W5YI

Nation's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

Fred Maia, W5YI, Editor, P.O. Box 565101, Dallas, TX 75356-5101

★ *In This Issue* ★

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HAM DEALERS ANSWERABLE TO $7,000 FINES

Three Los Angeles area amateur radio equipment dealers have received *Notices of Apparent Liability* (NAL's) in the amount of $7,000 each for marketing the Kenwood TS-50S HF Transceiver which could be "...operated on frequencies not authorized for amateur radio use."

The dealers, Henry Radio (Los Angeles, CA), Jun's Electronics (Culver City, CA) and Ham Radio Outlet (Van Nuys, CA) were investigated by engineers from the FCC's Cerritos, California, field office between March 8 and 10, 1993, in response to a complaint lodged against Kenwood on March 5th. The FCC refused to disclose who or which company lodged the complaint. Each of the dealers were ordered to either pay the fine or to "...file a written response showing why the forfeiture should be reduced or not imposed.."

The violations cited by the FCC involved equipment that was not properly type accepted (approved) as required prior to marketing to the public. The compact TS-50S is promoted as the world's smallest HF transceiver in a full back page advertisement in the July QST. While the ad did not give the frequency ranges, a sales brochure initially distributed to Kenwood's dealer network and the public showed operating ranges which were significantly above and below the authorized U.S. ham bands. While the Kenwood Company later had the flyers reprinted to show TS-50S operation only on authorized amateur spectrum, the FCC said it confirmed the radios would operate outside the ham bands. The initial frequency ranges and the reprinted frequencies are as follows:

Old Brochure	Band	New Brochure
1.705-2.0 MHz	160M	1.8-2.0 MHz
3.0-4.0 MHz	75/80M	3.5-4.0 MHz
6.5-7.5 MHz	40 M	7.0-7.0 MHz
10.0-10.5 MHz	30 M	10.1-10.15 MHz
13.5-14.5 MHz	20 M	14.0-14.35 MHz
18.0-19.0 MHz	17 M	18.068-18.168 MHz
20.5-21.5 MHz	15 M	21.0-21.45 MHz
24.0-24.0 MHz	12 M	24.89-24.99 MHz
27.5-30.0 MHz	10 M	28.0-29.7 MHz

Conversation with FCC, Los Angeles

While the FCC visited the three amateur radio equipment dealers in early March, the NAL's were not issued by J.R. Zoulek, Engineer-in-Charge of the Los Angeles field office until July 2nd. Zoulek told us that, for the most part, amateur transceivers that have the capability to transmit on other than amateur spectrum must be approved (type accepted) by the FCC. He said there were exceptions, ...such as spectrum assigned to the U.S. Government.

The 27.5 to 28.0 MHz band is partially allocated to the Land Mobile (Business Radio) service and Part §90.203 (a) and (b) of the FCC Rules

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cover the land mobile service type acceptance requirements. "The Kenwood TS-50S was capable of operating on frequencies that require type acceptance by Title 47 CFR [Government law]," Zoulek said. "If there are other [amateur] radios out there that operate on spectrum that requires type acceptance, we would like to know about them. Just because you have amateur frequencies in there too ...does not exempt you from the necessity of having them type accepted (FCC approved.) Amateur transceivers that just transmit on amateur frequencies are not required to be FCC approved. Just about any transmitter that operates under Part 90 of the Rules is required to be type accepted. Approved transmitters are included in the Commission's current Radio Equipment List."

Zoulek said there were exceptions. For example, radio transmitters operated by federal agencies and the military on Government frequencies do not require type acceptance. I asked Zoulek how would a dealer or importer know whether the transceivers he was marketing were legal and he referred me to the technical standards in the Rules for the various radio services. (Such as Part 23 Fixed, Part 80 Maritime, Part 87 Aviation, Part 90 Land Mobile and Part 95 Personal Radio.) The Part 2 Table of Allocations lists the frequency bands designated to each radio service.

We compared the publicized TS-50S transmit frequency ranges outside amateur spectrum with the Part 2 Allocations and found a multitude of bands that indeed require FCC equipment type acceptance.

[1705-1800 kHz, is assigned to Fixed, Land Mobile, Maritime; 3.0-3.5 MHz to Fixed, Land Mobile, Maritime and Aviation; 6.5-7.0 MHz Aviation, Fixed, Maritime; 7.3-7.5 MHz Aviation, Fixed, Land Mobile, Maritime; 10.0-10.1 Time and Frequency Standard, Aviation; 13.5-14.0 MHz International Broadcasting, Fixed and Aviation; 14.35-14.5 MHz, 18.0-18.068 & 18.168-19 MHz Aviation, Fixed, Maritime; 20.5-21.0 MHz Fixed; 21.45-21.5 Fixed and HF Broadcasting; 24.0-24.89 MHz Aviation, Fixed; 25 MHz Time and Frequency Standard; 27.5-27.54 MHz Land Mobile; 27.54-28 MHz Government Fixed and Business Radio Mobile; and 29.7-30 MHz Aviation, Fixed and Land Mobile.]

Zoulek said there were several frequency bands at issue, not just the so-called "freeband" between 27.5 MHz and the bottom of the amateur ten meter band. He said he was especially concerned about interference to public safety frequencies. "The radio regulations are written as a scheme to encourage people to transmit in an orderly fashion. And if people would abide by the Rules, then we would not have any problems."

