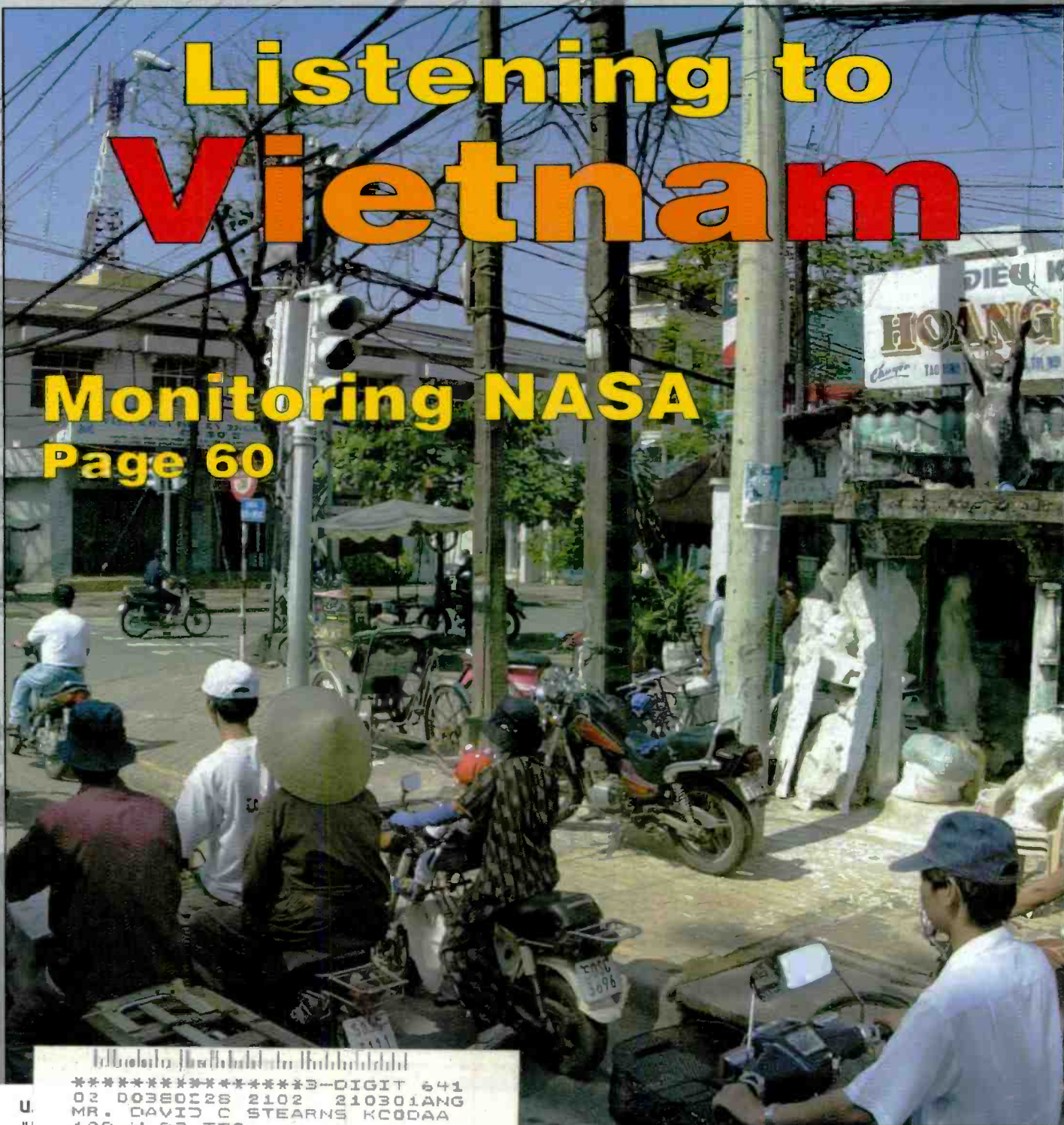


# POPULAR COMMUNICATIONS

MARCH 2001

## Listening to Vietnam

Monitoring NASA  
Page 60



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MR. DAVID C STEARNS KCODAA  
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Reviews the KMA Rover and Log Periodic Antennas



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# Tomorrow's Technology - Today.

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# Contents POPULAR COMMUNICATIONS

Volume 19, Number 7

March 2001



6

## 6 **Broadcasting From Vietnam—A New Millennium**

*A Look Back, And To The Future For Vietnam*

by Bob Padula

## 50 **Scanner Recorder 1.8**

*It's A Really Slick Digital Recorder—And It's Free!*

by Eric Force

## 70 **Local Governments Empowered To Enforce CB Rules**

by Ed Barnat

### Product Spotlight

## 16 **KMA Rover And 4113 Log Periodic VHF/UHF Antennas**

by Peter Bertini

20 *One-IC Radio Project, And Old Radio Found!*

The Radio Connection

24 *Speech Processing For Every Occasion*

The Ham Column

28 *Wide Band Receivers—Scanning Below 30 MHz*

Scan Tech

36 *Kenwood TS-2000 Takes Messages, Too!*

Radio Resources

40 *Navigating International SW Bands The Easy Way*

World Band Tuning Tips

44 *China Jams It, But Falun Dafa Radio Still Gets Through*

Clandestine Communiqué

45 *KVOD, Denver Fades Into History*

Broadcast DXing

52 *Challenge: Can YOU Hear UN Radio From Sierra Leone?*

The Listening Post

59 *Answers To Your Aviation Questions*

Plane Sense

60 **Monitoring NASA!**

Utility Radio Review

69 *Uncle Sam Taketh Away*

The Pirate's den

78 *MURS Murmurs*

Washington Beat

80 *The Smell Of Progress*

The Loose Connection

### Departments

4 *Tuning In — An Editorial*

35 *How I Got Started*

42 *Product Parade*

73 *Pop'Comm P.O.— Letters*

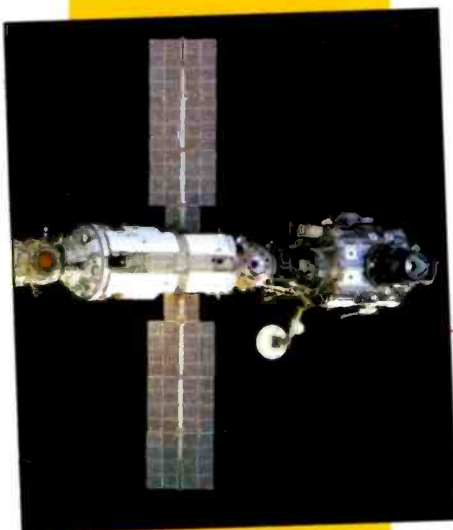
77 *Readers' Market*

### On The Cover

A view of downtown Ho Chi Minh City (Saigon), a bustling cultural and business center of nearly four million people. Writer Bob Padula recently visited Vietnam, providing us an exclusive look at radio from this Southeast Asian country. Bob's article "Broadcasting From Vietnam—A New Millennium" begins on page 6. (Photo by Larry Mulvehill).



16



60

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# TUNING IN

An Editorial

## Joe Carr: 1943–2000

If Joe were here to see that headline he'd certainly observe that this fellow was only 57 at the time of his passing. That's too young — we all know it, but it doesn't change anything. And as the many words of comfort to his family and friends almost certainly become a blur of endless condolences and well-meaning thoughts and prayers, we remember that Joe was one of us — a radioman, a darned good one, and then some. Please reflect for a moment that Joe stood tall among men — a systems engineer and radio professional in every sense of the word. He had been publishing books and articles since 1968, and active in radio listening since 1957.

Joe grew up in Arlington, Virginia, and graduated from Washington-Lee High School in 1961; six years later he attended Old Dominion University in Norfolk, Virginia, where he met his wife, Bonnie. They were married December 26, 1969. He was an electronics engineer who published more than 85 books and 700 articles since 1968, including popular books on electronics and technology, college level textbooks and professional technical/reference books and two books dealing with the holocaust. He wrote monthly columns and feature articles in *CQ Amateur Radio*, *Popular Electronics*, *Nuts 'n Volts* and *73*, plus magazines published in Europe (*Elektor Electronics*, *Shortwave*, *Electronics World/Wireless World*, *Practical Wireless* and others), and of course he was a regular in *Popular Communications* with his "Antennas & Things" column." His works have been translated into Russian, Bulgarian, Swedish, Spanish, French, Dutch, and German. Joe had a Masters of Science Degree in Electrical Engineering from George Washington University, Bachelor of Science degree from the University of the State of New York (Regents College). He worked as a biomedical engineer for GW University Hospital, the Food and Drug Administration and as an engineer in avionics for Nav-Air, with experience in radar, electro-optics, sensors, open systems, computing, and other disciplines, and prior to receiving his B.S. in 1978



*Joseph Carr, K4IPV was a columnist for Pop'Comm since July 1992.*

worked as an electronics technician for 16 years.

Two years ago he assumed duty as the Head, Systems Engineering Branch, Marine Corps System Command in Quantico, Virginia. While in this capacity Joe stood up as the Command's first Chief Engineer, and as such was the Commander's advisor on engineering issues. He established a certification program for engineers in the command and was an advocate of furthering education and professional certifications.

Joe was also a licensed amateur, K4IPV — the fellow who wrote "Joe Carr's Receiving Antenna Handbook." It's my personal favorite. It's all dog-eared and marked up, the result of many conversations I had with Joe about this antenna design, and that ground system. Now, Joe knew I'm no engineer, and have difficulty with even basic math and formulas, but time and again he'd take the time to walk me through those basics like it was the first time he'd been asked. That was our Joe Carr, K4IPV. He will be missed, but his work is remembered as

*(Continued on page 58)*

BY HAROLD ORT, N2RLL, SSB-596

## POPULAR COMMUNICATIONS

### EDITORIAL STAFF

**Harold Ort, N2RLL, SSB-596**, Editor  
(Internet e-mail: PopularCom@aol.com)

**Tom Kneitel, K2AES/SSB-13**, Senior Editor  
(Internet e-mail: tsksktsk@juno.com)

**Alycia Nichol森**, Assistant Editor

**Richard S. Moseson, W2VU**, Online Coordinator  
(Internet e-mail: W2VU@amsat.org)

### CONTRIBUTING EDITORS

**Ed Barnat, TCA-44**, CB SSB

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**Joe Carr, K4IPV**, Antennas

**Bruce Conti**, AM/FM Broadcasts

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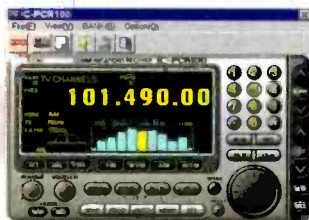
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# Broadcasting From Vietnam — A New Millennium

## *A Look Back, And To The Future For Vietnam*

By Bob Padula

*Author's note: Much of the technical background for this story was gleaned from a three-week trip to Asia in June 2000. The nine-day Vietnam sector commenced in Ho Chi Minh City, and concluded in Hanoi, and I traveled by mini-bus, ferry, car, taxi, cycle, boat, bicycle, aircraft, and on foot. The trip was an escorted tour undertaken with a small group of Australians, during the hottest period of the year, with daytime maximum temperatures around 40 degrees C, and evening temperatures falling only occasionally below 30 degrees. Humidity was extreme, running between 90 and 95% for most of the journey. Monitoring was carried out with the small Sangean ATS808A portable, using a three-meter antenna: in Vietnam from Ho Chi Minh City, Hoi An (near Da Nang), Hue, Ha Long Bay, and Hanoi. Additional monitoring was from Eastern Malaysia (Kota Kinabalu, Manukan Island, and Sandakan), and in Peninsular Malaysia (Langkawi Island, Kuala Lumpur). Times are UTC.*

The date of April 30, 1975 will long be remembered by many. It was on that day that Saigon fell. Some of us will recall the graphic TV images of Russian tanks forcing down the gates of the Presidential Palace, and of the last helicopters leaving from the roof of the U.S. Embassy. That day marked the demise of South Vietnam and its government. General Duong Van Minh, South Vietnam's president for just 24 hours, surrendered to the Northern forces minutes later. In the quarter century since, Ho Chi Minh City has emerged from the ruins, and now flourishes as the contemporary commercial capital of Vietnam.

The Presidential Palace has been preserved and maintained, known as the "Reunification Hall," and is now used mainly for ceremonial functions. I visited this building, and the basement contains the War Operation's Rooms of Nguyen Van Thieu's (president from 1967–1975). The rooms have the original floor to ceiling maps and charts, showing in enormous detail the location of military assets and population distribution. Adjacent are other preserved centers, in which there is an astonishing collection of 1975 communications equipment on view including rack-mounted HF transmitters, receivers, teleprinter facilities, telecommunications and telephone gear, switchboards, antenna couplers, and power supplies — just as it was during the regime.

### Broadcasting Activity

The government-operated broadcaster is Dai Tieng Noi Viet Nam (TNVN — Radio The Voice of Vietnam) and its origins

can be traced back to August 1945, just before the declaration of independence in September of that year. The studios (and administration center) is in downtown Hanoi, at 58 Quan Su Street, operating from a nondescript building not far from the French Embassy.

TNVN operates a number of MF, VHF, and HF stations, located in Hanoi and regional centers. The principal centralized networks originating from Hanoi are:

**Channel 1:** Vietnamese, Khmer, H'mong, and Ede — news, current affairs and music, 18 hours daily, on MF, VHF and HF

**Channel 2:** Vietnamese, Khmer, H'mong and Ede, economic, cultural, social, literature, art, and educational programs, 18 hrs daily, MF and HF

**Channel 3:** Vietnamese, VHF only

**Channel 4:** H'mong Network. This service is part of the ethnic minority service, on HF only.

**Channel 5:** English, French, Russian and Vietnamese, news and music for foreigners in Vietnam. This operates on 105.5 MHz, from Ha Noi, Ho Chi Minh City, Hai Phong, and Vung Tau.



*View of 1975 communications equipment including HF transmitter in the basement of the former Presidential Palace, Ho Chi Minh City as it was when the south surrendered.*



**Channel 6:** This is the External Service, designated as the Voice of Vietnam International, on HF and MF.

## Provincial Stations And Local Radio On MF And VHF

These are located throughout the country, using MF, HF, and VHF, and their output includes relays of the National Networks from Hanoi, or locally-produced programming.

There is a progressive shift from MF to VHF. A number of main cities have coverage on MF and VHF of the National Networks 1 and 2, and some have their own Provincial services. Some transmitters are dedicated exclusively to either Network 1 or 2, others carry relays at various times, while others have a mix of these networks. Most MF services are clustered towards the bottom end of the band, generally below 1000 kHz. This arrangement was introduced in the 1960s, when many 50/100 kW MF transmitters were brought on line by the Republic of Vietnam government. This was similar to the frequency distribution matrix, which had been introduced for MF stations in the north.

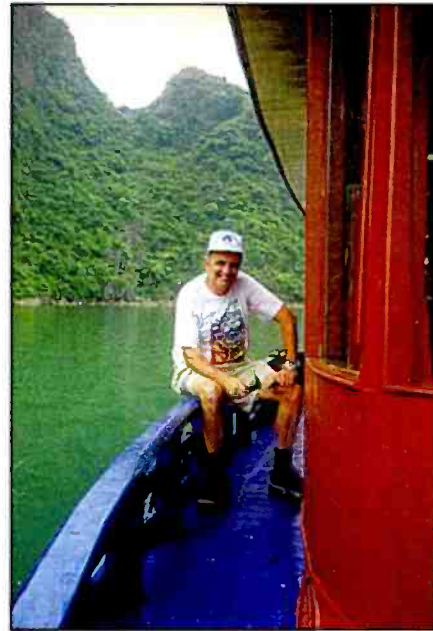
Operation at the low frequency end of the MF band is no accident, being intentionally arranged to optimize long distance coverage during daylight hours. Frequencies used today by many existing stations are identical to channels in use back in the 1960s, taking into account the slight adjustments made as a result of Region 3 (Asia/Pacific) changing from 10 kHz to 9 kHz channel separation in the late 1970s.

The MF and VHF bands are sparsely populated. There are no "private" or "commercial" stations authorized, and transmissions are limited to the National Networks 1 and 2, Provincial and local services. In several places, broadcasts from neighboring provinces are audible during local daytime on MF, and even on VHF, due to the relatively short propagation distances. MF transmissions from China, Laos, Cambodia, Taiwan, Philippines, and Singapore are also audible during the day, for propagation distances of up to about 200 km. In Hanoi, only six VHF stations were audible. In Hoi An (near Da Nang), only two local MF stations were audible during the day, carrying the National Networks 1 and 2. In Ho Chi Minh City and Hanoi, five MF stations were available during the day at each locality. Vietnamese frequency planning provides for multiple transmitters carrying the same network, on common MF and VHF channels, at various towns and cities, separated geographically.

From late afternoon and continuing throughout the evening, the MF band becomes a cacophony of sounds, with every channel occupied by at least one station, from virtually every country in Asia. As the evening progresses, and the terminator extends to the west, stations in Siberia, India, the Korean Peninsula, Pakistan, and the independent Central Asian republics become audible.

## HF Relays

There are five high-powered HF transmitters on the air continuously from 2200–1600. These use **5925**, **5970**, **6020**, **7115**, and **7210**, carrying relays of the National and Provincial Networks. These transmitters, and their associated antennas, are believed to be relatively recent installations, as frequency stability, signal effectiveness, and modulation quality are assessed as very good. For many years, transmitters carrying relays of the Domestic Services had previously operated on a variety of



*Writer Bob Padula on a boat in Ha Long Bay,  
north of Hanoi.*

out-of-band, oddball channels above 10-MHz such as 10044, 10068, 12035, 15012, 10225, and 10020. It is believed that some of those transmitters have been diverted to jamming of the Vietnamese broadcasts emanating from Radio Free Asia. Frequencies in use for the presumed new facilities mentioned above are lower than what had been used in the past, to minimize "shadow" blockage caused by skip effects. It should be noted that Vietnam is about 1000 km from north to south, and day and night/day coverage across such relatively short distances is optimized by the use of frequencies below 10 MHz.

At least two of these transmitters are co-sited — 6020 and 7210 — as low level spurious radiation were noted on 6005/6035, and 7195/7225, corresponding to carrier +/- 15 kHz. The spur on 6035 causes interference to the Vietnamese network of the Yunnan BS, at Kunming, during morning and evening periods.

Transmitter locations for these five outlets are not known. Based on monitoring observations from Vietnam and Malaysia, as well as from my home location in Melbourne, Australia, I believe that the general sites are as follows:

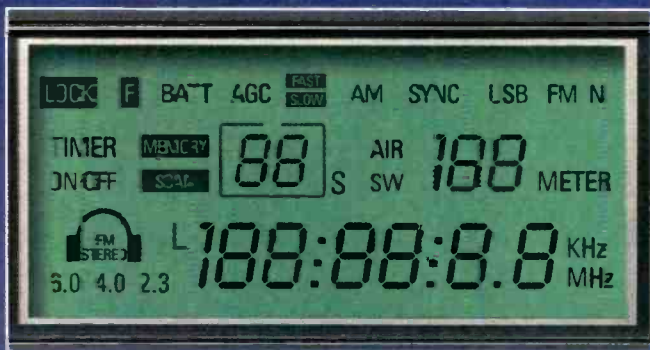
- 7210:** South, likely near Ho Chi Minh City
- 7115:** North, likely near Hanoi
- 6020:** South, likely near Ho Chi Minh City
- 5925:** North, likely near Hanoi
- 5970:** South, likely near Ho Chi Minh City

The 7115 frequency experiences annoying interference from co-channel Radio Thailand for the entire broadcast span, and also from the Voice of America, Iranawila, Sri Lanka, from 0100–0300 with its English service. That VOA transmission is actually beamed 334 degrees into the Middle East area, and has a very strong back lobe radiation signal to the southeast, across Indonesia, and Indo-China. 7115 is also disturbed by co-channel All India Radio, at Port Blair (Andaman Islands), during its afternoon service around 0700.

All five channels carry the National Network news from Hanoi at 2300–2315, which is 6 a.m. local. Between 1200–1230,



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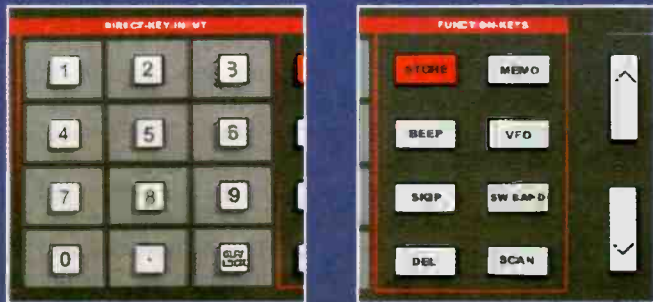
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*Bob on the Temple grounds.*

corresponding to 7 p.m. local time, there are four separate programs, carrying the following services:

- 7210** Network 1
- 5970** Provincial Network
- 5925** Network 2
- 7115** Network 1
- 6020** Regional Network

The schedule for each outlet is complex, as each frequency is not dedicated permanently to a particular "Network." Obviously, there is some sort of overall plan, but I couldn't determine what it was, and it appeared to me that the actual network relayed was almost random, differing from hour to hour and day to day. It is understood that these five transmitters are intended for general reception, and also serve as HF in-band feeders, for providing primary or secondary (back-up) programming for MF and HF broadcasts to the Provincial stations in remote areas, many of which do not have direct transmission links to Hanoi.

## H'Mong Network

This originates from Hanoi, and is available only on HF. It uses two frequencies **6165** and **5035**, signing on at 2200 for the morning service until 2300 close. There is also a midday service (0500–0600) and an evening release (1200–1330). H'mong is also known as Miao, and is spoken by some 4.5 million people in southern China, Vietnam, northern Laos, and Thailand.

Prior to reunification in 1976, the former Republic of South Vietnam broadcasting facilities were quite extensive, known as the Broadcasting System of Vietnam. The Republic actually extended quite some distance to 17 degrees N, which including the cities of Da Lat, Nha Trang, Hue, Da Nang, Qui Nho'n, Buon Ma Thuot, Can Tho, and Quang Ngai. Several high power HF transmitters were sited near Ho Chi Minh City, of up to 200 kW, and the Voice of America operated its 50 kW MF station from Hue, on 760 kHz.

MF and VHF outlets in the South were taken over by the incoming communist-controlled northern government in 1976, including "Liberated Radio Ho Chi Minh City." The HF outlets from Ho Chi Minh City vanished after 1976, and were believed

to have been destroyed. They formerly operated on such frequencies as 4877, 6165, 7175, 7245, 9620, and 9755.

As far as can be determined, the only local shortwave station operating from the area which was formerly the Republic of Vietnam is located in Gia Lai Province, which sits between the 13th and 14th parallels.

## External Services

It is believed that two principal HF sites are in use for External Broadcasting. The first is at Son Tay (with two 100 kW transmitters), located about 30 km NW of Hanoi. Son Tay is in Ha Tay Province, which borders the Hanoi region. The second site is at Mi Tri, about 5 km SW of Hanoi, with one 50 kW transmitter. TNVN advises that the total official national HF transmitter deployment is 11, believed to comprise the three units used for External Broadcasts, five transmitters for the National Service relays, and two transmitters carrying the H'Mong Network, and one "spare." Only two transmitters are in use from the Son Tay site at any given time for the External Service broadcasts.

Available antennas at Son Tay are at azimuths of 36, 57, 140, 177, 290, and 320 degrees. In recent years, the number of Vietnamese-based transmitters used for the external service has been reduced, and reports suggest that these have been diverted for jamming of Radio Free Asia broadcasts. The number and location of these are unknown.

The Mi Tri site has the transmitter which operates on the single frequency of 7285, 50 kW, with an antenna azimuth of 216 degrees, and it's used for the external service intended for Asia. The most recent schedule is:

0000–0030	Cambodian
0030–0100	Lao
1100–1130	English
1130–1200	Thai
1200–1230	Cambodian
1230–1300	Lao
1300–1330	Russian
1330–1400	Cambodian
1400–1430	Lao
1430–1500	Cantonese
1500–1530	Mandarin

Of particular interest is that output on this frequency has recently been extended, and is now used for relaying National Network programming from Hanoi, when not engaged for the regular External Service. This is from 0100–1100 with relays of Networks 1 or 2. This is to augment national daytime coverage into the southern part of the country of the HF relays on 5925, 5970, 6020, 7115, and 7210. 7285 gave excellent reception during the daytime period throughout Vietnam and all of Malaysia. However, 7285 is also used by Radio Taipei International from 1200–1400 and by the Voice of Asia (Taiwan) 1000–1100.

The regular summer External Service outlets on **9730**, **9840**, **12020**, and **13740** are reliably heard worldwide, particularly over darkness, or partial-darkness transmission paths.

The following frequencies are listed for the Son Tay site for the designated external service transmission blocks, for the summer broadcast period commencing on the first Sunday of March:

- 9730:** 0000–0100, 1100–1130, 1300–1400, 1600–2130
- 9840:** 0830–1100, 1130–1300, 1400–1600, 2130–0000



**12020:** 0830–1100, 1130–1300, 1400–1600, 2130–0000  
**13740:** 0000–0100, 1100–1130, 1300–1400, 1600–2130

**English** programming is broadcast from the Son Tay facilities at:

1000–1030	9840, 12020 for Asia
1230–1300	9840, 12020 for Asia
1330–1400	9730, 13740 for Europe
1600–1630	9730, 13740 for Europe
1800–1830	9730, 13740 for Europe
1900–1930	9730, 13740 for Europe
2030–2100	9730, 13740 for Europe
2330–0000	9840, 12020 for Asia

There is also a high powered MF transmitter operating on **1242 kHz** from Hanoi, between 0900 and 1700, and from 2200–0000, for external services, carrying programming in Vietnamese, English, Indonesian, Cambodian, Thai, French, Cantonese, Mandarin, and Lao, with some of this output in parallel with the HF External Services.

## External Service Relays

The Voice of Vietnam uses relays in Canada (Sackville) and Russia (Serpukhov and Moscow) for reaching audiences in the Americas and Europe respectively. Summer frequencies are listed (with alternate winter frequencies and timings):

**9695** (winter 9525)(via Sackville):  
0100–0130 English  
0130–0230 Vietnamese  
0230–0300 English

**9795** (summer and winter via Sackville):  
0300–0330 Spanish  
0330–0400 English  
0400–0500 Vietnamese

**12070** (via Serpukhov)(winter 7440 via Moscow):  
1700–1730 English (winter 1800–1830)  
1730–1830 Vietnamese (winter 1830–1930)  
1830–1900 French (winter 1930–2000)

**12030** (via Serpukhov) (winter 7390 via Moscow):  
1900–1930 Russian (winter 2000–2030)  
1930–2030 Vietnamese (winter 2030–2130)

The complete external service schedule is available for viewing or downloading from their Website at <http://www.vov.org.vn/docs1/english/history/international.html>.

## Regional Transmitters

This is where our story becomes complex. There is a handful of HF stations located in various provinces; mainly in the mountainous regions to the west and north of Hanoi, and one in the south, in Gia Lai Province. These HF outlets present interesting DX targets, as frequency and operating stability is not of a high order. Many of them have been in use for many years dating back to the early 1970s. These antiquated facilities carry relays of the National Networks, as well as local and regional

programming. They tend to operate for limited periods of up to two hours, typically in the early mornings (commencing at 2200), at mid-mornings (from 0300), and early evening (from about 1000). As well as Vietnamese, languages heard include Lao, Cantonese, Thai, Khmer, and Korean. Relays of the National Networks from Hanoi are also broadcast over these facilities at various times. They do not appear to be official transmitters operated by TNVN.

Stations monitored recently and known to be on the air are as follows:

**4212:** Lai Chau Province  
**4722:** Gia Lai Province  
**4796:** So'n La Province  
**5595:** Lao Cai Province  
**6347:** Yen Bai Province  
**6382:** Lai Chau Province  
**6451:** Thai Nguyen Province  
**6500:** Cao Bang Province  
**6695:** Lao Cai Province  
**7156:** Ha Giang Province



*A firefight, somewhere Vietnam circa 1970.*

Reports of Vietnamese HF regional stations located in other Provinces emerge from time to time in the hobby press, but often turn out to be drifting transmitters of existing stations, or broadcasters from other parts of Asia. There has never been any "official" information provided by the Vietnamese authorities on these shortwave operations, either pre- or post-reunification. The outlet believed to be in Gia Lai Province was first reported in the early 1980s.

Actual locations of these transmitters are not known, but identification announcements at the start of each broadcast usually give the name of the Province, and often the town or city. Accurate identification can be quite difficult due to the similarity of some words to Western ears. Note that many Provinces take the same name as the main town or city (such as S'On La, Lai Chau, Lao Cai, Ha Giang). An exception to this is Gia Lai Province, whose capital city is Play Ku.

Announcements usually are of the form: "Day la dai phat thanh . . . (station name)."

Operating frequencies of most of these transmitters vary from hour to hour and from day to day, with fluctuations of up to 50 kHz! Some are not on the air each day, and broadcast times are subject to constant change.



*Thirty years ago, this pilot's view and heads-up display on an AC-130E Spectre gunship after takeoff from Ubon, Thailand, for Vietnam.*



It should be noted that not all broadcasts in Vietnamese in the lower frequency bands are from Vietnam. The Yunnan Broadcasting Station, at Nanning, transmits special external transmissions in Vietnamese on **6035** and **5035** at 2200–0130 and 1000–1300, which are often misidentified as from Vietnam. China Radio International broadcasts in Vietnamese six times daily, at various times, using **5260** as a feeder frequency.

## QSLs And The Future

At present, the Voice of Vietnam responds readily to correct DX reports for its external broadcasts, sending a copy of its latest external service schedule with the QSL. QSLs from the Regional stations are extremely scarce. Reception reports would need competency in spoken and written Vietnamese, and access to specific addresses.

TNVN is continuing with an expansive plan to upgrade the state of radio broadcasting technology across the country. There is improvement to program production and transmission facilities, adoption of computerization and digital technologies, moving towards implementing Digital Audio Broadcasting (DAB) within 10 years.

In 1999, TNVN was concentrating its expansion plans on its program-production facilities. The broadcaster signed a contract with Studer to supply and install a complete radio broadcasting system for the new TNVN Broadcasting House. The new eight-story facility is located next to the existing broadcast center in Hanoi. When complete, the new Broadcasting House will be fully DAB-ready.

Studer will install more than 200 workstations including 70 audio workstations running Dalet broadcasting software and 120 news terminals running Dalet TeamNews software. It will also be fitted with more than ten broadcast consoles and a complex MAD1 channel matrix TDM routing system. The router network will provide a fiber-optic interface between the new and existing systems.

The new systems will enable TNVN reporters to create more programming as well as better quality programs. The digitization of the Broadcasting House is part of a plan to make TNVN fully digital by 2010. The broadcaster plans to initiate a DAB pilot project this year.

This is not the first step TNVN has taken towards employing digital working methods. Already, the broadcaster produces a

daily Web-based on-demand news service at <http://www.vov.org.vn/> with updates in Vietnamese and English.

Currently, TNVN radio broadcasts reach 87% of the population, and 69% of the area. Its official transmission network is reported as consisting of 19 MF, 11 HF, and eight VHF transmitters. Program-ming is fed to the transmitters via a variety of methods, including cable, microwave, relay stations, and repeaters.

I spoke with the Director of the Voice of Vietnam, who told me that there is a continuous review being undertaken of the cost effectiveness of the various leased relays currently in use from facilities in Canada and Russia. New relays may be introduced, and some deleted, particularly for augmenting coverage into the Americas and Europe. The Internet is regarded as a prime means of distribution of information and entertainment to the global community outside of Vietnam, and is being strongly developed. No immediate plans exist for upgrading or extending HF broadcasting facilities within Vietnam itself for external services.

***“The Vietnamese government through TNVN is strongly committed to modernizing its national radio broadcasting infrastructure, and its technological development plans are to be commended.”***

## Modernization

The Vietnamese government through TNVN is strongly committed to modernizing its national radio broadcasting infrastructure, and its technological development plans are to be commended. Australia is providing assistance, financial aid, and support in technology training, particularly for transmission planning/installation and service operations, and state-of-the-art studio equipment is being progressively acquired and commissioned. Terrestrial external broadcasting may not be as extensive or visible as that of other Asian countries, but positive efforts are being made to develop and maintain a reasonable, strategic, and modest presence globally through the mix of leased HF relays, Internet-delivered programming, and direct MF and HF transmissions. ■



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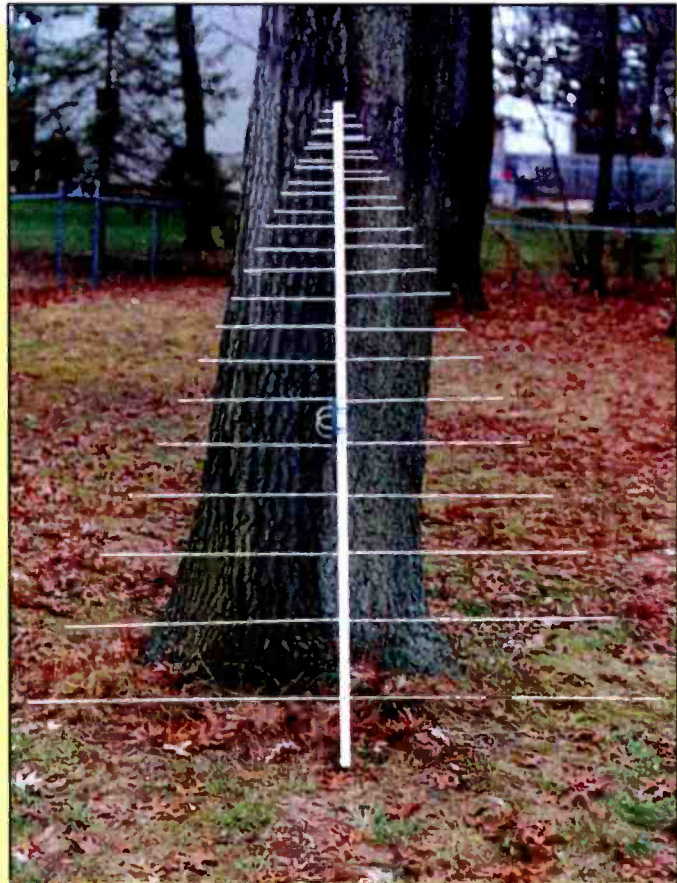
## The KMA Rover And The KMA 4113 Log Periodic VHF/UHF Antennas

**A**re you an active ham or scanner enthusiast? Both share a common need of being able to monitor the airwaves with a minimum investment in antenna hardware. U.S. amateurs have six band assignments between 40 and 1300 MHz. This range also includes the frequencies used by commercial and military aircraft, Public Service Bands, FM broadcasters, and high/low band VHF and UHF television stations. Now, imagine having to buy an antenna and coax for each of those six ham bands or commercial frequencies, and the added strain on your rotor and tower or mast! And besides, being a member of the aging Baby Boomer generation I find I have fewer and fewer friends who are still willing or able to climb towers with each passing year! I'm planning a new 60-foot Rohn fold-over tower so I single-handedly maintain my antenna system, but one tower can only safely handle so many antennas. What is needed is a few antennas to do the work of many.

A friend, Rick Littlefield, K1BQT, offered a solution to my dilemma: why not use log periodic antennas? Log periodic antennas have been around for years, but military and commercial users who need ultra-wide bandwidth antennas with gain have mostly used them. Most roof-mounted TV antennas are a form of log periodic antenna. Rick suggested I contact Ed Griffin at KMA Antennas who manufactures an extensive line of log periodic antennas. I was pleased to learn that only two KMA antennas would provide me with almost continuous coverage from 13 to 1300 MHz! More on this later. Rick just happened to have an unassembled KMA antenna stored under his shed, and he was willing to donate it to the cause.

### Meet The Rover!

Rick's contribution to my "retirement" antenna farm was the small KMA Rover antenna. Why is it called a Rover? Well, with its 6-foot boom, it aptly meets the



*The author's Rover antenna is shown resting against a tree after assembly.*

need for a small, easily-transported antenna for "Roving" VHF/UHF mobile stations that operate from rare grid squares during contests! The Rover covers from 90 to 1300 MHz and spans five amateur VHF/UHF bands. I've been told that some hams monitor the FM Broadcast Band to check propagation.

