

W5YI

America'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.

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The 1997 Amateur Radio Year in Review!

Every year about this time we pause to reflect on what has happened to Amateur Radio during the past 12 months. Being tied to technology trends, ham radio is naturally always changing. And 1997 was no exception! Here are what we feel are the major stories of the past year.

JANUARY 1997:

● **The new RF safety rules were scheduled to go into effect on January 1, 1997.** But as a result of several requests, the FCC's Office of Engineering and Technology agreed to extend the transition period to September 1, 1997 for most radio services. The Amateur Radio Service had the transition date extended to January 1, 1998.

"The Commission believes that these extensions are necessary so that applicants and licensees will have adequate time to understand the new requirements and to ensure that their facilities are in compliance with them."

● **On January 13th, the American Radio Relay League filed Reply comments** seeking to implement two existing international agreements that will lead to allowing amateurs of different countries to temporarily operate amateur radio equipment in other countries without formal licensing. The two programs under consideration are the IARP (CITEL International Amateur Radio Permit) and the CEPT (European Conference of Postal and Telecommunications Administrations) Conventions.

● At the January 17 and 18th ARRL Board Meeting, the League's Executive Committee was tasked with **studying the adequacy of FCC rules governing the qualifications of Volunteer Examiners**, particularly with respect to those VEs who have obtained license upgrades by means of Morse code element credit waiver provisions. The Executive Committee was also asked to investigate the extent of abuses of the Morse code exam waiver provisions for applicants with severe Handicaps and recommend any changes deemed necessary.

The Executive Committee (at an April 12th meeting) decided that (1) handicapped applicants should be required to at least try to pass a regularly administered telegraphy exam, and (2) VECs should be required to request medical information from the handicapped amateur's doctor pertaining to the individual's handicap and their Form 610 application could not be processed until it is received.

On September 23rd, the ARRL filed a *Petition for Rulemaking* asking that these changes be incorporated into the Part 97 rules. (See Page 10)

● **The ARRL Board also floated a suggested realignment of the Amateur Radio license classes.** The new lineup recommends that the present Novice Class be eliminated with present Novices being allowed to pass an open book exam to what is now the Technician Plus Class. The present Technician Class would be renamed the "Basic" license with the present Technician Plus Class

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becoming the "Intermediate" license. Additional phone privileges would be accorded to General, Advanced and Extra class licensees. General Class code would go to 10 wpm with a required one minute solid copy format and a sending test.

Features of the proposed (200 watt maximum) "Intermediate" Class included expanded HF CW and 160, 80, 15 and 10 meter phone privileges. The Board was to act on the proposal after a 90 day membership comment period but a decision has temporarily been put on hold.

FEBRUARY 1997:

- On February 19th, the FCC **established a new Wireless Communications Service on 13-cm spectrum.** WCS would operate between 2305-2320 and 2345-2360 MHz. These bands include a 5-MHz segment that Amateur radio shared with the government. The good news is that the FCC has agreed to allow the Amateur Service to maintain access to the 2305-2310 MHz segment on a secondary basis. WCS licensees are able to offer a wide range of telecommunications services.

MARCH 1997:

- On March 3rd, the FCC proposed rule changes that will allow **amateur operators to transmit spread spectrum (SS) transmissions employing additional spreading sequences.** Spread spectrum is a technique whereby the transmitting signal is distributed over a wide segment of spectrum. Presently only two spreading techniques (frequency hopping and direct sequence) are authorized above 420 MHz with a power level up to 100 watts. The new proposed rules provide for automatic transmitter control which will limit power to only that which is required for the communications.

- **On March 3rd, the FCC released a proposed fee schedule** that looked toward collecting \$152.5 million in regulatory fees - a 21% increase over FY 1996. Regulatory fees repay the government for the cost of performing "...enforcement, rule-making, user-information and international activities." The schedule included a hike in the cost of an Amateur vanity call sign. The current \$30.00 cost (or \$3.00 per year over the ten year term) was increased to \$50 (or \$5.00 per year.) It went into effect in mid-September 1997.

- **Citing a lack of FCC radio enforcement,** the American Radio Relay League petitioned the FCC on March 28th seeking to "...create a streamlined, privatized enforcement process" to administratively handle and prosecute the most serious Amateur Service interference violations. The new rules would permit members of the volunteer Amateur Auxiliary to bring evidence of malicious interference offenses directly before the FCC's legal department. The Amateur Auxiliary is a volunteer group authorized by the FCC to monitor the ham bands for rules violations.

Currently, the investigation and paperwork associated with enforcement cases are handled internally by FCC lawyers -- a time consuming and costly operation. Under the new procedure, the FCC's Chief Administrative Law Judge would be authorized to determine if a valid case exists, and if so, to issue show-cause orders, and to designate complaints for hearing. The League said it would assist the Auxiliary in preparing and submitting complaints and in presenting cases at FCC administrative hearings.

APRIL 1997:

- On April 1st, the FCC released final rules on several pending issues. The FCC characterized the changes as minor, but many amateurs consider them important. The new rules provide for improving eligibility standards for a club station license, recognizing the role of the volunteer examiner ("VE") teams and session managers, establishing a special event call sign system, and authorizing various self-assigned indicators in the station identification announcement. The Commission declined, however, to allow examination credit for licenses formerly held.

- **Previously amateur radio clubs could apply for a club station call sign if they consisted of only two members.** In order to reduce abuses, the new rules require that, "The club must be composed of at least four persons and must have a name, a document of organization, management, and a primary purpose devoted to amateur service activities."

- **Although practically all VE examining groups are headed up by a team leader, the FCC rules have never recognized their existence.** The rules were amended to provide that a VE "session manager" may act as the liaison between the VE team and the coordinating VE Coordinator. In addition, the session manager may organize the activities at an examination session. The three VEs who sign certify the application, however, are still jointly and individually accountable for the proper administration of the examinations.