FCC, Washington, DC

In an effort to learn more about the Rules covering amateur equipment, we telephoned the FCC's Field Operations Bureau and spoke to Deputy Chief Arlan van Doorn. He teleconferenced in Dan Emrick and Larry Clance from their Enforcement Division.

W5YI: On what basis where these NAL's issued?
FCC: We reacted according to a policy published in a Public Notice in 1987 which says you may not sell a device that requires type acceptance if it operates on a frequency to which type acceptance is required.

W5YI: Was it the promotional literature or the TS-50S radios the main target of the complaint?
FCC: It was both. The literature which advertised the fact that the radios operated beyond the ham bands was offered as part of the complaint. That was confirmed by inspection of the retail outlets where sales personnel behind the counter acknowledged that the brochure was accurate and that the devices did in fact function as advertised without modification by a third party.

W5YI: A May 1993 QST full page ad promotes the Yaesu FT416/816 transceiver as transmitting above and below the amateur 2-meter band. June and July 1993 QST ads also says the FT-530 and FT-2400 feature 140-150 MHz transmit capability. Does the fact that the Table of Allocations shows 140-144 and 148-150 MHz to be allocated to the U.S. Government which does not require FCC type acceptance make these legal radios? In short, is it O.K. to market extra Government frequency transmit capability to amateurs since that spectrum is not managed by the FCC?
FCC: No it is not. Those ads may be evidence of marketing improper devices. The advertising is itself an illegal activity. It can be a second violation if the radio does in fact operate outside the [ham] band. Even if the radio does not [operate outside the band], it does not relieve them from the responsibility of illegal advertising.

If those radios are being manufactured in the United States, you have one question. If those devices originated from off shore and offered at 140-150, regardless of the fact that they include both ham and government frequencies, they may not be imported. The importation standards say those radios may be sold for government use only.

It is perfectly all right for the FBI to go out and buy domestic or imported radios that ordinarily would require type acceptance if the distributor can show that the only customer is the U.S. government. A radio advertised in a ham magazine obviously could not claim the government exemption for importation.

W5YI: What about radios that cover the 220-225 MHz band. The 220-222 MHz segment was re-allocated to Part 90 Private Land Mobile. Can these radios still be marketed?
FCC: I understand that there would be some sort of 'grandfather' provision. It seems reasonable that there is some sort of allowed transition period. I would have to do some research on that one.

W5YI: In view of the recent NAL's, dealers are very concerned as to what equipment may be sold. Is there any list of approved radios or instructions to dealers notifying them of marketing guidelines or what may and may not be sold?
FCC: It used to be published in the Federal Register. There may have to be a new education effort. This is something that we are going to have to talk to OET (FCC's Office of Engineering and Technology) about and among ourselves. We are touching the tip of the ice berg.

W5YI: Dealers are disturbed that they - and not the manufacturers - are being held accountable. They buy from large reputable companies and this is an area that dealers really have not been concerned about. They have been of the opinion that type acceptance responsibility is a distributor/manufacturer/importer function.
FCC: The rules do not differentiate among those who sell these devices. They make it very clear that they may not be offered for sale by anyone. It even goes further to say that they may not be advertised or shipped. It is a very broad, far-reaching rule that includes the manufacturer, importer, the retailer ...anybody in the distribution chain. If the dealer says he bought the devices from Joe's Distribution, then Joe just inherited an NAL. If Joe says he bought them from an importer, then they too get an NAL. The reason the rule is written that way is to eliminate any possible marketing loop holes.

Devices that are frequency agile are being used more and more as the source of the interference that we are having to work on. In particular, operations on police frequencies by those who have no business being there, can not legally be there and who cannot and do not buy the Land Mobile quality high price equipment to do it. They buy a piece of ham gear that already operates there or is easily modified. We even have had enforcement actions against the police for using non-type accepted equipment. Its a double edged sword. We have police officers who want to ignore radio regulations.

W5YI: If dealers are going to be held responsible for the technical characteristics of radios they sell, where do they find the needed guidelines?
FCC: There are places where this information can be obtained, but I am reluctant to give this information out without first notifying the appropriate bureau of possible inquiries. The phone calls will start immediately, we know. Nothing is wrong, however, with dealers calling our FCC field staff.

W5YI: If the TS-50S was not a proper radio to be imported, why then was Kenwood not issued an NAL?
FCC: You are correct, under the importation rules, we hold the importer responsible to see that the equipment is being properly imported. The same rule may have been violated by both Kenwood and the dealers. It is not an either/or situation. It may well be that Kenwood will receive something based on the importation aspect. We are looking into this area right now. The complexity of these issues keeps mounting. We start at the source of the complaint and go from there. Sometimes it opens a Pandora's box. We may be busy on this issue.

W5YI: Was the primary cause of the three NAL's the concern that the FCC has for the illegal so-called "free-band" operation below 28 MHz? What will happen now?
FCC: That was one of the concerns but it was not the sole cause for action here. The process is well defined. The recipient of an NAL must respond to the office that issued it. Their response can be any number of things. 'Yes, you are right, I did it, and here's my check' or it can be an explanation of circumstances where they believe it should not have been issued ...or that it should be in a lesser amount. The office will then respond. The formal document is a *Notice of Forfeiture* that says 'nice hearing from you, but you still owe us seven grand' or it could say if the showing is strong enough that the forfeiture is cancelled. The recipient at that point has the choice to pay and close the matter or proceed with higher level review. In which case the field office sends it to our legal staff who will scrutinize it carefully for all the questions raised by the issuing office and the respondents. A determination is then made at the headquarters level as to what should happen next.