### Assembly Notes

Building the Rover was a snap, but like anything you need to read the directions and understand them before starting assembly. A good quality Phillips head

#### Rover Specifications

Frequency Range	90 to 1300 MHz
Free Space Gain, Av.	7.4 dBi
F/B Ratio	25 dB typical
Weight	6 pounds
Boom Length	72 inches
Longest Element	67.5 inches
Turning Radius	45 inches
Wind Area	2 square feet
Survival Options	152 MPH winds vertical and rear mounts

BY PETER BERTINI, K1ZJH





*The coax is fed to two stainless steel sheet metal screws at the end of each boom.*

### KMA 4113 Specifications

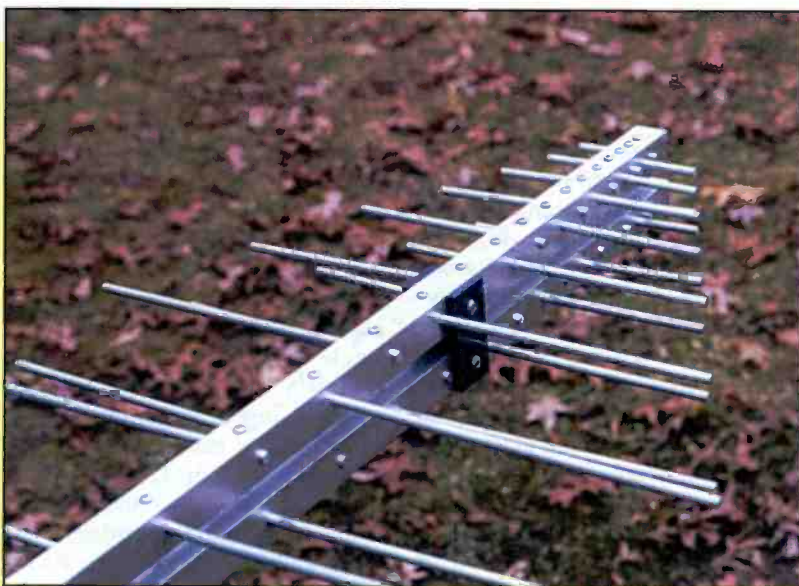
Frequency Range	41 to 1300 MHz
Free Space Gain	7.0 dBi
F/B Ratio	25 dB typical
Weight	13 pounds
Boom Length	12 feet
Longest Element	145 inches
Turning Radius	8.2 feet
Wind Area	3.5 square feet
Survival	105 MPH winds
Options	vertical mount

screwdriver is the only tool needed to build the antenna. The elements slide into pre-drilled holes in the booms, and are attached using stainless-steel sheet-metal screws that pass through pre-drilled pilot holes in the booms and elements. Some care is needed here; the sheet-metal screws self-thread the elements as a tap would. While tightening the screws you should stop frequently and back off a quarter turn or so. Otherwise, it's easy to break off a screw head if you aren't careful. One other caveat: over-tightening the element-to-boom screws risks bending

the elements! If this happens, simply turn the element 180-degrees and start the screw from the other side.

The antenna booms and elements are made from aircraft-grade 6061 aluminum. All of the other hardware, including the all-important mast U-bolts, are stainless steel. While some competitors use a single boom with individually insulated elements, all of the KMA log periodic antennas use dual booms made from square aluminum stock and directly-mounted elements, resulting in a substantially stronger boom design that will

last a lifetime! Boom-to-element insulators can break, and their insulation properties can be adversely affected by pollutants and age. The Rover uses 24 elements made from solid 1/4" aluminum tubing. PVC material is used for the boom-to-mast insulator and also for the boom spacers. The Rover is normally supplied with a boom-to-mast mounting plate for horizontal polarization, which is suitable for amateur SSB and CW modes, and also TV and FM reception. For amateur FM modes, or scanning, the antenna should be vertically polarized—this can be done using an optional mount is available from KMA Antennas. You'll also need an insulated mast; either schedule 40 PVC pipe or a fiberglass mast (carried by many Amateur antenna suppliers) will do. Retired athletic pole-vaults can be cut down for insulated mast material, and since these have a limited usable life span, you might get one for the asking from the sports department of your local school or



*Solid rod elements are used on the KMA Rover antenna. The two sets of boom spacers are shouldered blocks of PVC and firmly secure the booms from twisting. The forward set is shown here.*



*The antenna's substantial mast-to-boom insulator is also made from PVC. All hardware is stainless steel.*

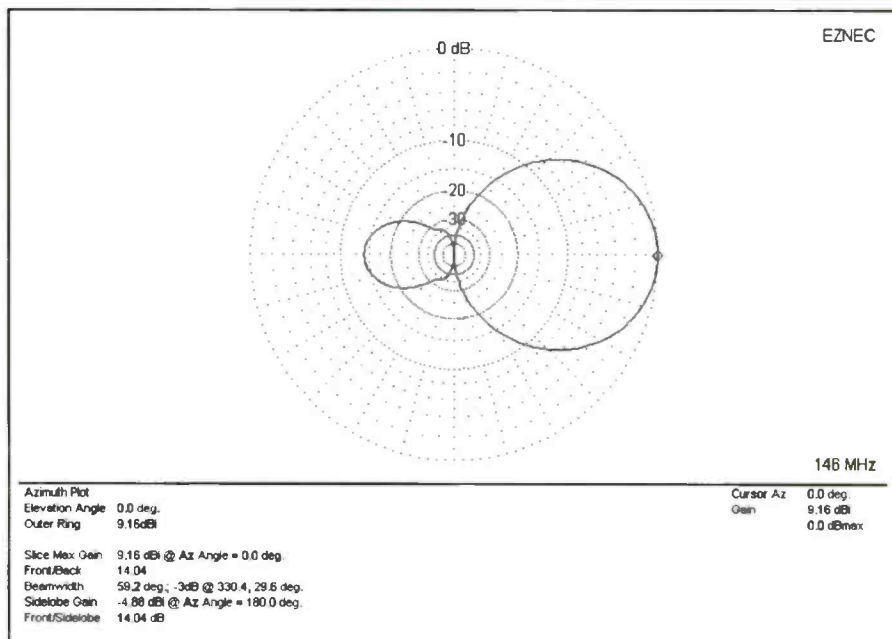


college. It's also possible to rear-mount the Rover with the boom ends affixed directly to the metal mast. This results in a mechanically unbalanced antenna, but fortunately the Rover is fairly light and this arrangement does make running the coax down the mast much easier. I suggest contacting KMA Antennas to discuss vertical polarization mount options.

Connecting the coax to the drive point at the front of the antenna can also be tricky. No connector is used. The coax is routed from the mast along the lower boom to the front of the antenna — here the braid and center conductor are separated into pigtailed and connected to the upper and lower booms using wire lugs and stainless hardware. The problem is getting a good seal so water cannot wick into the coax allowing the braid to corrode, which would cause high signal losses. Here is what I do. After forming the braid pigtail and center conductor pigtail, I bare an addition few inches of coax by removing the outer jacket from the coax further exposing the braid. Then, Scotch-Kote™ is liberally applied over the exposed braid and allowed to wick and fully saturate the braid. When dry, tape over the exposed braid, apply more Scotch-Kote™, followed by a final layer of tape. Tape the exposed portion of the center conductor insulator to prevent UV degradation. Ed Griffin's favorite method for sealing is dipping the exposed portions of the coax in Plasti-Coat™. This product is sold at home centers for coating the handles of screwdrivers and pliers.

## Meet The KMA 4113

What do you get if you add six more feet of boom along with six more elements to a Rover? The answer is the KMA 4113, a 12-foot boom log periodic antenna that covers from 41 to 1300 MHz! After playing with the smaller Rover for several weeks, I was so impressed I decided to upgrade and ordered a KMA 4113. Besides the Low VHF channels and some added Public Service Band coverage, this antenna also includes six meter coverage — one of my favorite ham bands. That's a grand total of six amateur bands covered by one antenna! The six added elements are a tad longer than the longest one used on the Rover, and use a combination of solid 1/4" aluminum tubing telescoped with 3/8" tubing to form a strong tapered element. I can't imagine these antennas becoming damaged unless your tower or mast falls over or a tree lands on them.



The azimuth plot for the Rover log periodic antenna.

My plan is to eventually use the KMA 4113 for my primary VHF/UHF antenna, giving me SSB and CW coverage on six ham bands, and also full-coverage TV and FM reception while I am not operating! The Rover will be vertically polarized at the top of the tower mast, where it will be used for FM repeater or packet work, while also doing double-duty as my scanner monitoring antenna. I'm also thinking about adding the KMA 1330 antenna for my 13 to 30 MHz ham needs; that single HF antenna covers an additional five amateur bands.

## How Well Do They Work?

A good single-band antenna will beat any log periodic antenna — if only boom length versus gain is used for a comparison. But, a single-band antenna can only maintain its SWR bandwidth, front-to-back ratio and gain over a very limited frequency range. The log periodic delivers a more modest, but constant gain, along with good SWR and front-to-back performance, over its entire operating range. It's almost like having an infinite number of single-band beams at your disposal! Log periodic antennas are also very efficient; they don't use lossy traps or loading coils. This means more of your transmit power is radiated instead of being wasted as heat. Over their frequency ranges, both the Rover and KMA 4113 have an average front-to-back ratio of typically 25dB; the F/B ratio improves as the frequency increases. The SWR for

***"I can't imagine these antennas becoming damaged unless your tower or mast falls over or a tree lands on them."***

either antenna is under 1.5:1 across their design range. If your operating style leans toward casual ragchewing or light contesting either of these two antennas will be ideal for your VHF or UHF needs.

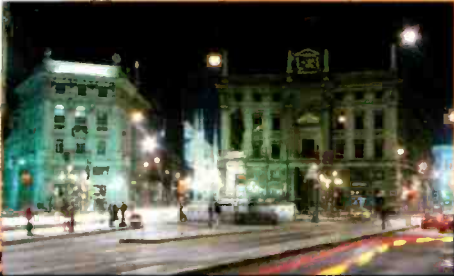
KMA also offers log periodic antennas that combine HF with VHF/UHF coverage. For example, the KMA 26500 covers from 26 to 500 MHz, while the KMA 2613 covers from 26 to 1300 MHz. Both antennas feature 12-foot booms. For HF operators, their model KMA 1330 antenna spans from 13 to 30 MHz.

KMA Antennas will also do custom antenna work on request — call them for a quote. KMA Antennas makes excellent single-band six-meter ham antennas. The complete KMA Antennas product line, with pricing information and antenna specifications, can be seen at <http://www.kmaantennas.com>. KMA Antennas are sold factory direct, so there are no middleman profits to inflate prices. The KMA Rover sells for \$225, and the KMA 4113 is \$255. You can write to KMA Antennas at P.O. Box 451, New London, NC 28127. You can reach them by telephone at 704-463-5820 most evenings. Ed's E-mail address is [W4KMA@QSL.Net](mailto:W4KMA@QSL.Net). ■



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# THE RADIO CONNECTION

A Look Behind The Dials

## One-IC Radio Project, And Old Radio Found!

This month we'll dip into the "Radio Connection" mail-bag and tackle a few readers' letters that have been awaiting replies. Thanks to everyone who has taken the time to write or E-mail us. I'm behind on answering my mail, so my apologies to anyone I may have missed.

Last December I mentioned building a one-IC receiver using the MK484 IC. This chip resembles a small three-lead plastic transistor, and replaces the discontinued ZN414 TRF (Tuned Radio Frequency) radio IC made by Ferranti. Ferranti packed 10 transistors into the tiny ZN414 package, and the device needed only a small 1-1/2 battery for power. Even a small button-sized watch battery would run the chip for many hours. In fact, the chip was often used in watchcase-sized novelty radios; a modern marketing to the novelty "no batteries needed, lifetime radio" crystal sets sold in the back of magazines during the '50s. The simple circuit only requires a tuning capacitor and coil, and one or two resistors to produce a working radio. The upper frequency limit for the ZN414 and the MK484 are both around 2 MHz, making them best suited for BCB use.

I asked if any readers would be interested in buying a few of the MK484 ICs, based on a upcoming project for the column, and providing I could secure an ample amount of the devices from Hong Kong. At first no one answered, but in the past few weeks I've been overwhelmed with requests for the ICs. Some folks are trying to place orders and a few you are clamoring for as many as four or five of the chips! Here's the scoop. The supplier is in Hong Kong, and I will be contacting him long before this *Popular Communications* hits the newsstands. I have a list of those who have already expressed an interest in buying a few of the ICs. I will contact those individuals with pricing and shipping information when the shipment arrives. I'm going to push the project up to mid-Spring as a "Radio Connection" project; or we might even consider doing it as a special project for the magazine outside of this column. I'll be posting more details as, and if, everything comes together.

### Old Radio Found!

Reader Larry Shaunce, WD0AKX from Albert Lea, MN, asked some questions about a newly-acquired vintage radio in a recent E-mail: "Hi Peter, first of all I'd like to say I read and enjoy every "Radio Connection" that you do! I am 37 years old and have been interested in radio since the age of seven. I received my ham license in 1977. I have never really been interested in old radios until the bug bit about a year ago. Over the past year I have been reading everything I can about the history of radio and about the evolution of radio through the years. I've been collecting any radio older than 30 or 40 years old that I can get my hands on without laying out too much cash. I have been given many radios from the '50s and '60s from friends and relatives that know I am interested.



Here's Larry Shaunce's Lansing model M three-dialer TRF set from 1925.

I recently attended a swap meet at the Old Threshers Steam Show in Mount Pleasant, Iowa, and happen to come across a few old radios that looked like they were from the '20s or '30s. I saw one in very good shape and just had to have it — it would be the oldest radio that I would own to date! I probably paid too much for it — about \$60 — but I decided to go for it because of the nice condition. I was a three dial TRF set, but missing the tubes. I know that 01A tubes are available, so I wasn't too worried.

Since I brought it home I have done some research on it. It is a Lansing model M, serial #247, made or distributed from Lansing, Michigan. The name of the company on the radio was the United Machine Company. Taking a long shot, I E-mailed the Lansing Chamber of Commerce asking about the company. As luck would have it, they put me in contact with someone in town who was a former president of a local antique radio club. He knew about my radio, and was able to tell me that the set, like many others, was actually made by a larger company and sold under another company's name. I also learned that my set was most likely made in either 1925 or 1926, and that the United Machine Company most likely went out of business during the Great Depression.

I have a question about the 01A tubes used in this set. Should I buy them new or used for this radio? I was told that the 01A tubes don't really last that long, and used ones should be avoided. I really don't know if this is true or not. Keep up the good work. Your column is the first one I read each month!"

Well, Larry, first things first. I did a quick search of my library, and couldn't find anything relating to the United Machine Company. The definitive resource for this sort of information would be the three volumes comprising Alan Douglas's *Radio Manufacturers of the 1920s*. The volumes sell for between \$24.95 to \$29.95 for the soft-cover editions. Our advertisers,

BY PETER J. BERTINI <RadioConnection@juno.com>



Antique Radio Classifieds and Antique Electronics Supply, have these volumes on hand.

I'd really like to do a few columns on restoring an early three-dialer TRF set for a future column. These sets typically used five or six tubes with three tuned stages of RF amplification, a tube detector, and a single or two stage audio amplifier. Each RF amplifier stage was individually tuned, and each of the three large tuning dials had to be exactly tuned to the correct setting to receive a signal. The dials were plainly marked with a simple 0-100 logging scale that didn't directly relate to the operating frequency or wavelength. Once the correct settings were found for

taken to the unfortunate habit of removing and hoarding good tubes from these sets, and selling the radios with dud display tubes or without tubes. The justification being that many of these sets were originally sold without tubes by the manufacturers. Here's the problem you'll face when buying O1A tubes on the open market. New O1A tubes will be very expensive, especially if you insist on the globe or teardrop shaped versions. The newer O1A tubes were made in a shouldered ST version, and sell for considerably less. You will find that collectors often sell tubes to fellow collectors for decent prices — a good price gauge is to look in a recent issue of Antique Radio Classifieds and



The silvery inside of these two type 30 tubes, shown in this photo of our Boy's First Receiver project, resulted from the getters being fired after the vacuum was applied during the tubes' manufacture. This action burned off any residual gases remaining inside the tubes.

a particular station, a wise operator would log the dial positions for future reference. Since the dials were fairly large, the dials were the most prominent feature of these sets and hence the nickname three dialer has stuck with them for many years. It would be hard to guess how many commercial and scratch-build or homebrew three-dialers were made in the mid '20s, but the number of sets must have been staggering! Typically, these early TRF radios used the same tubes throughout, normally O1As, but some sets used a O1A for the detector, and perhaps slightly beefier audio output tube.

Because these sets are so common the value of the tubes often exceeds the value of the actual radio! Many collectors have

check what prices are being offered by tube vendors for new or used O1A tubes in their want ads. You should expect to pay about the same price, or a tad more, from a private party. O1A tubes can be rejuvenated several times. This is done by raising the filament voltage to a very high level to drive fresh electrons to the filament surface, and then slowly bringing the filament voltage back down to the tube's five volt rating. This process can increase the emission of a very weak tube to very good condition, providing the filament isn't destroyed in the process. You really don't know how many times a used tube has been rejuvenated before coming into your possession.

On the practical side, most collectors

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display their battery sets with good looking dud display tubes, and keep several very good condition battery set tubes in reserve for those occasions when they wish to play or demonstrate one of the radios. Another trick you might consider is rebasing a 1H4 or 1G4 tube from the original octal base to a four-pin tube base and using them in your radio with a lower filament voltage supply. Or, use four-pin type 30 tubes. These tubes draw much less filament current compared to the 250 mA (1/4 amp) drawn by the 01A five volt filament, so the filament rheostats will have little control. If your tube tester has a four pin socket, but no setup test procedures for the 01A, use the settings for a type 30, which is based the same, and increase the filament setting to five volts. If your tester doesn't have a four-pin socket, but does have an octal, you can make a test adapter using a four-pin socket and the octal base from a dud tube. Wire jumpers from the octal plug to the four-pin socket as follows:

Octal Base	Four-Pin Socket
pin 2	pin 1
pin 3	pin 2
pin 5	pin 3
pin 7	pin 4

This will allow you to test your 01A tubes using the settings for a 1H4 or 1G4. But remember that you'll also need to set the tester filament switch to five volts. The ultimate cheat is to use dud tubes with solid state vacuum tube repair wafers. These tiny devices are slid over the tube pins before the tubes are inserted into the radio sockets. These use FET transistors, which closely match the tube impedance, although the manufacturer notes that performance may vary from set to set. One advantage is that the set may work well using a lower B plus operating voltage. And, unless you wish to light the filaments for effect, no A supply is otherwise needed. The tubes should be duds with open filaments or low emission, and of course, no internal shorts between the elements. For further information on the wafers, contact PTI, 7925 Mabelvale Cutoff, Mabelvale, Arizona 72103. Telephone 501-568-1995. Pricing is around \$10 per wafer, a very reasonable price!

### Collectors Helping Collectors

Many collectors find a unique solution to an existing problem, like the PTI

wafers we just talked about. There are quite a few entrepreneurs with small homespun businesses providing products or services to meet our restoration needs. For example a few years ago, in our July 1997 column to be exact, I did a feature on the plastic dial scale covers produced by Rita Hutchings using vacuum molding equipment that she designed and built herself! I was saddened to hear that Rita has recently given up her dial scale business because of health problems. I mentioned this a few months back: take advantage of these mom-and-pop restoration services when you need them. If you procrastinate you may find they are gone before you take action.

Antique Radio Classified is a great place to find out about what sort of restoration services and products are being offered. I'd like to suggest one other. I recently had the pleasure of hearing from Bill Turner. Bill, along with Mike Tobin from RockSeaEnterprises (the fellow who made the replacement dial for Ronnie Miller's Philco), publish a Pocket Resource Guide for Antique Radio & Phonograph. The guide is available without charge if you send Bill an SASE to handle the return postage costs. Don't let the small size fool you. The index lists services ranging from replacement cabinet parts for wood Philco cabinets to phono cartridge rebuilding. If you need it, Bill and Mike probably have listed a resource to solve your problem.

Bill also included a second flyer listing the services and products he personally offers. From manual reprints, to loop antennas, and phosphor bronze or regular dial cables, Bill offers a rather eclectic range of services and products, including plastic dial covers for any make, size, or model set you may have, for a modest \$14 each. That price includes shipping. To get your Pocket Resource Guide and Bill's product sheet, send a business-sized SASE to William Turner, 1117 Pike Street, Saint Charles, MO 63301. Call 636-949-2210, or E-mail Bill at dialcover@webtv.net. It was the best 33 cents I spent this year.

### Dial String Woes

Here's a request for help from Dan Towne dating back to November 5, 1999. I couldn't find an answer, so I am going to my readers for help on this one.

"Dear Peter, I need help. I recently received a Motorola model 10T28B AM and FM radio from a friend. It was in good

shape, except for some nice damage. It still works very well, but the string that moves the tuning wheel has rotted off completely. I don't know how it is supposed to be strung. Can you give me any help, or maybe one of the readers has a service manual for this model and can give me the diagram? HELP! Thanks for your time . . ."

Well, I feel like a jerk for not getting this into print sooner, but the inbox is overflowing at this point. Dan, there are guides for dial cords, and unfortunately I don't have any in my library. Radio Era Archives, 2043 Empire Central, Dallas, Texas 75235, telephone 214 358-5195 has an ad in the latest ARC for a CD of the Sams DialCord series for \$49. Of course, there is no guarantee your set is on this particular CD. You can get replacement dial cord from Antique Electronic Supply, or from Bill Turner, whose contact info is mentioned above. Be sure you use the same diameter dial cord. It does come in two or three different diameters and size matters!

Can anyone help Dan?

### Getters, Urban Legends, And Tube Lore

Harold passed along a letter written by John Caruso, W2JAC. John posed the following questions: "Dear Editor, A couple of stories are circulating among my friends concerning the getter used inside vacuum tubes. My own knowledge on the subject says that the getter material is flashed in the tube after the vacuum is formed in order to eliminate any air molecules still remaining in the tube. Also, once flashed, the tube shows a silvered area on the inside of glass. Thereafter, the getter silver flash serves no useful use. Getter flash is a onetime thing, and if the flashing does not appear silver but the tube tests show perfectly valid results, it is a good tube to use.

"Some stories say: 1. The silver flashing will continue to capture residual air during tube use. 2. The tube is no good for use if the silver is cloudy or not there, even if it checks okay on a tube tester. 3. The silver flashing will repel stray electrons during operation. 4. If the silver flashing is cloudy, tube life will be very, very, low.

"I have many tubes without shining silver flashing in my amps, preamps, and power supplies that have been operating over 30 years. This makes me feel that items 1 through 4 are hogwash. Please

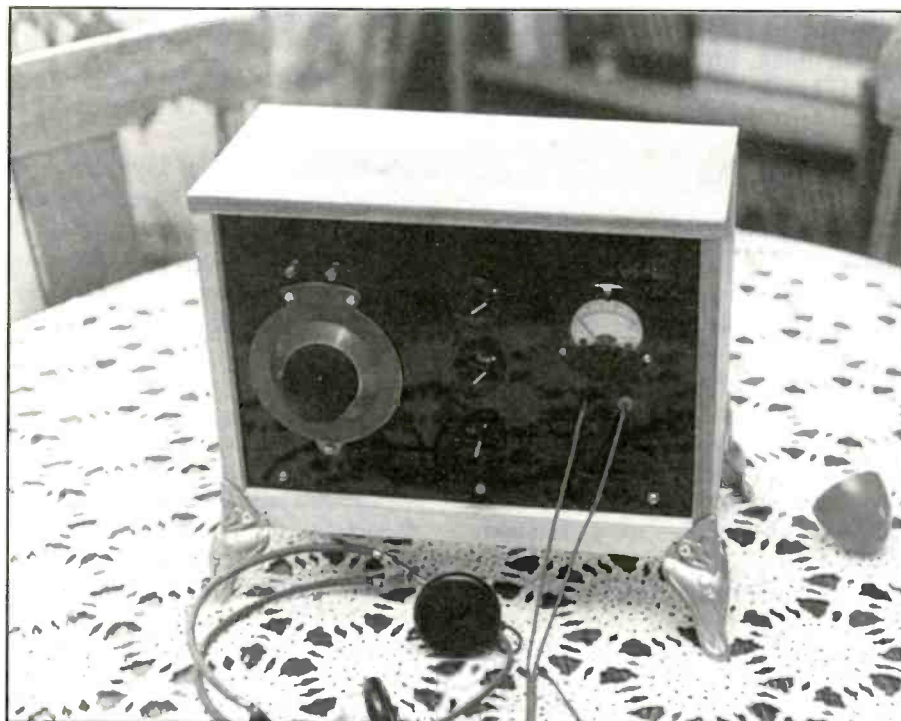


comment on the situation and help me prevent a war among friends. Your magazine is read as soon as the mail comes in. How about more articles on filament turn-on time delays to safeguard tubes? Regards. John Caruso."

John, like you, I have my own preconceived notions regarding the questions you posed. I suspect most of the assumptions are not totally correct; but I can not speak in an authoritative manner on this subject, so I will research it, and see what information I can find for you. I'll post what I learn in the next column.

## Jon's Lyonodyne

Here's another Lyonodyne project photo from a reader, which was also accompanied by this nice letter: "Hello, I thought I might share a photo and some input on my version of the Lyonodyne Crystal Radio project you had featured in the spring issues of *Popular Communications*. As you can see, my goal was to attain the appearance of an early 1920s tube radio. The front panel is made of black Lucite™ obtained from Antique Electronic Supply of Tempe, Arizona. It very closely resembles the Bakelite used on radios of the period. The main tuning dial is a National Velvet Vernier Dial. I also managed to find a vintage panel meter to carry the total overall appearance out.



Reader Jon Oldenburg's rendition of the Lyonodyne Crystal Set project. The black Lucite front panel and antique cast-iron legs lend a vintage feel to the radio.

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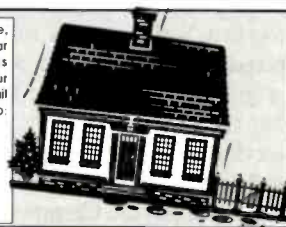
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"Construction was fairly straight forward, and winding the basket coil was interesting. I have yet to install the wave trap circuit. In preparation, I have sketched up a dial cord drive to move it in relation to the basket wound coil. The tunable wavetrap will add two more

knobs. These will be placed immediately below the headphone jacks. The cabinet is made of solid 3/8" poplar, and it features a set of antique cast iron legs picked up a flea market some years back.

"Performance-wise the radio plays surprisingly well. Local stations here come in strong—registering 30 to 35 uA on the S-meter—using the 96-foot long-wire antenna that I normally use for shortwave listening. When band conditions permit, Milwaukee and Chicago stations are also received. I took the set along with me to my vacation home in Townsend, Wisconsin, about 200 miles due north of Appleton, where I have a 175-foot long-wire up. I was able to receive some pretty good DX, including a French language station out of Montreal, Quebec. Thanks for the great project; and I'm looking forwards to your future project articles." Jon Oldenburg, KB9VFD.

Jon, thanks for the information on the black Lucite available from Antique Electronic Supply. That's a great tip, and your front panel looks as fine as any vintage radio I've seen! I'll be running some more Lyonodyne photos in future columns. One fellow has constructed a fairly elaborate dial drive system using dial cord, wooden pulleys, with the mechanisms and dial scales hidden behind the front panel. It's quite a setup, and I think you will get a kick out of it. Thanks for taking the time to share your set, and experiences, with us!



# THE HAM COLUMN

Getting Started As A Radio Amateur

## Speech Processing For Every Occasion

The FCC's recent restructuring of amateur radio license classes and operating privileges changed the very face of our hobby. By shelving the Morse code speed requirement for all higher-class licenses at 5 WPM, the Commission is "telegraphing" the fact that yesteryear's emphasis on the simplest form of radio communication is now a thing of the past. (And if 5 WPM is still too fast, wait a year or two and it's quite possible that a Morse code ham radio requirement will be eliminated entirely, but that's another story.) A few exotic modes aside, what remains are keyboard-to-keyboard modes and SSB. Good, bad or otherwise, the Commission's decision has definitely opened up dramatic new opportunities for beginners to make DX and stateside QSOs on phone. It's also created a need for beginning operators to know standard voice operating procedures — and adhere to them.

On phone, in addition to using standard QSO procedures such as the customary practice of telling the other operator how you're receiving him (RS or RST), where you're located (QTH), and what your name is, to make sure amateur radio voice communications are as understandable and as universal as possible (for hams from around the world), we use the international phonetic alphabet. Standardization is the key! Properly used, phonetics can go a long way towards smoother voice operation and can definitely improve your success rate when trying to break pileups and work overseas ops. This month's column focuses on the do's and don'ts of ham radio phonetics.

### The Phonetic Alphabet

The phonetic alphabet is an extremely useful convention, and over the years, several alphabets have come and gone. Many radio services use their own variants. Remember the TV show *Adam-12*? Remember officers Reed and Malloy calling in the license plate numbers of

suspected felons and scofflaws? "Lincoln, X-ray, Ida . . . ?" Phonetics at your service!

Today, most countries of the world are members of the International Telecommunication Union, or ITU. The ITU has its own phonetic alphabet, which all amateurs should know and are encouraged to use. Nobody says you have to use it, however, and you'll hear a lot of variation. Many hams devise "cute" personal phonetics specifically for their call signs. SSB operators often vary from approved ITU phonetics on occasion, especially in pileups, when many stations are calling a rare DXCC country.

"Germany" and "Kilowatt" are popular substitutes for Golf and Kilo, respectively. Being longer and stronger words, they're more likely to be heard under tough conditions. And, for example, in the push and shove of a pileup, just the "watt" might get through, and the DX station might come back. "Ending in Kilowatt, go ahead." Some hams think other phonetics sound better in the wacky world of sideband. They may be right.

So why use ITU phonetics? Language, for one thing. Although English is the world's universal language, your "cutie" phonetics — the ones you use when you talk to your radio buddies on the local repeater — may not be so catchy to a foreign ear. But even spoken with a foreign accent, "Uniform," "Whiskey," "Victor" and so on are easily recognizable.

Standardization is another reason, as is speed. Much like learning code, when you hear someone spell his name as "Juliett Oscar Hotel November," you won't simply hear the words, your brain will instantly register them as J-O-H-N, with no middle step. Without standard phonetics, you couldn't do that. Stick with ITU phonetics — most everybody else does!

Nobody wants to be welded to the rules just for trivial reasons, but useful conventions are something else. We need them for smooth operation and to better our chances of being understood. And there may well be a time in your amateur

### ITU Phonetics

A	Alfa ( <b>AL FAH</b> )
B	Bravo ( <b>BRAH VOH</b> )
C	Charlie ( <b>CHAR LEE</b> )
D	Delta ( <b>DELL TAH</b> )
E	Echo ( <b>ECK OH</b> )
F	Foxtrot ( <b>FOKS TROT</b> )
G	Golf ( <b>GOLF</b> )
H	Hotel ( <b>HOH TELL</b> )
I	India ( <b>IN DEE AH</b> )
J	Juliett ( <b>JEW LEE ETT</b> )
K	Kilo ( <b>KEY LOH</b> )
L	Lima ( <b>LEE MAH</b> )
M	Mike ( <b>MIKE</b> )
N	November ( <b>NO VEM BER</b> )
O	Oscar ( <b>OSS CAH</b> )
P	Papa ( <b>PAH PAH</b> )
Q	Quebec ( <b>KEH BECK</b> )
R	Romeo ( <b>ROW ME OH</b> )
S	Sierra ( <b>SEE AIR RAH</b> )
T	Tango ( <b>TANG GO</b> )
U	Uniform ( <b>YOU NEE FORM</b> )
V	Victor ( <b>VIK TAH</b> )
W	Whiskey ( <b>WISS KEY</b> )
X	X-RAY ( <b>ECKS RAY</b> )
Y	Yankee ( <b>YANG KEY</b> )
Z	Zulu ( <b>ZOO LOO</b> )

Note: The syllables highlighted in bold are emphasized. These pronunciations were designed for those who speak all international languages. The pronunciations given for Oscar and Victor may seem awkward for English speakers from the U.S.

radio career when you'll need to be understood without delay. Remember that someone else might be counting on you!

Hopefully, when it's your turn to save a life, you won't be stuck trying to pass emergency traffic by using goofy, non-standard phonetics.

Your suggestions, letters, and QSL cards are always welcome. Write to me at "The Ham Column," 25 Newbridge Rd., Hicksville, NY 11801.

BY KIRK KLEINSCHMIDT, NTØZ



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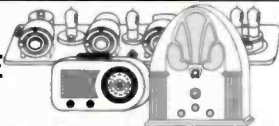


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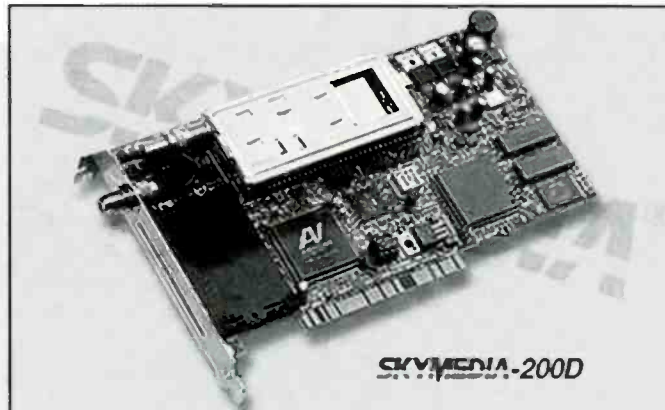
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*This Skymedia 200D DVB-compliant receiver card takes up a PCI slot in your Windows PC. It "receives" Internet data sent from your dish-mounted LNB (just like a mini-dish TV receiver). (Photo courtesy of Denney and Associates)*

If you're an amateur radio operator who lives outside a major metropolitan area (me!), chances are good that you're suffering from "Internet envy." You know the symptoms: One friend has a cable modem while another has DSL, and they both remind you that they can download War and Peace in the time it takes you to load your home page. You suffer with a crappy rural dial-up account that can't even manage a decent 56k connection. Clean country living may add years to your life, but it can definitely prolong Internet agony — until now.

If you're stuck outside the "bandwidth belt" there's a new satellite-based Internet service you should investigate. Nebulink, available from Denney & Associates ([www.nebulink.net](http://www.nebulink.net)), requires at least a telephone modem for your "uplink" connection, but uses a Ku-band satellite link for your "downlink" connection at peak speeds of up to 1.5 Mbits/s. Yes, that's 1.5 million bits per second — T1 peak speed — on the downlink side (Internet to you).

Similar services exist, but they're frustrating to use, overtake your entire PC, or limit your Internet capabilities. I'm presently helping Denney and Associates beta test the Nebulink system, and I can already report that my experience has been nothing short of amazing, and a whole lot better than with Hughes' DirecPC, the market leader in consumer-oriented satellite Internet systems (my DirecPC dish now stares blindly into space).

Although I had the chance to beta test the all-satellite home Internet system soon to be offered by Microsoft, RadioShack, and others, I passed on the ordeal because of the lengthy required contracts (Microsoft's idea?), high initial expense, and the extra delay added by having uplink and downlink signals relayed via satellite before reaching the Internet. Although an all-satellite system doesn't require any telephone connection (perfect for remote and portable/mobile use), the extra 1/3-second uplink delay makes for slow Internet browsing.

Nebulink has unrestricted access plans starting at about \$35 per month, with no contract required. The hardware costs between \$175 and \$275, depending on whether you want to scrounge an old Primestar dish or go with a shiny new one. If cable modems or DSL are miles (or years) away from your house, Nebulink is worth a closer look.



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# SCAN TECH

Trunking, Tips, Techniques, And Mods

## Wide Band Receivers — Scanning Below 30 MHz

Many of the new scanners coming on the market lately feature extended frequency coverage — they're the so-called wide band receivers. Ranging from the pocket sized Alinco DJ-X2 through ICOM's PCR-1000 and AOR's 5000 receivers, these sophisticated radios offer a wide range of radio listening activity. Yet many scanner enthusiasts find them difficult or surprising to use on frequencies they're unaccustomed to, or complain of poor performance.

The first problem that arises is the antenna. Remember that all antennas are frequency sensitive. Yes, some perform better than others over a wider range of frequencies, but all represent some sort of compromise to get there. You can have maximum performance on one frequency or narrow band, or moderate performance across a wide range of frequencies, but not both.

Also remember that the frequency where an antenna operates best is essentially a function of its length. I realize there are some exceptions to this rule achieved with active antennas and elec-

trical characteristics, but for the most part, longer antennas mean lower in frequency according to the formula — Overall Length in feet = 468/Frequency in MHz. Multiply the answer by 12 to get inches if you're dealing with higher frequencies. You might prefer the 1/4 wave formula, substituting 234 instead of 468. That will give you the length of a 1/4-wave segment (each element) of the 1/2 wave dipole (or you can use that amount for a 1/4-wave antenna).

At 155 MHz, the antenna comes out 3.019 feet total. That's 36.2 inches for a half-wave dipole or 18.1 inches for a quarter-wave whip using an external ground. The metal body of a car, or a filing cabinet works very well for this purpose. You can build one of these out of coat hangars if you're interested, or desperate. Wrap that length of wire around a plastic or air core of some sort and put a rubber jacket on it and you have a rubber duck-type antenna that can be put on a handheld conveniently. Even telescoping antennas 18 inches long aren't too unwieldy. Handheld receivers use the

body of the radio as best they can to make up for the missing part of the dipole.

### Different News On SW

However, when we transition to the shortwave bands, things get totally out of hand. At 9 MHz, which is about the center of the common utility bands and many of the broadcast bands, that half-wave dipole is going to be 52 feet long. Even a 1/4 wave will be 26 feet. Put that on top your DJ-X2 or ICOM R2!

The radio manufacturers, of course, realize this and try to compensate on many of the handhelds by adding amplification. The idea is to make the most of any signal that does reach the tiny antenna so that you might hear it. And it works to a certain extent. The AR-8200 from AOR is a fairly decent performer on HF with not much more than a telescoping antenna. Shortwave portables use this same technique to achieve better performance with the smaller antenna, and many of them will actually overload with a larger antenna — they simply can't handle the increased signal.

The advantage the shortwave portables have is that they are designed for, in the grand scheme of things, a fairly narrow band (1.7 to 30 MHz), and so can be optimized for that area. Even performance across this frequency range can vary on some portables. Your wide band receiver has to perform well on the shortwave bands, but equally well on the VHF/UHF where additional amplification can easily cause interference or overload. In fact, it does on some of the portables too. In North America, we're not bothered with particularly high signals on HF, and so an overamplified receiver, wide band or dedicated shortwave portable will work reasonably well. In Europe and other parts of the world where signals are stronger, overload can become a significant problem. It's really a delicate cat and mouse game, and the receiver that works best in your area might not work best for some-



Wideband high performance receivers like this AR-5000 and many others are a wonderful addition to your shack, but don't expect too much from scanning the whole spectrum at once!