- **A Special Event Call Sign System** using one-by-one format call signs was authorized. A special event call sign aids amateur operators in calling attention "on-air" to their participation in the event as well as helping to bring public notice to the event. Five different VEC organizations (including the W5YI-VEC) were approved to coordinate the issuance of 1x1 call signs.

A 1x1 call sign consists of the letter K, N or W - followed by a numeral (0 through 9) and a suffix letter A through Z - except the letter X. There are 750 such call signs available. A One-by-One Database has been established on the Internet by the National Conference of VECs at <http://ncvec.spindle.net>. Any amateur may reserve a 1x1 call sign to commemorate a special event.

- **The rules that permitted a self-assigned indicator to be used after a station call sign** were relaxed to

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provide that "If an indicator is self-assigned, it must be included before, after, or both before and after the [assigned] call sign." The previous rules only permitted indicators after the call sign..

- **The examination credit issue proved to be controversial.** The original request by the ARRL was for the FCC to approve lifetime operator (but not station) licenses. The FCC's responded by offering lifetime credit for examinations previously passed. The credit would be allowed by a VE team based on having passed the examinations needed for a previously held operator license.

The FCC declined to adopt this proposal in view of the opposition expressed in the comments. "Persons who allow their amateur operator license to expire will have to pass the requisite examinations if they later decide to obtain another amateur operator license," FCC said.

- On April 8th, the FCC issued a **Public Notice**, stating that a new **Amateur Radio Query program** had been placed on the Internet. This web-based program permits any amateur to check the FCC amateur service database for licensing information - including new call signs. It can be reached at: <http://www.fcc.gov/wtb/electcom.html> - Then select: "Beta Page for Future Electronic Commerce Applications." Eventually there will be a fee (\$2.30 a minute) to access this site, but as of now, it is still "free."

JULY 1997:

- On July 1st, volunteer examiners began including questions on radiofrequency safety practices for the first time in the Element 2 (Novice) and 3A (Technician) license examinations. The number of questions in a Novice written exam went to 35 (instead of 30). Technician questions to 30 (instead of 25). Much of the new RF safety questions contain material never before addressed by the ham radio operator community before.

These two new question pools now contain a total of 924 questions -- nearly a 50% increase over the previous combined Element 2/3A pools.

On July 1, 1998, another 55 questions on RF Safety gets added to the Element 3B (General Class) pool. The FCC rules call for five RF Safety questions each to be asked on Elements 2, 3A and 3B. These 15 exam questions are taken from a total of 230 pool questions.

- **The VECs held their annual conference in Gettysburg, PA on July 17th.** A discussion on the feasibility of "Tightening up CW Testing" resulted in "no decision." The VECs did agree, however, that they did not want to be placed in a position where they were expected to make or interpret a medical decision.

VEC statics showed that, for the fifth year in a row, the number of applicants being administered amateur

radio operator license examinations declined. (In 1992 there were 115,852 applicants; 1993= 113,028; 1994= 106,670; 1995= 97,547; 1996= 80,391 and number of applicants continues to drop in 1997.

AUGUST 1997

- Gate 3 of the Vanity Call Sign System opened to Advanced Class amateurs on August 6th who had about a month to submit their call sign applications before the FCC regulatory fee jumped from \$30 to \$50. On December 2nd, The fourth and final gate opened to the balance of the amateur community.

- **The FCC's Office of Engineering and Technology (OET) released their long awaited OET Bulletin 65** entitled "*Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields.*" For the first time, amateur radio is subject to the *Maximum Permissible Exposure (MPE)* guidelines.

The FCC also released a new FCC Form 610 Amateur Operator/Station License application on which all applicants must certify that they have read and will comply with the RF safety rules contained in the amateur section of OET Bulletin No. 65.

OCTOBER 1997

- **The World Radio conference opened in Geneva, Switzerland** on October 27 and closed on November 21st. The battle by the Little LEO industry (low bandwidth, non-voice, non-geostationary mobile satellite interests) for amateur radio spectrum never developed. Spectrum for wind profiler radars also did not impact amateur radio to any great degree.

Two ham radio issues that were to be taken up at WRC-99 were taken off due to a very crowded agenda. It appears now that a possible realignment of the 40 meter band to resolve a conflict between ham radio and short-wave broadcasting will not be taken up until WRC-2001. Consideration of Article S25 - the Amateur Radio Service regulations including the Morse code requirement for operation below 30 MHz - also was pushed back to WRC-2001.

WRC-97 delegates approved a resolution encouraging administrations to facilitate the use of ham radio and other "decentralized means of communications" for disaster and relief operations.

NOVEMBER 1997

- On November 18th, the FCC's Office of Engineering and Technology released and RF safety supplement to OET Bulletin No. 65. The supplement provides specific guidance for use by amateur radio applicants and licensees in evaluating their stations for compliance with the RF safety limits.

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AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of December 1997:

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0GQ	KI0KU	(***)	KC0CIG
1 (*)	AA1SX	KE1IV	N1ZXA	KB1CFW
2 (*)	AB2EP	KG2ND	(***)	KC2CSQ
3 (*)	AA3QN	KF3AP	(***)	KB3BXZ
4 (*)	AF4GW	KU4MR	(***)	KF4UWW
5 (*)	AC5OG	KM5NI	(***)	KD5CUB
6 (*)	AD6DX	KQ6TM	(***)	KF6OTL
7 (*)	AB7WV	KK7KU	(***)	KC7ZTP
8 (*)	AA8BP	KI8ER	(***)	KC8IWZ
9 (*)	AA9VD	KG9MA	(***)	KB9RTD
N. Mariana	NH0B	AH0AY	KH0GT	WH0ABI
Guam	(**)	AH2DF	KH2SR	WH2ANV
Hawaii	AH7V	AH6PE	KH7HH	WH6DEL
Am.Samoa	AH8P	AH8AH	KH8DL	WH8ABF
Alaska	AL0H	AL7QW	KL0KX	WL7CUO
Virgin Isl.	(**)	KP2CM	NP2JW	WP2AIJ
Puerto Rico	NP3Q	KP3BD	NP3SR	WP4NNM

* = All 1-by-2 & 2-by-1 call signs have been assigned.