Kenwood, USA

We spoke to Kenwood's ***Wayne Yoshida, KH6WZ.*** He said he first learned about the TS-50S excess transmit capability through another dealer who saw it mentioned in the amateur press where it was implied that it was a 100 watt CB transceiver.

He acknowledged that Kenwood's radios do indeed have transmit capability above and below the ham bands "...as do other manufacturer's radios." There was nothing unusual about the TS-50S. "Due to a printing or typographical error" the preliminary sales flyers listed frequencies other than strictly amateur spectrum, Yoshida said. "We never advertised to CB-ers and the brochures were changed at once to show only HF amateur bands once the error was detected."

Yoshida said Kenwood immediately contacted their Washington attorney, Chris Imlay, N3AKD, once it was determined that the FCC was now looking into the radio. On April 5th, Imlay hand-delivered a letter to Dan Emrick (FCC Enforcement Division, Washington, DC) requesting a personal meeting to resolve the matter of "...a current investigation of Kenwood by your office, the Cerritos, California Field Office, or both relative to the marketing by Kenwood of its model TS-50S HF Amateur Radio Transceiver." (Yoshida FAXed us a copy of that letter.)

Imlay's letter also charged "...this complaint may have been registered by a competitor of Kenwood, motivated by anti-competitive, rather than substantive concerns. Rumors concerning this matter within the amateur radio community may have already seriously damaged Kenwood's ability to conduct business and it is critical that this matter be clarified at the earliest opportunity."

Yoshida said that Chris reported back to us that the Washington, DC FCC office assured him that this "...was a non-issue." But possibly the Los Angeles FCC Office worked independently of their Washington headquarters and issued the NAL's anyway.

"Last week, we were notified by some dealers that they received $7,000 NAL's for wilfully violating the law by selling these radios." Yoshida said they were shocked that the NAL's were issued some three months after they contacted the FCC to resolve the matter. And Yoshida said they were particularly upset that only the TS-50S and Kenwood was singled out, when other major importers routinely offer amateur transceivers that transmit on out-of-band frequencies.

Ham Radio Outlet

Bob Ferraro, W6RJ owns the Ham Radio Outlet chain. His Van Nuys, California, store got one of the three NAL's. I telephoned him on Friday, July 9th. He was baffled by the citation and thought the violation might be that Kenwood was promoting the questionable frequencies in a Japanese version of the TS-50S brochure ...not the same one they use in the United States. The largest address on the brochure was indeed a Japanese address. The key word he felt was "promoting" or as the NAL said: "...marketing transceivers capable of operation outside of the amateur radio frequency band." The NAL also mentioned promotional "...literature accompanying the transceiver indicated that the transceiver operated on frequencies not authorized for amateur use."

As it turned out, he - like all dealers - was not aware of the FCC policy which requires a radio to be type accepted when its frequency capabilities spill over - even minutely - into spectrum allocated to an adjacent radio service.

Ferraro told us that he "...spent the last three days with manufacturers. They have all agreed to indemnify me against forfeitures which might be received as a result of selling their equipment. Icom, Yaesu and Kenwood have notified me in writing that they will protect me against any FCC fines because of violations caused by their brochures, display advertisements or equipment performance features."

VECs PROPOSE SINGLE VE ACCOUNTABILITY

The Rules Committee (Winford Guin, W2GLJ, Chairman) of the *National Conference of VECs* has submitted a *Petition for Rule Making* "...to require that VECs designate one VE at each amateur operator license examination session who has overall responsibility for proper conduct and necessary supervision of the examination session and who certifies the application form for successful candidates. This designated VE will be referred to at the Contact Volunteer Examiner (CVE.)"

At present most, if not all, examination sessions are being conducted with one of the VEs exercising overall responsibility to ensure that proper procedures are being followed by the administering VEs. Most large amateur radio operator examination sessions necessarily utilize more than three examiners. Frequently, the three VE's who certify the application FCC Form 610 are not the same ones who conduct both the telegraphy and written examinations.

The VEC Rules Committee believes the, "...important assurance that the examination is in full compliance with the Commission's Rules and with the instructions provided by the coordinating VEC and the FCC is most effectively accomplished by one lead VE."

Every FCC Form 610 is submitted to a VEC who reviews the test session paperwork. Since original CSCEs may be redeemed at all VEC test sessions, and additional examiners may need to be contacted to verify its authenticity, no change was suggested in the VEC requirement that three of the administering VE's certify the applicant's *Certificate of Successful Completion of Examination* (CSCE.)

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MAY AMATEUR LICENSING STATISTICS

May	***1990***	***1991***	***1992***	***1993***
New Amateurs:				
New Novices	3875	1801	1066	867
New Tech's	359	2858	3058	4104
Total New:	4284	4714	4178	5035
Upgrading:				
Novices	2249	1419	636	676
Technicians	791	*642	*507	*797
Generals	595	414	319	597
Advanced	322	288	227	348
Total:	***3957***	***2763***	***1689***	***2418***
Renewals:				
Total Renew:	138	72	70	135
Novices	28	7	0	14
Purged:				
Total Dropped:	0	0	25	19
Novices	0	0	14	4
Census:				
Indiv. Oper.	***453928***	***517665***	***565350***	***608733***
Change/Year	-2943	+63737	+47685	+43383