BY KEN REISS <armadillo1@aol.com>



one only a few miles away with different reception conditions.

## Scanning?

So what's all this got to do with scanning? Well, the next thing people want to do is make one of those receivers scan. Many readers have written to ask "Why can't I get my receiver to scan the HF Coast Guard frequencies like I can the VHF ones?" Well, assuming you have an HF receiver that scans, the answer is you can, but at reduced performance.

First of all, as you well know if you're familiar with the HF bands at all (and if you're not, you owe it to yourself to spend some time down there — it's a fascinating world) you'll be aware that the noise level can vary significantly in just a few kHz. Yet the whole idea of scanning the HF range is to keep an ear on the various activity that could be taking place at any point in the band.

The Coast Guard is a good example of this. On HF, the Coast Guard has three primary frequencies: 2.182, 5.696, and 8.983. Why? Because at any time, the propagation conditions, and therefore the distance that each of those frequencies will travel, are different. Depending on where in the water the ship or aircraft is that they want to communicate with, and what the conditions are for the evening, you'll find them switching back and forth between frequencies regularly. All of the services operate this way. So to track their activity, you'll either need multiple receivers or a way to scan.

But scanning presents some major problems of its own. What antenna do you use? At 2 MHz, you'll need 234 feet for a dipole! At 8.9 MHz, it's down to a mere 52 feet for optimum performance. The answer here is that you make a compromise. Pick something in the middle, or possibly use an antenna with slightly wider band performance on HF and live with what you can get. It won't be ideal for DX, but we shouldn't be scanning for DX anyway.

Some of the higher end units at least feature two antenna inputs — one for the higher frequencies and one for lower. The AOR AR-5000 offers an optional multi-antenna switch so your antennas can be selected based on frequency ranges. This is a nice feature, and will help enhance performance trying to scan a wide range of frequencies, but doesn't completely address the mode/squelch problems. This option does solve the multi-antenna problem, but if you're trying to use a handheld

or other receiver with only one antenna input, it's almost impossible to get good performance everywhere.

Of course if signals are strong enough, you'll get acceptable performance from many compromise antenna designs. Wideband discones and active antennas are commonplace.

Setting the squelch so you can scan also presents major problems. With that noise level changing as you hop from frequency to frequency, setting the squelch at a high enough level to stop the noise on the noisiest frequency means you'll be miss-

ing weak signals on other channels. And weak signals may be all that's there!

If you're only interested in the stronger signals, scanning with a high squelch setting might be OK. As a case in point, I sometimes like to scan the air frequencies for NY radio. They are either there at about S9, or not. There's not much middle ground. Once I find active frequencies for the evening, I can stop scanning and turn the squelch down or off to hear some of the aircraft talking back.

Better receivers have several methods of scanning to help compensate for this.

## Accessorize Your Portable!

Whatever your interest in hobby radio, **PRYME Radio Products** has an accessory item for you! We manufacture a full line of aftermarket products for all types of portable radios, from microminiature Family Radios, to scanning receivers, to amateur or commercial handheld radios. Our accessories are reliable, innovative, and affordably priced. We provide accessories for all major brands of radio including Motorola, Kenwood, Icom, Vertex, Uniden, and many, many more!

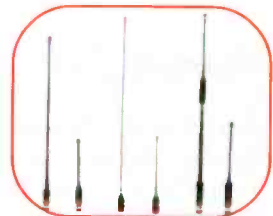
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Our innovative audio products have made us famous. From the comfort of our SPM-400 mini-boom microphone to the low-profile of our EH-1 "invisible" ear phone and SPM-700 surveillance mic, we have the right accessory for the job!



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### Table 1 — Try These HF Frequencies

Here's a very short list of HF utility frequencies to get you started. There are many excellent references, not to mention Joe Cooper's "Utility Radio Review" right here in *Pop'Comm!*

#### Military

11.175 — Global HF system (mostly Air Force). Primary day.

8.992 — Global HF system primary night.

#### Coast Guard

5.696 — Coast Guard rescue.

8.983 — Coast Guard rescue.

#### Aviation

5.520 — NY Radio — Overseas Flights

5.598 — NY Radio — Overseas Flights

6.586 — NY Radio — Overseas Flights

6.628 — NY Radio — Overseas Flights

8.906 — NY Radio — Overseas Flights

#### Weather

4.426 — Automated weather reporting

6.501 — Automated weather reporting

8.764 — Automated weather reporting

Many include a "time scan" mode that simply steps the receiver through each of the memory channels being scanned for a specific time interval, whether there's activity or not. While not the ideal situa-

tion for what we normally think of as scanning, this method can help to identify active frequencies, and can be done with the squelch off so that that weak signals are not lost. It's probably not some-

thing you'd want to do for long, as the constantly changing background noise, and conversations cut off in the middle will drive you bonkers! Hmmm, I wonder if Harold scans HF?

Of course, the situation is made worse if you are trying to add VHF/UHF activity into the scanning mix. Here, in the FM mode, squelch behaves a bit differently, and must be set accordingly. Switching back and forth with such a wide frequency and mode setting may simply not be workable on your receiver. Many receivers also have internal relays that must switch as the receiver crosses certain frequencies. This clickity-clack can sometimes annoy users while the receiver looks for activity.

### Give It A Try!

So if you have a receiver that *will* scan HF, give it a try. Find a few frequencies that you're interested in, and see what you can hear. See **Table 1** for a list of a few, but by no means all, utility frequencies from a couple of categories. Also, don't forget to check Joe Cooper's utility column right here in *Pop'Comm!* Pick a few that sound interesting and see what happens. If you've never spent much time on

# GET ON THE *MT EXPRESS*

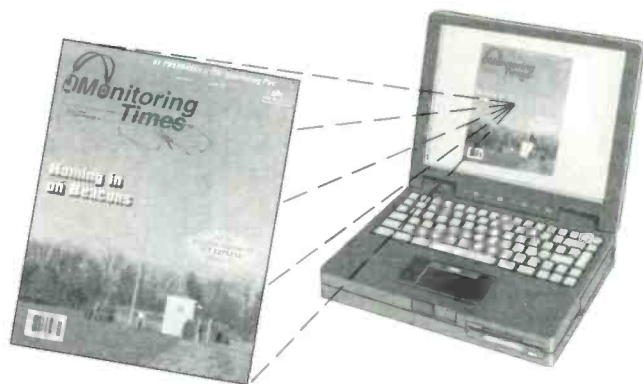
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← Even this telescoping antenna, while workable for the strong signals isn't ideal from a convenience standpoint.

This antenna almost defeats the purpose, but it's just a fraction of what you really need. Once again, this will work fine on the major broadcasters, but don't try to DX.



← This VSC or Voice Scan control seems to be unique to the high-end ICOMs like this R-9000 or the R-8500. It starts or resumes scan when there is no voice or audio signal detected, and it is very effective.

HF, you'll need to be a bit patient. You might even want to park on a frequency for 1/2 hour or an hour at a time to see if there's any traffic that you can hear before deciding to include the frequency in your scan. Let Joe Cooper, and me, know what you discover!

## Police Call 2001

The print and CD-ROM 2001 editions of *Police Call*, the standard frequency reference for scanner enthusiasts nationwide are out, and available at most Radio Shack stores. A few changes have been made to both, and for the most part they are big improvements. We'll take a more detailed look at the CD-ROM soon, but trust me that it is indeed an improvement over the first version.

Previously separated into nine volumes, a few of them have been combined for 2001. Volumes three and four and five and eight have been combined into one

large volume each that resembles the phone book for a fair-sized city. This volume has long been a reference for the scanner listener and is once again an invaluable resource.

*Police Call 2001* includes an excellent introduction to scanning. Even if you've been scanning for some time, it's worth reading this once in a while as a good refresher. This year, the intro deals more with trunking systems and provides some good background information if you're unfamiliar with the basic operation of these increasingly common public safety communications systems.

Instead of raw FCC licensee listings, which are provided by so many of the CD-ROM collections, *Police Call* provides edited data. In many cases, the information includes not only who is on that frequency, but at least some information about how the frequency is used. There is also a section of maps on some systems in each state. These can be very helpful

in figuring out what you should be listening to.

There is also a section on U.S. government frequencies which lists some common agencies and frequencies in use. Some information is available about specific federal installations (Grand Forks Air Force Base or Ozark National Scenic River, for instance), as well as some information on federal trunking systems, which are being installed rapidly at many federal and military sites.

Probably the most important section is the fairly detailed information on trunking systems. Fleet map settings if necessary, frequencies in use and common talk groups are included. This will be a great start if you're just getting into scanning, and help eliminate much of the guesswork of getting a trunking scanner up and running correctly.

The additional sections of *Beyond Police Call*, at one time a separate publication, are still included in the 2001 ver-



*This is what you really need for HF listening, but it's not exactly convenient to carry and listen at the same time!*

sion of *Police Call*. This section lists many businesses, schools, malls, casinos, and much more. It's worth a look through to see what's listed in your area and plugging them into an unused bank in your scanner. There can be some fairly entertaining listening on some of these frequencies, particularly if you're not offended by language easily.

Finally, there's a section of nationwide frequencies. These include nationwide allocations, railroad, and common aircraft frequencies. There's a section just for racing fans since those frequencies are also used nationwide and the sport is increasing in popularity.

The last section of the book is devoted to a very convenient but often underutilized section on frequency channels and allocations by service and frequency. The section by service lists all of the frequencies used by various services like maritime, taxi cab radio, and the family radio services, just to name a few.

The frequency list shows all licensable channels and their intended use. You'll have to take the intended use portion with a grain of salt, as those rules are being relaxed in an effort to use frequencies not in use by other agencies in a "shared" environment. So, for instance, if your local taxi companies aren't using 157.605, the fire department can make an application for it.

Check it out! *Police Call 2001* is available at your local Radio Shack now. Most stores carry your local volume, and if you're close to a state line, they will often carry the volume for the adjoining state. All stores can order any volume for you, or you can order it yourself through [www.radioshack.com](http://www.radioshack.com), or [www.police-call.com](http://www.police-call.com).

### Frequency Of The Month

Our scanner frequency this month is **155.730**. Check it out and see what's on it in your area! Then let me know via E-mail or snail mail.

For those who've joined us in the last few months, let me take a minute to explain what this is all about. We get requests all the time for frequency infor-

mation and other questions. With the vast number of changes and systems moving all the time, not to mention the availability of CD-based frequency databases, it is simply not practical to maintain a database of all the frequencies active across the country, so we came up with the idea of doing frequency hunting in reverse. I'll tell you the frequency; you tell me what's on it in your area.

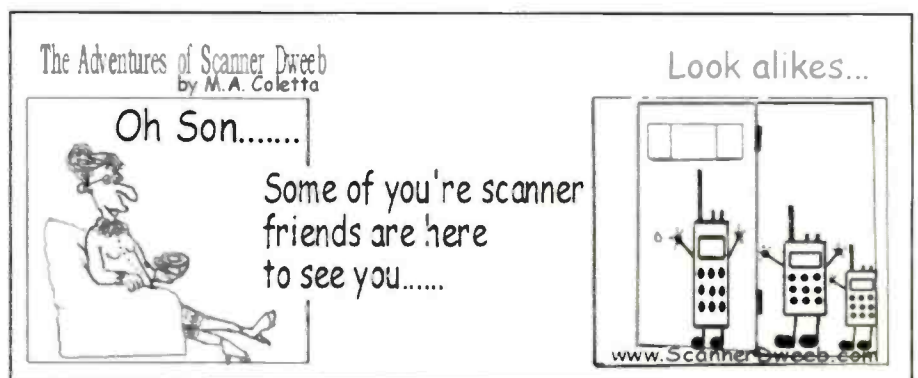
This way, you get the fun of discovering what's active, and we'll report it in the column as we have room. In the meantime, you'll have your own local results much faster! It appears to be a big hit from the responses we're getting so we'll keep going for now. Thanks for your help!

### Contest Winner

All of the responses from the Frequency of the Month are put into a big random number generator and once per quarter we draw out one lucky entrant for a one year subscription, or extension, to *Popular Communications*. We have once again done this and our lucky winner is **Phil Karras** from Mt. Airy, MD, who didn't hear much at home, but found the Montgomery County trunked radio system at work on the frequency of 860.7125. Congrats, Phil!

### Your Input Needed

In addition to your frequency entries, I'm always looking for questions and suggestions. If you have one, send it along. We'll pick the best and run them here in the column so everyone can benefit! Send to Ken Reiss, 9051 Watson Rd. #309, St. Louis, MO 63126 or via E-mail to [armadillo1@aol.com](mailto:armadillo1@aol.com). Remember to mark frequency entries with the frequency on the envelope or subject of the E-mail for so they'll be entered correctly. Until next month, good listening! ■





# HOW I GOT STARTED

## Congratulations To Torbjorn Ericson In Sweden!



Torbjorn Ericson at his monitoring post in Nykoping, Sweden.

**P**opular Communications invites you to submit, in about 150 words, how you got started in the communications hobby. Entries should be typewritten, or otherwise easily readable. If possible, your photo (no Polaroids, please) should be included.

Each month, we'll select one entry and publish it here. Submit your entry only once; we'll keep it on file. All submissions become the property of *Popular Communications*, and none will be acknowledged or returned. Entries will be selected taking into consideration the story they relate, and if it is especially interesting, unusual, or even humorous. We reserve the right to edit all submitted material for length, grammar, and style.

The person whose entry is selected will receive a one-year gift subscription (or one-year subscription extension) to *Popular Communications*. Address all entries to: "How I Got Started," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801 or E-mail your entry to [popularcom@aol.com](mailto:popularcom@aol.com), letting us know if you're sending photos. If you're

E-mailing photos, please send them in a separate E-mail with your name in the "subject" line.

### Our March Winner

In Nykoping, Sweden, *Pop'Comm* reader Torbjorn Ericson says, "My radio interest started in 1978 when I first heard Radio Luxembourg on MW, on an old tube set. After that I got a Panasonic DR-29 as a birthday gift, and I had that for around 10 years. During that time I was an active DXer.

Now I have a Realistic DX-394 for DX and utility monitoring, a Handic 0080 (same as PRO-2005) and a Regency M100 for police, fire, and aero. I also use a scanner in my car and have an Yaesu VR-500.

I'm a member of the Voluntary Radio Organization. We give total defense help with radio and telecommunications in the event of disaster, war, and other events.

My first contact with *Pop'Comm* was in Gothenburg in the spring of 1985 and I've been buying it every month since then. I've subscribed for three years." ■

## Pop'Comm March 2001 Survey

Circle Reader  
Service #

### 1. I listen to shortwave for the following reasons:

To hear the news	1
To learn a foreign language	2
To listen to sports from a foreign country	3
As a hobby DXing pursuit, only	4
To learn more about the culture of a country	5
To enjoy music/entertainment	6

### 2. What factor most affects your choice of antenna?

Limited space	7
Cost	8
Family concerns	9
Landlord or restrictive covenant	10
Performance	11

### 3. My listening post/shack is set up in the -

Basement	12
Attic	13
Bedroom	14
Living room	15
Den	16
Other room	17

### 4. I read the following types of magazines

News	18
Sports	19
Entertainment	20
Computer	21
Electronic	22
Aircraft	23
Gun	24
Women's	25
Men's	26
Travel	27
Home Improvement	28
Music	29
Gardening	30
Outdoor	31
Automotive	32
Off-Road	33
Photography	34
Business	35

# RADIO RESOURCES

Interesting Thoughts And Ideas For Enjoying The Hobby

## Kenwood TS-2000 Takes Messages, Too!

Hobby radio experts have been guessing what amateur radio giant Kenwood Corporation would come out with to match popular ICOM IC-706 and Yaesu FT-100 multi-mode, remote-head, high frequency through UHF, 100-watt transceivers with full shortwave and scanner frequency capabilities. Would it be a small-sized Kenwood TS-50 with a detachable head and VHF/UHF transceiver capabilities stuffed in the tiny chassis?

To everyone's surprise, Kenwood Corporation decided not to bring out a small HF/VHF/UHF detachable-faced transceiver, but rather opted for their "regular" medium-sized mobile configuration to be known as the Kenwood TS-2000, high frequency through UHF, but with a lot more surprises than the competition on the inside.

The TS-2000 is sized much like the TS-430 and TS-450 mobile transceivers with the standard Kenwood medium-sized bracket; 11 inches wide, 4-1/4 inches high, and 14-1/2 inches long, weighing in at 17 pounds. But the equipment may be configured so that the futuristic swept-back face could be detached from the body for mobile or home use. This is a 12-volt DC transceiver so you will need a 30-amp power supply for home use. The transceiver offers general high-frequency, uninterrupted coverage from 30 kHz continuous to 30 MHz featuring true IF stage digital signal processing with DSP adjustments active on the 2 lower left knobs. In other words, if you are planning on using this equipment as a shortwave receiver, or a ham set, there is no need to continuously go back into the menu and select different DSP settings because they are always active with just a twist of either low-cut or high-cut adjustments. This alone is a terrific feature.

On high frequency, we easily achieved over 120 watts of peak envelope power output, and during some PACTOR II testing we could barely get the massive rear heat sinks warm.

The main band also includes 100 watts output on 6 meters, 50 MHz to 54 MHz. Selecting 6 meters pulls in tight band-



Close-up of the TS-2000's LCD panel showing active packetcluster frequency capture, plus call sign.



The full satellite operating buttons were well laid out, and easy to access.

pass filtering, so there is no reception of any frequencies from 30 MHz to 49.9 MHz which may disappoint 6-meter hams who use 49 MHz foreign television carriers as clues to when the 6-meter band

may instantly pop open. There is also no reception directly above the 6-meter band, which might disappoint those of you who like to tune into wide FM television audio or the FM music band.

BY GORDON WEST, WB6NOA





The rear panel has four antenna jacks, plus one additional spot for 1.2 GHz.

"Our engineers felt band-pass selectivity on 6 meters was more important than general VHF low-band, entertainment-radio reception," commented a Kenwood representative at a recent trade show. "Our engineering efforts are best appreciated when the dedicated ham radio operator hears how clean our VHF and UHF reception is on the main band," adds another Japanese engineer.

## The Main Band

The main band includes 2-meter transceive from 144 MHz to 148 MHz, multi-mode, with a slight amount of band edge excursion from 142 MHz through 152 MHz. But don't panic — I'll tell you about fabulous expanded-frequency scanning beyond this range, shortly.

On 70 cm, the new Kenwood TS-2000 MAIN BAND may tune from 420 MHz to 450 MHz and from 1240 MHz to 1300 MHz with the optional 1.2 GHz band unit installed.

On 6 meters, amateur radio power output is 100 watts, and they also offer 100 watts on 2 meters! This is twice as much power than the competition with their HF/VHF/UHF multi-mode transceivers. On 70 cm, hams may enjoy 50 watts of power output, and on 1.2 GHz, the optional band unit that slides in the rear has 10 watts out. The competition does not offer 1.2 GHz capabilities. At least not built into the inside of their much smaller transceivers.

## Wide Scanning Limits

Besides full multi-mode shortwave capabilities from 30 kHz to 30 MHz, the

Kenwood TS-2000 has a continuous running AM/FM sub-band that may tune from 118 MHz aeronautical AM all the way up to 174 MHz FM. This means your transceiver has hot aeronautical receive, 137 MHz satellite download receive, and a very hot receiver on VHF high-band FM channels from 148 MHz through 174 MHz. This lets you tune in business band, public safety, the new MURS 5 channels, VHF marine band, FBI, and, of course, the weather channels.

The sub-band also continuously tunes from 220 MHz all the way up through 512 MHz, either AM or FM. This lets you listen to the amateur radio 222 MHz band, military air frequencies at 300 MHz, secret government and FBI channels at 400 MHz FM, public safety and paramedics at 460 MHz, and even big metropolitan "T-band" frequencies up to 512 MHz.

The sub-band supports only AM and FM reception. While the main band is fully multi-mode for 2-meter SSB, 432 SSB, and 1270 SSB, or FM, or AM, or CW or digital, the sub-band is strictly AM and FM. This means you can't be playing ham radio on the worldwide bands while simultaneously listening for a 144.200 or 432.100 MHz weak signal SSB contact or beacon. If you want VHF and UHF sideband and CW reception, you will need to take that band and put it into the main band display.

But there is twin-band, multi-mode operation for working satellites in Mode A, J, 1200 and 9600 baud AFSK, plus AO-40, our newest Phase 3D satellite with multiple VHF/UHF/1.2 GHz capabilities. There is also VV and UU reception (one band, two frequencies!)

Leo Fahme, KJ6HI, Kenwood's technical guru and avid weak signal enthu-

siast, explains that the new TS-2000 in the satellite mode splits between the main band and the alternate display for full duplex talk and listen plus satellite tracking in multi-mode operation. He explained that the satellite mode does not use the sub-band circuitry, only AM and FM, but rather goes into a full satellite mode for automatic dial tuning with associated receive frequency tracking. 10 satellite memory channels, single-button transmit channel receive check so you're not calling right on top of another transmitting station, and offers capabilities to compensate for satellite Doppler shift on receive. Leo also points out that each satellite may hold a display memory name, using up to eight alphanumeric characters. He tells me this is a full-blown satellite rig built into the TS-2000, putting this larger style radio in a class well beyond the smaller Yaesu FT-100 or ICOM 706. But keep in mind that ICOM offers a new 2-meter/440 MHz + 1200 MHz satellite radio — the IC-910H — and Yaesu's FT-847 sized and featured much like the Kenwood TS-2000, the FT-847 NOT having capabilities for a built-in 1.2 GHz transceive deck.

## DX Finder

If you are an active ham operator looking for that rare DX, or enjoy shortwave listening to beam in on seldom-heard radio stations, the new Kenwood TS-2000 has an amazing built-in packet cluster feature that other big radios would need a computer connection to equal! Kenwood calls it "DX packetcluster tune," featuring a built-in terminal node controller with built-in software to command the 2000 to immediately jump on the rare DX announcement.

The capability of a DX packetcluster system over ham radio is nothing new, but normally requires "specialized software running on a computer attached to a TNC and a transceiver," as indicated by the ARRL operating manual. The traditional high-frequency base station might have a labyrinth of wires and alternate-rig connections, plus a running computer to make the idea of an effective and effortless DX packetcluster set-up work. The idea is for someone spotting some rare DX to post their announcement on a 2-meter or 440 FM frequency, including the DX station's reported operating frequency, the DX call sign, and the time and date of the alert, and maybe a note on whether or not the DX had recently changed fre-

quency. On a traditional home system, you would be watching your computer, and maybe with the right software get the computer to command your HF transceiver to dial in the main band the reported DX frequency.

With the Kenwood 2000, I watched it all happen before my eyes without any external connection, and was even amazed when the equipment not only beeped at me that stuff was happening to the main band, but also a voice announcement for the actual DX call sign.

I was playing around on high frequency, and forgot that I had the sub-band tuned to a local packetcluster on 2 meters, and had my loaner TS-2000 in the automatic DX tune mode. One minute I'm tuning around on 14 MHz, and a second later my main band goes to 50.203 with an on-LCD-screen display of the call sign, VE1YX, truly a DX potential contact for me since I'm in California and this station was in Nova Scotia. Six meters was truly open!

The 2000 also announced the call sign with the optional voice synthesizer, and pre-set my main band to upper sideband and the specific 6-meter frequency. Six meters also automatically selects the proper antenna jack on the back, and all I needed to do was to give my call sign and work the DX.

True, hams who have elaborately hooked up their equipment to an external computer and TNC might get their software to also turn the antenna in the best direction of the incoming DX, but the new 2000 comes pretty close to what a big league ham may have as a fully integrated external computer, external TNC, external 2 meter, and HF system. Within the Kenwood, everything is on the inside.

We probably knew this was coming when we saw Kenwood with their handheld TH-D7A with APRS and packetcluster read capabilities, as well as the new Kenwood TM-D700A with built-in TNC and packetcluster readouts. So it's natural that these talents would go into the new 2000 big-rig.

The Kenwood 2000 I reviewed on the test bench was the model where the face was attached to the chassis, much like any medium-sized mobile/base transceiver. You can order the equipment with remote head cable kit, or even order it as a "black box" without any head for computer-only control. Also included was the TNC-based remote control capability with a Kenwood handheld, dubbed the "Sky Command," but rule interpretations indi-



*The small traditional 2-meter/440 mobile head may also be used with the TS-2000.*



*Clean styling on the futuristic face.*

cate this mode should only be initiated when there is another licensed ham at the control point.

For shortwave listening it has just about all of the receiver refinements you might want, including AF stage beat canceling, multiple beat canceling at the same time, manual notch or auto notch, several stages of noise reduction, smooth selectable AGC action, and a red hot VHF and UHF sub-band receiver for scanning.

Look for this rig to be priced approxi-

mately \$1,700, putting it close to the Yaesu FT-847. But consider some of the additional features that the Kenwood provides on the inside of the TS-2000, plus the capabilities of 1.2 GHz operation, too — and then see it at your local radio dealer and give it a test spin. I only had the equipment for two days before I needed to give it back, and I can say it was a fun experience not knowing when my main band would next come up on some rare DX from the built-in packetcluster. ■



# Tap into secret Shortwave Signals

Turn mysterious signals into exciting text messages with the MFJ MultiReader™!

Plug this self-contained MFJ MultiReader™ into your shortwave receiver's earphone jack.

Then watch mysterious chirps, whistles and buzzing sounds of RTTY, ASCII, CW and AMTOR (FEC) turn into exciting text messages as they scroll across an easy-to-read LCD display.

You'll read interesting commercial, military, diplomatic, weather, aeronautical, maritime and amateur traffic . . .

## Eavesdrop on the World

Eavesdrop on the world's press agencies transmitting *unedited* late breaking news in English -- China News in Taiwan, Tanjug Press in Serbia, Iraqi News in Iraq -- all on RTTY.

Copy RTTY weather stations from Antarctica, Mali, Congo and many others. Listen to military RTTY passing traffic from Panama, Cyprus, Peru, Capetown, London and others. Listen to hams, diplomatic, research, commercial and maritime RTTY.

Listen to maritime users, diplomats and amateurs send and receive *error-free* messages using various forms of TOR (Telex-Over-Radio).

Monitor Morse code from hams, military, commercial, aeronautical, diplomatic, maritime

## Super Active Antenna

"World Radio TV Handbook" says MFJ-1024 is a "first-rate easy-to-operate active antenna... quiet... excellent dynamic range... good gain... low noise... broad frequency coverage."

Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz-30 MHz.

Receives strong, clear signals from all over the world. 20 dB attenuator, gain control, ON LED.

Switch two receivers and auxiliary or active antenna. MFJ-1024 6x3x5 inches. Remote has 54 inch whip, 50 feet coax. 3x2x4 inches. 12 VDC or 110 VAC with MFJ-1312. \$14.95.

## Indoor Active Antenna

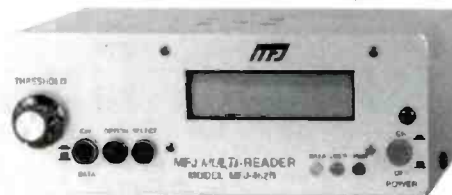
Rival outside long wires with this *tuned* indoor active antenna. "World Radio TV Handbook" says MFJ-1020B is a "fine value... fair price... best offering to date... performs very well indeed."

Tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Use as a preselector with external antenna. Covers 0.3-30 MHz. Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip. 5x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, \$14.95.

## Compact Active Antenna

Plug this compact MFJ all band active antenna into your receiver and you'll hear strong, clear signals from all over the world, 300 KHz-200 MHz including low, medium, shortwave and VHF bands.

Detachable 20 inch telescoping antenna. 9 volt battery or 110 VAC MFJ-1312B, \$14.95. 3/4x1/4x4 in.



MFJ-462B  
\$179.95

all over the world -- Australia, Russia, Japan, etc. MFJ's exclusive TelePrinterPort™ lets you monitor any station 24 hours a day by printing transmissions on an Epson compatible printer. Printer cable, MFJ-5412, \$9.95.

High Performance Modem MFJ MessageSaver™ You can save several pages of text in an 8K of memory for re-reading or later review.

High Performance Modem MFJ's high performance PhaseLockLoop™ modem consistently gives you solid copy -- even with weak signals buried in noise. New threshold control minimizes noise interference --

greatly improves copy on CW and other modes.

## Easy to use, tune and read

It's easy to use -- just push a button to select modes and features from a menu.

It's easy to tune -- a precision tuning indicator makes tuning your receiver easy for best copy.

It's easy to read -- the 2 line 16 character LCD display with contrast adjustment is mounted on a brushed aluminum front panel for easy reading.

Copies most standard shifts and speeds. Has MFJ AutoTrak™ Morse code speed tracking.

Use 12 VDC or use 110 VAC with MFJ-1312B AC adapter. \$14.95. 5/8x2 1/2xHx5 1/4D inches.

## No Matter What™ One Year Warranty

You get MFJ's famous one year No Matter What™ limited warranty. That means we will repair or replace your MFJ MultiReader™ (at our option) no matter what for one full year.

## Try it for 30 Days

If you're not completely satisfied, simply return it within 30 days for a prompt and courteous refund (less shipping). Customer must retain dated proof-of-purchase direct from MFJ.

## Eliminate power line noise!



MFJ-1026  
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New! Completely eliminate power line noise, lightning crashes and interference before they get into your receiver! Works on all modes -- SSB, AM, CW, FM, data -- and on all shortwave bands. Plugs between main external antenna and receiver. Built-in active antenna picks up power line noise and cancels undesirable noise from main antenna. Also makes excellent active antenna.

## MFJ Antenna Matcher



MFJ-959B  
\$99.95

Matches your antenna to your receiver so you get maximum signal and minimum loss. Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Select 2 antennas and 2 receivers. 1.6-30 MHz. 9x2x6 in. Use 9-18 VDC or 110 VAC with MFJ-1312, \$14.95.

## Dual Tunable Audio Filter



MFJ-752C  
\$99.95

## High-Gain Preselector



MFJ-1045C  
\$99.95

Two separately tunable filters let you peak desired signals and notch out interference at the same time. You can peak, notch, low or high pass signals to eliminate heterodynes and interference. Plugs between radio and speaker or phones. 10x2x6 in.

## CW, RTTY, ASCII Interface



MFJ-1214PC  
\$149.95

Use your computer and radio to receive and display brilliant full color FAX news photos and incredible WeFAX weather maps. Also RTTY, ASCII and Morse code. Frequency manager lists over 900 FAX stations. Auto picture saver.

Includes interface, easy-to-use menu driven software, cables, power supply, manual and JumpStart™ guide. Requires 286 or better computer with VGA monitor.

## High-Q Passive Preselector

High-Q passive LC preselector boosts your favorite stations while rejecting images, intermod and phantom signals. 1.5-30 MHz. Preselector bypass and receiver grounded positions. Tiny 2x3x4 inches.

## Super Passive Preselector



MFJ-1046  
\$99.95

New! Improves any receiver! Suppresses strong out-of-band signals that cause intermod, blocking, cross modulation and phantom signals. Unique Hi-Q series tuned circuit adds super sharp front-end selectivity with excellent stopband attenuation and very low passband attenuation and very low passband loss. Air variable capacitor with vernier. 1.6-33 MHz.

## Easy-Up Antennas

How to build and put up inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before. Antennas from 100 KHz to 1000 MHz.

## MFJ Antenna Switches



MFJ-1704  
\$64.95

MFJ-1702C  
\$24.95

MFJ-1704 heavy duty antenna switch lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection. Good to 500 MHz. 60 dB isolation at 30 MHz. MFJ-1702C for 2 antennas.

## World Band Radio Kit

Build this regenerative shortwave receiver kit and listen to signals from all over the world with just a 10 foot wire antenna. Has RF stage, vernier reduction drive, smooth regeneration, five bands.

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MFJ's 21 Band World Receiver lets you travel the world from your armchair! Listen to BBC news from London, live music from Paris, soccer matches from Germany and more! Covers 21 bands including FM, Medium Wave, Long Wave and Shortwave. Sony® integrated circuit from Japan, multicolored tuning dial, built-in telescopic antenna, permanent silkscreened world time zone, frequency charts on back panel. Carrying handle. Operates on four "AA"s. Super compact size!

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# Pop'Comm's World Band Tuning Tips

March 2001

This listing is designed to help you hear more shortwave broadcasting stations. The list includes a variety of stations, including international broadcasters beaming programs to North America, others to other parts of the world, as well as local and regional shortwave stations. Many of the transmissions listed here are not in English. Your ability to receive these stations will depend on time of day, time of year, your geographic location, highly variable propagation conditions, and the receiving equipment used.

AA, FF, SS, GG, etc. are abbreviations for languages (Arabic, French, Spanish, German). Times given are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 4 p.m. PST.