** = All 2-by-1 call signs have been assigned.

*** = Group "C" (N-by-3) call signs have now run out in all but the 1st call district.

Note: New prefix numerals now being assigned in Puerto Rico (KP3/NP3), Hawaii (AH7/KH7) and Alaska (AL0/KL0)

[Source: FCC Licensing Facility, Gettysburg, PA]

NEW AND UPGRADING AMATEUR STATISTICS

For the Month of November 1995, 1996 & 1997

License Class	New Amateurs			Upgrading Amateurs		
	1995	1996	1997	1995	1996	1997
Novice	97	78	66	0	0	0
Technician	2152	2350	1145	2	0	0
Tech Plus	188	244	122	371	403	220
General	27	37	15	353	392	252
Advanced	1	6	1	247	329	180
Extra Class	2	4	1	205	233	113
Club/Empty	24	75	43	0	0	0
Total:	2491	2794	1393	1178	1357	765
Decrease:		+12.2%	(36.0%)		+15.2%	(36.6%)

The above statistics tell the story. In a nutshell, the number of applicants being administered amateur radio operator examinations **has dropped dramatically.**

On the next couple of pages, we give you our annual Amateur Service statistics which were provided to us by the FCC's Licensing Facility in Gettysburg, PA.

The good news is that there are 18,636 (or 11.6%) more Technician Class amateurs than a year ago. The bad news is that the total amateur service only grew by

7,797 amateurs -- a scant 1.1%. That of course means that the other license classes (with the exception of the Extra Class) are declining.

There are less Advanced, General, Tech Plus and Novice operators than a year ago. These four classes show a total decline of 2.7% over the past year. And for the first time, there are less Tech Plus amateurs than the prior year which underscores the fact that Technicians are not learning the code. More than 45% of all amateurs hold a no-code Technician or Tech Plus (5 wpm code) license. The percentage of General, Advanced and Extra Class amateurs is now down to 43.5% of the total. Ten years ago (1987) 60% of all amateurs held these licenses.

Follows is the Amateur Radio individual station census over the last couple of decades. Keep in mind that the number of individual Amateur Radio stations was somewhat overstated during the period 1989 to 1993 due to the implementation of the ten year term license. During this period no ham licenses expired at all as Amateurs were carried on the roles for an additional five years. In 1984 the FCC began issuing ten year tickets which did not begin expiring until 1994. The last five year term licenses (issued until December 1983) expired in December 1988. This artificially increased ham radio growth.

Census of Active Amateur Radio Stations - (Dec 1st)

Year	Extra	Adv.	Gen.	Tech.*	Nov.	Total
1978	22204	82860	118363	68508	61227	353162
1979	24160	84959	122747	69076	61313	362255
1980	26455	88933	124364	70161	72093	382006
1981	29603	94174	125848	76715	79677	406017
1982	31342	94467	119576	75545	87814	408744
1983	34264	95590	118191	76799	86035	410879
1984	35910	97370	116887	80191	80565	410923
1985	38305	97781	117082	83387	77087	413642
1986	40989	97821	115998	85431	79019	419258
1987	43608	98383	114396	92618	82296	431301
1988	46735	98465	112974	100878	78988	438038
1989	50070	101904	116944	114507	85022	468447
1990	53520	105102	119552	126543	92230	496947
1991	57174	107485	122462	155368	96711	539200
1992	60986	109769	124924	189721	98950	584350
1993	65127	112705	127185	225521	100098	630636
1994	68062	114888	128843	254048	98809	664650
1995	72380	117089	129962	289483	97080	705994
1996	73518	114404	126714	308931	88192	711745
1997	75694	112482	124415	326785	79965	719331

* = Includes both Technician and Tech. Plus operators.

Amateur radio growth in the future does not look encouraging. On the next page we show the decline in the number of persons being administered ham exams. There are 38.4% less "persons" taking amateur radio operator license exams now than just five years ago. (115,852 vs. an estimated 71,381 this year. The trend is clear. Down!

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Volunteer Examiner Coordinator Report - 1995 to 1997

Report indicates number of examination sessions, persons examined, total elements administered and average session size for the last three years. Note that the only two months with an increase in the number of applicants and exam elements administered was May and June 1997. (Shown in **bold** below.) This is because a new Element 2 (Novice) and Element 3A (Technician) question pool went into effect on July 1, 1997. After July 1, the number of applicants and exam elements are greatly reduced. There are about 30% less persons taking ham radio examinations than just two years ago. Not a good trend at all!

Month	SESSIONS			PERSONS			ELEMENTS			SESSION SIZE		
	1995	1996	1997	1995	1996	1997	1995	1996	1997	1995	1996	1997
Jan.	942	845	810	8330	6228	5324	14355	10353	8945	9	7	7
Feb.	951	882	920	9516	7231	7150	16230	12355	12077	10	8	8
March	1067	1084	1034	11050	10196	8883	18726	17245	14795	10	9	9
April	1080	1088	1082	10895	9671	9284	17896	16618	15714	10	9	9
May	1089	971	991	10043	7557	7909	16985	12666	13296	9	8	8
June	977	914	1165	8045	6748	9314	13563	11266	15215	8	7	8
July	837	755	617	6526	5155	3172	11086	8710	5087	8	7	5
Aug.	821	819	696	6533	5674	4077	11085	9435	6536	8	7	6
Sept.	921	848	730	6498	5181	3699	11096	8844	6076	7	6	5
Oct.	840	847	732	6398	5271	4069	10930	8892	6661	8	6	6
Nov.	889	880		6986	6156		12007	10510		8	7	
Dec.	845	791		6726	5323		11370	9053		8	7	
Total:	11260	10724	8777	97547	80391	62881	165330	135945	104442	8	7	7
						(17.5%)						(17.8%)

At press time, we had not received the VEC statistics for either Nov. or Dec. 1997 from the FCC. In the table below, we have estimated the total number of 1997 exam sessions, persons, elements administered and the pass rate based on the actual figures through Oct. 31 with an estimate for November and December based on the trend. Note (below) that over 1 million applicants have been examined since the beginning of the VEC program in 1984.