Individual Operators by Class: *(and % of total)*

Extra	***Advan.***	***General***	***Technic.***	***Novice***	***Total:***
May 1990					
48840	99047	113650	111325	81066	***453928***
10.8%	21.8%	25.0%	24.5%	17.9%	100.0%
May 1991					
55212	106312	121053	138209	96879	***517665***
10.7%	20.5%	23.4%	26.7%	18.7%	100.0%
May 1992					
59169	108736	123730	174936	98779	***565350***
10.5%	19.2%	21.9%	30.9%	17.5%	100.0%
May 1993					
63085	111169	126306	207803	100370	***608733***
10.4%	18.3%	20.7%	34.1%	16.5%	100.0%

Club/ RACES &	***(1990)***	***(1991)***	***(1992)***	***(1993)***
Military:	2447	2432	2431	2431
Total Active:	**456375**	**520097**	**567781**	**611164**
% Increase	-.6%	+14.0%	+9.2%	+7.6%

(* = Does not include Technicians upgrading to Tech Plus)

AMATEUR CENSUS BY CALL SIGN GROUP:

Group	Extra	Advan.	General	Technic.	Novice	Total
A	35687	682	249	7	0	36625
B	4099	29217	54	6	1	3377
C	14506	44234	67567	91969	48	218324
D	8548	36919	58329	115760	100319	319875
Other	245	117	107	61	2	532
Total	**63045**	**111169**	**126306**	**207803**	**100370**	**608733**

[Group "A"=2X1 & 2X2; "B"=2X2; "C"=1X3 "D"=2X3 format.]

[Source: FCC Licensing Facility, Gettysburg, PA]

TEMPORARY OPERATING PRIVILEGES PETITION FOR RULE MAKING FILED BY VEC ORGANIZATION

On June 25th, the Western Carolina Amateur Radio Society VEC, Inc., of Knoxville, Tennessee filed a very professionally prepared *Petition for Rule Making* with the Federal Communications Commission.

The proposal looks toward "...permitting a person who does not hold any of the five classes of [amateur] operator licenses but who holds a *Certificate of Successful Completion of Examination* (CSCE), indicating that the person has completed the necessary requirements for an operator license within the previous 365 days is authorized to exercise the rights and privileges of such license pending physical receipt of said document from the Commission."

The petition, submitted by WCARS' **Ray Adams, N4BAQ**, was immediately accepted by the FCC and assigned File No. RM-8288 on July 8th. Actually temporary call signs were first suggested to the VECs by the FCC at their annual conference.

In support of its position, Adams argues "...the Commission presently authorizes a license holder to exercise the rights and privileges of a higher class license solely on the basis of possession of a CSCE which indicates successful completion of the requirements of such higher class of license, and ...specific indicators are prescribed for use with assigned call signs when a person exercises [his/her newly obtained] operating privileges.

"The temporary call sign to be used by such person pending receipt of their permanent call sign will be WZ, followed by the number of the VEC region containing the testing site [or alternatively the examinee's mailing address] ...followed by the first letter of their given name, ...middle name or initial, and ...surname. The letter Z will be used to represent the middle name or initial if the individual ...has neither." The call sign will be followed by the appropriate KT, AG, AA or AE designator.

Adams said a precedent for this procedure was set in the Citizens Radio Service. A formulated call sign could be used by a Citizens Band applicant once an application was filed with the FCC and pending receipt of their call sign.

"Granting of this Petition would effect a cost saving for the Commission staff by the resultant reduction in telephone contacts generated by the impatient anxiety of the 'licensees in waiting' to exercise the rights and privileges of licenses they have earned."

Adams said the FCC may wish to consider inserting wording in the Rules to preclude temporary amateur operations by any person who has ever had an FCC-issued license suspended or revoked.

W5YI REPORT

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WHAT HAS HAPPENED IN YOUR STATE SINCE THE BEGINNING OF THE NO CODE TECHNICIAN?

