officers, members of the state patrol and licensed hams to have such radios.

The legislators names are: Delmont, Dawkins, Jacobs, Swenson and Perit.

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NATIONAL AIRSPACE SYSTEM

The frequency spectrum has recently been expanded to cover 136.000 to 136.975, assigned to Enroute Operat ional Control for international airlines. All aircraft operating in the National Airspace System are required to have radios which are capable of operating on 720 channels. Now that's a radio!

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C.A.R.M.A

The Chicago Area Radio Monitoring Association sent me a copy of their fine newsletter to pass on to you. A subscription is $10.00 annually, (six issues) and the address is: Ted & Kim Moran, 6536 N. Francisco, Chicago IL-6064. I'll include more info next issue.

Spring has sprung,
The grass has riz,
Here is where
the scan-news is!

Ever Vigilant!