Examinations Administered Under VEC System by Year - 1984 to Present

Date	Sessions	% Inc.	Persons	% Inc.	Elements	% Inc.	Pass Rate
1984	413		8599		12633		47.5%
1985	3223	680.4%	41439	381.9%	62589	395.4%	58.2%
1986	3784	17.4%	42422	2.4%	61921	(1.1)%	59.7%
1987	4378	15.7%	49728	17.2%	81042	30.9%	60.6%
1988	4903	12.0%	53546	7.7%	89788	10.8%	61.0%
1989	5486	11.9%	57417	7.2%	96092	7.0%	61.5%
1990	6250	13.9%	64737	12.7%	105763	10.1%	60.8%
1991	8118	29.9%	103251	59.5%	172061	62.7%	66.2%
1992	10016	23.4%	115852	12.2%	193521	12.5%	65.6%
1993	10848	8.3%	113028	(2.4)%	193911	0.2%	65.0%
1994	11638	7.3%	106670	(5.6)%	194584	0.3%	65.2%
1995	11260	(3.2)%	97547	(8.6)%	165330	(15.0)%	55.2%
1996	10724	(4.8)%	80391	(17.6)%	135945	(17.8)%	55.0%
1997	10227	(4.6)%	71381	(11.2)%	117942	(13.2)%	53.1%
Total	101268		1006008		1683122		59.6%

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AMATEUR SERVICE CENSUS - INDIVIDUAL STATIONS - DECEMBER 1, 1996 vs. DECEMBER 1, 1997

State	Extra		Advanced		General		Tech Plus		Technician		Novice		Total		%
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	
AL	1160	1191	1696	1681	1766	1769	2299	2283	2929	3259	905	790	10755	10973	+2.0%
AK	329	348	522	507	624	611	571	570	759	948	392	345	3197	3329	+4.1%
AZ	1568	1624	2581	2543	2645	2652	3087	3096	4193	4655	1139	1027	15213	15597	+2.5%
AR	766	780	1051	1052	1056	1053	1346	1342	1969	2190	556	512	6744	6929	+2.7%
CA	8855	9020	15624	15218	16043	15617	23372	22922	29337	32861	15539	14436	108770	110094	+1.2%
CO	1273	1320	2116	2091	2081	2073	2426	2454	2698	3012	1193	1071	11787	12021	+2.0%
CT	1131	1137	1513	1461	1879	1805	1833	1801	1485	1634	1510	1381	9351	9219	(1.4%)
DE	202	204	235	233	293	283	329	334	267	303	187	158	1513	1515	+0.1%
DC	79	72	95	88	124	124	70	68	65	70	62	58	495	480	(3.0%)
FL	4445	4608	7875	7823	9308	9177	8402	8315	7317	8099	6211	5684	43558	43706	+0.3%
GA	1601	1858	2564	2554	2596	2586	3221	3238	3335	3726	1367	1245	14684	15007	+2.2%
HI	327	350	504	485	551	531	702	697	668	743	649	585	3401	3391	(0.3%)
ID	342	369	595	601	715	716	786	800	1086	1339	369	315	3893	4140	+6.3%
IL	2656	2699	4096	3971	4647	4531	5106	5011	4963	5466	3193	2834	24661	24512	(0.6%)
IN	1534	1556	2371	2327	2723	2702	3587	3571	3541	3879	1833	1660	15589	15695	+0.7%
IA	743	771	1403	1380	1458	1397	1236	1235	1267	1377	972	886	7079	7046	(0.5%)
KS	742	764	1167	1137	1529	1501	1511	1526	1742	1962	908	829	7599	7719	+1.6%
KY	915	961	1214	1205	1435	1454	1849	1853	2410	2655	1083	1005	8906	9133	+2.6%
LA	850	858	1318	1293	1361	1308	1478	1465	1661	1789	808	732	7476	7445	(0.4%)
ME	500	521	712	690	1017	997	818	847	928	1048	511	459	4486	4562	+1.7%
MD	1500	1538	2232	2172	2198	2137	2401	2398	2306	2517	1355	1236	11992	11998	+0.1%
MA	2079	2111	2668	2562	3251	3151	3325	3270	2635	2886	2083	1934	16041	15916	(0.8%)
MI	2283	2337	3569	3530	4221	4114	4530	4514	4797	5301	2329	2037	21729	21833	+0.5%
MN	1177	1220	1964	1954	2271	2197	2169	2155	2219	2492	1161	1021	10961	11039	+0.7%
MS	516	536	815	825	855	830	907	907	1218	1372	491	446	4802	4916	+2.4%
MO	1422	1510	2227	2159	2572	2525	2500	2486	2860	3303	1376	1216	12968	13199	+1.8%
MT	313	331	469	477	578	570	525	542	746	885	334	295	2965	3100	+4.6%
NE	394	409	766	742	948	918	816	809	717	828	434	390	4075	4096	+0.5%
NV	423	461	702	711	840	842	828	862	1126	1283	340	314	4259	4473	+0.0%
NH	667	710	751	738	955	929	1059	1067	1022	1130	525	484	4979	5058	+1.6%
NJ	2198	2250	3111	3019	3396	3277	3775	3676	2888	3135	2395	2196	17763	17553	+1.2%
NM	622	618	926	931	882	854	911	937	1477	1678	320	289	5138	5307	+3.3%
NY	3832	3875	5620	5475	6567	6394	7412	7311	7217	7864	6073	5283	36721	36202	(1.41%)
NC	1928	2032	2896	2915	3094	3065	3604	3637	4488	4974	1870	1831	17880	18454	+3.2%
ND	159	159	245	241	370	358	349	345	361	405	224	191	1708	1699	(0.5%)
OH	3195	3301	4912	4789	5472	5383	7764	7683	7074	7831	3645	3332	32062	32319	+0.8%
OK	968	981	1487	1478	1444	1421	1935	1918	2568	2847	999	894	9401	9539	+1.5%
OR	1288	1343	2157	2133	2690	2642	2635	2684	2803	3212	1403	1250	12976	13264	+2.2%
PA	3093	3166	4444	4312	5095	4954	5432	5414	4643	5142	3171	2840	25878	25828	(0.2%)
PR	286	301	587	582	787	804	2364	2377	756	883	4017	3700	8797	8647	(1.7%)
RI	349	353	363	348	512	502	628	619	407	436	377	349	2636	2607	(1.1%)
SC	725	771	1106	1098	1338	1342	1399	1419	1443	1639	619	559	6630	6828	+3.0%
SD	177	185	312	306	367	355	284	283	303	356	162	143	1605	1628	+1.4%
TN	1533	1598	2364	2317	2305	2299	3230	3215	3373	3733	1316	1192	14121	14354	+1.7%
TX	4807	5000	7484	7438	7595	7477	8769	8767	9893	11031	3928	3522	42476	43235	+1.8%
UT	498	517	832	830	758	764	1723	1741	3125	3547	691	626	7627	8025	+5.2%
VT	264	269	326	323	426	418	420	423	558	634	210	190	2204	2257	+2.4%
VI	51	52	52	50	82	79	58	58	74	78	41	38	358	355	(0.8%)
VA	2136	2189	3069	3031	3026	3024	3500	3513	3550	3940	1842	1689	17123	17386	+1.1%
WA	2446	2530	3749	3733	4431	4395	5194	5208	5962	6750	2791	2484	24573	25100	+2.1%
WV	596	630	733	725	930	941	1278	1296	1971	2224	724	634	6232	6450	+3.5%
WI	1195	1225	1838	1823	2143	2086	2026	2033	2392	2721	1148	1031	10742	10919	+1.7%
WY	181	190	237	228	287	287	313	307	418	476	194	161	1630	1649	+1.2%
Other	188	182	139	147	177	192	249	257	580	656	227	156	1560	1595	+2.2%
Total	73,518	75,694	114,404	112,482	126,714	124,415	148,341	147,559	160,590	179,226	88,192	79,965	711,534	719,331	+1.1%
% Total '97	10.3%	10.5%	16.1%	15.7%	17.8%	17.3%	20.8%	20.5%	22.6%	24.9%	12.4%	11.1%	100%	100%	
% Increase	+3.0%		(1.7%)		(1.8%)		(0.5%)		+11.6%		(9.3%)				
'96 %	10.3%		16.1%		17.8%		20.8%		22.6%		12.4%		100%		
'97 %		10.5%		15.7%		17.3%		20.5%		24.9%		11.1%		100%	