July 15, 1993

AMATEUR SERVICE GROWTH REPORT - MARCH 1, 1991 VS. JUNE 1, 1993

STATE	EXTRA		ADVANCED		GENERAL		TECHNICIAN		NOVICE		TOTAL		INC.
	1991	1993	1991	1993	1991	1993	1991	1993	1991	1993	1991	1993	%
Alabama	823	948	1509	1607	1650	1726	2074	3516	1055	1035	7111	8832	24%
Alaska	264	296	501	530	594	645	481	763	428	474	2268	2708	19%
Arizona	1022	1238	2214	2378	2324	2470	2680	4667	1267	1260	9507	12013	26%
Arkansas	443	579	868	954	941	1009	1092	2049	621	636	3965	5227	32%
California	6756	7798	15124	15758	15897	16510	21340	34685	15024	17314	74141	92065	24%
Colorado	955	1065	1861	1982	2021	2116	2042	3281	1287	1358	8166	9802	20%
Connecticut	913	1042	1504	1549	1872	1927	1527	2370	1699	1707	7515	8595	14%
Delaware	167	179	226	232	264	287	304	424	212	212	1173	1334	14%
Dist.of Col.	74	84	104	102	123	130	64	101	80	95	445	502	13%
Florida	3144	3735	6876	7379	8061	8698	7244	10913	6172	6915	31497	37640	29%
Georgia	1118	1318	2206	2368	2346	2510	2817	4420	1466	1544	9953	12160	22%
Hawaii	265	299	502	511	564	578	602	904	663	691	2596	2983	15%
Idaho	236	272	495	544	656	684	605	1079	398	422	2390	3001	26%
Illinois	2122	2367	3968	4092	4758	4865	4900	7384	3637	3648	19385	22356	15%
Indiana	1153	1346	2268	2336	2620	2759	3258	5022	2125	2132	11424	13595	19%
Iowa	597	658	1359	1424	1479	1502	1116	1760	1037	1069	5588	6413	15%
Kansas	562	670	1079	1114	1493	1539	1204	2095	1001	1057	5339	6475	21%
Kentucky	577	729	1069	1153	1326	1391	1525	2664	1198	1251	5695	7186	26%
Louisiana	665	729	1287	1153	1369	1391	1304	2664	914	931	5539	6683	21%
Maine	353	438	619	663	941	1002	591	1137	562	597	3066	3837	25%
Maryland	1219	1387	2154	2222	2115	2234	2036	3323	1499	1574	9023	10740	19%
Mass.	1633	1899	2635	2728	3232	3303	3087	4595	2201	2306	12788	14830	16%
Michigan	1714	1943	3392	3542	4070	4122	3988	6496	2779	2722	15943	18932	19%
Minnesota	919	1037	1845	1938	2210	2321	1766	2924	1382	1331	8122	9551	18%
Mississippi	351	417	721	777	808	830	796	1442	538	551	3214	4017	25%
Missouri	1048	1219	2050	2160	2471	2595	2126	3515	1567	1566	9262	11055	19%
Montana	229	279	387	401	559	578	356	686	351	370	1882	2314	23%
Nebraska	299	343	756	771	978	995	671	1045	516	507	3220	3661	14%
Nevada	288	339	537	612	705	776	634	1170	354	360	2518	3257	29%
N.Hampshire	500	576	667	720	875	942	883	1311	586	600	3511	4149	18%
New Jersey	1813	2020	3105	3176	3328	3452	3483	4975	2560	2768	14289	16691	17%
New Mexico	449	524	823	874	827	866	781	1422	388	395	3268	4081	25%
New York	3059	3466	5588	5754	6565	6870	6715	10459	6832	7186	28759	33685	17%
N. Carolina	1213	1476	2498	2675	2706	2900	2913	5065	1780	1961	11110	14077	27%
North Dakota	119	142	232	240	354	377	251	427	260	275	1216	1461	20%
Ohio	2423	2801	4660	4852	5281	5550	7098	10682	4393	4271	23845	28156	18%
Oklahoma	663	809	1385	1452	1379	1455	1754	2893	1086	1145	6267	7754	24%
Oregon	908	1075	1903	2032	2416	2578	2234	3507	1637	1647	9098	10839	19%
Penn.	2303	2709	4141	4344	4856	5057	4713	7132	3701	3753	19714	22995	17%
Rhode Island	238	280	325	344	512	527	532	765	383	433	1990	2349	18%
S. Carolina	488	582	968	1023	1231	1304	1164	1858	657	694	4508	5461	21%
South Dakota	139	149	307	317	354	377	244	371	174	184	1218	1398	15%
Tennessee	1010	1257	2074	2244	2038	2191	2851	4501	1520	1562	9493	11755	24%
Texas	3555	4081	6726	7127	7143	7582	7934	12685	4473	4505	29831	35980	21%
Utah	352	402	689	745	651	712	1333	2494	775	807	3800	5160	36%
Vermont	181	217	293	301	381	407	307	625	228	230	1390	1780	28%
Virginia	1552	1800	2718	2896	2896	3047	2759	4687	1994	2106	11919	14536	22%
Washington	1714	2034	3327	3552	4050	4327	4230	7205	3157	3156	16478	20274	23%
West Virginia	376	475	629	668	849	907	969	1912	942	907	3765	4889	30%
Wisconsin	873	996	1675	1765	2104	2165	1701	2944	1357	1334	7710	9204	19%
Wyoming	133	146	203	221	264	283	251	498	243	225	1094	1383	26%
Guam	28	42	41	43	41	50	59	87	169	171	338	393	16%
Puerto Rico	204	236	480	533	605	667	1937	2327	3462	4339	6688	8102	21%
Virgin Islands	30	42	51	51	68	80	55	93	44	44	248	316	27%
Other	14	55	14	49	20	52	5	96	25	47	78	399	***
Total:	54246	63085	105628	111169	120241	126306	129386	207803	94859	100370	504360	608733	20.7%
% of Total	10.8%	10.4%	20.9%	18.3%	23.9%	20.7%	25.6%	34.1%	18.8%	16.5%	100%	100%	
% Increase	**+16.3%**		**+5.2%**		**+5.0%**		**+60.6%**		**+5.8%**		**+20.7%**		

*(*** = Other includes U.S. possessions and in 1992, APO/FPO addresses. Figures not comparable.)*

• The FCC has allocated 3 MHz of spectrum in the 900-MHz band for a ***new narrowband Personal Communications Service*** - including advanced paging, electronic mail, two-way acknowledgement paging, data messaging and wireless FAX.

The regulatory plan adopted for narowband PCS includes an allocation of spectrum, a flexible regulatory structure and technical and operational rules.

The spectrum allocated is just below and above the 902-928 MHz band that is shared by many radio services - including the amateur service. The 3 MHz allocated to narrowband PCS are 901-902, 930-931 and 940-941 MHz. Two of the three megahertz allocations will be paired and unpaired channels. The FCC retained one megahertz unchannelized for future expansion of narrow-band PCS or for new services.

Up to 5500 licenses for narrowband PCS will be created including 11 nationwide and 13 regional licenses in each of 47 major trading areas. There will be up to 10 local licenses in each of the 487 basic trading areas, as defined by the government. The new channels will be subject to the spectrum auction rules under consideration by Congress.