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0000	3280	La Voz del Napo, Ecuador	SS	0300	17790	Radio Romania Int'l	
0000	13765	Vatican Radio		0300	12075	Radio France Int'l, via Russia	FF
0000	12070	Radio Netherlands, via Madagascar	DD	0300	11785	Qatar Broadcasting Service	AA
0000	9605	Vatican Radio	FF/EE	0330	21800	RDP Int'l, Portugal	PP
0000	9715	Radio Tashkent, Uzbekistan		0330	15190	Radio Pilipinas, Philippines	
0030	13675	UAE Radio, Dubai, UAE		0330	9740	BBC, via Singapore	
0030	9795	Voice of Vietnam, via Canada		0330	6100	Deutsche Welle, Germany, via Portugal	
0030	11665	Voice of Turkey		0345	11820	Radio Polonia, Poland	
0030	21605	UAE Radio, Dubai, UAE		0345	4750	Radio San Francisco, Peru	SS
0030	15520	Radio Ukraine Int'l		0345	11715	Voice of America, via Philippines	
0030	9445	Voice of Turkey	TT	0345	11820	Radio Veritas Asia, Philippines	JJ
0100	9810	Radio Ukraine Int'l		0400	6480	Radio Altura, Peru	SS
0100	7110	RTV Tunisienne, Tunisia	AA	0400	6536	Radio Huancabamba, Peru	SS
0100	7275	RTV Tunisienne, Tunisia	AA	0400	15465	Far East Broadcasting Co., Philippines	unid
0100	9610	Radio Taipei Int'l, Taiwan		0400	3235	Radio West New Britain, Papua New Guinea	Pidgin
0100	9680	Radio Taipei Int'l, Taiwan		0400	4890	NBC, Papua New Guinea	
0100	11660	Swiss Radio Int'l, via French Guiana	GG	0400	11570	Radio Pakistan	Urdu
0100	12085	Radio Damascus, Syria	FF/EE	0400	9965	KHBN/Voice of Hope, Palau	
0100	9885	Radio Thailand		0400	9405	Far East Broadcasting Co., Philippines	CC
0100	9905	Swiss Radio Int'l, via French Guiana		0400	15245	Radio Vlaanderen Int'l, Belgium, via Bonaire	
0100	15425	Sri Lanka Broadcasting Corp.		0430	15140	Radio Sultanate of Oman	
0100	13690	Deutsche Welle, via Sri Lanka	GG	0430	9590	Radio Norway	NN
0130	17715	Radio Exterior de Espana, Spain	SS	0430	5678	Radio Ilucan, Peru	SS
0130	6055	Radio Exterior de Espana, Spain		0430	13650	Radio Pyongyang, North Korea	SS
0130	15575	Radio Korea Int'l, South Korea	KK	0430	9345	Radio Pyongyang, North Korea	unid
0130	11715	Radio Korea Int'l, S. Korea, via Canada		0430	7255	Radio Nigeria	
0130	11640	World Beacon, USA, via S. Africa		0500	6165	Radio Netherlands, via Bonaire	
0200	15345	Far East Broadcasting Assn., Seychelles	AA	0500	15120	Voice of Nigeria	
0200	6150	Radio Singapore Int'l		0500	9465	KFBS/Far East Broadcasting, N. Marianas	Ukrainian
0200	11765	BBC, via South Africa		0500	17675	Radio New Zealand Int'l	
0200	15435	Broadcasting Service of Kingdom of Saudi Arabia	AA	0500	4725	Radio Myanmar, (Burma)	BB
0200	7290	Voice of America, via Sao Tome		0500	15345	RTV Marocaine, Morocco	AA
0200	7180	Voice of Russia, via Moldova		0500	12085	Voice of Mongolia	
0230	17600	RDP Int'l, Portugal	PP	0500	6185	Radio Educacion, Mexico	SS
0230	15420	BBC, via South Africa		0500	7125	Voice of Russia, via Moldova	
0230	11955	BBC, via Singapore		0500	15735	Radio Denmark, via Norway	DD
0230	11980	Voice of Russia		0500	6010	Radio Mil, Mexico	SS
0245	11820	Broadcasting Service of Kingdom of Saudi Arabia	AA	0500	4845	Radio Mauritanie, Mauritania	AA
0300	15135	Deutsche Welle, Germany, via Rwanda					



UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0500	9705	Radio Mexico Int'l	SS	1500	6897	Galei Zahel, Israel	HH
0530	7295	Radio Malaysia		1500	3250	Radio Luz y Vida, Honduras	SS
0530	6120	Radio Vilnius, Lithuania, via Germany		1500	5060	Radio Progreso, Ecuador	SS
0600	9855	Radio Vilnius, Lithuania, via Germany		1530	4930	Radio Barahona, Dominican Republic	SS
0600	17725	Radio Jamahiriya/V of Africa, Libya	AA/EE	1530	21745	Radio Prague, Czech Republic	
0600	17680	Radio Jordan	AA/EE	1600	15075	All India Radio	
0600	11675	Radio Kuwait	AA	1600	15555	BBC, via Cyprus	
0630	9595	Radio Tampa, Japan	JJ	1600	5025	Radio Rebelde, Cuba	SS
0700	4845	Radio Mauritanie, Mauritania	AA	1600	13660	Radio Havana Cuba	USB
0700	6145	Radio Japan/NHK, via Canada	JJ	1600	5054	TIFC/Faro del Caribe, Costa Rica	SS
0800	12090	Radio Mediterranee Int'l, Morocco, via Russia		1600	11705	Radio Havana Cuba	USB
0830	11960	Radio Jordan	AA	1600	11635	Croatian Radio	Croatian
0900	15495	Radio Kuwait	AA	1630	9470	Croatian Radio	Croatian
0900	9505	Radio Japan/NHK	JJ	1630	5955	La Voz de los Centauros, Colombia	SS
0900	11720	Channel Africa, South Africa		1630	5020	Ecos del Atrato, Colombia	SS
0900	9525	Channel Africa, South Africa		1700	15260	China Radio Int'l	CC
0900	9570	Radio Korea Int'l, S. Korea		1700	4975	Fujian PBS, China	CC
1000	4940	Radio Amazonas, Venezuela	SS	1700	17680	Voz Cristiana, Chile	SS
1000	9495	Radio Sweden		1700	9755	Radio Canada Int'l	
1030	15445	Voice of America, via Morocco		1700	9380	Central Peoples Broadcasting Station, China	CC
1030	12000	Voice of Russia		1730	11690	Voz Cristiana, Chile	SS
1030	11605	Far East Broadcasting Assn., Seychelles		1800	11650	Radio Australia	
1030	4800	Radio XERTA, Mexico	SS	1800	5960	Radio Canada Int'l	
1030	3945	Radio Tampa, Japan	JJ	1800	6160	CKZN, Newfoundland, relay CFGB	
1030	11585	Kol Israel	HH	1830	4775	Radio Congohas, Brazil	PP
1100	9930	KWHR, Hawaii		1830	9400	Radio Bulgaria	
1100	9420	Voice of Greece	Greek	1830	7400	Radio Bulgaria	
1100	13770	YLE/Radio Finland		1900	11725	Radio Novas de Paz, Brazil	PP
1100	15115	HCJB, Ecuador		1900	9505	Radio Record, Brazil	PP
1100	3300	TGNA/Radio Cultural, Guatemala	SS	2000	9665	Radio Marumby, Brazil	PP
1130	7450	Voice of Greece	Greek	2000	4865	Radio Missoes da Amazonia, Brazil	PP
1200	9900	Radio Cairo, Egypt		2030	11915	Radio Gaucha, Brazil	PP
1200	11600	Radio Prague, Czech Republic	FF	2030	3310	Radio Mosoj Chaski, Bolivia	SS
1200	17565	RTBF Int'l, Belgium, via Germany	FF	2100	15565	Radio Vlaanderen Int'l, Belgium, via Bonaire	
1200	3290	Voice of Guyana		2100	6155	Radio Austria Int'l	GG
1200	21520	RAI Int'l, Italy	II	2100	13730	Radio Austria Int'l	
1200	11810	RAI Int'l		2130	9710	Radio Australia	Pidgin
1200	9435	Kol Israel		2130	15220	BBC, via Antigua	
1200	21580	Radio France Int'l	FF	2130	7345	Radio Prague, Czech Republic	
1200	21630	Radio Telefis Eireann, Ireland, via Ascension		2130	9780	Republic of Yemen Radio	AA
1200	11710	Voice of the Islamic Rep. of Iran	AA	2200	9965	Voice of Armenia	SS
1200	11785	Radio Iraq Int'l	AA	2200	6240	Trans World Radio, via Armenia	unid
1200	15140	All India Radio	RR	2200	9615	KNLS, Alaska	
1230	13605	All India Radio		2200	7160	Radio Tirana, Albania	
1230	4800	Radio Buenas Nuevas, Guatemala	SS	2230	15476	Radio Nacional Archangel, Antarctica	SS
1230	9560	Radio Budapest, Hungary		2230	11710	Radiodifusion Argentina al Exterior	
1300	9835	Radio Budapest, Hungary		2230	9155	Radio Dada Gorgud, Azerbaijan	unid
1300	4819	La Voz Evangelica, Honduras	SS	2300	7210	Radio Belarus Int'l	
1300	4845	Radio K'ekchi, Guatemala	Kekchi	2300	4525	Nei Menggu PBS, China	Mongolian
1330	9430	KTWR/Trans World Radio, Guam	CC	2300	4960	Radio Villa, Dominican Republic	SS
1330	12015	Radio France Int'l, via Gabon		2300	4052	Radio Verdad, Guatemala	SS
1330	15520	Radio Free Europe/Radio Liberty, via Germany	Turkmen	2300	4790	Radio Republik Indonesia, Fak Fak	II
1330	15475	Africa Number One, Gabon	FF	2330	7120	Italian Radio Relay Service, Italy	M-F
1330	15185	Radio Africa, Equatorial Guinea		2330	9440	Radio Slovak Int'l, Slovakia	
1430	6249	Radio Nacional, Malabo, Equatorial Guinea	SS	2330	17870	Radio Sweden	
1430	12050	Radio Cairo, Egypt	AA	2330	15495	United Nations Radio, USA, via UK	
1430	4919	Radio Quito, Ecuador	SS	2330	6030	Radio Marti, USA	SS
1430	4950	Radio Baha'i, Ecuador	SS	2330	9490	Radio Republic Abkhazia, Georgia Rep.	vern
1445	4835	Radio Tezulutlan, Guatemala	SS	2330	11420	ISBC/Rikisutvarpid, Icelandic	USB/II.
1500	9835	Voice of Islamic Rep. of Iran		2330	3240	Trans World Radio, Swaziland	vern
				2330	4770	Radio Nigeria	
				2330	5440	Xinjiang PBS, China	CC
				2330	4800	Radio Lesotho	

# PRODUCT PARADE

Review Of New, Interesting And Useful Products

## The TRI-DI-POLE Outdoor Shortwave Antenna

The TRI-DI-POLE from DWM Communications is a shortwave antenna of unique design. Grounding your receiver can be a difficult and clumsy task. Most of today's portable shortwave radios have extremely small antenna jacks; it's hard enough securing your antenna feedline to the connector, let alone adding another wire for grounding. So DWM Communications has come up with the original idea of grounding your receiver, at the antenna! By adding a third element — or wire — to the "shield" side of the dipole, you can now conveniently ground your receiver at the base of the antenna installation!

Made of tough, insulated copper wire — the antenna's total length is only 66-feet — it can be mounted as an "Inverted V" to help save yard space, plus it gives the antenna added space at the center. The antenna's vertical ground lead is 33-feet, and it has a durable auto battery clamp attached to the end of the wire for easy connection to your ground rod (ground rod not included). The TRI-DI-POLE uses a high-quality Budwig HQ-1 center insulator that accepts a PL-259 connector (coax not included).

Get the maximum performance from your shortwave receiver by using an outdoor antenna and grounding the radio while doing it in one easy step with the TRI-DI-POLE antenna system! Satisfaction guaranteed and it comes with a lifetime warranty. The TRI-DI-POLE is made in the USA and comes fully assembled and includes all insulators and nylon



DWM Communications new TRI-DI-POLE shortwave antenna.

support rope. (It's not designed for radios without an external antenna jack or connection). The TRI-DI-POLE is \$29.95 plus \$6.95 shipping and handling via priority mail from DWM Communications, P.O. Box 87, Hanover, MI 49241. You can also call their order line at 517-563-2613 or FAX them at 517-563-8974 or visit their Website at <http://qth.com/dwm> or E-mail DWM Communications at [tinytenna@hotmail.com](mailto:tinytenna@hotmail.com). Be sure to tell them you read about the TRI-DI-POLE in *Pop'Comm!*

## Alinco Announces DJ-X2000 Handheld Wide-Range Scanning Receiver

Alinco USA announces the release of the DJ-X2000, a "new generation" wide-range receiver expected to be available in the North American marketplace in February 2001. With continuous coverage from 100 KHz to 2150 MHz (cellular band excluded), the DJ-X2000 offers a broad package of functions and features not found in other scanning receivers. The new unit receives most common modes, including CW (Morse Code), Wide FM, Narrow FM, AM, Upper Side Band, Lower Side Band, and FM stereo broadcasts.

"Alinco designed this receiver to meet the needs of the listening enthusiast and for professionals in public safety and news gathering operations," said Katsumi Nakata, KE6RD, Branch Manager for Alinco USA. "With 2000 memories, on-board 'help' navigator, hidden transmitter detection, and more, we are confident in saying there is nothing quite like it in the marketplace. It is such a fresh design, we have applied for two patents on new circuits included in this unit."

The DJ-X2000 features alphanumeric channel naming, is computer programmable, receives FM stereo broadcasts, has an instant "Flash Tune™" feature that can lock onto nearby signals, a frequency counter for checking radios in the field, and a digital recorder that can record a user voice memo or received audio for over two minutes. The receiver can also decode CTCSS tones commonly used by FM transmitters and can associate a tone



Alinco's new DJ-X2000 is a full-featured handheld scanning receiver.

associated with a given memory channel.

A NiCd battery (EBP-37N) and quick charger (EDC-88) are included and the receiver accepts battery packs used in several other Alinco radios. In addition, it can be powered by 12V external DC, found in base or mobile operations.

Some technical highlights include a Digital Temperature Compensated Crystal Oscillator (DTCXO) for frequency stability that is accurate to 1 ppm and technically superior to older TCXO designs. The dot matrix LCD display conveys an amazing amount of information depending on the function the user has selected. From the relative field strength meter to graphic displays of band activity, it keeps the operator informed of its operations. The on-board "help" navigator guides the user through most functions and features and can instantly refer the user to change settings for the function in question. A new antenna design boasts increased sensitivity, improved low-end performance and a conventional BNC antenna terminal allows easy connection to external antenna systems. A two-level attenuator reduces strong or interfering signals 6 or 20 dB.

Alinco expects a strong demand for the DJ-X2000, saying it may take some time for production to catch up with demand. The DJ-X2000 is the latest wide cover-

BY HAROLD ORT AND R.L. SLATTERY



age receiver to come from Alinco, which manufactures other receivers and a wide variety of transceivers for the amateur radio marketplace in North America. MSRP for the DJ-X2000 is expected to be \$650 (U.S.) but dealers frequently discount from manufacturer's price guides.

## Midland FRS Radio With eVOX Introduced

Midland Consumer Radio has announced a new FRS radio model that includes their improved voice activation system they call "eVOX," which allows "hands-free" use without a headset required. The SpeakEasy 75-509 is the 14-channel successor to their top selling model 75-507.

Available in a new "Platinum" silver color with black accents, it is an attractive addition to their full line of FRS and CB radios. According to Bob Jehle, Midland's Director of Sales, "Initial reaction to these new styles has been very positive." Jehle adds that "The 75-509 will be a terrific value 14 channel unit, since it includes features frequently asked for by consumers, including eVOX, water resistance, and in-unit battery charging."

The eVOX system on this model has

three sensitivity levels and three delay settings for nine variations, allowing eVOX to be used in almost any noise conditions. Optional headsets are available for times when quieter operation is desired, such as while hunting. Plus, you don't have to be afraid to use your radio out in the weather, because it's water resistant design gives you improved reliability for indoor or outdoor use.

A Page button sends an attention grabbing alert tone, plus the ability to charge NiCd or NiMH batteries while they are still in the radio when used with a wall charger or drop-in desk charger (both available separately from Midland). A battery-save option helps extend battery life, and a battery indicator warns when the three "AA" batteries are low (batteries not included).

Also included is Dual Watch, which allows easy monitoring of two channels, and Midland's Stealth Squelch circuit that automatically quiets annoying popping noises at the start and end of transmissions. Maximum FCC allowed output power provides up to a two-mile range over land and five miles over water, depending on conditions and terrain.

Additional features include a large backlit LCD panel that is easy to read, and

button locking to prevent accidental changes. A five-note roger beep and power-on tone can be user disabled for extremely quiet operation. A flexible rubber antenna, belt clip, and hand strap are included. Dependable Surface Mount Technology (SMT) circuitry provides years of trouble-free use.

The radio measures 2-1/16"W x 3-7/8"H x 1-1/16"D. The 75-509 has a general retail price of \$49.95 each.

Midland Consumer Radio was the first to introduce a 14-channel FRS radio to the market. In addition, Midland is the oldest manufacturer of CB radios in the U.S., and a leader in weather/hazard alert radios. Since 1959, Midland has stayed on the forefront of two-way radio technology, offering the latest features at value prices. They offer a full line of CB and FRS handheld and mobile radios, Marine radios, antennas, and accessories.

For more information, contact Midland Consumer Radio, Inc. 1670 N. Topping Ave. Kansas City, MO 64120-3865; phone 816-241-8500; FAX 816-241-5713; E-mail midlndcb@midlandradio.com, or visit Midland's Website at www.midlandradio.com. Be sure to tell them you read about the 75-509 in *Popular Communications*.

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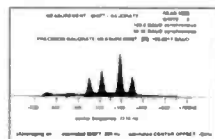
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## HOKA CODE-3 GOLD

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# CLANDESTINE COMMUNIQUÉ

Tuning In To Anti-Government Radio

## China Jams It, But Falun Dafa Radio Still Gets Through!

**F**alun Dafa Radio, which is operated by U.S. members of the Falun Gong (the belief system which has received so much harassment from the Chinese government) signs on now at **2200** and is jammed by China Radio International, but not with 100% effectiveness. The broadcast (in Mandarin) runs until 2300, and may appear instead somewhere between **12120 and 12150** — there doesn't seem to be a favored frequency within that 30 kHz segment. The broadcasts are believed to come from a transmitter in one of the former Soviet Asian republics, perhaps Tajikistan. The **2200** broadcast is repeated from 1400–1500. Also check for it between **9340 and 9380, 13575 and 13590 and 15670 to 15700**.

The **Voice of Tibet's** anti-Beijing broadcasts are now up to three-45 minute segments per day: from 1215–1300 on **15705 or 15675**, via Almaty, (Kazakistan) and **15645 or 15650** via Dushanbe (Tadjikistan); 2315–0000 via Almaty on **9900** and 0100–0145 via Dushanbe on **15640 or 15650**. The broadcast is produced in Oslo, Norway.

**Tamil Oli Radio**, in opposition to the Sri Lankan government, is active from 1230 to 1330 on **21590**, beaming to Asia via DTK transmitters at Julich, Germany.

**Radio Free Chechnya** (Radio Chechnya Svobodnya), the Russian government's propaganda program aimed at Chechnya, now airs from 0300–0600 on **5935**, 0300–0700 on **7335**, 0630–1430 on **11635**, 0730 to 1400 on **15605**, 21430 to 2100 on **7340**, 1500–1800 on **7355** and 1830–2100 on **7305**. All broadcasts are transmitted from St. Petersburg, Russia.

**Radio Nacional de la Republica Arabe Saharaui Democratica** (RASD) operates from 1800 to 2300 (sometimes 0000) on **7357** (it's moved around a bit recently). This station, based in Algeria, seeks independence from the former Spanish Sahara. The first hour is in Spanish and the rest of the schedule is in Arabic. It should be possible to hear this one during this time of year—at least in the Eastern and Central parts of North America. Try it during the late afternoon.

**Radio International** is the mouthpiece of the Worker-Communist Party of Iran and uses such slogans as "Voice of the Workers," "Voice of Freedom," "Voice of Equality" and "Voice of Humanity." It's on the air on **15550** via Moldova from 1700–1730.

**Republic of Abkhazia Radio** operates on **9490** Monday to Friday from 1400–1415v in Russian. And in Abkhazian daily from 0400–0500, Saturdays 1400–1600, and Sundays 1400–1430.

**Anti-Ethiopian Rainbow Radio** airs Sundays only from 0900–1000 on **5995**, via Julich, Germany. Programs are in

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*"It should be possible to hear this one during this time of year—at least in the Eastern and Central parts of North America. Try it during late afternoon."*

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Amharic and are aimed at Ethiopian ex-patriots now living in Europe.

The **Voice of the Communist Party of Iran** operates from 1700–1800 in the area of **3870 and 3880** and somewhere between **4370 and 4390** with programs in Farsi.

The **Voice of Iranian Kurdistan** uses **3985 and 4145** from 0230–0330 and 1530 to 1630 (North American DXers can forget the latter). Broadcasts are in Kurdish.

The **Voice of Palestine — Voice of the Palestine Islamic Revolution**, broadcast via Iranian government facilities, uses **7290 and 9610** from 0330 to 0430 and **6025, 6200, 9680, 9705, 11740, and 11840** from 1930 to 2030, all in Arabic.

Anti-Ethiopian station **Radio Huriyo** on **15175** is on from 1630 to 1700 via German government transmitters at Julich. It's operated by the Ogaden National liberation Front.

Here are a few logs from some of the clandestine hunters out there:

**Radio Marti, 11815** in SS at 1205. (Northrup, MO) **13820** heard in Spanish at 2240. (Stewart MacKenzie, CA)

**Radio Free Asia**, via Tinian, Northern Marianas, on **15515** in Chinese at 2140. (MacKenzie, CA)

**Voice of the Iraqi People**, on **9568.5** from 0305 tune to 0314 sign-off. Koran, then talk. Off with Iraqi national anthem. (Brian Alexander, PA)

**Voice of National Salvation**, on **4120** in Korean at 1143. Also at 1254, in parallel to 4450. (Peter Becker, WA)

Informational input from clandestine hunters, as well as those of you with a more casual interest is always welcome — and needed! Loggings of clandestine stations or broadcasts by "anti-whichever-government" groups are always appreciated. We also welcome information you may run across about the groups which sponsor these stations, their locations, mailing addresses, websites, etc. And, of course, copies of any QSLs or other replies you get from your reception reporting efforts. Thanks for your continued interest and help.

Until next month, good hunting! ■

BY GERRY L. DEXTER



# BROADCAST DXING

DX, News And Views Of AM And FM Broadcasting

## *KVOD, Denver Fades Into History*

Classical music aficionados are a dedicated group of listeners. Even AM radio can attract loyal listeners. WQXR New York at 1560 kilohertz used to attract a large national audience with its clear channel classical music broadcasts. The once grand state-of-the-art WQXR studios could accommodate a 52-piece orchestra. When WQXR announced that classical music was coming to an end on 1560, there was a huge campaign mounted by listeners to retain the format. Now history repeats itself in Colorado, as unfortunately for the supporters of KVOD, Denver, at 1280 kilohertz, their loyalty wasn't enough. The public outcry was so great upon learning about the pending sale of the station that program director Jim Conder was moved to write an open letter to KVOD listeners.

"I am writing this 'form e-mail' in response to questions and to thank you for your overwhelming outpouring of kind wishes and unforgettable memories. The situation is just this: Latino Communications is buying KVOD. That includes all the assets: the call letters, the dial position (1280), various equipment, and real estate. Zee Ferrufino, President of Latino Communications, has assured us that he will indeed flip the format to Spanish. Mr. Ferrufino has promised to donate the call letters and the library of thousands of CDs to Colorado Public Radio (KCFR, 90.1 FM).

"Many of you expressed concern about the 'reasons' for the loss of KVOD. The top reasons, naturally, have to do with money. Stations in Denver are selling for tens of millions of dollars. KVOD was no longer viable on AM to bring home the bacon for the large corporation that owned us. As a result, we were systematically phased out with budget cuts and neglect. We bravely hung in there despite the attempts to bury us much earlier. That is why we thank you for your steadfast support through the tough times . . . on behalf of the entire staff of KVOD, thank-you for your well wishes and for your concern."

In its final days KVOD carried the Beethoven Satellite Network while the transition to Spanish programming was completed. KVOD will be sorely missed by Denver listeners.

Meanwhile in Connecticut, rock music has been replaced by classical on AM. WCCC West Hartford at 1290 has dropped the simulcast with "The Rock" 106.9 FM. They are now classical music under the same group running the "W-Bach" format in Boston and Maine.

## **Real Estate — A Real Problem**

One of the major expenses of AM radio stations is the real estate required for antennas. Case in point, according to reporter Jim Litz, "there's a local controversy brewing" as KRKO Everett, Washington, at 1380 kilohertz seeks an upgrade from 5 to 50 kilowatts. The proposed transmitter site is next to the local air-

port, which has the FAA involved because of safety concerns. Five to eight towers over 400 feet tall will be needed to provide the directional signal that would allow for the power increase. This has area residents concerned as well regarding the aesthetics in addition to safety.

## **X-Band Update — Now 20 States On!**

The expanded AM broadcast band has been radio active with a number of changes and new stations signing on. KALT Atlanta, Texas, the only broadcaster assigned to 1610 kilohertz in the U.S., is now on the air. One of the original x-banders, WPHG Atmore, Alabama, at 1620 kilohertz has been silent and recently submitted an application to move to Gulf Breeze, Florida. Also at 1620, KBLI Blackfoot, Idaho, has been reported to be on the air, but experienced some antenna problems that needed to be corrected before going to full-time operation. KBLI will be a prime target for DXers that need to add this rocky mountain state to their logs. California has two new stations on the air; KAZT at 1670 and KAVT at 1680, and yet another station preparing to sign on; KSXX at 1690. There are now 20 states represented on the x-band. Argentina and Mexico are the only other two countries broadcasting on the x-band in the Americas.

## **QSL Information**

**580 CKUA** Edmonton, Alberta, an E-mail QSL in two days from Larry King, CKUA Radio. Address: <Larry.King@ckua.org>. I have this verified in 1965 from Seward AK, but I have wanted to re-verify it from Oregon. CKUA for years had not replied to any of my reports from Oregon. (Martin, OR)

**670 KIRN** Simi Valley, California, an E-mail QSL in four days from Siamak Kalhor, GM. E-mail address is siak2@msn.com. (Martin, OR)

**860 XEMO** Tijuana, Mexico, a very nice verification letter in Spanish and "La Poderosa" bumper sticker in 40 days for a taped report, signed Sergio Golarle Quiros, Gerente de Promociones. Address reports to XEMO, Grupo Uniradio, Gral. Manuel Marquez de Leon No. 950 Zona Rio, Tijuana BCN 22320, Mexico. (Martin, OR)

**1270 CHWK** Chilliwack, British Columbia, Radio Max QSL certificate and letter in 40 days. This station is still CKWK, as 850 Abbotsford is still CKMA, and 1240 Hope is still CKGO per the letter from CE Arnie Schmidt. The "new" call letters are for the move to FM. Address: Radio Max, #520-45715 Hocking Avenue, Chilliwack, BC V2P 6Z6. (Martin, OR)

BY BRUCE CONTI <BAConti@aol.com>

## AM Expanded Band Stations On The Air

Call	Format	Call	Format
<b>1610</b> KALT Atlanta, TX Lanus, Argentina Monte Grande, Argentina	Fox Sports Silent "Radio Cantico Nuevo"	<b>1660</b> WMIB Marco Island, FL WQSN Kalamazoo, MI WWRU Jersey City, NJ KQWB West Fargo, ND KRZX Waco, TX KXOL Brigham City, UT Rafael Calzada, Argentina	Nostalgia Sports Radio Unica, Spanish Nostalgia News/Talk Oldies "Radio Unidad"
<b>1620</b> WPHG Atmore, AL KSMH Auburn, CA KBLI Blackfoot, ID WHLY South Bend, IN KAZP Bellevue, NE WTAW College Station, TX KYIZ Renton, WA Buenos Aires, Argentina	Silent EWTN Catholic Talk/Sports "Radio Hollywood" Nostalgia ESPN Sports Talk Urban Contemporary "Radio Tropicana"	<b>1670</b> KAZT Redding, CA WRNC Warner Robins, GA WTDY Madison, WI Buenos Aires, Argentina	Sports "Real Country" 96.5 FM Talk, Sports BBC America Latina
<b>1630</b> WRDW Augusta, GA KCJJ Iowa City, IA KKWY Fox Farm, WY XEUT Tijuana, Mexico Buenos Aires, Argentina	Talk/Sports Adult Contemporary Country Music Jazz "Red 92" Oldies	<b>1680</b> KAVT Fresno, CA WTIR Winter Garden, FL WJNZ Ada, MI WTTM Princeton, NJ Lanus, Argentina	Radio Disney Tourist Info "Jams" Urban Contemporary ESPN Sports "AM Getro"
<b>1640</b> KDIA Vallejo, CA KPBC Lake Oswego, OR WKSH Sussex, WI Buenos Aires, Argentina	EWTN Catholic Religion, Gospel Religion "Radio Bolivia"	<b>1690</b> KSXX Roseville, CA KDDZ Arvada, CO WPTX Lexington Park, MD	Testing Radio Disney Talk, Nostalgia
<b>1650</b> KFOX Torrance, CA KBJD Denver, CO KDNZ Cedar Falls, IA WHKT Portsmouth, VA Hurlingham, Argentina	Korean Contemporary Christian News/Talk Talk, Religion "AM Restauracion" Religion	<b>1700</b> WEUV Huntsville, AL WAFN Miami Springs, FL KBGG Des Moines, IA KQXX Brownsville, TX KTBK Sherman, TX	Gospel "The Fan" Sports CNN News Spanish Sports

**1300 KYNO** Fresno, California, "Radio Guadalupe" QSL letter with coverage map in 17 days for taped report and letter in Spanish. The reply was in English, signed Jess M. Gonzalez — Prog/Promo Director. Address reports to 2125 North Barton Avenue, Fresno, CA 93703. (Martin, OR)

**1570 KOSZ** Vermillion, South Dakota, letter in 241 days signed Kevin Culhane — GM, heard with 71 watts. Mentioned since they changed format a few months back they had been busy. They are now KVTK, ESPN Sports. Address is 1407 East Cherry Street, Vermillion, SD 57069. (Martin, OR)

**1630 KCJJ** Iowa City, Iowa, QSL card in 10 days. I had an E-mail QSL, but they now have a card, pretty much blank on the back where the message is written, red and black letters on the front of the card, signed Tom Suter-Sales Manager KCJJ Radio. Address on the card is P.O. Box 2188, Iowa City, IA 52244-2118. (Martin, OR)

**1660 KQWB** Fargo, North Dakota, full data letter, info sheet describing format, and coverage map in 16 days, signed Brian Whalen, APD. Address is P.O. Box 9919, Fargo, ND 58106-

9919. Format is nostalgia from the '40s through the '90s, slogan is "Star 1660." transmitter is in Averill, MN, day pattern is circular but night pattern is definitely egg shaped with a null to the east and a large lobe to the west, broadcasting in stereo. (Griffith, CO)

**1680 KAVT** Fresno, California, an E-mail QSL letter in 30 days for a taped report, from Paul Shinn-CE. E-mail address is Paul@kstn.net. (Martin, OR)

### Broadcast Loggings

Listen for **740** kilohertz to become active again in Toronto. The former home of the CBC will become **CFPT** "Prime Time Radio" broadcasting the nostalgia formerly on CHWO at 1250. CHWO will be relaying the contemporary Christian programming of sister station CJMR at 1320. Another new AM station has hit the airwaves in Ontario. "The Jewel" CJUL Cornwall, Ontario is broadcasting nostalgia on 1220. KABC Los Angeles listeners may want to keep an ear open for the Al Gore Show. The former Vice President and presidential candidate has been offered to host a talk show, but a recount of the latest ratings



results might be in order before accepting the job. Now the logs, all times are UTC.

**640 R. Progreso**, Guanabacoa, Cuba at 0650 with ballads, "Habana" and "Progreso" mentions. (Hill, VA)

**738 RFO** Mahina, Tahiti, at 1030 a man and woman in French faded up briefly, otherwise a 2 kHz het against 740. XEX Mexico on 730 was strong. WWNZ Florida was dominant over an unID Latin American signal on 740 until WSBR Florida switched to day facilities followed by WJIB Massachusetts popping up at 1100 UTC, essentially wiping out what was a weakening signal with local sunrise approaching at 1135 UTC. (Conti, NH)

**783 R. Mauritanie**, Nouakchott, Mauritania, at 0240 parallel 4845 kHz shortwave with a man in Arabic, on late for Ramadan. (Connelly, MA)

**850 KOA** Denver, Colorado, "Bronco Radio — Voice of the West" 0400–0430 excellent signal but fades with news/talk show host Bill Jones. (Marcher, CA)

**850 WABA** Aguadilla, Puerto Rico, at 0312 Spanish talk and "Waba" jingle, in an even mix with WEEI Massachusetts and WDJF Florida. (Connelly, MA)

**1070 KFDI** Wichita, Kansas, news station heard daytimes mixing with KATQ Montana. A phone call to KFDI verified the

local news items heard. They even are going to do a local news story about me. This along with Houston has been some of my best daytime MW DX for several years. (Martin, OR)

**1160 KSL** Salt Lake City, Utah, at 1000 good with country music, news, advertising, and general chit chat. (Marcher, CA)

**1476 UAE Radio**, Dubai, United Arab Emirates, at 0137 poor to fair through WSAR slop, Ramadan-extended schedule parallel 13675 kHz shortwave with male Koranic chant, then march (anthem?), then faded or off at 0140 UTC. (Connelly, MA)

**1500 XEDF** Mexico City, Mexico, 1305–1400 good with lively music and many "Radio Uno" IDs, fair to weak with fading. (Martin, OR)

**1500 KUMU** Honolulu, Hawaii, at 1245 good with Westwood One nostalgia, many "Kumu" IDs. (Martin, OR)

**1610 KALT** Atlanta, Texas, at 0128 a good signal at times with deep fades, Fox Sports Network, "AM 1610" and KALT IDs, new. (Griffith, CO)

**1690 KSXX** Roseville, California, at 0730 testing with a 1 kHz tone. They were going to start testing according to a tip from Gary Jackson. (Martin, OR)

Thanks to contributors Mark Connelly, Patrick Griffith, Norman Hill, Jim Litz, Sterling Marcher, and Patrick Martin. 73, and good DX. ■

Pending							
New Call	Location	Freq.	Old Call				
WKHZ	Ocean City, MD	1590	WETT	KFPB	Chino Valley, AZ	103.9	KPBZ
WBRJ	Marietta, OH	910	WYLI	KXNA	Springdale, AR	104.9	KBRB
WYLO	Jackson, WI	540	WZER	WRCQ	La Belle, FL	92.5	WWWD
KHKV	Kerrville, TX	88.7	KBAB	KTOH	Kalaheo, HI	99.9	KAYI
KHCP	Paris, TX	89.3	KBCV	KITH	Kapaa, HI	98.9	KAWT
				KKBM	Waipahu, HI	102.7	KKHN
				WHCM	Palatine, IL	88.3	New
				WKKQ	Barbourville, KY	96.1	WYWY-FM
				WPTK	Louisville, KY	103.9	WMHX
				KBZZ-FM	Morgan City, LA	96.7	KFXV
				WHYT	Imlay City, MI	89.1	New
				WWCM	Standish, MI	96.9	WSTD
				KRVY-FM	Starbuck, MN	97.3	KAYF
				KLEU	Lewistown, MT	91.1	New
				KXMT	Taos, NM	99.9	KLAB
				KTUM	Tatum, NM	107.1	New
				WBBF-FM	Avon, NY	93.3	WQRV
				WBZA	Rochester, NY	98.9	WBBF
				WRUP	Bayboro, NC	97.9	WBHU
				WZUP	Rose Hill, NC	104.7	WBSY
				WXJC	Wilson, NC	90.5	WAHD
				WDPT	Piqua, OH	95.7	WCLR
				WDTP	Xenia, OH	95.3	WZLR
				KMMZ	Enid, OK	96.9	KMKZ
				KBUG	Malin, OR	100.3	KHAT
				WPTP	Philadelphia, PA	96.5	WWDB-FM
				WDDH	St. Marys, PA	97.5	WPKX
				KSQB-FM	Flandreau, SD	107.9	KSQB
				WMAK	Murfreesboro, TN	96.3	WRMX
				WKZP	Spencer, TN	107.3	WWEW
				KTHT	Cleveland, TX	97.1	KKTL-FM
				KDGE	Fort Worth, TX	102.1	KTXQ-FM
				KTXQ-FM	Gainesville, TX	94.5	KDGE
				WZEZ	Goochland, VA	100.5	New
				KDWY	Diamondville, WY	105.3	New

Changes							
New Call	Location	Freq.	Old Call				
KWHN	Fort Smith, AR	1650	KHFS				
KYHN	Fort Smith, AR	1320	KWHN				
KAFY	Bakersfield, CA	1100	KZPM				
KZPM	Bakersfield, CA	970	KAFY				
KSPN	Pasadena, CA	1110	KRLA				
WWFS	Peoria, IL	1290	WIRL				
KCKN	Kansas City, KS	1340	KFEZ				
WCKW	Garyville, LA	1010	WLTS				
KFXV	Houma, LA	1490	KJIN				
WJSS	Havre de Grace, MD	1330	WASA				
WIRL	Louisville, MS	1270	WLSM				
KINF	Roswell, NM	1020	KCKN				
WBBF	Rochester, NY	950	WEZO				
WTEL	Red Springs, NC	1160	WYRU				
KMKZ	Enid, OK	1640	KMMZ				
WWDB	Philadelphia, PA	860	WTEL				
WCEO	Columbia, SC	840	WCTG				
WIQB	Conway, SC	1050	WJXY				
WKZX	Lenoir City, TN	730	WLIL				
WQCQ	Madison, TN	1430	WMAK				
WHRP	Claremont, VA	670	WRJR				
WKXX	Wheeling, WV	1600	WOHZ				
CJUL	Cornwall, ON	1220	New				
CFPT	Toronto, ON	740	New				

# Scanner Recorder 1.8

*It's A Really Slick Digital Recorder — And It's Free!*

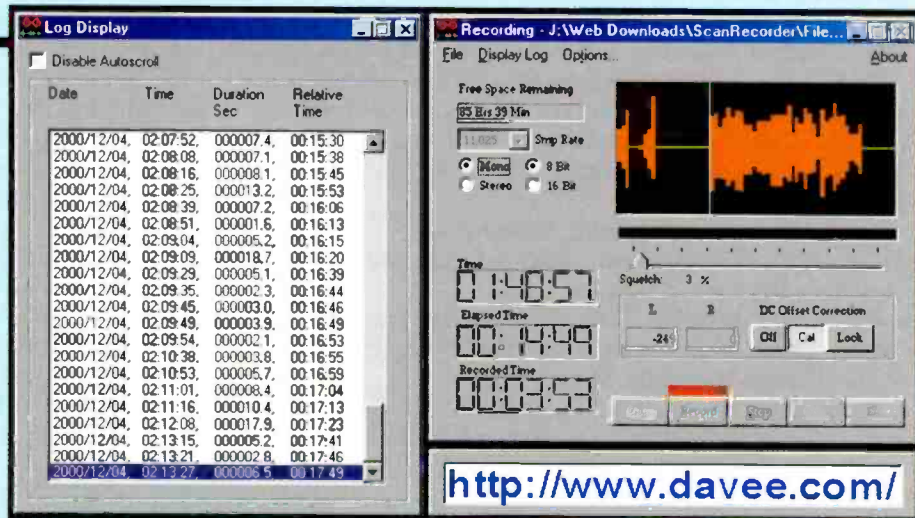
By Eric Force <eric@dobe.com>

This is one of the few times you'll see me put my last sentence first: If you do nothing else, **DOWNLOAD** David Jacobs' **FREE** Scanner Recorder **NOW!** Rarely will you find such a well-thought-out, well-written and useful program — and, with a price tag of zero! Grab it before David changes his mind! Scanrec creates standard WAVE (.WAV) files, which can be played back via most multimedia programs — Microsoft's Media Player — will work fine. Here's how Dave describes "Scanrec."

"Scanrec is a free audio recorder that is primarily designed to record speech. It has a VOX control that allows the user to save disk space when no sound is present in the signal. Since FM communication has such an effective squelch, the recorder works best with FM. HF ham bands and World Band radio have such a poor signal-to-noise ratio that the VOX gate on Scanrec might not be very easy to set. Some of the uses of the Scanner Recorder are: recording radio communications; recording channels that hardly ever have activity; catching those rarely heard conversations; air traffic control recording; dictation; record (compressed) broadcast radio or TV and listen to it when it's more convenient."

## Records A Log!

One of the nifty things NOT mentioned is that Scanrec records a log of all transmissions received as they occur complete with date, actual and relative time lines and duration — great for documenting QSL info. Scanrec uses your PC's system time so if UTC (Universal Coordinated Time) is needed, remember to make the appropriate adjustments when reviewing the log(s) or, you might consider (temporarily) setting your PC's clock to UTC during recording. You'll find the log in the SAME directory as your recordings as a text file with the same file name as your recording but with a .LOG extension instead of .WAV. WORDPAD® (comes with Windows®) is a good program to



*Here's a really slick digital recorder. It's a must have and it's FREE!*

use for opening, reviewing and/or printing your log files. Also mentioned was that Scanrec was designed primarily for speech. That may be true, but given Scanrec's ability to sample at up to 48.0 KHz, 16 bit stereo, you can get some pretty good sounding recordings from any source that can be played through your sound card. Of course, at a high sampling rate, tons of disk space will be gobbled up very quickly. However, Scanrec keeps track of how much time is available on your disk (based on the sample rate) so you'll have a heads up on how fast you're filling up your hard drive. If you have a CD-R or CD-RW drive, you might consider saving your records to CD instead.

Scanrec doesn't have a help menu or user guide, but it's so easy to use you won't need either. Regardless, here are some tidbits of info and suggestions that you may find useful based on my first experiences with this slick program. PRINT and read the FAQ (Frequently Asked Questions) available at the site. Most problems you might encounter are pretty well covered. I tend to plug things in first and "read the manual" only when absolutely necessary so I had to go back to the site to find out how to start a recording (solution noted below). Take a couple of minutes to read the FAQ before you begin using Scanrec. It will be time well spent.