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CUTTING EDGE TECHNOLOGY

■ **Nippon Telegraph and Telephone has developed a wristwatch telephone** which can be dialed through voice recognition technology. NTT, Japan's largest telephone company, hopes to have it on the market within two years.

EMERGING COMMUNICATIONS

■ Make no mistake about it, "Wireless" is the Internet delivery system of the future! **One such network, the \$9 billion global broadband "Internet-in-the-Sky" is now in the final planning stages** by Microsoft's Bill Gates and telecommunications visionary Craig McCaw.

Its last regulatory hurdle was cleared when a pair of 500 MHz bands of spectrum were authorized internationally at WRC-97 for use by non-geostationary fixed satellite services (NGSO-FSS) such as those Teledesic will provide. These are the same paired bands the U.S. Federal Communications Commission licensed to Teledesic in March.

In 2001, Teledesic will begin launching the first of a constellation of 312 LEO (low-Earth orbit) satellites to provide an orbiting broadband network. The advantage of LEO networks is very short "round trip" communications -- the latency (delay) is less than 0.03-seconds.

Teledesic's satellite constellation will orbit about 50 times closer to Earth than traditional geostationary satellites. The Teledesic Network's low orbit eliminates the long signal delay normally experienced in satellite communications and enables the use of small, low-power terminals and antennas, about the size of direct broadcast satellite (DBS) dishes.

A satellite in geosynchronous earth orbit (parked 22,300 miles above the equator) has an "end-to-end" delay of at least a half a second -- so long that it makes two-way communications very annoying and awkward. This means that GEOs can never provide fiber-like delays.

Teledesic will use two 500 MHz slices of spectrum in the Ka-band (28.6 - 29.1 GHz uplink and 18.8 - 19.3 GHz downlink). The satellites will orbit at a height of 435 miles above the earth with 288 satellites operational and 24 backups. Each will cost about \$20 million - a total of nearly \$6 billion just for the satellites. At one point, the Teledesic network was to

consist of more than 800 satellites! The Boeing Company, which has a 10% stake in Teledesic, is the prime network contractor. Service is targeted to begin in 2002.

By the year 2010, there will be more than 200 million users of broadband services. Subscribers will need to purchase a dish-type antenna from a partnering telephone company which will be hard wired to PCs.

Network speed will be "fiber-like" -- 2 Mbps uplink and 64 Mbps on the downlink. That is more than 2,000 times faster than today's 28.8 Kbps analog modem!

Pricing has not yet been determined, but consideration is being given to charging based on the number of data bits passing through to the user.

COMPUTER INFO

■ Dataquest, a San Jose, CA market research company says that **personal computers are now installed in 43% of all U. S. households**. They say the reason for the increase is the marketplace presence of PC's priced under \$1,000. The number of U.S. households intending to purchase a personal computer in the next six months is also sharply higher. Interest in PCs has also been stimulated by the expanding availability of Internet information and services.