The FCC awarded Mobile Telecommunications Technologies Corp. a "pioneers preference" for a nationwide 50 kHz unpaired channel for their development of a wireless message system that provides two-way service to and from laptop computers and personal digital assistants in a single 50 kHz channel.

• Also on June 24th, the FCC began a proceeding to ***prepare for the 1991 World Radiocommunication Conference*** (WRC-93) scheduled for Nov. 15-19 in Geneva, Switzerland.

In Dec. of 1992, the ITU was restructured to include a WRC every two years beginning in November 1993. WRC-93 will recommend issues for the 1995 and 1997 WRCs. In addition, the WRC-93 will consider scheduling two specific topics for WRC-95. They are: 1) a review of the Radio Regulations and, 2) facilitating use of frequency bands allocated to the mobile-satellite service.

Consequently, the Commission is seeking information and comment relating to telecommunications issues to be addressed at future WRCs.

In addition, the FCC has identified additional issues for possible inclusion on the agendas of WRC-95 and WRC-97. They are: 1) satellite digital audio broadcasting; 2) wind profiler radio systems; 3) space sciences services and; 4) high frequency broadcasting. The FCC requests comments on how United States interests will be served by placing these issues on the agendas of WRC-95 and WRC-97. Parties are also invited to suggest new issues for inclusion on future WRC agendas in addition to those listed.

• President Clinton is expected to sign a bill adopted by Congress which **approves an additional $11.5 million in supplemental funding this year for the FCC.** These funds are needed by the FCC to hire 240 full time employees to implement and enforce the provisions of the 1992 Cable Act.

Non-binding wording requires cable operators to issue overcharge refunds to cable TV subscribers retroactive to Sept. 1 rather than the current Oct. 1 date. The rate roll-back is expected to be on the order of 10%. Cable rate increases have been frozen since last April 5th. The FCC says the Oct. 1 date will remain.

• ***The FCC 's Enforcement Division has been busy lately!*** Four out-of-band CB operators are being fined from $2,000 to $3500 each. And a $10,000 whopper was issued to Lonnie N. Gwinn of Federal Heights, CO for selling external CB radio frequency power amplifiers at a truck stop.

Margaret G. Taylor of Windermere, FL was told she owed the Government $2,000 for her unlicensed amateur radio operation.

Four computer companies (Arche Technologies, Fremont, CA, Clevo, Inc., Walnut, CA, Computer Corner, Albuquerque, NM and Tech-Repair, Kaneohe, HI) were ordered to cough up from $7,000 to $10,000 each for marketing personal computers which did not contain the proper FCC equipment approvals.

And it cost the Southern Railway Company $7,500 when they refused to allow an FCC inspection of their base radio station.

• The FCC Commissioners have agreed with and affirmed an April 13, 1993, Private Radio Bureau denial of a discrimination complaint filed by a ***blind amateur who charged he had been discriminated against solely because of a handicap.***

Blind amateur, ***Leon R. Moten, WD8POF*** (Advanced Class) of Jumping Branch, WV, had accused the Black Diamond Amateur Radio Club of discriminating against him by denying his participation as a volunteer examiner at a West Virginia amateur radio operator license test session because he was blind.

In its decision, the Private Radio Bureau concluded that Moten was not improperly excluded from serving as an administering VE because he was unable to perform fully all of the necessary duties and VE responsibilities since he was unable to observe the examinee throughout the entire examination as required by the Rules, Part §97.509(a). The FCC noted that the VE team was willing to find other ways for Moten to assist the VEs at test sessions.

• ***The FCC has proposed new regulations aimed at preventing conflict of interest among its employees.*** It could prevent Commission officials from presenting FCC Forums at amateur radio functions.

The Commission is considering banning gifts from anyone or any organization that has an interest in the outcome of commission decisions.

Payment of travel expenses for attendance at meetings or conventions sponsored by a non-government source would also be banned under the FCC proposal. Comments close on August 24.

• ***"Self-healing" components are growing in popularity.*** A large capacitor that heals itself after it shorts internally is undergoing testing for high-voltage power lines.

Current capacitors use film, oil, and other materials. When such capacitors dry out and short, the only option is to replace them. The new type of capacitor uses a film that can heal itself; it is a thin sandwich of plastic and metal. If a short circuit develops anywhere across it, the metal layer burns away. This removes the short, effectively returning the capacitor to normal service quickly.

Like many new materials, it still has some bugs in it. Gases build up inside the capacitor. But a fiber-optic device shows engineers when internal stresses are shifting; a loop of the fiber-optic cable runs around the capacitor. This effectively creates a resonant loop, and any internal pressures will change its resonant frequency. That sets up a signal that can be measured. —— *The Engineer, 22 April 1993*

• ***James Breakall, a researcher at Penn State University, has invented a new type of phased-array antenna*** that may help meteorologists. It is called a "three-dimensional frequency-independent phased-array antenna," or 3D-FIPA.

Breakall's novel approach uses an entirely new geometry for the antenna. Based on a log-periodic dipole antenna, every portion of the structure is shaped like the entire structure itself —— in effect, the antenna is shaped like a fractal.

In theory, the antenna system has no upper frequency limit, requires no band switching, and no other frequency-dependent hardware. The elements are arranged to form a nested structure, in which the spacings and heights are constant over a wide frequency range. A full-scale version of the 3D-FIPA is planned for Sweden; it will be part of a 10-13 GW radar system. —— *Electronics World & Wireless World, June 1993*

• ***Bootleg cable converter boxes have become so adept at decoding scrambled cable TV signals*** that one major manufacturer has come out swinging with an entirely new version.