Getting the "Record" button to work takes a little getting used to and was my

initial "hang up." Unlike most programs that let you do whatever first THEN "save" or "save as" a file, Scanrec requires that a filename be OPENED (created) before you begin to record. While you could use your PC's microphone as an input device, I'd suggest connecting your scanner or receiver's external speaker jack to your sound card's LINE INPUT jack for best results. With respect to volume, watch Scanrec's display — if it fills top and bottom, you're overloading the sound card so turn your rig's volume down. You can then increase your PC speakers' volume for comfortable listening. If you're recording from the 'net, you shouldn't have to do anything — if you can hear it on your PC's speakers, Scanrec should "hear" it too.

Experiment with Scanrec. Try various settings and observe how they affect your recording(s). You can also use Scanrec's STOP button as a PAUSE function — just click RECORD again to start the recording process.

When I'm DXing the MW and HF bands (lots of static) I typically STOP Scanrec while I tune for a new frequency. Repeating my earlier statement, if you do nothing else, **DOWNLOAD** David Jacobs' **FREE** Scanner Recorder **NOW!** You won't be disappointed! Many thanks, Dave — great work and a real gift to the scanner community! Visit <http://www.davee.com/scanrec/>.



# books, calendars, videos...

## Keys, Keys, Keys

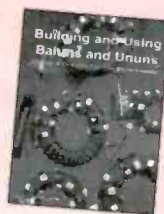
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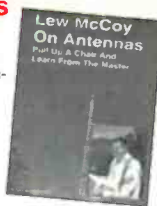
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# THE LISTENING POST

What's Happening: International Shortwave Broadcasting Bands

## Challenge: Can YOU Hear UN Radio From Sierra Leone?

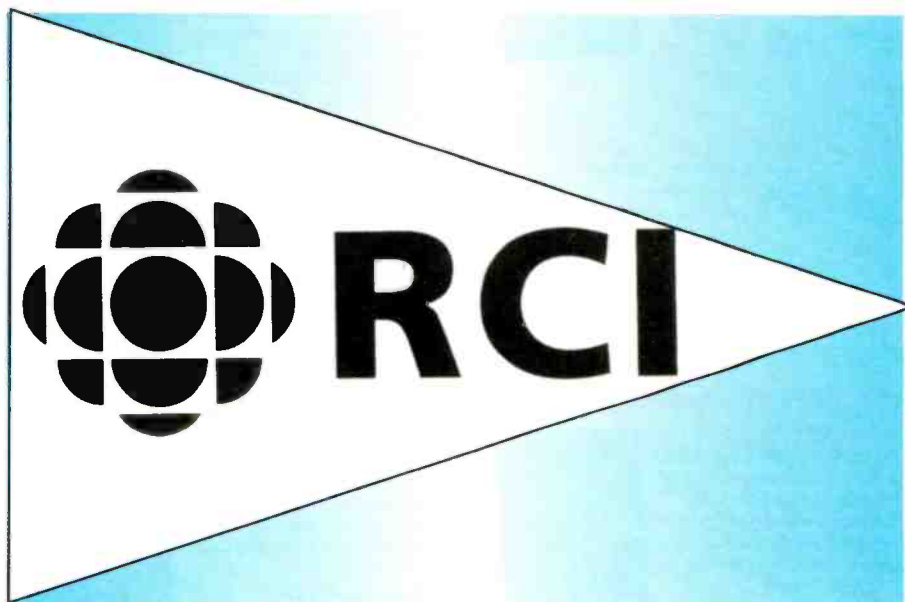
Shortwave is full of challenges and one of the newest is trying to hear the new United Nations Radio, which has gone on the air from Sierra Leone, operating 24-hours-a-day on 6140. The facility isn't quite the equal of, say, VOA-Greenville, however. All they're using is a small transceiver! Programs are a mix of English and the local Kriol language. Even though 6140 looks more or less open for much of our evening hours, this should still be a super catch for anyone lucky enough to bag it!

We haven't had any reports on Christian Voice via Darwin (Australia) yet. They should be on the air now, with (more or less) this schedule: 0200-0530 on 9865, 0000-0200 on 9875, 2230-0500 on 13780, 2230-0200 on 15165, 0200-0530 on 15185, 2230-0530 on 17645 and 2230-0530 on 21680. These transmitters run 250/300 kW. Meantime, Radio Australia is set to use Darwin for Chinese from 1100-1230 on 13605 and in Indonesian from 2130-0000 on 15425.

U.S. shortwaver WGTG has come under new management and, in the process also has new call letters: WWFV (World Wide Freedoms Voice). They are selling time to religious and political groups and are said to have five (!) 100 kW transmitters in the process of being installed. Currently assigned frequencies include 6890 and 9400.

Just to give you an idea of how hard it can be to keep track of the various relay sites used by international broadcasters, Deutsche Welle currently broadcasts over sites at Werchatal, Nauen, and Julich in Germany, and transmitters in Antigua and Bonaire in the Caribbean. They're also on from Irkutsk, Komsomolsk, Novosibirsk and Petropavlovsk in Russia; Sackville in Canada, Sines, in Portugal; Kigali in Rwanda and Trincomalee in Sri Lanka.

All reception reports for Trans World Radio — presumably this includes all the station's sites and studios — now go to this address: Trans World Radio, P.O. Box 141, A-1235 Vienna, Austria.



*Radio Canada International sends this pennant to some lucky listeners.*

It looks as though Israeli armed forces station Galei Zahal is also using a frequency in the 120 meter band, namely 2442.2. That's in addition to their 6 MHz frequency, which lately has been hovering around 6983 to '86. Another frequency in use during our morning period is 15783, varying to 15786. Programming is in Hebrew.

### Congratulations, Marty!

Time to send somebody a monthly book prize. This time it's one of our old faithfuls, Marty Foss of Talkeetna, Alaska, who also DX's from the Philippines two or three times a year (see photo). Marty receives a 2001 edition of *Passport to World Band Radio*, a book that's as important to hearing shortwave stuff as your antenna is! Thanks go to Universal Radio for providing this month's prize. If you don't have Universal's mammoth radio catalog you should get a copy. Call 'em at 614-866-4267 and request a copy.

Photos, illustrations, copies, pictures, QSLs, photocopies, photos — no matter what you call 'em — we need 'em! Whether the subject is a station transmitter, building, antenna, studio, employee, operating schedule or even (gasp!) a picture of you and your listening post, it's more than welcome here. And the more the merrier!

Of course, your reception logs are always wanted, too. We make every effort to use most, if not all, of the logs sent in, so don't be shy or feel yours aren't good enough. Just be sure to list your logs by country and leave enough space between then one so we can navigate scissors easily. Logs are cut into strips and then sorted by country, so be sure to use only one side of the paper otherwise some of your logs won't survive. Also include your last name and state abbreviation after each logging. As always, thanks so much for your continued interest and participation.

Here are this month's logs. All times are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 5 p.m. MST and 4 p.m. PST.

BY GERRY L. DEXTER



## BROADCAST TIMES AND FREQUENCIES FOR ENGLISH LANGUAGE SERVICE

(Beginning Oct. 30, 2000)

Beijing Time	UTC	Local Standard Time	Metre Bands	KHz
<b>North America (East Coast)</b>				
07:00 - 08:00	23:00 - 24:00	19:00 - 20:00 (E. S. T)	50	5990 *
09:00 - 10:00	01:00 - 02:00	21:00 - 22:00 (E. S. T)	31	9570 *
11:00 - 12:00	03:00 - 04:00	23:00 - 24:00 (E. S. T)	31	9690
12:00 - 13:00	04:00 - 05:00	00:00 - 01:00 (E. S. T)	31	9730
21:00 - 22:00	13:00 - 14:00	09:00 - 10:00 (E. S. T)	31.41	9570 * 7405
21:00 - 22:00	13:00 - 14:00	09:00 - 10:00 (Washington D. C.)		1120AM#
#One-hour program is relayed by WUST or New World Radio				
<b>North America (West Coast)</b>				
11:00 - 12:00	03:00 - 04:00	20:00 - 21:00 (P. S. T)	31	9690
12:00 - 13:00	04:00 - 05:00	21:00 - 22:00 (P. S. T)	31	9730
13:00 - 14:00	05:00 - 06:00	22:00 - 23:00 (P. S. T)	31	9560
22:00 - 24:00	14:00 - 16:00	06:00 - 08:00 (P. S. T)	41	7405
<b>Europe</b>				
04:00 - 05:00	20:00 - 21:00	20:00 - 21:00 (London) 21:00 - 22:00 (Central Europe)	50.30	5965.9840
05:00 - 06:00	21:00 - 22:00	21:00 - 22:00 (London)	30.50	9840.5965
06:00 - 07:00	22:00 - 23:00		42	7170
07:00 - 07:30	23:00 - 23:30	23:00 - 23:30 (London)		558AM
<b>Southeast Asia</b>				
20:00 - 21:00	12:00 - 13:00	19:00 - 20:00 (Western Indonesia, Bangkok) 20:00 - 21:00 (Singapore) 20:00 - 21:00 (Ho Chi Minh City, Manila) 18:30 - 19:30 (Rangoon)	224.31.25	1341.9730.11980
21:00 - 22:00	13:00 - 14:00	20:00 - 21:00 (Western Indonesia, Bangkok) 21:00 - 22:00 (Singapore) 21:00 - 22:00 (Ho Chi Minh City, Manila) 19:30 - 20:30 (Rangoon)	224.20.25	1341.15180.11980
<b>South Asia</b>				
20:00 - 21:00	12:00 - 13:00		253	1188 *
22:00 - 23:00	14:00 - 15:00	19:30 - 20:30 (Delhi, Colombo) 19:00 - 20:00 (Rawalpindi) 20:00 - 21:00 (Dacca) 18:45 - 19:45 (Kathmandu)	42.26 31.26	7180.11765 9700 * 11675 *
23:00 - 24:00	15:00 - 16:00	20:30 - 21:30 (Delhi, Colombo) 20:30 - 21:30 (Rawalpindi) 20:00 - 21:00 (Dacca) 19:45 - 20:45 (Kathmandu)	42.31	7160.9785
<b>The South Pacific</b>				
17:00 - 18:00	09:00 - 10:00	19:00 - 20:00 (Aust. E. S. T) 21:00 - 22:00 (N. Z. S. T)	20.26	15210.11730
18:00 - 19:00	10:00 - 11:00	20:00 - 21:00 (Aust. E. S. T) 22:00 - 23:00 (N. Z. S. T)	20.26	15210.11730
20:00 - 21:00	12:00 - 13:00		26.19.31	11675.15415.9760
21:00 - 22:00	13:00 - 14:00		26.25	11675.11900
<b>East and South Africa</b>				
22:00 - 24:00	14:00 - 16:00		22.20	13685.15125
00:00 - 01:00	16:00 - 17:00	18:00 - 19:00 (Cape Town, Harare) 19:00 - 20:00 (Dar es Sa. laani)	42.22	7190.13650
01:00 - 02:00	17:00 - 18:00	19:00 - 20:00 (Cape Town, Harare) 20:00 - 21:00 (Dar es Sa. laani)	31.25.42 31.31	9570.11910.7150 9695 * 9670 *
04:00 - 05:00	20:00 - 21:00		26.22	11735.13640
05:00 - 05:30	21:00 - 21:30		26.22	11735.13640
<b>West and North Africa</b>				
00:00 - 01:00	16:00 - 17:00		22.42	13650.7190
01:00 - 02:00	17:00 - 18:00		31.31	9670 * 9695
03:00 - 04:00	19:00 - 20:00	18:15 - 19:15 (Monrovia) 19:00 - 20:00 (Accra, Freetown) 20:00 - 21:00 (Lagos) 21:00 - 22:40 (Cairo)	32.31.49	9440.9585 * 6165
04:00 - 05:00	20:00 - 21:00	19:15 - 20:15 (Monrovia) 20:00 - 21:00 (Accra, Freetown) 21:00 - 22:00 (Lagos) 22:40 - 23:40 (Cairo)	32	9440

\* Testing Frequencies

### Abbreviations Used in Listening Post

AA	Arabic
BC	Broadcasting
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North America
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/iou/s
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel Frequencies

Double capital letters are language abbreviations (FF = French, AA = Arabic, SS = Spanish, etc.). If no language abbreviation is included the broadcast is assumed to have been in English.

**ALASKA** — KNLS. 7365 in RR at 1130. (Becker, WA) 9615 in RR with pops at 0920. (Barton, AZ)

**ALBANIA** — Radio Tirana, 7160 at 0230 with IS, ID, schedule, frequencies, and into news. (Burrow, WA)

**ANGUILLA** — Caribbean Beacon/University Network. 6090 monitored at 0750 with Dr. Gene Scott. (Becker, WA) 0919. (Newbury, NE)

**ANTIGUA** — BBC relay. 5975 at 0000, 15220 at 1159 and 17840 at 1738 all beamed to the Americas. (Jeffery, NY) 5975 at 0448. (Sherwood, KS) Deutsche Welle relay. 11985 at 0759 with IS and sign-off of their broadcast to the South Pacific and Australia. (Paszkiwicz, WI)

**ARMENIA** — Voice of Armenia, 9965 at 0345 in SS with announcements and music to ID. (Brossell, WI) 1954 with IS, anthem, ID, schedule, frequencies, news, and comment. (Burrow, WA) Trans World Radio, tentative. 6240 at 0028 and again at 0047 to 0100 sign-off. Sign-on at 0028 with TWR IS. IS again at 0045 with religious talk in unid language. Reactivated here? (Alexander, PA)

**ASCENSION ISLAND** — BBC relay, 15400 at 2025 with news. (Newbury, NE) 17830 to West Africa at 2015. (Jeffery, NY)

**AUSTRALIA** — Radio Australia, 6020 at 1206. (Becker, WA) 11650 at 1315 with program on the solar system and 15515 at 0340 with program on Polynesia. (Brossell, WI) 6020 at 1155 and 11650 at 1350. (Northrup, MO) 9475 in CC with news at 1222. 9580 at

←  
*Here are the current times and frequencies for English from China Radio International.*

1232. **21740** at 2112. (Jeffery, NY) 9580 at 1300. (Newbury, NE) 1529. **15240** at 0635. **17580** at 0648. **17795//21550** at 2347. (Sherwood, KS) **9710** at 0800. (Weronka, NC) 0910 in Pidgin. (Barton, AZ) **17580** at 0352. (Burrow, WA) **21725** at 0410. (MacKenzie, CA) VNG time station, **16000** at 0646 with time signals and female announcer. (Sherwood, KS)

**AUSTRIA** — Radio Austria Int'l, **6155** monitored at 0505 in GG with Mozart. (Sherwood, KS) **13730** with news and ID at 2140. (Burrow, WA)

**BELGIUM** — Radio Vlaanderen Int'l, **9865**, via Russia, at 1145 with ID as "Voice of Brussels." (Newbury, NE) **11985**, via Bonaire, at 0420 with Brussels Calling. (Weronka, NC) **15565** via Bonaire at 0417. (Burrow, WA) RTBF Int'l, **17565** via Germany, at 1710 with news in FF. (Sherwood, KS)

**BOLIVIA** — Radio Mosoj Chaski, **3310** at 2200 with children singing, long talks in PP or SS. Best earlier in the evening. Later dates better at 2331. (Montgomery, PA)

**BRAZIL** — Radio Record, **9505** in PP at 2224 with pop vocal, talk, jingle ID and talk in PP by man and woman. (D'Angelo, PA) Radio Novas de Paz, **11725** at 1325 in PP. (Northrup, MO) Radio Gaucha, **11915** at 2235 with music and announcements in PP. (Brossell, WI) Radio Congohas, **4775** at 0008 with talks in PP and into Brazilian-type music. (Montgomery, PA) Radio Missoes da Amazonia, tentative, **4865** with man and greetings at 0907 after tentative ID. (Montgomery, PA) Radio Marumby, **9665** at 1248 in PP with music and woman announcer. (Jeffery, NY)

**BULGARIA** — Radio Bulgaria, **7400** at 0330 with "Time Out for Music." (Weronka, NC) **9400//11700** at 0204 with news, weather. (Burrow, WA) **13710** in RR at 2240 with classical music and ID. (Jeffery, NY)

**CANADA** — CHU time station, **7335** at 0755. (Becker, WA) CKZN, **6160** at 0400 with CBC news. Severe QRM from Radio Netherlands/Bonaire on 6165. (Brossell, WI) 0903 with news. QRM from Deutsche Welle. (Becker, WA) Radio Canada Int'l, **5960** at 0137 with "Maple Leaf Mailbag." (Barton, AZ) **9640** at 1546. (Sherwood, KS) **9755** at 2316. Into FF at 0000; **13650** at 1343. (Wilden, IN) **11720** at 1811. (Burrow, WA) **13670** at 2325 and **13755** at 0510. (Weronka, NC) **15470** at 2033, **17695** at 2203 and **17820** at 2012. (Jeffery, NY)

**CHILE** — Voz Cristiana, **11745** at 0354 in SS. (Burrow, WA) **11690** at 0112 and 1135. (Newbury, NE) 1127. (Becker, WA) **15375** at 0637, **17680** at 1711 and **21550** at 2350. (Sherwood, KS) **21550** at 1635. (Barton, AZ)

**CHINA** — China Radio Int'l, **5145** in RR at 1051. **7170** with Esperanto/CC lesson at 1127. Off at 1150. (Becker, WA) **5990** at 2316. **9440** in unid. language at 1218. (Jeffery, NY) **11675** at 1320. (Northrup, MO) **11700** in SS at 0048 and **15120** in SS via Cuba at 0050. (MacKenzie, CA) **11730** at 0916. (Newbury,



*How's this for a DX shack? "Listening Post" regular Marty Foss does his SWBC DXing from here and says "it's a great location for radio!"*

NE) **12035**, via Russia, in Chinese-accented AA at 1830. (Ziegner, MA) **15260** in CC at 2338. (Sherwood, CA) Fujian PBS, **4975** in CC at 1224. (Becker, WA) Central People's Broadcasting Station (aka China National Radio) **4460** at 1136 in CC, **4850** in CC at 1155 and **5420** at 1148. (Becker, WA) **9380** in CC at 1212. (Jeffery, NY) **9845//9900** at 2305. (Sherwood, CA) **11630** in CC at 2230 and **15500** in CC at 1320. (Brossell, WI)

**COLOMBIA** — Ecos del Atrato, **5019.8** at 1038 in SS with news, sports, ID. (D'Angelo, PA) La Voz de los Centauros, **5955.1** with SS ID at 0948, complete location, lots of IDs and mentions of Colombia. ID as "Voz de los Centauros. Vilavicencio, Colombia" and then mentions of Caracol. (Montgomery, PA)

**COSTA RICA** — Faro del Caribe, **5054** in SS at 0442. (Sherwood, KS) University Network, **5030** at 1310 with classical music. (Brossell, WI) **9725** at 1550 with Gene Scott talks. (Sherwood, KS) RFPI, **15049** at 0631 and 1620. **21815 USB** at 1755. (Sherwood, KS) **21815** at 0005. (MacKenzie, CA) 2121. (MacKenzie, CA)

**CROATIA** — Radio Croatia, **9470** at 0602 with news in Croatian. (Sherwood, KS) **11635** at 1325 in unid. language. (Northrup, MO)

**CUBA** — Radio Havana Cuba, **9820** at 0136. (Newbury, NE) **9820** at 0535, **9830** at 0525, **11760** at 2210 in SS and **13660 USB** at 2110. (MacKenzie, CA) **11705** at 0145. Cuba in USB and co-channel VOA can be heard in LSB, both in EE. (Alexander, PA) Radio Rebelde, **5025** at 0440 in SS. (Sherwood, KS) **0815** in SS. (Becker, WA) **15075** harmonic at 0230 with sports coverage. SS announcements, jingles. Second harmonic on **10050** also heard. (Alexander, PA)

**CYPRUS** — BBC relay, **15555** at 1325 in AA to ID at 1330. (Brossell, WI)

**CZECH REPUBLIC** — Radio Prague,

**7345** at 0110, **11615** at 0004 and **21745** at 1625. (Newbury, NE) **11600** at 0340. (Burrow, WA) 1700. (Weronka, NC) **2159** in EE/FF. (MacKenzie, CA)

**DENMARK** — Radio Denmark, via Norway, **9945** in DD monitored at 0345. (Brossell, WI) **15735** via Norway, in DD at 1542. (Barton, AZ)

**DOMINICAN REPUBLIC** — Radio Barahona, **4930.05** at 0245 in SS with possible religious talk, SS ballads, ID and lively LA music. No sign of the Honduran. Apparently they fixed their transmitter, as it was a very good, stable signal. (Alexander, PA)

**ECUADOR** — HCJB, **9745** at 0125. (Newbury, NE) 0035 and 0400. **15115** at 0100. (MacKenzie, CA) **11840** at 0027. (Jeffery, NY) Radio Baha'i, **4950.1** tentative in SS at 1033 with child in canned format, short talks and back to local music. (Montgomery, PA) Radio Quito, **4919** in SS at 0310. SS news with brief music breaks, ID. Problems with somewhat distorted audio. (Alexander, PA) 0438. (Sherwood, KS) 1045. (Becker, WA) HD210A, **3810**, SS time signals at 0615. (Becker, WA) 1000, Montgomery, PA) Radio Progreso, **5060**. One in SS with IDs at 0046 and 0056. Lots of local music, man/woman announcers with reverb announcements. (Montgomery, PA)

**EGYPT** — Radio Cairo, **9900** in AA at 0037. (Newbury, NE) 2300 in EE. (Burrow, WA) **11665//12050** in AA at 2318. **12050** in AA at 0627 and 1612. (Sherwood, KS) **12050** at 0551 in AA. (Becker, WA) **12050** in AA at 0315 and **15475** at 1320. (Brossell, WI)

**ENGLAND** — BBC, **6175** via Canada at 2325. **9515** via Canada at 1458 and **9590** via Okeechobee at 2345. (Jeffery, NY) **9515** via Canada at 1525 and **9590** via Okeechobee at 1515. (Sherwood, KS) **9740** (via Singapore) at 1205. (Northrup, MO) **15520** (via Antigua) at 1403. (Wilden, IN)



**EQUATORIAL GUINEA** — Radio Nacional. Bata, 5003 at 2159 with female vocals. SS ID. sign-off announcement prior to long orchestral national anthem. (D'Angelo, PA) Radio Nacional, Malabo. 6249.3 weak in SS with news by man, music. Lost at 2208. (Montgomery, PA) Radio Africa. 15184.8, excellent level but really poor, over-modulated audio. Man with religious talks at 2219, program change at 2230 with somewhat better audio. (Montgomery, PA) 15186 with religious program in EE at 2155. (Brossell, WI)

**FINLAND** — YLE/Radio Finland. 13770 at 0105. (Newbury, NE) 15400 at 1315 with interview program in Finnish. (Brossell, WI)

**FRANCE** — Radio France Int'l. 5990 in FF at 0452. (Sherwood, KS) 11660 in FF at 2318. (Sherwood, CA) 11995 in FF at 0309. "RFI, le Radio du Monde." Live ballads, applause, and news from Paris. (Paszkiwicz, WI) 15210 with news at 1606. Also with EE news on 17605 at 1600. (Barton, AZ) 1700 in EE. Also 11615 at 1615. (Burrow, WA) 17620 at 1420 in EE. (Wilden, IN) 21580 in FF at 1442. (Jeffery, NY)

**FRENCH GUIANA** — Radio France Int'l relay. 15200 in FF at 2335. (Sherwood, CA)

**GABON** — Africa Number One. 15475 in FF at 1643 with "world music." (Sherwood, KS) 1657 in FF with "rap." ID. FF talks. (Burrow, WA) Radio France Int'l relay. 4890 in FF at 0434. (Sherwood, CA) 11910 at 0425 in FF. (Brossell, WI) 12015 at 1610. (Sherwood, KS)

**GERMANY** — Radio Deutsche Welle. 11985 (listed via Antigua — Ed) at 0505. (Barton, AZ) Radio Liberty (RFE/RL) 15520 LSB at 1600 with news in Turkmen, music, ID. (Ziegner, MA)

**GHANA** — Ghana Broadcasting Corp.. 3366 with classical music and EE talks Reggae at 2155. ID on the hour, news in EE. (Montgomery, PA)

**GREECE** — Voice of Greece. 7450 in Greek at 0545, closing at 0550. 9420 in Greek at 0557 and 1453. (Sherwood, KS) 9420 at 0330 in Greek. (Brossell, WI) 9420/12110 at 0202 with EE news, back to Greek at 0206. (Burrow, WA) 17705 (via Delano — Ed) at 2019 in Greek. (Jeffery, NY) VOA relay. 15160 at 1425. (Barton, AZ) 15205 at 1405. (Jeffery, NY)

**GUAM** — KTRW/Trans World Radio. 9430 at 1456 in CC. (Sherwood, KS)

**GUATEMALA** — TGNA/Radio Cultural, 3300 at 0345, ID 0400. (Brossell, WI) 0605 and 1148 in SS. (Becker, WA) Radio Tezulutlan, 4835 with calliope-type music, talks in SS at 1035, tentative ID. (Montgomery, PA) Radio K'ekchi, 4845, 0101 with religious programming, talks in K'ekchi, contemporary SS religious music and local religious music. Anthem and off at 0159. (Alexander, PA) Radio Buenas Nuevas, 4799.7 with pretty ballads, "Onward Christian Soldiers" at 1115, ID in SS. (Montgomery, PA)

**GUYANA** — Voice of Guyana. 3289.7 at 0450 with relay of BBC sports. World Service ID, time pips and "World Today." No local ID noted. (D'Angelo, PA)

**HAWAII** — KWHI/World Harvest Radio, 9930 at 1600 with ID and QSL info. (Sherwood, KS)

**HONDURAS** — La Voz Evangelica, 4919 in SS at 0431 with religious music. (Sherwood, KS) Radio Luz y Vida. 3250 with SS ID by man several times at 1100, continuous ballads in SS. (Montgomery, PA)

**HUNGARY** — Radio Budapest, 9560 at 0115 with financial news. (Newbury, NE) 9835 at 0220 with multilingual ID. (Burrow, WA) 1555 in FF. Weak under carrier. (Sherwood, KS)

**INDIA** — All India Radio. 11620 with

news at 1330. 11735 at 0325 in presumed Hindi. (Brossell, WI) New 13605 at 2354 with announcement, news on the hour. Music at 0016. (Montgomery, PA) 13625 in EE at 0012. (Newbury, NE) 13750 at 1914. (Burrow, WA) 15075 at 1215. (Northrup, MO) 15140 at 1625 in RR. (Sherwood, KS)

**INDONESIA** (Moluccas) — Radio Republik Indonesia, Ambon, 4845 in II with continuous sub continental music, short talks by man/woman, more music. ID 2304. (Montgomery, PA)

**IRAN** — Voice of Islamic Republic of Iran, 9835/11970 at 0032 sign-on in EE.

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(Newbury, NE) 11710 in AA at 2322. (Sherwood, CA) 15084 at 0340 in presumed Farsi. (Brossell, WI)

**IRAQ** — Radio Iraq Int'l, 11784.96 at 0345 with AA music, talk in unid. language, Koran at 0412. Very strong but the usual poor modulation and slight hum. Down from nominal 11787. (Alexander, PA)

**IRELAND** — Radio Telefis Eireann, (via UK) at 1802 with talks of taxi problems in Dublin, milk prices and commercials. (Ziegner, MA) 21630 via Ascension at 1829. (Burrow, WA) 1842. (Sherwood, CA)

**ISRAEL** — Kol Israel, 7545 in AA at 0552 and into HH. 11585 in AA at 2315. 15760 in AA at 1700//17535. 17545 in EE at 1708. (Sherwood, KS) 7545 in HH at 0423 to ID at 0425. (Brossell, WI) 9435 with news in EE at

0500. (Burrow, WA) 11585 in AA at 0035 and HH at 2155. (MacKenzie, CA) Galei Zahel, 6896.6 in HH with call-in show and mostly U.S. pop. Still there at 0438 recheck and better. (Montgomery, PA)

# RDP Internacional

R á d i o P o r t u g a l

**ITALY** — RAI Int'l, 7150 at 0425 with ID, frequencies, news. (Burrow, WA) 11810 at 0103 with news. (Newbury, NE) 21510 at 1436 in II. (Jeffery, NY) Italian Radio Relay Service, 7120 carrying Radio Free Euphoria pirate program at 2338. (Montgomery, PA)

**JAPAN** — JYJ time station, 8000 with time signals at 1142. (Becker, WA) Radio Japan/NHK, 6110 via Canada at 0500. (Weronka, NC) 1100 with terrible signal. 6145 via Canada at 0658 with sign-on to Asia. (Becker, WA) 0038 with pops in JJ. Also 7230 via UK at 0514 and 11715 at 0521. (Newbury, NE) 0025. (Weronka, NC) 9505 in JJ at 1515. Also 9535. (Sherwood, KS) 9505//15355 at 1009. (Burrow, WA) 9835 at 0515 and 11895 (via French Guiana) in JJ at 2233. (MacKenzie, CA) 11705 at 1310 in JJ. (Northrup, MO) Radio Japan domestic service, 3907.5 in JJ at 1124. (Becker, WA) (*Nothing listed here — do you mean 3607.5?* —Ed) NSB/Radio Tampa 3925 at 1206; 3945 at 1058 with pops without break; 6055 at 0859 and 6155 at 0852, all in JJ. (Becker, WA) 3945 with alternative rock at 1250 in JJ. (Barton, AZ) 9595 in JJ at 1140. (Newbury, NE) 1237. (Jeffery, NY)

**JORDAN** — Radio Jordan, 11810 in AA at 0055. (MacKenzie, CA) 0707. Also 11960 at 0606. (Becker, WA) 1325. (Brossell, WI) 17680 in EE at 1606 with program about desert castles. (Paszkiwicz, WI) 0910 in EE. (Burrow, WA)

**KUWAIT** — Radio Kuwait, 11675 with AA at 0320. (Brossell, WI) 2205. (MacKenzie, CA) 11675//15495 in AA at 2319. (Sherwood, CA) 11990 at 2006 with EE ID and pop, comedy. (Burrow, WA) Radio Pinoy, presumed (over Radio Kuwait) 17885 at 1050 with mix of vocals hosted by soft-talking woman. Apparent news on the hour. No ID noted. (D'Angelo, PA)

**LIBERIA** — ELWA, 4760 with religious program, ID date 2158 with program and station info. Then to anthem and off at 2201. (Montgomery, PA) Radio Liberia Int'l, 5100, 3201 with news. Returned at 2342 to continuous easy pop vocals, woman ID and sign-off announcements and orchestral national anthem at 2358. QRM from a utility station. (D'Angelo, PA) 0015 to 0102 close. On late with continuous Afro-pops. Off abruptly. (Alexander, PA)

**LIBYA** — Radio Jamahiriya/Voice of Africa, 17725, 1755–1800 in EE with ID, news. EE also heard at 2030–2035.

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(Alexander, PA) 2108 in EE with ID, news and comment. Also at 1728 to 1733 when back to AA. (Burrow, WA)

**LITHUANIA** — Radio Vilnius, 6120 (via Germany) at 0130. Also 9855 via Germany at 0030. (Weronka, NC)

**MADAGASCAR** — Radio Mediterranean Int'l, 12090 monitored at 1613 with news. (Sherwood, KS)

**MALAYSIA** — Radio Malaysia, 7209.5 at 1154 with EE pops, ID on the hour. (Newbury, NE) 1506 with western pops and ID as "Radio Four." (Burrow, WA)

**MAURITANIA** — Radio Mauritanie, 4845 at 0010-0101 close. AA talks and music, off with national anthem. Days later, 4826.6 at 0010 to 0059 close. Had been stable on 4845 but now drifting again. AA talks and phone calls. Koran at 0049. (Alexander, PA) 4845 at 0700. (Becker, WA) 2330 with incredible copy. Mostly AA. Anthem at 0100, never seems to ID. Some Radio K'ekchi QRM. Tunes are extremely long and with occasional vocals. (Montgomery, PA)

**MEXICO** — 4845 at 0700. (Becker, WA) 2330 with incredible copy. Mostly AA. Anthem at 0100, never seems to ID. Some Radio K'ekchi QRM. Tunes are extremely long and with occasional vocals. (Montgomery, PA) Radio TA, 4800.7 at 0427 with apparent live broadcast with long talks before a crowd and some music selections. ID at 0445 by a man who appeared to be talking quietly so as not to disturb others at the event. (D'Angelo, PA) Radio Mil, 6010 at 0350 with music and announcements in SS. (Brossell, WI) 0453. (Sherwood, KS) Radio Educacion, 6185, 0510 in SS with ID, music. (Sherwood, KS) 0757. (Becker, WA) Radio Mexico Int'l, 9705 at 0400 with music. ID. "Antenna Radio Summary" in EE at 0406. (Burrow, WA) 1547. (Sherwood, KS)

**MOLDOVA** — Voice of Russia via Moldova, 7125 at 0528. (Sherwood, KS) 7180 at 0320. (Brossell, WI)

**MONGOLIA** — Voice of Mongolia, 12015 in EE at 1526 with music, ID, schedule and frequencies, end of EE at 1532. Also at 2000 with EE. (Burrow, WA) 12085 at 1011 in CC, into EE at 1030. (Ziegner, MA)

**MOROCCO** — Voice of America relay, 7195 at 0514, 15445 at 2015. (Newbury, NE) 2040 with "Africa World Tonight." (Jeffery, NY) RTV Marocaine, 7185 at 0410 in AA. (Brossell, WI) 15345 in AA at 1840 and 2118. (MacKenzie, CA)

**MYANMAR** (Burma) — Radio Myanmar, 4725, started coming up around 1100. Announcers and talks and what sounded like country-western or ballads. (Montgomery, PA)

**NEW ZEALAND** — Radio New Zealand Int'l, 11725 at 1705 with news. 17675 at 0339 with "Radio New Zealand Sport." (Burrow, WA) 0122 with "Cadenza." (Jeffery, NY) 0454 with Mills Brothers. (Foss, Philippines) 0650. (Sherwood, KS)

**NETHERLANDS ANTILLES** — Radio Netherlands Bonaire relay, 6165 at 2340. (Weronka, NC) 9795 at 0940. (Barton, AZ)

11730 at 2324. (Sherwood, CA) 11750 at 0310. (Brossell, WI) 21590 in DD at 1915. (MacKenzie, CA)

**NIGERIA** — 7255 at 0521 with "African Safari." 15120 with news at 1802. (Jeffery, NY) 7255 at 0507. (Newbury, NE) 0534 with news and ID. (Sherwood, KS) 0555 with news, drums. (Weronka, NC)

**NORTH KOREA** — Radio Pyongyang, 6574//9335//11710 at 1520 in EE with music, lecture, ID. Into FF at 1600. (Burrow, WA) 6575 at 0920 in RR. (Barton, AZ) 9345 at 1203 in unid. language. (Jeffery, NY) 11710 at 1545. (Ziegner, MA) 1830 and 0050 in SS. (MacKenzie, CA) 13650//15445 at 2332 in SS. (Sherwood, CA)

**NORTHERN MARIANAS** — KHBI, 11580 in CC monitored at 1330. (Northrup, MO) KFBS, 9465 with drama in RR at 1506. (Sherwood, KS)

**NORWAY** — Radio Norway Int'l, 9590 in NN at 0609 and 15705 in NN at 1658. (Sherwood, KS)

**OMAN** — Radio Sultanate of Oman, 15140, man/woman with world news, music, "Banker's Special" on banking in Oman. 1443. (Montgomery, PA) 1625 in AA. (Sherwood, KS)

**PAKISTAN** — Radio Pakistan, 11570//15100 at 1600 with IS, time pips, ID, schedule, news. Off at 1616. (Burrow, WA) 1824-1900 closing, with world service in Urdu. Man with ID and sign-off announcements at 1858 and choral national anthem. (D'Angelo, PA)

**PALAU** — KHBN — The Voice of hope, 9965 with religious program at 1320. ID at 1327. "This is KHBN, the Voice of Hope. You can write to us at P.O. Box 66, Koror, Palau." (Brossell, WI)

**PAPUA NEW GUINEA** — NBC, 4890 with "Happy Listening" and into pops at 0806. (Becker, WA) News at 1305 and pops at 1310. (Brossell, WI) Radio West New Britain, 3235 with country-western, man in Pidgin. Possible ID at 1220. (Montgomery, PA)

**PERU** — Radio Imperio, 4389 at 0943 with announcer talk between church links by another man before a live audience. Some choir music. With my ears this could just as easily have been "Estereo" or "Mi Estereo" as previously reported by others. (D'Angelo, PA) La Voz de la Selva, 4824.4 at 1023 with local vocals, woman announcer and romantic vocals. (D'Angelo, PA) Radio Huancabamba, 6535.8, 0404 with nice folk vocals, echo effects, ID 0406, more IDs, talks and music. (D'Angelo, PA) 6536 at 0003. Weak but continuing to build. (Montgomery, PA) Radio Super Nueva, 6673.1 with some nice Peruvian music. Tentative ID at 0040. (Montgomery, PA) Radio Celendin, 4655.1 with several IDs at 2321, 2330, and 2335. Mostly accordion music. (Montgomery, PA) Radio Altura, 6479.66 at 0140 with folk music, announcers, ID. Occasional utility QRM. (Alexander, PA) Radio Ilucan, 5678 at 2351 with theme from the "Magnificent Seven." Possible ID at 2354. (Montgomery, PA) Voice of Alabanza,