INTERNET NEWS

■ **Free e-mail provider, Juno Online Services is suing five organizations** in federal court who forge its name in spam mail. Junk e-mailers commonly disguise their bulk mail with the return address of a non-existent user of a free mail service such as Juno, HotMail or American On-Line.

■ **Accessing the Internet using a TV set was featured at last month's COMDEX computer trade show**. Microsoft's Web-TV and Oracle's NC (Network Computing) systems were the big guns. Philips, Mitsubishi and Sony are making the \$200 WebTV box; RCA, the NC boxes (\$299, \$349 with wireless keyboard.) They are on the shelves now at your neighborhood electronics outlet.

■ **Have you seen the new Internet toy store: "eToys?"** They have spent millions getting the site going! Check out: <http://www.etoys.com>. They want to be to toys what Amazon.com is to books.

WASHINGTON WHISPERS

■ **A federal judge has issued a preliminary injunction against Microsoft**. U. S. District Court Judge Thomas Jackson has ordered the firm not to force PC makers to include its Internet browser as a condition to buying its "Windows" operating system.

The ruling remains in effect until the Department of Justice's antitrust case against Microsoft is resolved. The DOJ believes that the firm violated an earlier agreement by unfairly using its Windows monopoly to gain increased Internet Explorer browser market share.

Microsoft contends that the browser is part of the continuing evolution of its operating system and not a separate product. The firm has requested permission to file more documents in its defense.

A final ruling is expected by the end of May. The timing complicates Microsoft's plans to include its browser in Windows-98 which is due in the Spring.

Microsoft's Internet Explorer now commands a 40% share of the browser market (double what it had at the end of 1996.) Netscape still leads with a 60%.

■ The FCC has ruled that a California **homeowner's association covenant is "...prohibited and unenforceable** to the extent that they impair the installation, maintenance, or use of over-the-air reception antennas."

On August 5, 1996, the Commission adopted regulations which pre-empted local zoning restrictions on antennas that hamper a viewer's ability to receive direct-broadcast satellite and wireless cable video programming. Antennas for these broadcast services must have a direct line-of-sight to the transmitter.

Sacramento's Morrison Creek deed restrictions had outlawed the installation of antennas and satellite dishes on the exterior of a building.

The ARRL has asked the FCC to rule that amateur radio antenna heights below 70 feet should be presumed "unreasonable." (RM-8763.) The League also wants amateur radio antennas included in the pre-emption of over-the-air reception antennas.

■ **Since 1991, the FCC has been getting ready to move their administrative offices to a single large office complex southwest of downtown Washington, DC**. The FCC headquarters

is currently scattered among eight office buildings in downtown Washington.

The goal was to consolidate the agency in a single new office complex at "The Portals" where they would be anchor tenants. In the early 1990's, the government's leasing officials at the General Services Administration (GSA) signed a 20-year lease for FCC space at "The Portals."

While the move seemed to make sense to the GSA, practically everyone -- and especially the FCC staff and telecom lawyers -- opposed the move. The downtown area is located very conveniently for FCC employeesand communications lawyers are usually based within walking distance of the commission.

The move to new quarters would be very costly and disrupt FCC processes for about two months. Furthermore, the FCC's rent would increase by nearly 30 percent to \$20 million -- or \$400 million over the 20-year term.

And the cost would come right out of the FCC's annual budget. The commission initially thought the funding would be borne by the GSA since it was they who negotiated the lease. Not so. A request to Congress for a boost in the FCC budget to pay for the move was denied.

The GSA later tried to terminate the lease agreement after the FCC decided it did not want to make the move. The commission argued that the leased space was inadequate for future needs and that it did not want to leave the downtown Washington area which they say is more conducive to FCC operations.

A court battle ensued and a 1994 decision required the GSA to honor the original long-term lease arrangements. The FCC has been paying rent on the new facility since last summer even though the building is not yet ready. It should be ready for occupancy by May. The commission was eventually able, however, to obtain additional needed space at the Portals at a higher cost.

Now comes word that Congress is taking a hard look at the move. The *Washington Post* and the *Wall Street Journal* both disclosed that "...one of the project's lead investors paid a \$1 million legal fee to President Clinton's 1996 campaign manager for work that included amending the FCC's lease at the Portals development project." The implication is that the administration may have been involved in the decision to move the FCC to the building.

Senate Commerce Committee Chairman John McCain (R-Ariz) whose panel has jurisdiction over the FCC has now

called in the General Accounting Office for a formal investigation.

The high-powered GAO is the government watchdog over federal programs. They answer only to Congress. If the GAO recommends against the FCC's move to the Portals, McCain said he is ready to make other arrangements.

He especially wants to know if the FCC move would serve the public interest. Completion of the GAO report has been assigned top priority and is due by February - only three months before the FCC is scheduled to move.

■ **New FCC Chairman Bill Kennard is launching a complete top-to-bottom review of its rules** to see if any should be relaxed or eliminated.

And we thought it was interesting that new FCC Commissioner, **Harold Furcht-gott-Roth does not watch television ...or even own a TV set!**

AMATEUR RADIO

■ **On December 1st, the VECs Question Pool Committee released newly revised Element 3B (General Class) questions into the public domain.** There are 332 questions in the new pool versus 290 previously. Fifty-five of the new questions are on RF Safety practices - a topic that was not previously included. A printed copy of the new question pool - complete with all multiple choices and answer identified is available from: **The W5YI Group, Inc., PO Box 565101, Dallas, Texas 75356.** Cost is \$4.00 postpaid (\$5.00 if you want fast Priority Mail shipping.)

■ **Important reminder to all VEs and amateurs renewing their licenses!** Effective January 1, 1998, the FCC (and all VEC organizations) can **only** except the newly revised FCC Form 610 that has a **September 1997** edition date!