General Instrument's VideoCipher II, which has been broken over the past few years, has been updated to VideoCipher II Plus. This will involve replacing several thousand cable boxes, at no cost to legal viewers.

The original VideoCipher was not foolproof because, according to experts, it was too easy for pirates to sneak in between the security links and steal the special codes required for descrambling the signal. VideoCipher II Plus incorporates all the security links within one integrated circuit in each box, making it much more difficult to access the data.

But other cable box manufacturers have their own ideas. Scientific-Atlanta, Jerrold and Zenith just released their own versions of low-risk descramblers, and the power they contain is impressive.

Intel 386 microprocessors and all-digital circuitry allow cable operators to change codes and features by simply downloading new commands into the system. – *Broadcasting & Cable, June 14th and July 5th, 1993*

• ***The world of compact disc technology has not been idle.*** Sony says that soon we may see 1.5-gigabyte storage on a single 2.5-inch magnetic disk, using CD technology. They claim 200 megabytes of storage on such a disc already.

In addition, the world's major consumer electronics companies have teamed up to create a worldwide standard for storing linear video material on CD's. This effort took place to avoid a "VHS-vs.-Beta" struggle.

Digital compression techniques now allow a full hour of video to be stored on a compact disc, and the new standard will allow the same disc to be played on a wide variety of units. —— *Design News, June 21, 1993 and Broadcasting & Cable, July 5, 1993*

• ***Why is it sometimes so difficult to understand what the other ham is saying over the air?*** Why is it sometimes necessary to revert to phonentics? Because of the unusual nature of translating sound into electrical energy and back. Work is under way to make radio communication sound more natural.

What is "sounding natural"? When two people talk face-to-face within a room, their characteristic sounds tell their brains that they are speaking to each other. Ambient room noise, echo effects from the walls, and the resonant frequencies of their own bodies contribute to the so-called natural sound. Adapting that to radio communication is rather tricky, because the entire frequency range is not always available in RF circuits as it is in the real world.

If you speak into a telephone handset without first placing a call, you hear your own voice in

the earpiece. The phone company began using this "feedback" signal many decades ago. Without it, callers cannot hear themselves and unconsciously believe that the party to whom they speak cannot hear them. As the conversation progresses, they talk louder. This feedback signal eliminates callers from literally screaming at each other.

The "echo-chamber" effect one hears in a room is not always consciously noticeable, but it really does contribute to the natural sound. Synthesizing that effect in electronic circuits goes a long way to contributing to realism. But at present, it is too expensive to use effectively.

Another secret to "real" sound is a microphone whose sensitivity is not constant, but changes according to what it hears. When you listen to a repeater, you can always tell when someone is speaking too closely into his microphone. When the two of you are face-to-face, your brain knows when to speak loudly or softly. A "smart" microphone takes care of this automatically.

After transmitting a "processed" signal, it should be reproduced so that it matches the way we hear sounds. That too is difficult, as human hearing is not linear; it's actually pretty complicated. Our sensitivity to sounds changes according to frequency.

These are just a few of the reasons why we hear things differently over the radio. Many companies, including telephone companies, are studying ways of overcoming these shortcomings.

• ***TDK claims to make the smallest electromagnetic interference (EMI) filters in the world.*** Encased within surface-mount packages, they look like chip capacitors. But they are available in impedances from 80 to 1000 Ω at 100 MHz. Five of them can fit across your smallest fingernail.

• ***Current FCC regulations require commercial FM broadcasters to transmit*** with horizontally-polarized antennas, or a mixture of vertically-and horizontally-polarized antennas.

An Alabama-based company recently sought to change this rule, claiming that most listeners use vertically-polarized antennas to receive signals, therefore missing most of what they want to hear (this dichotomy exists in Amateur Radio; 2-m FM repeaters use vertical antennas, but 2-m SSB hams use horizontal antennas).

The company wanted to change the rule to allow FM broadcasters to transmit with vertically-polarized antennas, but the FCC rejected it, stating that the complaint offered no scientific evidence to back up its claims. —— *Broadcasting & Cable, June 28, 1993*

• A telephone company learned the hard way that it is not always desirable to give the customers more than what they ask for. ***New York Telephone recently began offering free call-waiting to its customers on a trail basis,*** but in an unusual way: everyone got it immediately for free; if someone did not wish to continue the free service, they said, then he or she was welcome to contact the telephone company and request that it be stopped.

Apparently they didn't count on computer users and modems. You may have experienced a loss of data yourself when you try to use a modem and, because of call waiting, suddenly experience a loss of signal when someone tries to call you.

Computer users who know that they have call waiting wisely program the telephone to shut off call waiting while using the modem; but if you have no idea that call waiting is suddenly active, you're a target for data hits. New York Telephone agreed to stop the free trials.

• ***On Saturday, 10 July 1993, the North Texas Balloon Project launched their fourth weather balloon package.*** Released from Clifton, Texas (about 30 miles northwest of Waco), the Global-Positioning Satellite (GPS) receiver riding on-board received data from satellites, telling it where the balloon was every minute throughout the flight.

This data was then sent to a packet radio terminal node controller (TNC), and then transmitted on 144.29 MHz for all hams to capture. Hams across Texas saw, in real time, the following information on their screens during the two-hour flight: latitude and longitude; altitude; ground-track velocity; bearing; upward velocity; and QSL information.

