

W5YI

National Volunteer Examiner Coordinator

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.

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...and much, much more!

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July 1, 1988

FCC HOLDS AMATEUR RADIO LUNCHEON MEETING

From time to time, the FCC's *Consumer Assistance and Small Business Division* of the Office of Public Affairs sponsor "brown bag luncheons" covering the various radio services. The **Amateur Radio Service** was the subject of a lunch meeting on Tuesday, June 21st. The following transcript of the comments is not totally complete. We attempted to capture the primary topics covered.

The *Brown Bag Lunch* at FCC, was hosted by Private Radio Bureau chief **Ralph Haller, N4RH**, whose background includes extensive engineering, enforcement and policymaking positions at the FCC since 1971. Haller is the top U.S. official for Amateur Radio and the other private radio services, reporting directly to the Commissioners.

Also appearing were PRB Personal Radio Branch chief **John B. Johnston, W3BE**, Special Services Division chief **Robert A. McNamara**, and **Marcus Stevens** of the PRB Gettysburg facility, who described the procedure by which Form 610s are processed. Haller's and Johnston's remarks addressed the entire spectrum of Amateur concerns ...from the VE program to the forthcoming 18 MHz band ...even the quality of ham license printing.

N4RH ON VOLUNTEER EXAMINING....

"The Volunteer Examining program seems to be functioning very well. During 1987, there were over 81,000 elements administered to nearly 50,000 people in almost 5,000 sessions the country. We had a passing rate of around 60%. Another 22,000

people passed exams under the Novice system."

"There are currently 60 regional VECs. This consists of 18 different organizations. There is tremendous interest in being a VE. I think that says a lot for the Amateur Radio community, because you don't get anything from being a VE. The only thing you get is the pleasure of bringing people into the Amateur Radio Service, and opening up a new world to them that they might not otherwise have. We're most appreciative of the tremendous, untiring efforts of the VECs and VEs. What a tremendous improvement over the old system where you had to go into an FCC office on an assigned day, or go to an exam point at some remote location."

W3BE ON VOLUNTEER EXAMINING....

"One area where the VECs are starting to lose ground is in getting applications to Gettysburg in 10 days or less. In 1987, late filings were down to 1.6%, which I think is a remarkable record. But so far this year, it's jumped up to over 5% and January was the worst month ever when it skyrocketed to over 13%. February was second-worst with 7.5%."

"This causes us headaches. People today expect instant gratification. They want that license as soon as they pass the test. When the VEs and VECs sit on those applications, everyone starts to call us and complain. Responding to those complaints, and to the petitions we get for instant licensing schemes, adds to our workload. We have been tolerant of the VECs on infractions of the 10-day

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rule, but the syndrome is spreading to the Novice system, and some are way over the limit ...30 days, 40 days, even 112 days. We've been sorely tempted to do something about this. We could dismiss the application as being defective, but that would be unfair to the applicant who worked hard to pass the test. We've asked the VECs to try to improve their performance and they agreed."

"There is cheating going on. Fortunately, the system is working. People are talking. We've had to set aside some licenses, particularly in Puerto Rico and Honolulu, ...and we're going to be doing some more of that."

"Regrettably, these shenanigans not only damage your service by giving you a black eye and siphoning off our compliance resources, they also indirectly affect innocent people. By the time we get the evidence to take action against people who have obtained licenses illegally, they may have administered exams to others. So, then we have to void those licenses. We've even had cases where in the third generation, we had to pull licenses."

"This [cheating and fraud] has caused almost a complete redirection of our compliance activities. Prior to the VEC system, our compliance work was directed almost exclusively to following up on cases of on-the-air operating violations. These were sticky cases that were referred to us by our field engineers. At this time last year, exam cheating and fraudulent applications were taking up about 30% of our compliance time. This year, it's up to about 73%."

"We are having to make some tough choices on where to invest our resources. We ask our VECs and they agreed to screen their VEs carefully. Willful false statements are punishable by fines and imprisonment. We impress upon each of our VEs that they should read the certification before they sign it. We've had cases where VEs administer exams, and sign the certification that it was all on the up-and-up, and then send us a letter saying that "I signed the paper, but the exam wasn't done right." If the examination session has not been administered properly, do not sign that certification. The system depends upon the VEs."