4410.2 with long talks in SS by woman with program details. ID by man at 0002 with station info, into religious programming. (Montgomery, PA) (*This is apparently the third harmonic of 1470 AM — Ed*) Radio San Francisco, 4750.1 with continuous Peruvian music, man in SS, tentative ID at 1020 and again at 1036. ((Montgomery, PA) Radio Sicuani, 4826.4 at 0940 with Peruvian music, talks by man in Ss, flute type music at 0949. (Montgomery, PA)

**PHILIPPINES** — VOA relay, 6160 at 1129. (Newbury, NE) 9760 at 1552 and 9890 at 2309. (Sherwood, CA) 11715 at 1320. (Brossell, WI) Radio Veritas Asia, 11820 at 2325 with ID in EE, program in JJ. (Sherwood, CA) Far East Broadcasting Co., 9405 at 1445 in CC. And 15450 in CC at 0640. (Sherwood, KS) 15465 in unid. language at 2343. (Sherwood, CA) Radio Filipinas, 15190 at 1834 with news, ID, U.S. '60s folk. (Burrow, WA) 1900-1927 with business report, ID, news, stock market report. (Montgomery, PA)

**POLAND** — Radio Polonia Warsaw, 11810 with news by man, stocks at 1225, ID by woman, cooking program. Short piano interlude between each program. (Montgomery, PA)

**PORTUGAL** — RDP Int'l, 15450 in PP at 1645 with live sports. (Sherwood, KS) 17600 at 0545 in PP. (Foss, Philippines) 21800 in PP at 1845. (Jeffery, NY)

**PUERTO RICO** — Armed Forces Radio, 6458 at 0000. (Newbury, NE)

**QATAR** — Qatar Broadcasting Service, 11785 in AA with Mid-east music at 0425. (Barton, AZ)

**ROMANIA** — Radio Romania Int'l, 15250//15390 in EE at 1700 with IS, ID, frequencies, news. (Burrow, WA) 17790 at 1340, //15250. (Newbury, NE)

**RUSSIA** — Voice of Russia, 7180 (Moldova) with "Speak Russian" program. (Weronka, NC) 11980 at 2055 and 17595 at 0415. (MacKenzie, CA) 12000 at 0158, //15595, 17595. (Alexander, PA) 0312. (Barton, AZ) 15460 at 0642. (Sherwood, KS) 1320. (Brossell, WI) 15470 heard at 1947. (Burrow, WA) 17595 at 0125. (Newbury, NE) 217900 at 0615 with "Moscow Mailbag" (Foss, Philippines)

**RWANDA** — Deutsche Welle relay, 15135 in EE at 2113. (MacKenzie, CA)

**SAO TOME** — VOA relay, 7290 at 0415. (Brossell, WI)

**SAUDI ARABIA** — Broadcasting Service of the Kingdom, 11820 in AA at 2215. (MacKenzie, CA) 15435 at 15640 in AA. (Sherwood, KS) 21495 in AA at 0556. (Foss, Philippines)

**SEYCHELLES** — Far East Broadcasting Assn., 11605 at 1633 with religious program in EE. (Newbury, NE) 15535 at 0344 with "What a Friend We Have in Jesus" IS and into AA. (Brossell, WI)

**SINGAPORE** — Radio Singapore, 6150 at 1205 with ID and announcements. (Becker, WA) 1500 with top 95 love songs, commercials, ID. EE ends at 1600. (Burrow, WA)

BBC relay. **9740** with sports at 1551. (Sherwood, KS) **11955** at 2240. (Brossell, WI)

**SOUTH AFRICA** — Channel Africa, **9525** at 1607 with news from African countries. (Burrow, WA) **11720** at 0511 with news. (Newbury, NE) **17870** at 1715. (Sherwood, KS) BBC relay. **11765** with news at 0430. (Brossell, WI) **15420** at 1832 with "Every Woman." (Jeffery, NY) World Beacon, **11640** at 2130 with EE Ids. DX QSL program, Christian pops. address. (Paszkievicz, WI)

**SOUTH KOREA** — Korean Broadcasting System, domestic program on **3930** in JJ at 1127. (Becker, WA) Radio Korea Int'l, **9650** via Canada at 1145. (Weronka, NC) **9570** at 0846. **11715** via Canada 1030. (Newbury, NE) **15575** at 0216 with Korean news and comment. (Burrow, WA) **2345** in KK. (Sherwood, CA)

**SPAIN** — Radio Exterior de Espana, **6055** in EE at 0459. (Burrow, WA) 0511. (Newbury, NE) 0526. (Jeffery, NY) **15110** in SS at 2110 and **21700** in SS at 1910. (MacKenzie, CA) **17715** in SS at 1712. (Sherwood, KS)

**SRI LANKA** — Deutsche Welle relay, **13690** at 2334 in GG. (Sherwood, CA) Sri Lanka Broadcasting Corp., **9770** with continuous orchestral pieces. EE ID on the hour. Knocked out by Deutsche Welle coming up on **9765**. (Montgomery, PA) **9770//15425** at 1502 with news, ID, music program, schedule and frequencies, local music and off at 1533. (Burrow, WA)

**SWEDEN** — Radio Sweden, **9495** at 0229 in EE with IS. ID. (Burrow, WA)

**SWITZERLAND** — Swiss Radio Int'l, **9885//9905** at 0430 with ID and news.

(Burrow, WA) **9885** at 0831. (Barton, AZ) **11660** (via French Guiana) with ID at 2230 and into GG. (Brossell, WI) **15555** at 1647 in possible Italian. (Sherwood, KS)

**SYRIA** — Radio Damascus, **12085//13610** at 1952 in FF. Then EE ID, schedule, frequencies, anthem, news from 2010 to 2019. (Burrow, WA)

**TAIWAN** — Radio Australia via Taiwan, **11550** at 2310. (Sherwood, CA) Voice of Asia, **11750** at 1620. (Barton, AZ) (*presumed in CC? —Ed*) Radio Taipei Int'l, 7130 at 1250 with Chinese lessons. (Newbury, NE) **5950//9680** via Florida at 0353 with CC lessons. (Burrow, WA) **9610** at 1242 with "Arts and Performers." (Jeffery, NY) **9680** at 0540 and **15345** at 0320, both via Florida. (MacKenzie, CA)

**THAILAND** — Radio Thailand, **9885** at 1250 with news. (Barton, AZ) **11905** at 0025 with Buddhist chants. (Newbury, NE) **15460** at 0300 with ID. (Burrow, WA) **21560** in unid. language at 0557. (Foss, Philippines)

**TUNISIA** — RTV Tunisienne, **7110** at 0405 with music and singing, Holy Koran at 0415, **//7275**. (Brossell, WI) **7110** in AA at 0515. **7275** at 0542. (Sherwood, KS)

**TURKEY** — Voice of Turkey, **9445** at 0335 with music and talks in TT. (Brossell, WI) 0600. (Sherwood, KS) **9665** at 2305. (Weronka, NC) **11655** at 0333 with "Wonders of the World." (Burrow, WA)

**UKRAINE** — Radio Ukraine Int'l, **9810** at 0100 with EE news, comment, local folk music. Poor with Voice of Russia also here. **//9610** and **7420** both poor. (Alexander, PA) Tentative at 0414 with mentions of Ukraine.

Completely unreadable by 0425. (Burrow, WA) **15520** at 1200 with news, commentary, ID, folk music. (Alexander, PA)

**UNITED ARAB EMIRATES** — UAE Radio, Dubai, **12005** in AA at 0315. (Brossell, WI) 1615 in EE. (Sherwood, KS) 1445 in AA. (Newbury, NE) **13675//15395//15400** at 0344, ending EE at 0348. (Burrow, WA) **21605** with 1601 sign-on in EE; **//13675, 15395**. (Alexander, PA)

**UNITED STATES** — WJFP, **26470 FM** mode, preacher to 1600, ID "You are listening to the very best of gospel radio — WJFP, Cocoa Beach. (D'Angelo, PA) WFLA, **25870** at 1350 with talk show, ID, news on the hour. (D'Angelo, PA) KGON/KPM 556 (FM mode) Portland, OR, **25960** at 1608 with continuous reggae. (D'Angelo, PA) (*These are broadcast station studio-to-transmitter or "cue" transmitters used in conjunction with remote broadcasts —Ed*)

**UZBEKISTAN** — Radio Netherlands relay, **12070** at 1330 with IS and ID and into presumed DD. (Brossell, WI) Radio Tashkent, **9715** at 1200 with news, comment, ID, local pops and listener letters. Off at 1228. (Alexander, PA)

**VATICAN** — Vatican Radio, **9605** at 0244 in FF, IS, ID and into EE. (Burrow, WA) **11740** at 0630. (Weronka, NC) **11830** in CC at 2140. (MacKenzie, CA) **13765** at 0630 with ID. (Sherwood, KS) 0750 with schedule. (Barton, AZ)

**VENEZUELA** — Radio Amazonas, **4939.5** at 0118 with man in SS. South American type music. (Montgomery, PA)

**VIETNAM** — Voice of Vietnam, **9795** via Canada at 0232. (Burrow, WA) 0352 to 0358 close. (Newbury, NE)

**YEMEN** — Republic of Yemen Radio, **9780** at 0440 with music and talk in AA. (Brossell, WI)

## Tuning In (from page 4)

more than words on paper and personal notes in his books: When you listen to the radio, think of Joe. We will.

He leaves behind a loving wife,

Bonnie; two children, Bucky and Julianne, and a granddaughter, Amani Desiree' Muntu. We dedicate this issue of *Pop'Comm* to Joe and his family. ■

The holidays, as the time this is written, are such a great time for family and friends, while we all gather around together to have laughs and fun and celebrate the season however your style. And yet it is a time we may often take for granted. I know I do, and I was blown away about Joe Carr, K4IPV passing away. It makes me sit back and think (as it will many hams, SWLs, and scannists). I know about how fragile life is. I never "knew" Mr. Carr nor did I ever even speak to him or hear him speak. But to me has was a true "Elmer" if there ever was or will be for me. No, I never got to ask him questions and have him "show" me or "teach" me things one-on-one — never had the privilege of meeting him or got to put a face with the name, but if he only knew what he DID answer for me and how he DID show me things and still will long after his passing. That is why I say he is an unknown Elmer. He is to me, but yet, I DID know him — not a face or a voice, but his work, his books, his great knowledge that he shared through books and articles in *Popular Communications* and many other forms of media. To a great man with all my respect and admiration — you will be missed. My heart goes out to the Carr family and his many friends.

John Alley  
KF4UAE  
Knoxville, TN

That wraps up a whopping set of short-wave logs! Boundless thanks go to the following who helped make it work: Robert Montgomery, Levittown, Pennsylvania; Pete Becker, Clarkson, Washington; Jesse Sherwood, Kansas and California; Stewart MacKenzie, Huntington Beach, California; Ed Newbury, Kimball, Nebraska; Marty Foss, Talkeetna, Alaska; Richard D'Angelo, Wyomissing, Pennsylvania; Sue Wilden, Noblesville, Indiana; Rick Barton, Phoenix, Arizona; Dave Jeffery, Niagara Falls, New York; Mark Northrup, Gladstone, Missouri; Bruce Burrow, Snoqualmie, Washington; Robert Brossell, Pewaukee, Washington; David Weronka, Benson, North Carolina; Tricia Ziegner, Westford, Massachusetts; Brian Alexander, Mechanicsburg, Pennsylvania; and Sheryl Paszkiewicz, Manitowoc, Wisconsin. Thanks to each one of you.

Until next month, good listening! ■



# PLANE SENSE

Your Link To Aviation Communications

## Answers To Your Aviation Questions

This month there has been a virtual cornucopia of new and changed frequencies. Look for them at the end of the column, which will run a little short this time, but it's chock full of your letters and questions! Starting with the next issue I'll try to explain certain phrases, statements, and words that you may hear while monitoring. Now I'll answer a few of your questions.

Rick Stastny writes: "Mr. Hoefler: Enjoyed all your articles re ATC systems in *Pop'Comm* magazine. I'm an avid scanner enthusiast and also a ham radio operator. Need your help though. Could you please provide the URL for the U.S. map of ARTCC centers on page 72 of the December issue of *Pop'Comm*? I've searched various websites beginning with the Denver ARTCC site given in the Dec. issue, but to no avail. Thank you for your help."

It seems that I misplaced that address, too. But I did find a site that covers the ARTCC's individually. Try: <http://www.faa.gov/orgs.htm>, click on FAA LOCAL MAPS, then on MAP OF FAA REGIONS. On that screen you can find any ARTCC in the country. Thanks for the question, Rick. I hope this will help.

Bill from North Carolina writes: "Bill... nice layout in the Dec. issue. I can't find the large map you have shown: <http://www.nw.faa.gov/ats/zdvarcc/ind ex.htm>."

Well, I tried that address and I ran into the same roadblock. I don't have the December issue in front of me so I don't know if I wrote the address down wrong or it was placed in the magazine in error, but try it again with html instead of htm at the end. I did notice that the map had changed a little since it was put in the magazine. Thanks for the question, Bill.

Dick Hamann from San Francisco writes, "I watch planes at SFO (San Francisco, CA). I hear quiet 2 departure, Freeze 5 departure, and silent 7 departure. I assume these are routes the planes fly leaving SFO. Is there a chart that would show this? Also is there a chart showing SFO's runway and taxiway layout?"

Dick, I wrote on this in the first couple of articles I wrote last year, but since you

may have missed them here's what you need. You need the Low Altitude Approach book that covers California. You can get one at most of your smaller public use airports. Look in the yellow pages for AIRCRAFT SCHOOLS. The cost is nominal. This, as well as most aviation publications, is updated every 56 days, but you don't need to get one at each update. That's too expensive and only really necessary for professional pilots. There are books for every state in the country. The Low Altitude Approach books show graphically the instrument approaches, standard instrument departures, and standard arrival routes. Also, many of the airports have pages that show the airport layout with all runways, taxiways, major buildings, and helicopter landing areas. Hope this is what you need, Dick.

Rick Jarrett writes: "I listen to Indianapolis center here in CRW (Charleston, West Virginia). I am close to the 4-Mile (Hernshaw) remote site and

can receive 119.525 and 134.225 quite well. I also noticed that the low sector freq of 128.400 had vanished. Reading your article in the Dec. *Pop'Comm* cleared that up. In reading your article, you made reference to publications that have the ARTCC freqs on them. I have the Low IFR charts, and they do list the low sector frequencies. What publication lists the high sector freqs? I am always curious as to which direction flights are heading by their handoff freq. I have found some sites on the Web, but none cover Indy center with any degree of accuracy or detail. Any help on this particular center would be GREATLY appreciated!"

This also refers to the response to the previous letter. You also need to contact the nearest flight school and pick up the High Altitude IFR chart and the Airport/Facility Directory (A/FD) for your area. The IFR chart will list the frequencies available for the area. The A/FD lists available frequencies for ARTCC's and FSS's in the back. Frequencies listed in bold in the ARTCC listings are those used in the High Sectors. Thanks, Rick.

During the month of November, there was an onslaught of new frequencies and frequency changes throughout country. Here's as many as I could track down for this issue. ■



Ceramic

Junghans Atomic Ceramic sapphire lens, ceramic band, LCD for day, date, zone, luminous, w-resistant 100ft, all ceramic-harder than steel \$790



atomic radio with 2 alarms and temperature, day, date, LCD \$39.95



NEW

Junghans Atomic Carbon Fiber Watch, stainless bezel, sapphire lens, LCD day, date, time zone, carbon/leather band, 7 models \$279

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Atomic Sports Watch Silver Polymer Case, LCD for day, date or seconds 100 ft water resistant black leather band \$129

BY BILL HOEFER  
<flacap388@prodigy.net>

# UTILITY RADIO REVIEW

News, Information, And Events In The Utility Radio Service Between  
30 kHz And 30 MHz

## Monitoring NASA!

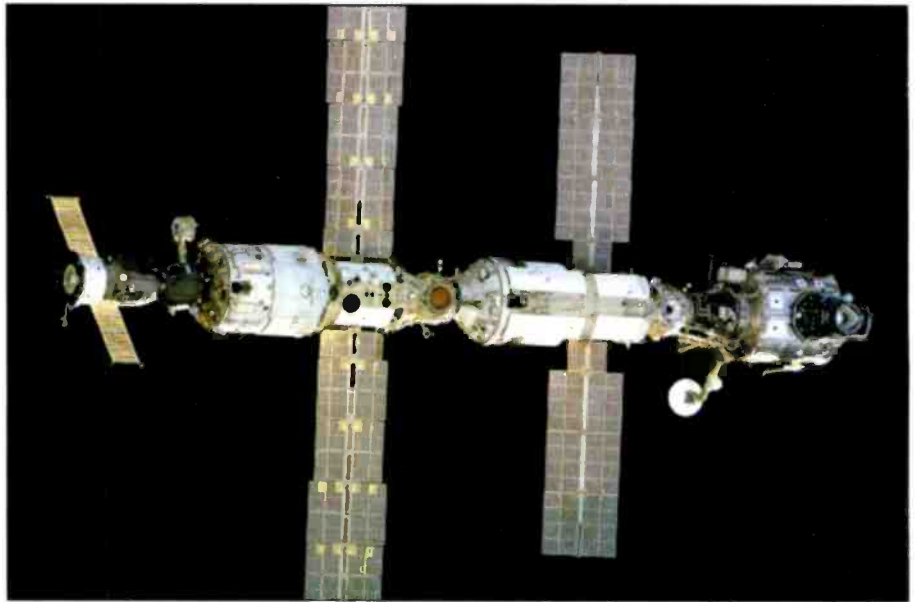
With the new International Space Station being built, along with new generations of communications satellites being placed aloft, the space program is entering an entirely new phase of development. The space station itself is being hailed as one of the greatest engineering feats of all time due to its unprecedented scope and scale.

Despite the importance and drama of these events, media coverage of the space flights and subsequent events that take place in orbit have been greatly reduced. Part of that came from the experiences that took place back in the days of the Apollo moon flights when the public began to complain bitterly about the preemption of their favorite TV shows during the extended coverage that the networks provided back then. As a result, today most people only see short clips or highlights on the regularly scheduled newscast, if that much.

There is still a lot of drama and fascinating events available for the general listening public if you are willing to invest some time tracking the schedules of the various launches. Since NASA is a civilian organization with a clear mandate to keep the public well informed, it is very easy to find out when, where, and how a space launch is going to take place — as long as it is not a classified military operation.

However, if there is a problem, it's the fact that NASA tends to take its job a bit too seriously, so it tends to provide a bit *too much* information to the public. What I hope to provide here is a clear and easy to understand summary of how to monitor launch and support activity that would be of interest to UTE monitors that take place on the HF bands. Certainly there is a great deal of activity that also takes place on the VHF, UHF, and even SHF bands, but I will leave that to our scanner experts to document.

I've also got very good logs to offer to you this month thanks to the efforts of new and continuing contributors. It is really good to see the efforts being made



*The International Space Station as seen by the crew of STS-97 as they approached to dock with it in December 2000. (Photo Courtesy NASA)*

to get those in. I am particularly pleased to see people make those important first contributions that can come to make your monitoring sessions more enjoyable by sharing them with others.

There are some good letters this month as well. I'm pleased to say that a real dialog is beginning between us. I really welcome this, particularly as this is your column, and your ideas and contributions belong here. I would like to see more people writing to me with comments, ideas, and suggestions.

So enough of the housekeeping, let's get on to monitoring NASA.

### Background To NASA Monitoring

While most NASA radio traffic takes place on frequencies outside of the HF band, there is still a significant amount of activity that can be heard by UTE monitoring stations. The majority of this activ-

ity takes place at launch time, so that your window of opportunity for hearing these events can be limited.

To successfully monitor NASA activity you will have to track the published schedule of events for non-classified launches. If you have access to the Internet this has become less of a problem as the government agency and many fans of space flight publish these schedules.

Like anything connected to UTE monitoring, the more you know about the service being monitored the more you can appreciate the size and scope of the operations being listened to. A space launch is a fantastically complex series of events, and the success of each event depends upon the successful communications between many individuals.

If you can take the time to familiarize yourself with the roles of the different people that you are listening to, then you can understand why each is important to the success of the program. In a space flight, nobody has a secondary job. As we

BY JOE COOPER <ur-review@provcomm.net>



know from both the successes and tragic events of past space flights, even the smallest contribution contributes something to the events that take place.

## How To Monitor NASA Frequencies

To successfully monitor a space launch on HF you need three things. These are: the schedule, the frequencies, and the background of the particular mission you are listening to. You should also have a basic understanding of the sequence of events that take place during a launch so that you can anticipate which frequencies will be in use at a particular time.

A good example of this would be the recovery of the solid fuel booster rockets, which takes place in a series of scheduled events that occur before, during, and after the main launch. While not a critical part of the operation, this operation is still a significant one that helps to keep the operating costs of the space program under control. A great deal of coordination takes place between base operations and the fleet of ships used to recover the reusable booster rockets via HF radios that is worthwhile monitoring.

In general you should set up a calendar well ahead and plan out what your focus will be for a particular launch. Work out a basic schedule with frequencies to monitor, and then be prepared for delays. As with any complex engineering task, there will be the occasional snafu. However, once the events begin their sequences, things happen fast, so be ready to track what happens quickly and accurately. Who knows when you will be listening to history with a routine event?

To get you started I'll provide you with a summary of the schedule of non-classified launch events that will be happening in Florida this year.

## Highlights Of The NASA Launch Schedule 2001

Note: this list focuses mainly on the space shuttle/space station operations. A number of commercial and military satellite launches are also scheduled to take place. Please consult the NASA resources sidebar for more information on launch dates and events.

**No earlier than Feb. 15:** Space Shuttle Discovery on STS-102 for space station assembly flight 5A.1 with Multi-Purpose Logistics Module (Leonardo) for laboratory outfitting from pad 39A at Kennedy Space Center, Fla. Launch time 4:24 PM EST (2124 GMT).

**No earlier than Feb. 26:** Space Shuttle Discovery STS-102 landing at Kennedy Space Center, Fla. Landing time about 11:44 AM EST (1644 GMT).

**March 1:** Boeing Delta 2 (792x) with NRO's Geosynchronous Lightweight Technology Experiment (GeoLITE) spacecraft from Complex 17-B at Cape Canaveral Air Force Station, Fla.

**No earlier than March 28:** Orbital Sciences Pegasus XL with NASA's High Energy Solar Spectroscopic Imager (HESSI) spacecraft staged from Cape Canaveral Air Force Station, Fla. Launch Time TBD. (Delayed from July 2000 — Spacecraft damaged during testing).

**May 17:** Space Shuttle Atlantis on STS-104 for space station assembly flight 7A with the airlock from Pad 39B Kennedy Space Center, Fla. Launch Time TBA. Phase 2 Complete.

## NASA Information Phone Numbers

- (321) 867 4636 — Recorded manifest of anticipated launch dates
- (321) 867 0600 — Recorded launch status during countdown
- (321) 867 2525 — Space shuttle launch preparations
- (321) 867 3900 — Space shuttle status line.

**No earlier than June 21:** Space Shuttle Endeavor on STS-105 for space station assembly flight 7A.1 from Pad 39A at Kennedy Space Center, Fla.

**July 12:** Lockheed Martin Atlas 2A with GOES-M weather satellite for NASA and NOAA from Cape Canaveral Air Force Station, Fla.

**No earlier than July 19:** Space Shuttle Columbia on STS-107 with a Spacehab research module and the Freestar micro-gravity payload from Pad 39B at Kennedy Space Center, Fla.

**Oct. 4:** Space Shuttle Endeavor on STS-108 on Space Station Utilization Flight 1 (UF1) from Pad 39A at Kennedy Space Center, Fla.

**Nov. 1:** Space Shuttle Columbia on STS-109 on Hubble Space Telescope Servicing Mission-3B from Kennedy Space Center, Fla.

## NASA Launch and Landing Operations

The following is a list of many of the common frequencies used by NASA and supporting commercial and military support personnel. In general you should begin your monitoring at least one hour before a scheduled launch in order to hear the maximum amount of on-air activity. Be certain to have planned out which are of operation to listen to in terms of launch events priority.

### NASA Malabar/Palm Bay, FL Nets (in kHz, USB commonly)

- Solid rocket booster recovery 2622
- primary, 2764, 3187, 4510, 7765, 11407, 11621
- NASA tracking vessels 5180, 5187
- ETR range control 2678
- ETR primary night channel 5190
- ETR secondary night channel 5810
- ETR primary day channel 10780
- ETR secondary day channel 20390
- Launch support ships 5680, 11104, 11252, 18009, 19303
- Launch support aircraft 5350, 7676, 9022, 9043, 9132, 13227, 13878
- Cape Radio/Leader 4856
- Cape radio/Coast Guard Ships 4992
- Cape Radio/Launch support A/C 7461
- Cape Radio 6896, 6837, 11414, 11548, 19640, 23413
- Coast Guard primary 3024
- Primary recovery zone 4376
- Primary Atlantic 6720
- Comm with Bahamas 7412
- Backup mission audio 2664
- Navy harbor control 2716
- Launch tracking net 7525, 20186

Space missile tactical net **10305**  
OCC Shuttle mission audio **20198**  
NASA CB radio channel 9 **27065 AM**  
Data buoys **2405**  
Data channels **7919, 7985, 13237, and 13495**  
Malabar-Ascencion Island **10310, 13600, 20192**  
Ascencion Island-Malabar **14937, 19966, 22755**  
USAF/NASA communications **4510, 4760, 4855, 4992,**  
**5350, 5810, 6727, 6740, 8993, 9315, 9974, 10780, 11104,**  
**11414, 11548, 14615, 19303, 19984, 20191, 20475**  
Contractors Rockwell (Edwards AFB)  
**2995.5, 3282.5, 3475.5, 5597.5, 10010.5, 17966.5**

### NASA General Freq. List (in kHz, USB, typically)

Air-to-Ground **3089.5 6743.5 9003.5**  
**11192.5 15062.5**  
Emergency Net **3385.0 3395.0 4604.5**  
**6982.5 14455.0**  
HF Net **2360.0 3379.0 3388.0 5403.5**  
**5821.0 5961.0 6106.0 6108.0 6809.0**  
**9462.0 11801.0 12129.0 12219.0**  
**13633.0 13744.0 13780.0 14836.0 14989.0 15464.0 16201.0**  
**16430.0 18744.0 20063.0 22983.0 23390.0**

Good luck in monitoring NASA launch events. I hope to receive more logs covering this topic in the future. I also welcome any insights or suggestions on how to improve your monitoring skills in this area from people who may have experience logging past missions. Speaking of such, we've got mail!

### Reader's Letters

A lot of excellent correspondence has been coming in from all over the world. I have received E-mails and letters from Japan, New Zealand, Australia, and Europe — and of course all over North America. In all cases, I have tried my best to answer each and every piece of correspondence. If you have not received a reply from me yet, have patience; it will get there eventually! E-mails are the best. I try to get a reply out within 24 hours, although most people will tell you that my average is less than 12. I encourage questions and comments, as well as suggestions for new topics and improvements.

Speaking of international correspondence, here is one reader and contributor from South America.

Hi Joe!

I began again with the subscription to *Pop'Comm* and I saw in the December issue that the quality and content of the magazine has changed a lot. In the past, I didn't like the changes, but now change is better! I take advantage to congratulate you for the content and treatment of the topics in your column. Thank you for including my logs of Wefax. Sorry for not sending many logs but I don't have a lot of time. I promise you that I will send you something soon.

Saludos cordiales,  
Enrique A. Wembagher  
Buenos Aires, Argentina

Closer to home, Hue in Oregon has some comments on the digital issue that I put together a while ago.

Joe,

I just read the Oct. article (some backlog here) and wanted to give you some positive feedback here. I think your emphasis, as iterated in your discussion in this issue, is an excellent idea. I do not operate digital modes, and this article was about the right speed for a ramp-up for me. After reading it I felt my time was well spent, and that the article was excellently, very intelligently assembled. I just hope at this rate you don't burn out too soon. I am very impressed with the new column. I don't recall being that taken with the old column, although I cannot fault it.

When the backlog subsides, maybe I'll get one of the Wellbrook loop antennas (very noisy location here) and find a purpose for the old original heavy metal (shielding!) IBM PC I still have.

Hue Miller Albany, OR

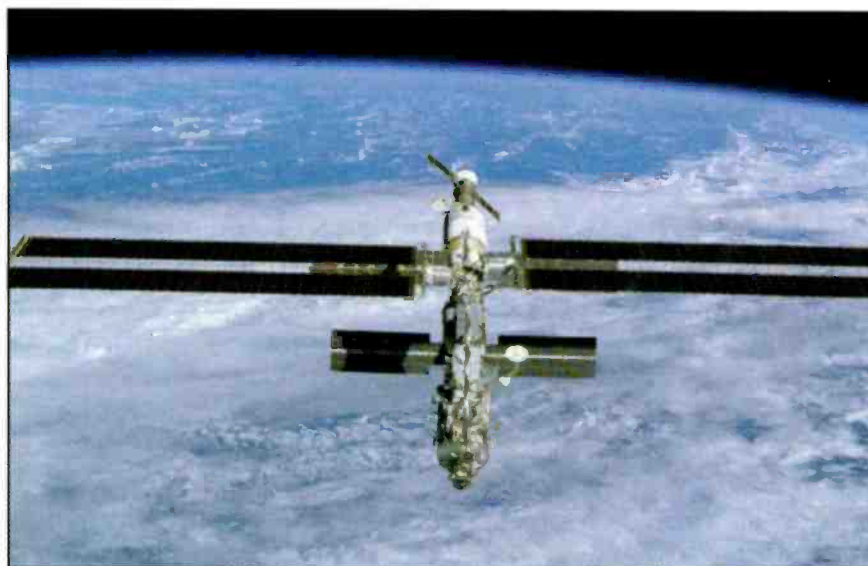
Don't worry Hue, I enjoy researching and writing, and after nearly 35 years of radio monitoring I don't think I'm going to burn out just yet (however, rusting out is another issue). Frankly, I wish people would start sending in their suggestions for future topics so I can start researching them. Likewise I also would like to see more reader-contributed mini-topics sent in. Like I said before, don't worry about how they look; my job is to clean them up and make them pretty.

Interestingly enough, it was my "essay" on what equipment goes into making up a good UTE monitoring station that got a lot of people motivated to write in. For example;

Joe,

Just a quick note to let you know that while I'm not a big fan of utility monitoring I've really enjoyed your last three or four columns in *Pop'Comm*. Good job to get me to read something I'm not really interested in. I use a FRG-100 also and also dream about a Drake R8B. Keep up the good work.

John H. Carver Jr.  
Mid-North Indiana



International Space Station with new solar panels installed. They are 240 feet long by 38 feet wide. Note the Russian spacecraft docked at the top of the picture. (Photo Courtesy NASA)



Hi Joe,

I just read your December column and agree with you on your choice of radio, antenna, and coax. I had an R8 when they were new and it is an excellent radio. I had a DX-SWL when I lived in Calif. on a city lot. It doesn't have to be real high to work well. After many hours of listening to a variety of antennas and radios I can say with some confidence that your choices are good ones.

I now live on the Oregon coast and that antenna is out behind the building where I work (hidden in the trees) and fed with RG8X — eight years old and still working fine.

I have not used the DX Ultra so I don't know if it performs any better than the DX-SWL. I personally have my doubts, but that is just a guess.

My current antenna is a horizontal loop — very BIG loop. My property is 1.5 acres in an almost square shape with tall trees. I had a tree trimmer come in and clear a path all around the perimeter at the 50-ft. level and put up stainless steel pulleys. I have just under 1000 ft. of #12 insulated antenna wire (high strand count) around the property. It is fed with 450-ohm "window" line.

It is a very quiet antenna. Being resonant at about 1MHz, the DX angle in the higher bands is quite low. Does it work better than the DX-SWL? Yes but depending on propagation, sometimes a wet string works better than the expensive antenna next to it.

I have a 15-ft vertical whip right next to the shack and every once in a while it will pull in a station better than the loop, but rarely! In fact I have found that with a receiver connected to each antenna (diversity reception) I can hear better through fading than with synchronous sideband. The signal sounds like stereo that just moves back and forth between the speakers, which are on each side of the shack. Enjoy your column and keep up the good work.

Greg Sparacino N6PUO

P.S. If you want to know what I look like just look at the March 1990 cover of *Pop'Comm*. That's me at KMI facing toward the camera.

Dear Joe,

Good to hear you have your Internet problems sorted out. I have the December issue of *Pop'Comm* and I would like to say I agree with many of the points you make in that column. The real start of the next century will be this January, not last

## Resources For Successful NASA Radio HF Monitoring

**NASA home page:** <http://www.nasa.gov/>

**Launch Schedule:** [http://www.nasa.gov/see\\_a\\_launch.html](http://www.nasa.gov/see_a_launch.html) <http://www.jpl.nasa.gov/calendar/>  
<http://www-pao.ksc.nasa.gov/kscpao/schedule/schedule.htm>  
<http://www.cbs.com/network/news/space/futuremission.html>

**Patrick AFB:** <http://www.patrick.af.mil/45OG/45Rans/schedule/page2a.htm>

**Vandenberg Air Force Base:** <http://www.vafb.af.mil/index.html>

**NASA human flight data:**  
<http://spaceflight.nasa.gov/realdata/elements/index.html>

**Space Shuttle info:** <http://www.sworld.com.au/steven/space/shuttle/guide.txt>

**Technical terms defined:** <http://roland.lerc.nasa.gov/~dgllover/dictionary/content.html>

**Press kits for mission description:** <http://www.shuttlepresskit.com/>  
<http://www-pao.ksc.nasa.gov/kscpao/presskit/presskit.htm>

**Launch Guide:** <http://www.hq.nasa.gov/osf/miscinfo.html>  
<http://www-pao.ksc.nasa.gov/kscpao/status/sisstat/current.htm>  
<http://spaceflight.nasa.gov/shuttle/>  
<http://www.ksc.nasa.gov/shuttle/countdown/>

January, like a lot of people seem to have thought. Math never lies. Secondly, your remarks about antennas and coax in particular are very good.

You stopped short of saying there should be a law to prohibit anyone from selling a pre-amp for use on frequencies less than 1 Ghz, but I can understand that you have limits on the kind of things you can say in the column. There is a lot of advertisement in *Pop'Comm* for many such evil devices. While you did give a blurb about the safety concerns of building antennas, your advice about lightning or static protectors are less than honest. I don't know if electrical storms do much damage in Canada, but down here in Georgia they are a seasonal hazard to life and freedom of the airwaves in general.

Nothing will protect your receiving equipment from lightning or static charges as well as physically disconnecting it from the antenna whenever it is not in use. We have many dangerous thunderstorms here in Georgia, and any antenna, indoors or outdoors, can conduct dangerous levels into your expensive receiving equipment, even if the lightning strike is not a direct one. A bolt of lightning a mile away can damage a modern HF receiver if it is connected to even a very short indoor antenna.

This has happened to me as well as two other local amateurs. I do not want to be a safety nag, but you should tell people that an HF antenna, especially one outdoors, makes a very good lightning rod. If they have been able to create a good earth ground for use in their radio shack, their antenna becomes an even more efficient lightning rod.

Physically disconnecting the antenna leads whenever your HF equipment is not in use, and never using your HF equipment during a storm, is the only way to protect your equipment, yourself and your home from damage. I know this sounds like a "no brainer", but I only mention it because I don't want other people to repeat my mistakes.

Larry J McMahan

Well Larry, I stand before you head down and humbled regarding my comments on lightning or static protectors. However, if I can speak in my own defense, it was more oversight rather than negligence that made me forget the very important point that you so rightly raised.

With my own monitoring station I have it setup so that I physically disconnect and separate my lead in coax from the antenna when I am not using it for monitoring. You are quite right: all the protectors can

do is draw off a small static charge — not send a lightning strike to ground.

Lightning is nasty stuff, and can happen anytime the conditions are right, and not just during a thunderstorm. Some of the worst strikes have taken place under clear sky conditions. Take some time to read up on how to protect yourself from this powerful and destructive force of nature so that you don't become a statistic.

I also have a request for information from one of our regular contributors;

Dear Joe,

Please ask the readers for confirmation of *USCGC Tortuga* or *Tortugas* existence and mailing address. No luck searching the Internet. Also, for the readers of the column: c/s USCGC - ELM is NRPK. The QSL address for cutter is commanding officer USCGC ELM (wlb-204 ) 2301 East Fort Macon Road, Atlantic Beach, North Carolina, 28512-5633

Jim Deardorff

Can anyone help Jim with this information? Please forward it to me and I will pass it on to him. This also raises the point about having a QSL address lost and found section of the column on a regular or semi-regular basis. Please start to send in your request/information, and I will put it in here.

I also have this note from another contributor. I've added it here because it points out the fact that you don't have to have a monitoring station that looks like something out of a military operation in order to make good logs.

Dear Joe,

As far as my rig goes, it's a DRAKE SW8 sitting on the nightstand next to my bed. I have a Radio shack ARCHER shortwave antenna (in a spool) attached to the radio whip and stretched across my bedroom ceiling. Nothing spectacular, except the radio . . . I can hear nearly the whole world at times (propagation permitting). Whenever I can't sleep I turn the radio on and listen.

Regards,  
J. Hall

If you check out this month's logs you will see that the number of logs contributed by this reader are numerous and interesting. If you have been thinking about getting involved, then let those logs be an example for you.

And speaking of logs, please welcome new contributor David Davidson, who is going to prove that I do accept and publish single logs. Welcome aboard David! I look forward to more contributions from you and other readers.

## Reader's Logs

Note: All frequencies are shown in kHz and follow the format shown below using standard abbreviations.