Due to the precise nature of GPS data, the NTBP hams learned immediately when the balloon burst (at just over 87,000 feet) and when. The package gently parachuted to earth about 15 miles west of the launch site, with practically no damage.

The following is part of the actual packet telemetry transmitted from the balloon:

GREETINGS ! NORTH TEXAS BALLOON PROJECT MISSION # 4 LOCKHEED ARC & ROCKWELL GPS PACKET INPUT (W5SJZ-6) ON 145.89 MHz - CROSSBAND FM REPEATER ACTIVE ON INPUT 445.80 MHz / OUTPUT 147.58 MHz
GPS TELEMETRY FOLLOWS:
7-10-1993 15:10:43 UTC
ALTITUDE = 38711 FEET
LATITUDE = N. 31x 47' 40"
LONGITUDE = W. 97x 33' 37"
VELOCITY = 42.0 MPH, BEARING 202 DEG. VELOCITY UP = 1227 FEET / MINUTE [PLEASE ATTEMPT NO CONNECT TO W5SJZ-1]

• ***AT&T's Bell Labs has developed an in-band digital audio broadcasting system*** that will allow AM broacsters to transmit digital signals without changing their frequencies. AMers could convert to digital without any further action by the FCC!

WASHINGTON LAWYER TO CHAIR FCC

After six months of speculation, the search for the chief architect of the administration's long heralded information superhighway is apparently over. On June 29th, President Clinton announced that he has nominated Reed Hundt to be the next FCC Chairman

He will succeed interim-chairman James Quello who replaced former Chairman Alfred Sikes when he resigned the day before Clinton was inaugurated. Hundt still must be confirmed by the Senate and if approved, would take office sometime this fall for a full five year term.. Quello, at age 79, has gotten high marks for his temporary managling of the FCC. Appointed by President Nixon, he has been a commissioner for nearly two decades.

Hundt, a well respected attorney, was a founding member and senior partner in the Washington, DC telecommunications law firm of Latham & Watkins. Ex-FCC Chairman Mark Fowler is also employed at that law firm.

Hundt's specialty is anti-trust, first amendment and competition litigation. He does not have a communications background. Among his clients were, however, such telecommunications giants as the Wireless Cable Association, Hughes Communications, Turner Broadcasting, Bell Atlantic ...and Evergreen media, owner of WLUP-AM/FM which is involved in a broadcast indecency matter with the commission.

Hundt strongly opposes monopolies and favors regulation where there is little competition. This is probably bad news for the cable industry ...and good news for telephone, wireless and broadcast competition. There was a report (denied) that the National Cable Television Association strongly opposed the Hundt nomination and it cost NCTA's president his job. In any event, he has resigned.

The selection of Reed Hundt was sort of a surprise to many FCC observers. It was widely reported in the media that the administration with their policy of ethnic and racial diversity would select black female Senate Communications Subcommittee counsel Toni Cook-Bush to lead the FCC. Supposedly, all Clinton was waiting for, was for her to have her baby.

Once her son, Dwight Bush, Jr. was born, however, she surprised everyone by announcing that she did not want a seat on the commission. "My life at this time is filled with other challenges and honors.." she said. Many observers believed that meant she wanted to stay home and take care of Dwight, Jr. Apparently that is not the story, however, since we now understand that she will return to Capitol Hill after her maternity leave. What is the story then?

Reed Hundt, 45, has substantial long term ties to both Clinton and Vice President Al Gore. Hundt attended Yale Law School with Clinton in the early 1970's ...and was a boyhood friend of Al Gore. Both Gore and Hundt attended St. Albans Prep, a Washington private high school. He was Senator Gore's economic advisor and served Clinton in the same capacity during the campaign and later on as part of the president-elect's transition team. It may have been Gore and not Clinton who really made the choice, since it is Gore who is more or less managing the administration's telecommunications policy. (He's well qualified.)

Clinton said "Telecommunications innovations are constantly changing the way we as Americans communicate with each other and with the world. With his years of experience, I am confident Reed Hundt will do an excellent job of steering the FCC through the challenges it will face."

At this point, Hundt is not making any statements ...or taking any interviews, so not much is known about his plans for the Commission. The people that know him, however, say he is a very capable, aggressive, smart, superbly educated ...and "quick to grasp" complex subjects. A "take charge" leader. His background should serve him well as the cable, telephone, broadcasting and computer businesses infiltrate into each others turf. Reed, his wife and their three children live in the Washington DC suburb of Chevy Chase, Maryland.

There is still another non-Democratic vacancy to fill on the commission and insiders say that Senate Communications Subcommittee minority counsel, Gina Keeney, 37, has the inside track. The cable industry won't like her either. She is considered to be one of the chief architects of the 1992 Cable Act. And will Democratic commissioner Ervin Duggan be the next to leave? We heard he is a top contender for the presidency of the Public Broadcasting System.

The White House's *National Telecommunications and Information Administration* is in the process of producing a telecommunications policy paper outlining the administration's goals for developing the universal national information superhighway. What will it be made of? Will everyone have access to it? How? Will it be analog, digital, data, voice, facsimile, video, fiber-optic, copper-wired, wireless, terrestrial, satellite-based...?. Our guess, is "...all of the above." Industry will simply have to learn to work together. Many alliances will have to be forged.

The next FCC will have monumental decisions to make regarding the path of 21st century telecomunications. The multi-media, interactive information age is upon us. The regulatory framework the new FCC must develop is as important a decision as any this - or any - administration will ever make.