This is because of a required statement concerning RF safety that applicants must sign which says: *"I have read and will comply with Section 97.13(c) of the Commission's Rules regarding radiofrequency (RF) radiation safety and the amateur service section of OST/OET Bulletin No. 65."* The 610 is available at URL: <http://www.fcc.gov/formpage.html>

There is also a new FCC Form 610-A (*Reciprocal Permit*) and 610-B (*for club and military recreation stations.*) The forms are not yet in stock at the FCC's Form's Distribution Center.

■ **Certainly not one to avoid controversy, late-night talk show host Art Bell, W6OBB,** is among those putting forth the theory that the death of Commerce Secretary Art Brown may have been caused by a gunshot wound.

At least two military pathologists are confirming the finding of what appeared to be a 45 caliber bullet hole in Brown's head. The doctors, members of the *Armed Forces Institute of Pathology*, participated in the April 1996 military jet crash investigation in which Brown and 34 others died.

One of the doctors, Air Force Lt. Col. Steve Cogswell later received written orders not to talk to the press. No autopsy was conducted on Brown's body and X-rays of Brown's head have mysteriously disappeared from the case file. X-rays and gruesome photographs that were in the possession of Cogswell, however, are available on the Art Bell web site located at <http://www.artbell.com>

Bell hosts the all-night radio show, "Coast-to-Coast AM" from his home in Pahrump, Nevada. A "Studio Cam" sends live images from Art's studio to the Internet every minute continuously during the live radio show. You can listen on the radio and "watch" on the Internet at the same time.

■ **The FCC has received hundreds of requests for amateur call signs under Gate 4.** They will not be issued until early January. The FCC has also received many *Notices of Motion* from the commercial telecom industry protesting the new RF Safety rules. Some are seeking review by federal appeals courts.

■ **Icom has a new external "black box" communications device** that transforms a computer running "Windows" into a high quality wide band short wave receiver. About the size of a hard-bound book, its frequency range is 10-kHz to 1.3 GHz. You merely hook an antenna to the PCR-1000 and load the software. There are three receiver screens including one that displays a typical receiver front panel complete with S-meter, frequency readout and a keypad. (List: \$599)

■ **The non-profit Washington, DC-based Foundation for Amateur Radio will be awarding sixty-six scholarships** to licensed radioamateurs for the 1997-1998 academic year. Scholarships range in value from \$500 to \$2,500. Applications are available from **FAR Scholarships, 6903 Rhode Island Avenue, Washington, DC 20740.**

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FLORIDA PIRATE FM RADIO STATIONS SHUT DOWN!

Following the return of civil and criminal indictments, three Tampa-area unlicensed micro broadcasters were raided and shut down by the government on November 19th. The plugs were pulled on low power FM stations operated by Kelly Benjamin (87.9 MHz), Arthur Kobres (96.7 MHz) and Doug Brewer (102.1 MHz.) Their broadcast equipment was then seized by armed agents of the U.S. Marshal's Service and the Federal Communications Commission.

Doug Brewer, 43, operated "The Party Pirate" on 102.1 MHz from his home in Temple Terrace. He and other station disc jockeys could only watch as U.S. marshals rolled station equipment into a Ryder truck parked in his driveway. Brewer said he was awakened at 6:30 AM by armed U.S. marshals who handcuffed him.

Agents then confiscated equipment from his home studio and gear from a remote van which bore the "102.1 FM Pirate Radio" insignia. They also brought a crane to dismantle and haul away his 150 foot tower. Some of the equipment confiscated was ham radio gear. Brewer, who holds a General Class ham ticket and call sign KC4HAZ, operates several amateur radio repeaters in the Tampa area.

Known on the air as Craven Moorehead, Brewer harassed FCC officials on-and-off the air for some two years. The government had earlier ordered him off the air and when he refused, Brewer was socked with a \$1,000 fine which he refused to pay. His FM pirate broadcast operation even attracted the attention of the *Wall Street Journal* who did a front page story on his operation.

The FCC's agent-in-charge of the Tampa field office, Ralph Barlow was quoted in the article as saying, "Sooner or later, I'll nail him." On November 19th, he did. But Brewer wasn't off the FM airwaves long; his broadcasts on 102.1 returned less than a week later in conjunction with a nationwide protest against the FCC.

Kelly Benjamin, age 22, operated on 87.9 MHz as "Kelly Kombat" from Seminole Heights. He called his station "87 X." Assisted by several volunteers, his schedule consisted of such programs as "Poetic Terrorism" and "Kombat Zone." After finding marijuana and drug paraphernalia, Benjamin was arrested on drug charges and later released on \$1,000 bond.

Arthur "Lonnie 'Lutz Man'" Kobres, age 53, was charged with a 14-count criminal indictment for operating "Lutz Community Radio" on 96.7 MHz without a license. He was later released on a \$25,000 bond. Kobres said he is seeking a Congressional inquiry on the government raid and a legal defense fund has been started on his behalf.

The station was first visited by FCC agents in the fall of 1995 but he ignored the warning and continued his low power broadcasts. On March 7, 1996, Federal Marshals

and FCC agents raided and confiscated his station equipment. He was back on the air the following day.

The latest crackdown on unlicensed broadcasting has drawn praise from the Tampa broadcast community. Drew Rashbaum, vice president and general manager of five radio stations, including WHPT 102.5 on the FM dial in Tampa applauded the raids and equipment seizures.

Citing interference and confusion to listeners, it was Rashbaum who filed the original complaint against Brewer last year. The FCC also said that illegal FM broadcasts have the potential to create a safety hazard by jamming aircraft and public safety transmissions.

Tampa, Orlando and Miami continues to be a hotbed of unlicensed FM broadcast operation. Most broadcast industry executives believe that the raids will continue for some time to come.

Another Tampa FM pirate operating on 99.1 MHz is under city investigation for violating zoning and city code ordinances. The FCC and U.S. Attorney's Office could be visiting that station next.