**0000:** STATION, Anytown, USA, summary of traffic heard in MODE at 0000 UTC, personal comments here (JC)

**1752:** EJK Valentia Radio:IRL 2034 UTC Dec 01 USB Weather then phone patch with crew (PP)

**1890:** TFA Reykjavik Radio:ISL 2240 UTC Dec. 5 phone patch in presumed Icelandic (PP)

**2125:** Sondrestrom Air Traffic: Greenland at 2125z calling briefly a party called OMD "oscar mike delta" on 8945 kHz (I fail to know how I'm gonna QSL that one!!) (PP)



*Not all of NASA's work involves manned space flight. Here's a Delta III rocket being launched at the Pacific coast facility. These flights can also be monitored. (Photo Courtesy NASA)*

**2677:** CROSS CORSE at 0550 on Dec. 6 short wx in FF last night I also heard JWT (Norwegian Navy Stavanger) on 2680 kHz for a radio check at around 2200z which seems strange to me since they're usually heard on 2687 kHz. (PP)

**2749:** Halifax CG Radio: c/s vcs w/ notices to shipping at 0121z in usb. 4.500 USAF MARS net c/s AFA2Ga op talked about high voltage safety when repairing electronics gear. Georgia administrative net. (JD)

**3231:** UNID: KAWN broadcast (xmtr site?) 0523 FAX 120/576 on USB w/KAWN wx in BAUDOT 75/850 on LSB. Listed as an Offutt/Eikhorn frequency in the latest Worldwide FAX Schedules publication. (MADX)

**4125:** VAE: Canadian Coast Guard Tofino 0503 USB w/MIB. (MADX)

**4372:** IAS: prob GIANT KILLER FACSFAC 0109 USB clg 7NN: unid. At 0110, IAS wkg 9VP. At 0111, 5K wkg (MADX)

**4500:** SHARES 00-3 exercise net, numerous callsigns including USAF Mars stations. (RRM)

**4610:** GFA22: Bracknell Meteo 0436 FAX 120/576 w/chart. (MADX)

**4721:** TROUT 99: USAF Chief of Staff C-135C 0533 USB wkg ANDREWS w/pp to Andrews CP. TROUT 99 stated that he was carrying a CSAF (Chief of Staff U.S. Air Force) support van and asked for the active runway. (MADX)

**4724:** ANDREWS: 0647 USB w/28-character EAM (IHO2S7...)/6712/6739/8992/9025/ 11175/13200/15016/ (MADX)

**5120:** OWD: Danish Mil 0741 MIL-STD 188-141A clg OWP: Danish Mil. (MADX)

**5120:** unid 0742 MIL-STD 188-141A clg 001: unid. (MADX)

**5236:** SHARES 00-3 exercise net, numerous callsigns including USAF Mars stations. (RRM)

**5505:** EIP: Shannon VOLMET 0540 USB w/aviation WX. (MADX)



5598: SPEEDBIRD 2252: 0540 USB wkg New York w/selcal chk. Air France 381: 0541 USB wkg Gander w/selcal chk (HP-LM). MARTINIQUE 912: 0544 USB wkg SANTA MARIA: "You are cleared to descend to 340. Please confirm...." (MADX)

5696: RESCUE 6042: USCG HH-60J 0715 USB wkg COAST GUARD GROUP WOODS HOLE. "Flight ops normal, position 4118N 06838W. Be advised, we have completed our VS at minute 10. and started our PS." (MADX)

5696: CAMSPAC Point Reyes 0700 USB clg RESCUE 6016: USCG HH-60J #6016 (CGAS San Diego). (MADX)

5696: 0120 cg a/c 6026 to CAMSLANT USCG. Something about the videotape pilot decided to keep video and turn it in at CGAS E. City North Carolina. Note: videotape could be footage of earlier MEDEVAC from unid navy ship. (JD)

5696: At 2140. rescue a/c 6026 in comms w/ CAMSLANT reposition of Navy ship at 36 - 13 n > 73-28- w. op tells pilot the freq of ship's tacan navigation gear. Helo 6026 will contact ship vhf ch. 16 for medevac. helo's homeplate of E. City CGAS North Carolina. (JD)

5850: UNID: stations Pacific Islands 0752 UTC USB with 2 OMs in a Pacific Island language. (IJ)

5882: YRR. Bucharest Meteo. Romania. in Baudot 50/425 at 0400 w/METAR coded wx for Romanian airports. (LJM)

6026: Homeplate San Diego, CGAS passes t/c to CG activities, San Diego that handheld radios should be issued to ground crews to assist in SAR mission. (JD)

6200: USCG: c/s NMN in comms w/ cutter "november eight mike at 0310 in USB. NMN requests a zdk "zcodes" radioteletype of ship's priority message. nmn acknowledges receipt of teletype t/c. (QSL) (JD)

6371: Two OM/EE in USB at 2340 to 0020, deep sea fishing in Gulf of Mexico near 26N 95W, w/references to commercial sea surface temperature plots, and mobile oil drilling rigs in area. (LJM)

6483: PBB, Dutch Navy, Den Helder, Netherlands, in Baudot 75/850 at 0515 w/channel status. (LJM)

6496: CFH: CANFORCES Halifax 1944 BAUDOT 75/810 w/meteo t/c. (MADX)

6501: NMN: USCG CAMSLANT 0625 USB wkg Z4I: prob USCG Cutter. (MADX)

6604: WSY70: New York VOLMET 0609 USB w/aviation wx. /3485/ (MADX)

6697: B0D: unid RAF 0549 wkg MKL: RAF Kinloss. "Please relay to station 9LY: "ETA EGQK (Kinloss) 0600z." At 0557, B8I: unid RAF wkg MKL: Kinloss w/"request close down." (MADX)

6754: CHR: CANFORCE VOLMET Trenton 0522 USB w/aviation wx. (MADX)

6754: Canadian Forces, Trenton, Ontario, in USB at 0128 w/wx for Canadian airports. (LJM)

6837: FDG: FAF Bordeaux 0415 BAUDOT 50/810 w/"voyez le brick" test tape. (MADX)

6852: UNID: stations Marshall Islands 0815

## Goddard Amateur Radio Club — WA3NAN

Kindled by a desire to spread the excitement of America's space program and of the Space Shuttle in particular, members of the Goddard Amateur Radio Club (WA3NAN) and the Amateur Satellite Corporation (AMSAT) devised a plan to retransmit live, air-to-ground audio over amateur frequencies.

After overcoming many hurdles, the Shuttle Retransmission effort began on August 31, 1983, seven hours prior to the launch of Challenger on mission STS-8 on the local AMSAT/GARC 2 meter repeater by virtue of a waiver granted by the FCC for this purpose. Retransmissions expanded to HF frequencies with the launch of STS-9 on November 28, 1983. Among many firsts for the Shuttle program during this mission was the first use of amateur radio from space by STS-9 payload specialist Owen Garriott, W5LFL. To date, volunteer control operators have worked over 60 Space Shuttle flights logging more than 5000 hours on the air.

NASA, the Goddard Space Flight Center, AMSAT, and the efforts of hundreds of dedicated volunteer control operators share the success of this effort by the worldwide support of the amateur community.

Using the callsign WA3NAN, the Goddard Amateur Radio Club (GARC) transmits live Space Shuttle audio on the amateur radio bands. This activity normally begins approximately 1 hour prior to a Shuttle launch and continues through to landing.

**Frequencies in kHz: 3860 7185 14295 21395 28650**

GARC also maintains a WWW Server containing a wide variety of information about the club, including its activities, as well as links to other Amateur Radio resources. The URL address is <http://garc.gsfc.nasa.gov/www/garc-home-page.html>.

(Source — GARC website)

UTC USB with 2 OMs in Marshallese. (IJ)

6903: UNID: stations C/S.America 0710 UTC USB with 2 OMs in SS. (IJ)

6911: DUST: unid 0807 MIL-STD 188-141A w/sounding call. Also at 0853, 0938, 1023, 1153, 1239, and 1409. (MADX)

6915: UNID: Telecom Solomon Islands heard at 0745 UTC in USB with 2 OMs discussing banking details and mentioned about going to Honiara. (IJ)

6957: UNID: stations Papua New Guinea or Solomon Islands at 0808 in USB with OM in Pidgin EE. Ended with "OK, goodnight to you." (IJ)

6994: WA9XHN, "Americas Broadcast RTTY Station" with an advertised QTH of Auzum, Washington, in Baudot 45/170 at 0420 w/news in English followed by very corny jokes. All of this t/c with a lot of typographical errors. (LJM)

7535: OSCAR AUSTIN: USS Oscar Austin DDG-79 1545 USB wkg SESEF: SESEF Norfolk. (MADX)

7555: V02A: Atencion Numbers Station 0301 AM w/"51333 83382 25223Atencion" (MADX)

7620: E5: The Counting Station 0322 AM w/YL/EE/5FGs (3/2) already in progress. QRT at 0330 w/"End". (MADX)

7698: WRZ8934: RV Cape Hatteras (134/294gt) 1354 USB wkgWJS: Duke University Marine Lab Pivers Island w/conversation regarding replacing a broken ice machine inside an electronics laboratory and ordering of electrical cable. (MADX)

7710: VFF: Canadian Coast Guard Iqaluit

0530 FAX 120/576 w/2 December 2000 Ice Analysis Chart. At 0540, into 3 December 2000 Ice Analysis Chart. (MADX)

7710: VFF: CCG Iqaluit 1015 FAX 120/576. (MADX)

7898: National Weather Service Papua New Guinea 0802 in USB YL with WX synoptic report. (IJ)

7939: Presumed Telecom C/S.America 0632 UTC USB with OM and YL in SS. (IJ)

7964: UNID station C/S.America 0650 UTC with OM in SS. "Particulares." (IJ)

8050: CLC51: unid CANFORCE station 1116 MIL-STD 188-141A clg CRC5: unid CANFORCE and CPK: unid CANFORCE. (MADX)

8094: FDC: French Air Force Metz 0322 CW w/call tape. (MADX)

8097: M8: Cuban Numbers Station 0734 CW w/cut 5FGs. (ANDUWRIGMT). (MADX)

8157: E17: The English Lady 0323 AM YL/EE w/5FGs (x2). QRT at 0324 w/"00000" (MADX)

8240: USCG- Tortuga, possibly tortugas calling S /v Guinevere re/ injured sailor onboard sailboat. Cutter Tortuga reports its position as 11 miles off their starboard beam. CG will put small boat alongside. 0719 in USB. (JD)

8459: NOJ: USCG Kodiak 0403 FAX 120/576 w/test chart. Fuzzy, but readable. (MADX)

8534: U/I station in Baudot 75/850 w/encrypted traffic from 0240 to 0300. (LJM)

8683: LFI: Globe Wireless Rogaland 0521 CW w/ID and ARQ free idle. (MADX)

8715: UMF: Radio Odessa 0350 CW w/t/c for

STB Dinenco. Broken, but readable. STB is a Dry Transport Barge. (MADX)

**8746:** Coast station operator txing callsigns of ships the station held radio t/c. for IL2GE: L2GV; L2HG; 9HULG; 9HYM5. Prefix IL2= Argentina 9h= Malta. Coast station could be Madrid radio or LGX in Argentina. (JD)

**8764:** NMC: USCG CAMSPAC 0449 USB w/MIB. (MADX)

**8764:** UIW: Kaliningrad Radio 0641 USB w/kg unid MV w/attempted pp in RR. (MADX)

**8764:** QSX 8.240 useg station NMN in contact w/ Dutch f/v lomeer Bigei re injured sailor. op advises they proceed to Curacao. Netherlands Antilles and contact authorities on 2.182 kHz. (JD)

**8828:** Weather for unidentified airfields given in Romanian at 1705 on 8828 kHz USB (PP)

**8889:** French Trawlers in the Atlantic 1030 discussing problems with their respective Video Cassette Recorder (PP)

**8927:** Jeddah LDOC on 8927 khz at 1812zu with selcal check to Saudia 1726 in heavy accent EE also with a flight 321 Dammam to Cairo (not 100 % sure it was Saudia, time 1718 (PP)

**8957:** EIP: Shannon VOLMET 0608 USB w/aviation wx. (MADX)

**8971:** WIZARD 11: 0443 USB w/kg BLUESTAR. "Request position of go-fast." (MADX)

**8971:** HUNTER 01: 0104 USB w/kg BLUESTAR w/msg servicing. (MADX)

**8971:** Comms involving Customs Service; Joint Task Force-4 at 1830 zulu. spider731 or fighting tiger 731 Qrn ...clg bluestar re/landline to Tssc. 731 told to close on unid target. vsl or a/c. Unit called Goldenhawk also in pursuit. (JD)

**8971:** USN c/s Bluestar calling Hunter 01 at 0536 UTC re/01 contact Bluestar on uniform (UHF) green - scrambled. Bluestar asks Wizard 11 their course and speed. Bluestar reports "Herk 17" airborne. Joint Task Force 4 drug interdiction. (JD)

**8971:** HUNTER 01 (RAF Nimrod) w/kg FIDDLE (USN TSC Jax) with req for wx at several northern Florida airfields and passing an ops normal report for OCTOPUS 02. (RRM)

**8971:** OCTOPUS 02 (probable RAF Nimrod) w/kg FIDDLE (USN TSC Jax) with ops normal report and spare groups throughout the day. (RRM)

**8971:** Numerous callsigns including TRIDENT (USN P-3), OCTOPUS (probable RAF Nimrod), w/kg HIGH VOLTAGE (unknown ground station, probably at NAS Jax) to pass spare groups and ops reports. Apparent multinational ASW/Patrol exercise. (RRM)

**8971:** LL42 w/kg LL45 (both USN P-3, VP-30) with initial contact in the red followed by green comms (ANDVT). (RRM)

**8983:** USCG rescue a/c 2105 in contact w/ Gantsec re sar mission involving the sailing vsl *Calico* time — 2146 z also searching is the Dominican Republic navy vsl, *Aria*. s/v *Calico* out of fuel and drifting. (JD)

**8992:** USB: GHFS 2055Z. Two EAM type messages (26 characters each) broadcast by

JESTER (probably an ABN CP?). Broadcast simo on 11244 kHz. (JH)

**8992:** USB: GHFS 0317Z EAM type broadcast by Hickam (26 character msg). (JH)

**8992:** USB: GHFS 0329Z Two part EAM type mes (28 and 30 characters) broadcast by PARAMOUNT simo on 11244 kHz. (JH)

**8992:** GHFS 0355Z Two part EAM type message (26 char each) broadcast by PARAMOUNT (Abn CP?) (JH)

**8992:** GHFS 0413Z PARAMOUNT calls McClellan. Hickam responds with "Go Ahead." PARAMOUNT called Hickam back at 0419, but no response. (JH)

**8992:** GHFS 0415Z Andrews broadcasts 50-character EAM type message, simo on 6712, 6739, 11175, and 11244 kHz. Echoed by Hickam on 8992 and 11175 at 0417Z, and by an unidentified station on 11244 kHz at 0420Z. (Start of an EAM frenzy period.) (JH)

**8992:** GHFS 0425Z PARAMOUNT broadcasts two part EAM type message (28 char each), simo on 11244. (JH)

**8992:** GHFS 0425Z LANDSCAPE working with DRAFTBEER. LANDSCAPE passed "REQUEST YOU SEND EAM WITH PREAMBLE UAZBWS." DRAFTBEER complied simo on 8992 and 11244, 30-minute QC checks on this message. (JH)

**8992:** GHFS 0510Z Station BOWLEGGED broadcasts "STANDBY FOR HIGH PRECEDENCE TRAFFIC." then sends a 28 char EAM type message. Simo on 9057 and 11244 kHz. The EAM was echoed by LANDSCAPE on 9057 at 0519Z. More EAM echoes were broadcast on 8992 and 11244 by DRAFTBEER. Andrews. for next 30 minutes. (JH)

**8992:** GHFS 2234Z ROADMAP with Offutt. P/p to Hickam Metro, received WX for 0430Z ETA Honolulu International Airport. Hickam was not expecting a callsign such as ROADMAP and was confused by it. (JH)

**8992:** GHFS 1806Z Andrews broadcasts a 28 char EAM type message, and simo on 11175, 11244, 13200 and 15016 kHz. Echoed by Selinas on 11175 at 1812Z. (JH)

**8992:** GHFS 1918Z Andrews broadcasts SKYKING message. (JH)

**9057:** 0531Z CLERICAL with MOONCALL, thanks him for the phonepatch. (JH)

**9057:** 0535Z GRANDVILLE called by CLERICAL. No answer. (JH)

**10066:** Calcutta Aero IND 1815 UTC Dec 3 USB w/kg Lauda 20 and mentioning position V V Z at 1818 (PP)

**10235:** M8: Cuban Numbers Station 0412 CW w/"UDWNN(x5) = = =" then into 5FGs. (MADX)

**10581:** Swedish Embassy Washington DC 0819 MIL-STD 188-141A w/kg S94: Swedish Embassy Guatemala City + 2400bd serial modem. (MADX)

**10608:** TURBO: Colombian Coast Guard Base Turbo 2311 MIL-STD 188-141A w/kg ATLANTICO: prob Atc Fleet HQ. (MADX)

**10630:** USN Fleet Area Surveillance network. Many shore and mobile stations in USB from 2100 to 2200 w/tracking and strike exercise info. Many phonetic ID's reporting to

"Reptile," the net control station. (LJM)

**10940:** American Forces Network, Sigonella, Italy, in USB at 2227 w/rebroadcast of US National Public Radio and Associated Press news. (LJM)

**11119:** UNID: 0050 BAUDOT 75/850 w/KAWN wx. (MADX)

**11120:** UNID: KAWN broadcast (xmtr site?) 0405 FAX 120/576 on USB w/KAWN wx in BAUDOT 75/850 on LSB. QRT on USB at 0409, BAUDOT continues. (MADX)

**11175:** REACH 928 w/kg SALINAS for phone patch to NAS Roda, Spain with arrival and cargo information for early arrival; followed by patch to Rota Metro. (RRM)

**11175:** USB: GHFS 0208Z Puerto Rico working radio check with McClellan. Puerto Rico signed off with "Have a good Air Force Day." (JH)

**11175:** USB: GHFS 1815Z Andrews broadcasting 1st six-letter encrypted message (EAM type) "FOR ALPHA FORCE." At 1833 and 1844Z Andrews broadcast a second and third unique six-letter EAM type message "FOR ALPHA FORCE." Each was simo broadcast on 8992, 11244, 13200, and 15016 kHz. (JH)

**11175:** USB: GHFS 1918Z ORCA 70 working with Andrews. Phone patch to Travis AFB CP, with ETA 2300Z, and other routine arrival info. (JH)

**11175:** USB: GHFS 1950Z Puerto Rico calling any station. No response. (JH)

**11175:** USB: GHFS 1951Z DELTA MIKE 904 calling Mainsail for radio check. DM-904 op had British accent. (JH)

**11175:** USB: GHFS 2117Z WAHOO-74 with Andrews, p/p to Beale AFB CP, ETA Beale 2340Z with 15 passengers, requested K-loader. Then p/p to Fairchild AFB CP and passed the Beale ETA and arrival info. (JH)

**11175:** USB: GHFS 2134Z TENNESSEE AIRCRAFT 91182 radio check with Andrews. L/C by Andrews. (JH)

**11175:** USB: GHFS 1636Z COROGAN with Andrews, p/p to Offutt Metro. Received WX forecast for ETA 2200Z Offutt. Then p/p to Wright Patterson Metro, rcvd WX for 1830Z ETA there. Wanted to speak with Sierra Alpha but she wasn't there. COROGAN would call her by landline later. (JH)

**11175:** GHFS 0336Z Selinas with SPAR-15. Selinas advised SPAR-15 that Andrews requested he standby on 311 (MHz) and he'd call shortly, but to also S/B on 11175 for further assistance needed, then Selinas signed off as Andrews. (JH)

**11175:** GHFS 0346Z Hickam broadcasts a SKYKING message. (JH)

**11175:** GHFS 1537Z LIMA FOXTROT 778 with Andrews. P/p to VPI6 DUTY OFFICE, passed "WEAPONS FREE AT THIS TIME." (JH)

**11175:** GHFS 1805Z Andrews broadcasts EAM type message (28 char), and simo on 8992, 11244, 13200, and 15016 kHz. (JH)

**11175:** GHFS 1834Z Offutt to unknown callsign "REQUEST YOU ECHO THE FOLLOWING," then sends a SKYKING message. (JH)



11175: GHFS 1835Z Selinas broadcasts SKYKING message. (It may have been the one originated by Offutt at 1834Z.) (JH)

11175: GHFS 2219Z AUDIENCE working with Andrews. P/p to READYMADE. AUDIENCE passed "AKAK 369 MESSAGE FOLLOWS. STAND BY," then passed six three-character groups, followed by, "REQUEST YOU CHOP. NO FURTHER TRAFFIC." Andrews breaks p/p and says, "HAVE A SAFE FLIGHT." (JH)

11175: GHFS 2225Z REACH-1053 working with Ascension Island. P/p Andrews CP, passed arrival info: ETA Andrews 0130Z. DV CODE DV3 on board, departed EBBR Belgium 1702Z. 12 passengers, 15 crew, requested power cart and air-stairs. (JH)

11175: GHFS 2230Z THULE broadcasts SKYKING message. Echoed by Andrews at 2232Z on 11175. (JH)

11175: GHFS 1245Z PAPA DELTA 326 with Hickam. P/p to WESTERNSKY, passed ops info. (JH)

11175: GHFS 1725Z Offutt broadcasts to BEACHMAN "REQUEST YOU ECHO THE FOLLOWING," then sends SKYKING message. (JH)

11175: GHFS 1836Z LIMA LIMA 47 with Andrews. LL-47 passed "TOTAL LOBSTER COUNT IS 15." (JH)

11175: GHFS 1840Z ROLO-03 calls MAIN-SAIL. No response. (JH)

11175: GHFS 2000Z (garbled) DELTA SIERRA with Andrews, p/p to CP and passed "BE ADVISED WE'RE LEAVING AT 2200Z. REQUEST PICKUP." (Requesting ground transportation to the aircraft.) (JH)

11175: GHFS 2012Z REDMAN-3 with Offutt, p/p Kirtland AFB, advised he would be three hours early. Kirtland advised they would call Edwards AFB and tell them of the three hour early arrival. (JH)

11202: CAMSLANT: 0243 USB clg 1701: USCG HC-170H7. No response for over 30 minutes. (MADX)

11232: Canadian Forces, Trenton Military Base. Ontario txing wx forecast for Halifax NS to Canforce 2994 a/c at 2035 (JD)

11244: GHFS 0430Z Elmendorf broadcasts two SKYKING messages. (JH)

11637: FAAZFW: Fort Worth ARTCC 0651 MIL-STD 188-141A w/sounding call. (MADX)

12320: CANFORCE a/c "tiger313" reports to rec they are working vfr west of Pembroke. time- 2007 z also wx report for search area of unid ship, aircraft or whatever. (JD)

12359: "Herb" the weatherman in USB at 2000 wkg many vessels off U.S. New England coast with wx forecasts. This radio net is heard regularly on this freq. (LJM)

12414: UNID 0433 FAX 120/576 w/weak signal. (MADX)

12639: OST, Oostende R., Belgium in Sitor-A at 0039 w/nx in Dutch about the Olympics followed by scores for European football matches. (LJM)

12932: U/I station in Baudot, 100/840 with

encrypted traffic from 0100 to 0200. Probably Cuban station. (LJM)

13140: U/I station in Baudot, 100/840 with encrypted traffic from 1920 to 0200. After a marathon monitoring session, have decided this is probably a Cuban station. (LJM)

13200: GHFS 1735Z RFR-7491 (British or Scottish accent) working with Selinas, requested p/p with KINLOSS, and explained that KINLOSS is the MOD (Ministry of Defence) in Scotland (difficulty with making the p/p) (JH)

13233: HUDSON 29 (RAAF HS-748) and RNZAF Auckland New Zealand 0145 UTC USB with Air Command Drill SITREPs for RCC exercise searching for the Yacht "Scooby Dooby Doo". (IJ)

13244: NNOELA: 1839 PACTOR 100/200 wkg AFA3HY: USAF MARS. This is a SHARES BBS net freq. (MADX)

13282: KVM70: Honolulu VOLMET 0606 USB w/aviation wx. (MADX)

13392: DFZG: MFA Belgrade 0656 BAUDOT 75/400 w/RY's and DFZG id. At 0703, into t/c w/1161 246325 23000 9515 xyxyxyxyxy then into on-line encryp-

tion. Msg #'s 1161-1166 sent in on-line encryption. QRT at 0715. (MADX)

13867: WGM1: poss Cruise E-mail Station Annapolis 2331 PACTOR-I 200/200 w/email to WCW6853: Yacht November. CruiseEmail (www.cruiseemail.com) is another company similar to SailMail and PinOak Digital. (MADX)

13874: The Counting Station 0008 AM w/076 and 1-10. At 2010 into tones, "count 69" then 5FGs. (MADX)

13882: DDK6: Hamburg Meteo 1844 FAX 120/576 w/chart. (MADX)

13927: TORCH 81: 1825 USB wkg AFA1QW: USAF MARS w/pp to TORCH OPS. (MADX)

13927: USB: MARS 2018Z THUNDER-BIRD-14 with AFA3UZ, working phone patch (signal weak). (JH)

13927: MARS NET 1806Z REACH-23M3 working with AFA1CW, with p/p to Patrick AFB. Reach-23M3 identified himself as a C-130 "INBOUND PATRICK KCAF." Declared IFE (in-flight-emergency) with number three engine problems. ETA 40 minutes. (JH)

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**13927:** MARS NET 1934Z AXES-56 working with AFA2XD. p/p to DSN 228 9620, passed info about FDO. AXES OPS is checking with maintenance and to "STANDBY FOR THE WORD." (JH)

**13927:** MARS NET 1942Z RAVEN-68 with AFA380 (RAVEN-68 was about 2x2 signal.) Located Greenland and AFA380 advised him to go to 20992.5 kHz. (JH)

**14404:** S86: Swedish Embassy Mexico City 0640 MIL-STD 188-141A wkg S91: Swedish Embassy Lima + 2400bd serial modem. (MADX)

**14441:** USN MARS station c/s nnn0tw. qth - Florida pp from USCGC Ventorous wmc -625 homeport St. Petersburg, Florida (JD)

**14481:** RFTJ: French Forces Dakar 1949 ARQ-E3 48/390 w/CdV on ckt [TJF](Dakar to Port Bouet). (MADX)

**15016:** GHFS 2103Z AVALON-12 with Puerto Rico. P/p to Scott AFB CP, acft was enroute Little Rock AFB but the left flap was hanging down "a bit" and pilot requested to divert to Scott AFB, otherwise he would be "broken on the ground at Little Rock." ETA Scott in 40 minutes. (JH)

**15016:** GHFS 1857Z. NATO-01 with Andrews. p/p Andrews's Metro and received KBFI wx for 0001Z. (JH)

**16304:** U/I station in Baudot 45/170 at 2100 with "de karbuzan hq all ships cease tracking all enemy ships" and etc. Probably USN testing RTTY equipment. (LJM)

**16340:** UNID: Algerian Diplo 1202 8-tone MFSK in 16.7bd IRS Mode. At 1348, 8-tone MFSK in 100bd ISS mode. (MADX)

**16693:** 3FPV9, M/V Royal Chance. in Sitor-A at 1815 w/automated mutual-assistance vessel rescue system (AMVER) Vessel was off coast of Puerto Vallarta, Mexico. This freq is used in the Pacific Ocean to report their particulars to NMC. (LJM)

**16696:** Many vessels in the Atlantic Ocean, with callsign, name, current lat/long coordinates and heading in Sitor-A w/AMVER traffic to NMN, USCG Portsmouth, Virginia, US. (LJM)

**16934:** LUA: British MFA/Mil Luanda Angola 1949 MIL-STD 188-141A w/sounding call. (MADX)

**17521:** UNID: 1352 36-50 50/250 w/encrypted tfc. (MADX)

**18012:** USB magic 90: calling mike papa delta nothing heard. break break magic 90 calling rockwell flight test 454. Thanked them for the help today but was shutting down for today at 1751 UTC (DD)

**19325:** NAR, USN, Key West, Florida, at 1730 in Baudot 75/850 w/meteo tfc. (LJM)

**20631:** MCC: McClellan AFB 1825 MIL-STD 188-141A w/sounding call. (MADX)

**22382:** NRV, USCG Apra Harbor, Guam, U.S. Protectorate, in Sitor-A at 0430 w/hydropac navigation warnings for West Pacific. (LJM)

**23526:** S84: Swedish Embassy Washington DC 1847 MIL-STD 188-141A wkg S93: Swedish Embassy Havana then into Swedish Diplo 2400bd serial modem. (MADX)

**23526:** S84 wkg S94: Swedish Embassy Guatemala City in MIL-STD 188-141A and 2400bd serial modem. 1946, S12: Swedish Embassy Bogota wkg S84 in MIL-STD 188-141A. (MADX)

**26385:** Small Business comms Russia 1152 UTC NFM YL in RR with dispatch comms. (IJ)

**26595:** Small Business comms Russia 1155 UTC NFM YL in RR with dispatch comms. (IJ)

**27845:** Small Business comms Russia 1135 UTC NFM YL in RR with dispatch comms. (IJ)

**27880:** VMR201: Royal Volunteer Coastal Patrol Eden NSW Australia 2000 UTC AM YL with "All stations...All stations WX forecast will be B/C on CH#86 (27860)." (IJ)

**27880:** VMR423: Volunteer CG Cardwell QLD Australia 0127 UTC AM with OM calling. (IJ)

**27910:** VMR257: Volunteer CG Iluka/Yamba NSW Australia 2018 UTC AM YL with WX forecast. (IJ)

**27925:** Small Business comms Russia 1137 UTC NFM YL in RR with dispatch comms. (IJ)

**29800:** Pager Russia 1035 UTC with brief databursts. (IJ)

**29880:** UNID: station C/S.American 1918 UTC AM with OM in SS. (IJ)

**29885:** UNID: station Russian 1118 UTC NFM with OM in RR. (IJ)

**29900:** Presumed Pager Russia 0926 UTC NFM YL in RR with voice announcements. (IJ)

**30035:** UNID: comms Russia 0916 UTC NFM with OM in RR. (IJ)

**30280:** Program Feed China 1100 UTC WFM with EE language lessons. "Hello are you from Beijing?" (IJ)

**30805:** UNID: comms Russia 1032 UTC NFM with OM in RR. (IJ)

**31090:** Phone System (probably cordless) Russia 1125 UTC NFM with dialtones. (IJ)

**31290:** Phone System (probably cordless) Russia 1045 UTC NFM with YL in RR and dial tones. (IJ)

#### Log Contributors

JH — Jhall, Maryland

RRM — Roland R. McCormick

LJM — Larry J McMahan

DD — David Davidson, North Carolina

IJ — Ian Julian

PP — Patrice Privat, Noailles, France

JM — Jim Deardorff

MADX — MidAtlantic

Don't forget, a suitable for framing certificate of appreciation is available to anyone who submits a log to this column. Just provide me with your mailing address and I will send it along to you at no cost.

Once we get things rolling with that I will start to keep track of the number of logs that are being sent in by individuals, and will begin to send out rewards

— generally in the form of books on radio monitoring.

However that could be expanded upon depending on how many people begin to contribute logs. I really appreciate all of the help that each and everyone of you provide in making this column a success, and I would like to see some rewards going out for those efforts.

Remember, this is a reward system, not a competition, so the basic rules are those of Gentlemanly and Lady-Like conduct (e.g. play fair, no cheating, congratulate winners and be a good sport if you don't get to be number one, and most importantly — have fun at what you do).

#### Last Word

One of the most important tools that any UTE monitor can have at their disposal is a comprehensive frequency list. One of the standards that helps to keep the hobby (and professional) monitoring interesting and exciting is the Klingenfuss frequency list. For the new millennium and up-to-date list has been released under the following headings.

- 2001 Super Frequency List on CD-ROM
- 2001 Guide to Utility Radio Stations
- 2001 Shortwave Frequency Guide
- 2001/2002 Guide to Worldwide Weather Services

If you're interested please contact Klingenfuss Publications, Klingenfuss Radio Monitoring, Hagenloher Str. 14, D-72070 Tuebingen, Germany. Phone ++49 7071 62830 or FAX ++49 7071 600849. You can also E-mail him at [klingenfuss@compuserve.com](mailto:klingenfuss@compuserve.com) and visit the site at [www.klingenfuss.org](http://www.klingenfuss.org).

See about purchasing through one of the businesses specializing in these products that advertise in *Pop Comm*. Having said all that let me say that I do not get a cent for plugging Mr. Klingenfuss's product here, but I simply mention it as a service to you, the reader.

Next month I am finally going to publish that report about the software demodulators that I have been promising you for months. I've had a lot of fun researching this and using a wide range of products. Demodulating digital is cheaper and easier than ever, so it would seem, but do software products work better or worse than hardware? See what I have to say about it.

Until then, may all of your monitoring sessions be enjoyable and successful — and please don't forget to send your logs so you can share those experiences with other readers. ■



# THE PIRATE'S DEN

Focus On Free Radio Broadcasting

## Uncle Sam Taketh Away

**R**adio Free Speech, 6952 was heard by Johnny Bernay in Arkansas at 0310 with talks about personal freedom and the repression of free speech, government being a "taker," not a giver, etc. Johnny is upset because his report, addressed to the announced Wellsville, NY, address was returned by the post office. To top it off, this was his first pirate logging!

**WFFU, 6950.7 USB** at 0030 with Steely Dan music. Good signal and good audio. Address as P.O. Box 2841, Providence, RI. (Harry Ricker, MD)

**WHYP, 6950.7** at 0011 with "Hot Child in the City." Gives E-mail address as [WHYP1530@yahoo.com](mailto:WHYP1530@yahoo.com). (Ricker, MD) **6950.6 USB** at 0130 with excerpts of a speech by George Zeller. Also **6954.95** variable at 0047 with southern rock. James Brownyard. (William T. Hassig, IL)

**Ground Zero Radio, 6955 USB** at 2350 with a good signal. Gave e-mail address as [gzrsw@usa.net](mailto:gzrsw@usa.net). (Ricker, MD)

**KPIM, 6955** heard opening with CW ID at 0024. Poor signal; weak and noisy. (Ricker, MD) (KPIM, or KIPM, below, Harry?)

**KIPM, 6950** at 0215 with program featuring Allen Maxwell and "War Hounds." Gave their address as via Box 69, Elkhorn, NE 68022. Also heard several times on **6955 USB** at 0500 with host talking about being kidnapped by women and Xerox copies made of him. Also from 0553 to 0638, also at 0200. (Hassig, IL) It seems this station's address is proving hard to copy for some. They've also been heard saying "Elkhorn" and the state has been copied as Nevada, rather than Nebraska. (*The address as given above is correct —Ed*) **6955** with the Allen Maxwell Show at 0730. Then again from about 0330. And again at 0600. (Craig M. Paraderelli, WI)

**"KITM" Outer Limits Radio, 6955 USB** from 0650 with joking story about a new kind of chemical warfare, stories of a boy's father as a paratrooper during



WWII, strange music and sound effects, sign off with a salute to the pilots of WWII. (Aaron Woolard, TN) (*This one is very likely also KIPM. They're using the "Outer Limits" slogan —Ed*)

**Unidentified, 6955 USB** from 0220 to 0230 with rap music. (Hassig, IL)

Bill Finn in Pennsylvania reports a QSL in from WLIS — number 1511, design #120. Episode XXV. "Numerous members of ACE continue to wait anxiously for the arrival of a QSL from WMPR in their mailboxes, plus Jell-O card and Big Boy's coupons redeemable in two places that are very far away from here." ("How much is 95 Bhat?" says Bill).

That's all we have on hand for this time. Good to see two or three new reporters put their two cents worth in this time. Let's keep those reports coming! I'm also in need of sample pirate QSLs to include as illustrations in the column. Also photos of pirate station installations (if you dare!) and station address info. Keep those radios burnin' in the area of **6950** and let me know what you're hearing.

See you next month! ■



*From the "oldie but dead" file — KDED, active some five years ago.*

BY EDWARD TEACH

# CB SCENE

27 MHz Communications Activities

## Local Governments Empowered To Enforce CB Rules

Is it a dream come true, or a nightmare in the making? We've all been there; at least I know I sure have.

You are trying to get a little quality time with your CB and a few of your on-air neighbors when the bozo down the road keys up and totally destroys your plans. You just know he is running heat. You know it because every word out of his foul mouth is coming in loud and highly distorted, even though he is thirty some channels (or more) away. Boy! Where is the FCC when you need them?

Well, from now on it won't matter where they are because you may not need them at all. The cure for your radio blues could soon be as close as your local police station. On November 22, 2000, President William Jefferson Clinton signed a bill called **HR-2346** and turned it into **Public Law No: 106-521**. Public Law No: 106-521, in essence, allows state and local governments to enact and enforce their own laws governing certain aspects of the operation of CB radios. On the surface, this looks like a contentious CB operator's dream come true. For the most part, I believe that is exactly what it is. The language of the law could, however, open the door to the harassment and abuse of some of CB radios best operators by neighbors and officials as well. Why? While the intention of the law is to help reduce radio interference to telephones and home electronic equipment such as TVs and stereos. It does not, unfortunately, target the interference itself but the possession of non-type accepted equipment instead, mainly power amplifiers. SSB radios with clipped clarifiers or extra channels, however, are also considered non-type accepted. Therefore, it will be easy to assume that most serious SSB operators and certainly all Freebanders are "holding" and probably in violation.