N4RH ON NOVICE ENHANCEMENT....

"Last year, *Novice Enhancement* was adopted, and we hoped that more people would be

attracted to Amateur Radio through increased Novice privileges, and that those people would upgrade and become Technician and higher-class operators. That appears to be happening. The number of Novices dropping out over the past year was down by about 64% from 1984. The number of Novices moving up to Technician is up by 77%. So we have a tremendous increase in the number of persons getting into Amateur Radio through the Novice class, and then upgrading. The Novice program was bogged down for a while, but we've got the speed of service back to where Novices can get on the air very quickly after they take the test."

N4RH ON SPECIAL CALLSIGNS....

"PRB-3 proposes to select a *Special Call Sign Coordinator* (SCSC) and then the SCSC would be responsible for issuing additional callsigns to Amateurs. Thirteen organizations were interested in becoming a SCSC. We have not decided what to do on that. Last year we had to turn down over 250 requests for special callsigns, so we know the interest is out there. We haven't granted a special callsign in the last 10 years. That's because the callsigns are issued absolutely automatically by the computer. When you are assigned a callsign, you get the next call in the block of calls for your class of license and call zone for your mailing address. Our staff in Gettysburg has no option [to grant a special callsign]. We hope to have a decision on PRB-3 in the near future. It is under active consideration; that's all I can say."

N4RH ON 17 METER (18-MHz) BAND....

"In July 1989, 17 meters is scheduled to become part of the Amateur bands. We will be asking for your thoughts on that, ...what types of emissions should be permitted on 17 meters, and which classes of operators should have privileges in that band. [Editor's note: This clearly implies an NPRM.] We want to be ready as soon as the band is available."

"Right now, there is government use of that band and that is why we're not allowed in there as Amateurs. There is some possibility that if the government users can be taken off before July 1989 then we might be able to open it to the Amateurs, but we don't have control over that. We've been having meetings with the NTIA [National Telecommunication & Information Administration - White House advisory agency] to try to urge them to get

WOULD YOU LIKE TO BECOME A VOLUNTEER EXAMINER?
under "The W5YI Report" Program? If so, please send a copy of
the Ex. Clas. ben., the ...bwir, 3 Jign... Statu...ht, ...a
"I am a currently licensed Extra Class amateur radio operator and
wish to be a volunteer examiner. I have never had my station or
license revoked or suspended, I do not own a significant

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the government users off the band as soon as possible. I think it's a bad situation when people in other countries are operating on that band already, and we're not. From our perspective at the Commission, we want to get Amateurs on the band as quickly as possible, but we don't have unilateral authority to do that."

N4RH: PRINTING OF HAM TICKETS....

"I'm concerned with the quality of the licenses that we send out. You work diligently to obtain an Amateur license. There are many hours of study that go into it. You finally pass the test, and you get a smeared piece of carbon paper back from the Commission that you may have trouble reading your name on, not to mention your class of license."

"There is a reason for that. Last year we pumped out nearly a million licenses. When you are putting licenses through a printer at that speed you have to have something that works well and quickly. [We use] an automatic mailer. Not having to stuff envelopes makes a big difference, time-wise. It also has caused this problem with the license document not being particularly pretty. I'm more concerned about this in the Amateur Service than any other, because this is a personal service ...your personal achievement. I am working on this to see if we can come up with a better process even if it means printing the licenses somewhere else, consistent with the resources we have available. I think the Amateur Service deserves it."

N4RH ON HAM RADIO BUSINESS USE...

"We've tried to keep business communications from encroaching on the Amateur frequencies. It's been our policy on swap-shops, that as long as you're legitimately trying to swap Amateur Radio equipment, that is not a violation of our no-business rule. We're putting this policy in the [proposed] new rules. The equipment must be for an Amateur station, to be used by an Amateur operator. It is not an open swap-shop. Dealers may not use the Amateur bands to solicit business."