PASSIVE RADAR SCRAMBLERS ARE ILLEGAL

On December 4th, the FCC adopted an order that says the Spirit II radar jammer manufactured by Rocky Mountain Radar of El Paso Texas, is illegal.

In the past, the manufacturer maintained that the device was legal in all states except Oklahoma, Minnesota and Washington, DC. since it does not generate radio signals. The firm even offered a one year speeding ticket rebate if the speed violation was no more than 30% or 15 mph over the speed limit.

Passive radar detectors mix the incoming radar signal with an FM chirp which is reflected back to the radar unit. The added chirp confuses the police radar unit and it cannot lock onto the return echo to measure the speed. The result is that no speed reading appears on the read-out.

Radar scramblers are different from radar detectors which sound an alarm when a radar signal is heard. A radar scrambler gives no audible or visual warning, instead it disables the police radar gun. In effect, these jammers work more like a heterodyne receiver than a transmitter. But even reflective receivers come under the FCC's Part 15 rules which holds that "Operation of an intentional, unintentional or incidental radiator is subject to the condition that no harmful interference is caused..." (Sec. 15.5(b)).

The FCC says that the device "...interferes with police radar signals [and that] interference from these devices creates a threat to public safety." The FCC also warned that any other similar device would also be in violation of the agency's rules. This action "sends a message to all manufacturers that the FCC will strictly enforce its rules to prevent harmful interference to police radar," says FCC Chairman William Kennard.

ARRL SEEKS CHANGES TO HANDICAP CODE EXAMS

The American Radio Relay League has requested what it terms "two very minor changes" to the Part 97 rules covering the administration of manual telegraphy examinations to handicapped individuals by volunteer examiners (VEs).

The FCC has assigned the petition file number RM-9196 and preliminary comments are due by December 29, 1997. The League believes these rule changes are needed to stem abuses of the FCC's telegraphy waiver policy and limit its use only to severely handicapped individuals

Specifically, the League requests the modification of procedural requirements to be utilized by VEs in establishing that a severely handicapped person is unable to pass a 13 or 20 word-per-minute telegraphy examination, prior to granting examination credit for those telegraphy requirements. The candidate would be required to at least attempt the examination, with any and all necessary accommodations, prior to being granted the telegraphy examination waiver pursuant to a physician's certification.

Furthermore, the Volunteer Examiner would be entitled to request medical information pertaining to the applicant's handicap from the certifying physician. The medical information would be forwarded to the coordinating VEC who would be required to have this information on file before the application is forwarded to the FCC for processing.

The FCC's current policy is to require VEs to accept a statement of a Medical Doctor (M.D.) or a Doctor of Osteopathy (D.O.) on an FCC form 610 instead of administering the 13 or 20 wpm Morse code examination.

Consistent with international regulations, there is no provision for waiver of the 5 wpm telegraphy requirement for those radio amateurs desiring to operate on the high-frequency bands. The statement certifies that, because the person is an individual with a severe handicap, the duration of which will extend for more than 365 days beyond the date of certification, the person is unable to pass a 13 or 20 wpm telegraphy examination.

The candidate must also sign a release permitting the disclosure to the FCC of medical information pertaining to the person's handicap. *[The FCC has never contacted a physician, however, seeking additional medical records relating to an applicant's handicap.]*

The ARRL believes that this policy invites abuse. Here is a quote from the petition: "The difficulty with this process, given seven years of experience with it, is that it is and has been subject to numerous instances of apparent abuse. Whether due to lack of familiarity with the telegraphy examination process and the Amateur Service; the difficulty of correlating a diagnosis to the function of a cognitive skill; or merely an attempt by a physician to accommodate a patient's request for a favor on a matter which is

of no commercial import, it is nonetheless the League's experience, in the seven years that the telegraphy waiver rules have been in place, that large numbers of individuals without severe handicaps have obtained physicians' certifications of inability to pass the telegraphy examination, and have abused the process."

The ARRL said that "From an analysis of the records of the ARRL-VEC, approximately 8 percent of license upgrades involving telegraphy examinations involve a medical exemption from the higher speed requirement. According to information received, the other large VEC [*meaning the W5YI-VEC*] has had similar experience with license upgrades." *[Editor's note: ARRL Executive VP Dave Sumner, K1ZZ did ask us some time ago about our experience with handicapped telegraphy waivers. We confirmed that we did indeed get a lot of them - but that we had no way of knowing how many were 'stretching the rules.']*

The League said that there is a growing suspicion in the amateur community that telegraphy exemptions are generally undeserved. "This is completely unfair to those severely handicapped amateurs who require and deserve the exemption because they cannot be accommodated by procedural means. The League cannot for one moment tolerate a process that causes severely handicapped persons to feel as though they are in any sense members of a 'second class'." The League said the answer "...is simply to place additional, minor safeguards into the exemption process."

"The modified rules requested are intended, first, to accommodate, fully and completely, those who, due to severe, long-term handicaps, really cannot master the ability to receive 13 wpm or 20 wpm telegraphy; and second, at least minimally, to discourage those who would abuse the procedure simply to avoid the effort required to develop and demonstrate a higher level of telegraphy skill."

The ARRL wants Section 97.505(a)(10) to include a statement that "Evidence must also be presented to the VE team that the applicant has taken and attempted to pass an examination administered in accordance with the requirements of Section 97.509(k) of this Part; *[Note: This section requires a VE team to accommodate an examinee whose physical disabilities require a special examination procedure.]*" and

"A release signed by the applicant authorizing and requesting release to the VEC and FCC from the certifying physician, for review by the VEC prior to processing the Form 610 of that applicant. The sponsoring VEC shall, upon receipt of the Form 610 containing a physician's certification, request from the certifying physician medical information about the patient which substantiates the certification."

Comments to the FCC should reference RM-9196. Address them to: Secretary, Federal Communications Commission, 1919 M Street NW, Washington, DC 20554.