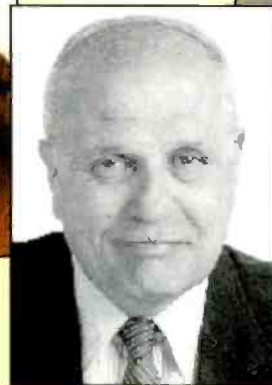
The final case, extolling the whys and hows for this new law was presented to the House of Representatives on November 13, 2000, by the bill's sponsor **Vernon J. Ehlers** of Michigan assisted by **John D. Dingell** also from Michigan, **Tom Bliley**,



*Did you know Tom Bliley was camera shy?*



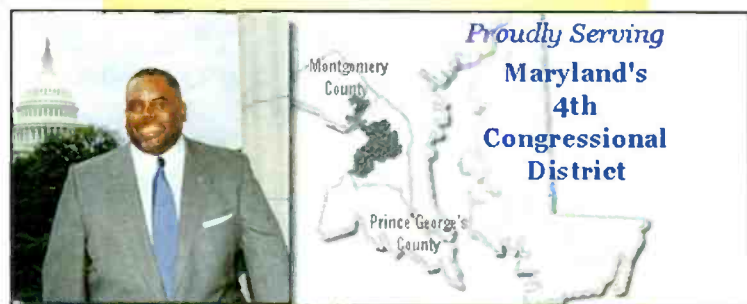
*Smilin' Billy Tauzin.*



*John Dingell, Mr. Congressman from Michigan.*



*Another Billy photo!*



*Wynn one and only.*




of Virginia, **Albert Russell Wynn** of Maryland, and Louisiana's **W. J. (Billy) Tauzin**, who opened the presentation.

After praising Mr. Ehlers, "for persevering all this year to bring this to final action in this House," Chairman Tauzin thanked Mr. Bliley, Mr. Dingell, Mr. Markey, and Mr. Wynn for their help in moving the bill along. He pointed out that: "even while we are going through an awfully hotly contested election (surely you remember the Bush/Gore thing) and waiting to find out who our next President may be, we are still working here and still improving the state of our Nation's laws and this small, but important area making sure that consumers enjoy their televisions and their radios and their mobile telephone sets in their homes. This is an important bill that helps American families in a very special way when they run into this problem. It will give them local redress so they do not have to come all the way to Washington to get help."

He then explained that, "H.R.-2346 is an important initiative intended to improve compliance with the FCC rules governing citizens band radio service. Fundamentally, the bill is an effort to help eliminate the practices of the few CB radio users that have chosen to take advantage of the unlicensed nature of CB radios to operate outside the boundaries of the FCC rules. When some people choose not to follow those rules, unexpected and potentially-harmful interference can result for users of other services." Tauzin admitted that, "This certainly is not a bill that is going to reshape the economy of Louisiana or America or Michigan or Maryland, but it nevertheless is an unusually important bill to neighbors who cannot use their telephones and their television sets."

Mr. Ehlers was next to speak. He pointed out that, "It has taken a considerable amount of work over several years to reach this point." He explained that, "It initially arose when a constituent contacted me. He was extremely frustrated, because he was unable to use his radios, television sets, and cordless telephones, because a neighbor nearby was blasting away at 100 watts of CB power when the legal limit is only 5 watts. He had illegally attached a high-power amplifier to his CB system. This person, my constituent, had contacted the police. They were unable to help. They simply said, we do not have jurisdiction. He had contacted state agencies. They also could not help. In both cases, he was told to contact the Federal Communications Commission. When he



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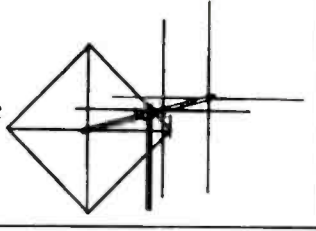
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did so, they said, yes, this person is breaking the law, but we do not have the personnel to go everywhere in the country to take care of this matter. As a result of this situation I have introduced this bill. I initially thought this constituent's problem was a rather isolated incident. Once I introduced the bill, I heard from individuals and organizations across the country that were encountering the same problem. Since I had apparently hit a hot nerve with a number of members of the public, I decided this bill was worth pursuing. The Senate has made minor changes to the bill which clarify it and which take care of some concerns of the truckers who, as my colleagues know, use CBs very heavily. They were worried about perhaps being harassed by improper use of this law, but we have taken care of that. I believe it is now in very, very good shape and will serve the purpose for which it was intended."

Mr. Wynn was last to speak. He started out by saying that, "This legislation will go a long way towards solving an ever-increasing and intrusive problem — the illegal operation of CB radios. To be sure and I must emphasize, the vast majority of CB operators are law-abiding citizens who use their radios properly. However, rogue

operators do exist across the country who regularly operate their CB radios at power levels far above the legal limit. When these operators boost their CB power levels, it often causes bleeding into nearby frequencies." "I am actually reminded of," he continued, "an old science fiction program, the Outer Limits, in which a rogue radio operator boosted his frequency above allowable limits creating a highway for which an alien appeared on our planet. In the real world, however, Americans who are unfortunate enough to live near these illegal CB radio stations experience only interference with their telephones, televisions, and other electronic equipment — a very serious problem. Worst, these transmissions are often profane and occur at all hours of the night and day. This intrusive practice is simply not a neighborhood nuisance — it borders on trespass. Unfortunately, the Federal Communications Commission does not have the power or resources to adequately police illegal CB radio operators around the country. As a result, victims are left helpless to defend against this growing intrusion to their privacy and the quiet enjoyment of their homes."

"The bill before us," he concluded, "would protect the American public by

allowing local law enforcement officials to enforce existing FCC rules regarding CB radios. Victims of this type of harassment can be given assistance by local authorities to shut down these rogue operators. Mr. Tauzin has put a good perspective on this bill. It does not shake the Earth, but yet it is very important to our constituents to show that we are, in fact, here working, carrying out the public's business."

## The Reality Of It All

There will, of course, be no immediate effect to this law. It only allows state and local agencies to enact and enforce their own regulations. Until they do, we really have no idea how effective they will be, how intrusive they will be, who will actually be doing the enforcement, how enforcement will be carried out or how severe penalties will be. They could be — and most likely will be — different from state to state and municipality to municipality. We are very likely to end up with a mishmash of laws ranging from severe to non-existent — depending on where you are located. I have been watching (and telling you about) this law

since early 1997. Since that time we have agreed that something had to be done to beef up CB enforcement. Since nothing was being done, this had to be better and so, for the most part, we have supported the effort. You and I, however, have also both agreed that local enforcement could also open the door to abuse. Abuse not only by our neighbors, in the form of false complaints resulting from personal vendettas, but from local officials as well. One South Carolina "local yokel" was quoted as saying that he could, "hardly wait to get the nod" because it would give him "new radios and more funds".

As Congressman Ehlers pointed out, provisions have been included in the law that will require "probable cause" for inspection of motor vehicles to protect truckers. The Amateur community thinks that they are going to be exempted from the law by virtue of their licenses. The rest of us can hope that our constitutional guarantees against unreasonable search and seizure will offer us some protection. All of this may be true, if you care to take it to court, but arguments can be made that none of the above give any of us much protection at all, at least from the initial so-called intrusion.

Again, let me point out that, the danger for abuse arises because, even though the law is designed to stem RFI interference, it focuses on the possession of "non-type accepted" equipment, not the interference itself. While the "non-type accepted" equipment targeted is mainly power amplifiers having extra channels or a clipped clarifier, however, it will also put you squarely in the bull's eye. Therefore, most serious Sideband and Freeband operators will be at risk. Well, ready or not, here it comes.

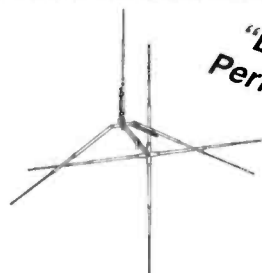
## March And April Mixers

If you are looking for a little chatter on the CB be sure to make plans to attend the next, regularly-scheduled, on-air CB mixer. They are held, wherever you are, on the last Saturday of the month. The next two will be on the 31<sup>st</sup> of March and the 28<sup>th</sup> of April from 9 p.m. until 10 p.m. local time. SSB operators work channel 36 LSB. AM operators work channel 23.

Thanks for writing me here at the magazine or via the Internet where my address ed@barnat.com. And as always, if you can (especially on March 31<sup>st</sup> and April 28<sup>th</sup>) — catch me on the radio! 73 ■

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# OUR readers SPEAK OUT...

Each month, we select representative reader letters for our "Pop'Comm P.O." column. We reserve the right to condense lengthy letters for space reasons and to edit to conform to style. All letters submitted must be signed and show a return mailing address or valid E-mail address. Upon request, we will withhold a sender's name if the letter is used in "Pop'Comm P.O." Address letters to: Harold Ort, N2RLI, SSB-596, Editor, *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801-2909, or send E-mail via the Internet to <popularcom@aol.com>.

## Freeband On His Mind

Dear Editor:

I recently subscribed to *Pop'Comm*. I've read your fine publication, off and on for over 13 years. I usually went to the local public library to read the most recent issue, but now I've finally subscribed and I want you to know why. Recently, your coverage of 11 meters has really expanded to include activity from 26,000 through 27,999 MHz. I realize that you may have touched lightly on the subject in the past, however, there is a noticeable increase both in content and frequency. (No pun intended.) This is a good thing; I've often wondered how such a fine publication could report so thoroughly on pirate radio activity yet (seemingly) turn a blind eye to the so-called "freeband."

I'll try not to be too long winded but I thought you might want a little background on one of your readers. I am a systems programmer for a Fortune 500 company on Long Island. I've been involved in 11 meters for over 23 years. I no longer operate on 11 meters other than an occasional SSB QSO on channels 36 through 40, but I still monitor the entire band. Now that my wife and I have just bought our first home and our lives are settling down, I'm going to go for my amateur general license. Santa Spouse was nice enough to leave a Yaesu FT-840 w/a Heil Goldline mic and Vibroplex straight key under the tree as an incentive. (Or was it a trade for the house? — smile.)

My parents gave me a pair of toyish GE 3 ch. 300mw h/t's for a Christmas present so my best friend and I could QSO between our QTH's — a half-block distance. With a little research, a home-brew 1/2 wave dipole w/coax replaced the fixed telescoping antenna — my introduction to soldering — and voila, I could reach stations clear

across town. My father saw my interest and bought me a RadioShack 40 ch. (One of the first.) AM CB and I was now talking to others in the next county. A Royce SSB rig then followed with a handheld power mic and a 5/8 wave vertical; "please repeat your QTH, did you say TEXAS????!!!(A criminal at 15?!) After graduating college (Aeronautical Engineering Technology complete w/FCC GROL) and landing my first real job, I went to the local dedicated CB/ham electronics shop and asked for the best SSB rig money could buy. To my surprise, rather than reaching for the Cobra 148GTL on the shelf, the merchant reached under the counter (literally) and came up with a amber/brownish box w/the logo Galaxy\*\*\*\*. (Get the picture?) It was a Galaxy 2100 and it was one of the best radios I've ever owned, and I've had more than a few. I stuck with the 5/8 wave vertical and added a D-104 desk mic and, w/an open sunspot cycle, the results literally spoke for themselves — "please repeat your QTH, did you say England, Germany, Belgium, Japan????!!!"

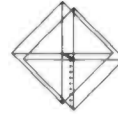
I'm older and hopefully wiser now but I must say that my involvement in 11 meters has brought me many, many hours of pleasure and has led me into the amateur radio arena. Groups like the ARRL and NAB would have you believe that the freeband — for lack of a better word — is somehow "stealing" good operators from the ham bands. It's been my experience that the case is just the *opposite*. Sadly some amateurs have forgotten (or even more sadly, conveniently "chosen" to forget) their 11 meter roots. They know who they are and, for the most part, so do we as some are still active and well-known voices (but different call #s) can be frequently heard on 11 meters. It is also not unthinkable that not only will courteous competent amateur operators have a positive effect on 11 meter ops, but the other way around, too.

I would just like to take my hat off to you. You tell it like it is. Freebanding is definitely against the FCC rules and regs. (I have some trepidation with calling it illegal as the FCC has no voted representation, although I know that illegal is the correct technical term — just making a point.) I am just happy that you are covering it and not treating it as if it did not exist. I applaud your staff, magazine and keep up the GREAT work.

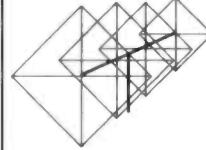
Sincerely,  
Bert C. Craig, Jr

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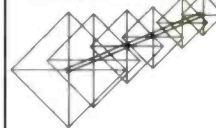
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# RADIO & THE INTERNET

Pop'Comm's Cyber Sleuth Checks Out Online Resources

## Web TV And The Quick Links Site, And Aviation Scanning

*Note: Remember, all online resources and contacts appearing monthly in Pop'Comm are available at the Quick Links Site, <http://www.dobe.com/ql/>.*

A Pop'Comm reader recently advised that he was unable to access the Quick Links site via his Web TV receiver. As many of you know, I use an HTML coding technique known as CSS (Cascading Style Sheets) to make the site's pages load quickly. Unfortunately, and according to the Web TV site as of early December 2000, Style Sheets are supported only on the Web TV Plus Receiver. The Web TV Classic Internet Terminal does not support Style Sheets in any form.

How does the use of CSS affect most

site visitors? Well, let's say you connect to the 'net using a standard modem and normal dial-up access. Let's further assume that your download speed nets out at about 3,000 characters (bytes) per second. Now, let's look at the text portion of the Quick Links, January, 2001 "columns" page. As written, (using CSS) it contains about **24,000 characters**. The time required to display that text, based on the above parameters, would be about eight seconds. Without CSS, the page would contain nearly **50,000 characters** and require upwards of 17 seconds to display fully — over twice as long! Consequently, while I appreciate the problem associated with Web TV access, I hope those of you with that technology won't think too harshly of me because I've

elected to continue using CSS coding techniques which benefits the (hopefully) overwhelming majority of site visitors.

### Aviation Scanning

The late Earl Nightingale, in his "Lead the Field" audio seminar, stated something like: "Find something you love to do, make sure it provides a needed or beneficial product or service, do it better than anyone else and the world will beat a path to your door." That statement was among my first thoughts when visiting Michael Dell's relatively new, FlightRadio.com web site. For my money, he has defined what a THEME web site should be: highly focused with substantial and quality content. Combine those elements with



Welcome to  
**FlightRadio.com!**  
The First website Dedicated to  
people who scan aircraft radio traffic  
<http://www.flightradio.com/>

← FlightRadio.com is how a theme site should be done. Highly focused and heavy on content. Don't miss it!

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BY ERIC FORCE <eric@dobe.com>



**An Introduction to the world of Radio Communications**  
 Australian Designed & Owned  
 These pages have been visited 85272 times since November 1997.  
 PLEASE HELP: If you have any information or practical tips about where & how to install CB's in cars I would greatly appreciate being able to add it to my webpage. All contributions will be fully credited to the author. (email: cbradio@roity.com)

CB Radio	Different modes of operation on radio	Communication theory
CB Introduction 27MHz CB UHF CB Controls Codes Appearance CB World Wide Freebanding	QSL Cards & Logs Packet Radio Trunking Slow Scan TV Selcall Tone Squelch Scramblers Roger Beeps Radio Teletype	Aerial Tuning & SWR Transmission methods (Part 1) Transmission methods (Part 2) Aerials & Signals DX & Skip Interference (RFI / TVI) Co-phasing Aerials Feedlines (detail) - <i>Soon</i> Radio Spectrum
Radio communications equipment & installation Handheld Radios - <i>Updated</i> Antenna Mounts Angle Adaptors Flexibility Adaptors Cables & Connectors Radio location - <i>Soon</i>	Up & Coming events	RF Interests Amateur Radio Radio Scanning Radio Foxhunting Other Radio Bands

<http://www.roity.com/rc/index.asp>

Check out this interesting, informative and useful site from Australia.

fast-loading, easily-navigated pages and you've got a blockbuster! So, what is FlightRadio.com about? Simply stated, it's one SUPERB resource for aviation scanning frequencies and information!

As mentioned, FlightRadio.com is fairly new so while the site's infrastructure is in place, some of the specific areas within the site were still in need of additional content when I visited. And, that's where YOU come in. It's also one of the things that make FlightRadio.com so special. Michael relies heavily on folks like you for current, accurate data and information. He is also looking for state/area page editors. Count me in! I'm definitely looking forward to contributing what I

can for the benefit of all aviation scanning enthusiasts. The bottom line is the site can be as good as YOU want it to be. Even though FlightRadio.com is already an outstanding resource as is, it's virtually impossible for one person to "do it all" given the site's scope — at least in any reasonable time frame. But, just think what would happen if every aviation scanning hobbyist, like you, would contribute just a little for the betterment of everyone. Wow! It boggles the mind! It's a beautiful day for flying and you're been cleared for takeoff. Proceed non-stop to <http://www.flightradio.com/>.

## Scanning — Internet Style

If you overlook the myriad of display banners and animations, Dick Becker's "Live Police, Fire, Air Traffic Control and Amateur Radio Links" site is a nice resource for links to live scanner broadcasts. If you won't be offended by a 911 caller's frequent (every other word it seemed) "M\_F\_" profanity, be sure to listen to the "You Will Not Believe This 911 Call" link. You'll find it about two-thirds down the page. I mention the excessive (in my opinion) use of banners and graphics since they're a pet peeve of mine given most folks, using a standard modem, would have to wait ten forevers for the page to load. Regardless, Dick has compiled an impressive list of online scanner type resources that you should enjoy.

Check it out at [http://members.tripod.com/~bobc\\_3/](http://members.tripod.com/~bobc_3/).

## Catching World Radio — Internet Style

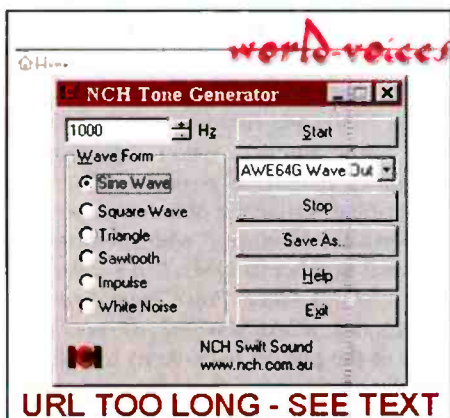
Virgilio Krumbacher's "RadioStations.net" is one awesome resource of worldwide radio streaming media content! From (I'm guessing) thousands of individual streaming media links, you'll find over 200 station formats. (Genre) Navigation is incredibly easy via Country, Format, or Location links. If that's not enough, you'll also find a vast array of Clock scanners, Multilingual links, Police scanners, Web scanners, and Webradio.com stations. And, if SWL is your thing, you might find RadioStations.net quite helpful for reception confirmations. Folks, trust me — check it out — you won't be disappointed! Visit <http://www.radio-stations.net/>.

## Intro To The World Of Radio

From Australia, comes David Roity's "Introduction to the world of Radio." This is one of those sites you'll love to explore. While most information pertaining to frequencies, regulations, etc., is geared to his homeland, the concepts explained are universal. Regardless of your specific interest in radio, you're bound to find something to your liking. Check out the screen shot of "Introduction to the world of Radio" for but a "taste" of the goodies awaiting you. If you're just beginning your radio hobby, David covers many of the basics in down-to-earth terms and includes several illustrations to help with the understanding. Visit <http://www.roity.com/rc/index.asp>.

## NCH Tone/Waveform Generator

Here's a neat program, provided free by The NCH World-Voices International Voice Over Index. It's used to create tones using a computer with a sound card and could be used as a substitute for traditional electronic tone generators. It can produce selected waveforms including sine, square, triangle, sawtooth, impulse and white noise at selected frequencies between 1 to 20,000 Hz. You can also use it to test (subjectively) your PC's sound system for frequency response. In my



Get your FREE tone/waveform generator here. Test your PC's sound system.



← Here's a blast from the past — were YOU a WPE?

I found my Pop'Comm cover images with picture slide show! Not only is it one slick and useful program, it's FREE! →

**KAPTECH**      **FREWARE**      **KAPTECH**

**Picture Slide Show**



<http://www.buinternet.com/~kaptech/PictureSlideShow.htm>

case, I couldn't hear anything above about 13 kHz and thought I had been "taken for a ride" on my MidiLand sound system — until my son came in. He was able to hear the response up to about 19

kHz! I guess the 'ol Sleuth's ears aren't what they used to be. Anyway, it's a nifty little utility and it's free. Grab your copy at <http://www.world-voices.com/software/nchtone.html>.

Note: If you have need for Voice-Overs, be sure to check out the NCH Home Page where you'll find an impressive list of worldwide artists for hire. Most have provided online demos which, in themselves, are interesting listening. If you do Voice-Overs, you might consider listing yourself at NCH.

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### Were You A WPE?

I received an interesting note the other day from Joe Tyburczy (W1GFH/WPE1FYE) letting me know about his new site celebrating an era, beginning in the mid 1950s and running well into the '70's. Remember when *Popular Electronics* magazine issued Callsigns and certificates (like the one shown here) to "Shortwave Monitors" who submitted a minimal number of QSLs? (It's indeed a small world since *Pop'Comm's* own Tom Kneitel, K2AES/WPE2AB, was in charge of the project back then) Joe also echoed my thoughts that the program probably accounted for a substantial number of people getting into the hobby. I asked Joe to send me a paragraph reflecting what he'd like to say to other

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PopComm readers if given the chance. Joe, the podium's yours:

"A while back I noticed that there was not one single mention of the WPE program anywhere on the World Wide Web. I thought there should at least be ONE page devoted to something that affected so many people in their youth. Magazines like *Popular Electronics* and *Electronics Illustrated* were immensely popular during the 1960s. Before personal computers and the Internet came into being, interest in radio and electronics was at an all-time high and SWling was a thriving hobby. This page is meant to help celebrate that era and be a place for former WPE's to drop in and say hi."

Well-stated Joe! WPErs/WPXers point your browser to <http://www.qsl.net/wb1glh/swl.html>.

## Picture Slideshow

Kaptech's "Picture Slide Show" is one of those programs you'll probably use more than you think. It provides a quick and extremely easy way to view all of the images in a directory (or on your entire system for that matter) without having to open each image individually. In addition to a normal slide show, one of the handiest features I found was the ability to "scan" all of my drives (I have eight) to see what I put where. I even found images that I'd previously given up on trying to locate. ZDNet™ says, "It isn't real fancy, but it works well — and it's free."

I'll second that with the caveat It works QUITE well and does everything I'd ever need in a slide show program — and you can't beat the price! Just pick your starting point, tell it how long to display each image, then sit back and enjoy the show. The program will run until you tell it to stop, or until it reaches a predetermined time that you specify. If an image is larger than the screen or open window, it's automatically resized to fit. Picture Slide Show supports ICO, BMP, EMF, GIF, JPG, PNG, and WMF graphic formats — that's just about all of the major players! Other options let you select the background color, sort images five ways, and run the show full-screen. "Picture Slide Show" is a well-thought-out program and a must have for your software toolbox. Show off those Christmas photos of your new gear. Grab your FREE copy at <http://www.btinternet.com/~kaptech/PictureSlideShow.htm>. Please be sure to visit Kaptech's Home page to review other useful and fun programs.

Well, that's about it for this month. Remember to keep those comments and suggestions coming and don't forget to visit the Quick Links site at: <http://www.dobe.com/ql/> for easy access to all the resources noted here and the *PopComm* web site at <http://www.popular-communications.com/> for the latest greatest. ■

# readers' market

**Advertising Rates:** Non-commercial ads are 30 cents per word, including abbreviations and addresses; minimum charge \$6.00 per issue. Ads from firms offering commercial products or services are \$1.00 per word; minimum charge \$20.00 per issue. Boldface words are \$1.20 each (specify which words). Leading key words set in all caps at no additional charge. All ads *must be prepaid in full* at time of insertion; a 5% discount is offered for prepaid 6 time insertions. All ads must be typewritten double spaced.

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# WASHINGTON BEAT

FCC Actions Affecting Communications

## MURS Murmurs

In a dramatic turn of events in the ongoing Multi-Use Radio Service saga, Motorola Incorporated has stepped forward and filed a Petition for Reconsideration (FCC Docket 98-182) with the Federal Communications Commission asking for the return of frequencies recently allocated to MURS. Motorola's request to return these five VHF channels to the Business Radio Service would mean that operating on these frequencies would again require a license and only business users would be eligible. You can read a copy of this petition at the FCC's site located at [www.fcc.gov/e-file/ecfs.html](http://www.fcc.gov/e-file/ecfs.html).

In related news, the Personal Radio Steering Group (PRSG) has filed a petition of its own with the FCC. PRSG is requesting that the FCC reconsider certain aspects of the new MURS Rules. In particular, they are asking for changes regarding the specification of maximum permissible transmitter power, the maximum permissible antenna height, interconnection with the public switched telephone network, use of MURS for repeaters, and the name of the service itself.

According to the group, these rule changes are sought "in part to encourage retention of the traditional mobile-oriented nature of the five frequencies now in MURS. We believe that proliferation of base-to-base communications on these frequencies would be to the detriment of the base-to-mobile and mobile-to-mobile operations which currently typify use of these frequencies." The PRSG petition can be found at [www.provide.net/~prsg/mursrecn.txt](http://www.provide.net/~prsg/mursrecn.txt).

## U.S. And Mexico Sign Border Spectrum Agreement

From the "Can't We Share?" file comes this bit of news: The Federal Communications Commission and the Mexican Comision Federal de Telecomunicaciones have reached an agreement for coordinating the use of frequencies in the 806-824/851-869 and 896-901/935-940 MHz

Land Mobile Services bands. The recently signed Special Coordination Procedure, also known as SCP, designates certain frequencies in the border area for primary use by either the United States or Mexico. It also allows for secondary use by the other country provided that a power flux density limit is met. The SCP also allows arrangements to be made for special operations in which either licensee may operate on a frequency allotted to the other country. The SCP is part of an ongoing Commission effort to negotiate sharing agreements of radio spectrum with Canada and Mexico. The arrangement initially covers operations by U.S.-based Nextel of California and Nextel License Holdings and by Mexico-based Servicios de Radiocomunicacion Movil de Mexico, S.A. de C.V., and Sistemas de Comunicaciones Troncales, S.A. de C.V. The full text of this agreement is available at <http://www.fcc.gov/ib/pnd/agree>.

## What's That Buzz I Hear?

Two amateur radio operators in Iowa have taken on a Wisconsin electric utility company, claiming interference from the company's power lines. James L. Spencer, W0SR, and Frederick M. Spinner, W0FMS, both from Cedar Rapids, wrote the FCC to complain about high levels of radio noise that they claim is emanating from power lines and equipment owned by Alliant Energy. The FCC intervened, writing Alliant to explain their obligations under Part 15 rules and asking them to look into the problem. Iowa amateur James Spencer said that he has been working with Alliant for several years to resolve interference problems and initially received help, but lately the utility has been denying that the problems stem from their equipment. Steven Baker, general manager of Alliant, said that they "cannot financially justify making major system changes or investments to address problems which are understood to be incidental radiators with no harmful interference as per FCC requirements." Baker went on to deflect blame, claiming that some of the interference is from "fish tank heaters,

doorbell transformers, and other devices" not associated with Alliant operations.

According to the FCC, utility companies must not cause harmful interference to licensed services and if they do, they should locate and correct the problems within a reasonable time. Sharon Bowers, with the FCC's Consumer Information Bureau, said "the levels of interference reported by Mr. Spencer and Mr. Spinner are very clearly strong enough to be considered harmful interference to the Amateur Radio Service." The ARRL has offered to assist in resolving the conflict. More information on utility company interference with amateur services can be found at [www.arrl.org/tis/info/rfi-elec.html](http://www.arrl.org/tis/info/rfi-elec.html), or E-mail ARRL Lab Supervisor Ed Hare, W1RF1, at [rfi@arrl.org](mailto:rfi@arrl.org).

## Crime Doesn't Pay

From the "Enough is Enough" File, the FCC recently denied a Petition for Reconsideration filed by a Houston, Texas, amateur and affirmed his \$4000 fine. Leonard D. Martin, the former KC5WHN, had been fined \$17,000 in July 2000 for repeated unlicensed 11-meter operations and failure to allow inspection of his amateur radio station. Martin sent a plea to the FCC, never denying the charges, but stating that he was unable to pay the fine. The FCC issued a Forfeiture Order and reduced their fine to \$4,000. In a reconsideration petition, Martin claimed that the FCC failed to provide him with proper notice to inspect and did not allow him to have an attorney present. He also said that the fine was out of proportion to the violations. As if that isn't enough whining, Martin also went on to complain about violation of his First Amendment rights and denial of due process. Three cheers for the FCC who dismissed Martin's objections and ordered the fine paid within 30 days.

## More Spectrum Allocated For Wireless

The Commission recently moved to reallocate 27 megahertz of spectrum for

BY LAURA QUARANTIELLO <LauraQ@cti.com>



non-government (wireless technology) use. The blocks of spectrum proposed for reallocation under the Commission's Notice of Proposed Rulemaking (FCC 00-395) are the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1670-1675 MHz, and 2385-2390 MHz bands. All of these frequencies are currently used for Federal Government services.

### FCC Denies CC&R's Again

The Federal Communications Commission has denied an ARRL Petition for Reconsideration which asked to extend the coverage of the limited preemption of local antenna ordinances to include CC&R's, also called restrictive covenants. The FCC Order states that "the League failed to demonstrate any significant change in the underlying rationale of the PRB-1 decision that would necessitate revisiting the issue." The ARRL has said that it will continue to research ways to better present its argument to the Commission. You can find the full text of this most recent denial online at [www.arrl.org/announce/regulatory/rm8763.html](http://www.arrl.org/announce/regulatory/rm8763.html). ■

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Antenna Supermarket	23	
Antique Radio Classified	26	<a href="http://www.antiqueradio.com">www.antiqueradio.com</a>
Atomic Time, Inc.	59	<a href="http://www.atomictime.com">www.atomictime.com</a>
Bill's CB & 2-Way Radio Service	73	<a href="http://www.bills2way.com">www.bills2way.com</a>
Bruce Sound and Security	76	
C. Crane Company	Cov. III	<a href="http://www.ccrane.com">www.ccrane.com</a>
C & S Sales, Inc.	55	<a href="http://www.cs-sales.com">www.cs-sales.com</a>
CQ Amateur Radio Calendars	72	<a href="http://www.cq-amateur-radio.com">www.cq-amateur-radio.com</a>
CQ Merchandise	51	<a href="http://www.cq-amateur-radio.com">www.cq-amateur-radio.com</a>
Communications Electronics, Inc.	27	<a href="http://www.usascan.com">www.usascan.com</a>
Computer Aided Technologies	43	<a href="http://www.scanat.com">www.scanat.com</a>
Cutting Edge Enterprises	67,73	<a href="http://www.powerportstore.com">www.powerportstore.com</a>
DWM Communications, Inc.	76	<a href="http://www.qth.com/dwm">www.qth.com/dwm</a>
Davis Instruments Corp.	21	<a href="http://www.davisnet.com">www.davisnet.com</a>
Drake, R.L. Company	19	<a href="http://www.rldrake.com">www.rldrake.com</a>
GRUNDIG	8,9,14,15	<a href="http://www.grundigradio.com">www.grundigradio.com</a>
ICOM America, Inc.	5	<a href="http://www.icomamerica.com">www.icomamerica.com</a>
Jo Gunn Enterprises	72	<a href="http://www.jogunn.com">www.jogunn.com</a>
Lee Electronics Company	26	<a href="http://www.LeesElect.com">www.LeesElect.com</a>
Lentini Communications, Inc.	1	<a href="http://www.lentinicomm.com">www.lentinicomm.com</a>
Lextronix, Inc.	8,9,14,15	<a href="http://www.grundigradio.com">www.grundigradio.com</a>
MACO Mfg. Div/Majestic Comm.	71	<a href="http://www.majestic-comm.com/maco">www.majestic-comm.com/maco</a>
MFJ Enterprises, Inc.	39	<a href="http://www.mfjenterprises.com">www.mfjenterprises.com</a>
Monitoring Times	30	<a href="http://www.grove-ent.com">www.grove-ent.com</a>
Optoelectronics, Inc.	Cov. IV	<a href="http://www.optoelectronics.com">www.optoelectronics.com</a>
Phillips-Tech Electronics	76	<a href="http://www.phillips-tech.com">www.phillips-tech.com</a>
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Radioworld, Inc.	21	<a href="http://www.radioworld.ca">www.radioworld.ca</a>
Ranger Communications, Inc.	25	<a href="http://www.rangerusa.com">www.rangerusa.com</a>
Shortwave Store, The	67	<a href="http://www.usa.shortwavestore.com">www.usa.shortwavestore.com</a>
Signal Engineering, Inc.	73	<a href="http://www.signalengineering.com">www.signalengineering.com</a>
Universal Radio, Inc.	3	<a href="http://www.universal-radio.com">www.universal-radio.com</a>
Viking Systems International	67	<a href="http://www.vikingint.com">www.vikingint.com</a>
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# THE LOOSE CONNECTION

Radio Communications Humor

## The Smell Of Progress

Hello again, loyal readers. You can't tell it from here, but this column almost didn't get written. Technology is probably to blame. It's those #@!\*&%\*! transistors!

There was a day when I used a manual typewriter, and, as Andy Rooney would say, each letter was applied to the page with a resounding crack! I readily admit that it was hard to E-mail a piece of paper, and my Underwood didn't have nearly the spell-checker that my recently-upgraded 386 laptop has, but that Underwood could keep on clacking right through the longest power-failure and never blink. Now that you ask, I never did type by candlelight, but I could have.

If my Underwood wide-carriage would have been electronic, it would have had tubes! It would not, as just happened to me, sit glowing with that faceless liquid-crystal glow, with no cursor — no sign of intelligence — no pulse, if you will — just a flatline, glowing screen. Eventually, I moved the contrast control and found the cursor where it had been "non-blinking" before my very eyes.

Tube-days were simpler. I know that those of you who invested in Bill Gates' crazy ideas might have picked up a few bucks thanks to Bell Labs and their bit of silicon gone awry, but transistors have really changed my life — and not really for the better.

Cohort and Kemosabe Dave Bradley reminded me that there was a day when a slender wooden dowel — a stick — was a primary television diagnosis tool. Yessir, a TV repair man would take his tube caddy (c'mon, someone must remember a tube caddy — forerunner to the three-tier fishing tackle box), extract the magic dowel — unfinished and dark brown from use — and methodically tap each tube, watching for the internal glow to change, or come alive — or cease altogether.

He did this, of course, while the whole family looked on — dad in a nice two-piece suit, mom in her dress (and simple

but tasteful pearl necklace) and junior (that would be me) trying to sneak a peek into the forbidden zone — the back of the TV set.

We had a great TV repairman. Ed Simons, rest his soul, was a ham with a day job, and he fixed everyone's TVs in the fifties. Only charged a couple bucks, rarely took it "into the shop," and apologetically gave us a loaner when he did.

I've heard tales, though (and if any readers can confirm this, please let me know) that after 30 seconds of successful diagnosis behind a set, some less-than-scrupulous repairmen would actually put a paperback book inside the back of the set and read for a while, so that a customer felt that he was getting his money's worth, then swapped a tube after a sufficient time — say two chapters — had passed.

Tubes were so much simpler. Foremost, when they took out a neighboring component, there was no guessing as to which one it was. It was the black one. The one charred beyond recognition. The one that crumbled to the touch (once again verifying the usefulness of "the stick").

I've known TV repairmen to walk into a living room, sniff the ozone and say, "Ooooh, boy — this smells expensive." If a person learned what not to touch, he was well on his way to a short-lived career in diagnosis and repair. A tube, for instance, that kept a piece of seared fingertip when touched, was too hot, and equally suspect to the cold tube, though more painful to diagnose. And who among you can rock a transistor or IC in its socket to cure a problem?

Just the other day, I went down to the corner drugstore and found that it had been taken over by a chain some 15 years ago. Not only that, but they no longer had a tube-tester — a video-game-sized device which (for free) would allow even mom or sis to take all the tubes from the TV set, carry them to the drugstore in a paper bag, and try for hours to read the little numbers which were never very

well etched to begin with. They'd get the settings wrong, and only the pharmacist had the skill to "haaaahhhh" his breath on them, revealing the magic numbers which he'd write on an RX label and stick to the tube.

Charts were flipped, dials set, switches clicked, and sometimes the famous "short test" button was pressed. We waited as the tube came to life (or not) and glowed (or not) as the meter ever so slowly climbed past the red, through the yellow, and almost into the green. We asked the pharmacist if five minutes was long enough to wait for a tube to warm up and give a good reading, as he got the key for the cabinet below, found the right tube or replacement (are you sure that'll work?) and sent us home exclaiming, "Four dollars! Man, that's a lot of money for a tube."

The prescription labels enabled us to replace the tubes in the right sockets. The skilled judgement of the pharmacist allowed us to watch Ozzie and Harriet once again, and the smell of hot labels was as comforting as the new car smell from a '54 DeSoto.

My first guitar amplifier had a wonderful tube smell to it as it warmed up. That \$64.95 Silvertone beauty is worth several times its original price today — because it has tubes, yet I remember the noise, the dirty sockets, the 10-below-zero trips to gigs paying \$8-\$20 per man, and how quickly I plunked my money down on the first solid-state guitar amplifier — the Haynes.

The only thing it lacked was the nostalgic smell. If only transistors could run a little hotter, they two would have some nostalgic appeal in the future. As it is, though, I'm afraid we're building things — fantastic, sometimes unbelievable things, but throwaway things which will never be remembered fondly for the glow and smell of a tube coming up to temperature. Nostalgia itself may be obsolete. Hope you've experienced some before it's all gone.

BY BILL PRICE, N3AVY



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