W3BE ON PENDING PETITIONS....

"*Wolfgang Kaiser* wants to change the code speeds to 5, 10, 15 and 20. We've dealt with that before, it was dismissed before."

"Bill Gardner of Athens, Ohio, has a number

of ideas on how Amateur Radio can replace police call boxes and he thinks the Amateur frequencies are the best frequencies to do it in. He also wants to use the Amateur Service as a marine distress service, and for a national amateur TV network for distributing some kind of public service programs."

"*Bentley F. Adams* wants to put a limit on information bulletins. We had one of these requests a couple of months ago and denied it. W1AW, Westlink Radio and others do a bang-up job keeping you informed about your service. We don't want to put any constraints on that."

"*Herbert P. Miller* wants us to come up with a callsign plan for the next 100 years. Keith P. Mitchell just took the General test and wants to change the CW standards. J. Steven Grantham wants us to allow packet in the phone portion of the ten-meter band. We have two petitions, which were put on public notice, to expand the 6-meter repeater band by 1 MHz."

N4RH ALSO MENTIONED....

"We have before us a petition from an operator in New Jersey to permit SSB on the entire 30 meter band [10 MHz]. He indicates that in his experience only the lower 10 kHz of the band is being used, and that there's very little activity in the remainder of the band. This does not mean that this is going to go on to a rulemaking, but if you have thoughts on how we might change the 30 meter band, we'd be interested in hearing them."

N4RH ON PART 97 REWRITE....

The FCC has proposed in the new Part 97 rewrite to arbitrarily restrict amateur operation as a way of dealing with harmful television interference. A member of the audience asked N4RH about the regulation of RFI susceptibility in consumer electronic products. She complained about the lack of procedures in the proposed new rules to assure Amateur's rights of due process in RFI disputes.

Haller responded, "I urge you to comment in the [Part 97 rewrite] docket on this. The Commission sometimes has to look at what is the effect of the Amateur operation on the community. If an Amateur is on the air and wiping out 500 homes because the ham is getting into a cable TV system, one of the immediate ways to rectify that problem and pacify the town council is to ask the Amateur to

General 3(B) \$4.00
A \$3.50
Extra Class 4(B) \$4.00
P.O. #56 Dallas, TX 75456
Each .50 Each
10 or more

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shut down. Generally the first approach is the voluntary approach. This [quiet hours] would be a secondary approach and one that we hope would not be long term. That is the intent [of the proposed rule], to give immediate relief to a very tough situation."

"Sometimes when you're in the middle of one of these controversies, your own rights in it cloud the public outcry that's really occurring. This is just an attempt to keep that outcry to a minimum, and then get the matter resolved in a proper way through technical means. I urge you to comment and put your feelings in the docket."

"The *Electronics Industries Association* has taken several steps to have immunity standards for FM broadcast, for Amateur, for CB, so the TV manufacturing community has begun going that direction on its own. It's not there yet, and an EIA study says that something like half of the TV sets that are in use today will still be in use in 15 years. Even if we were to adopt very stringent standards, and put them in place tomorrow, you're still looking at only 50% of the sets being better 15 years down the road. I applaud the industry for trying to get going on its own, but there are other means, low-pass filters and so on, that can be put on in the interim."

N4RH ON REPEATER COORDINATION...

A question from the audience about the wisdom of coordinating repeaters that are not used very much. Haller responded: "It's a question I think we'll have to deal with in the next few months and years, on how the bands could be used more effectively. The fact that a repeater is coordinated on a frequency--yes, we do have rules that say that coordinated repeaters have certain rights. But what about frequency usage? If you're looking at a time period when none of the repeaters happen to be in operation, shouldn't there be a way that somebody else could put something on there. We're looking for strong input on that."

N4RH ON 220-MHz ISSUE....

N4RH was asked about the 220 MHz issue, even though the matter is under the jurisdiction of the *Office of Engineering and Technology* and not the PRB: "I think this will be resolved in the near future. It's a tough public interest question, from a regulatory standpoint. I'm not going to comment on

where the outcome is likely to be, but there certainly are strong interests on both sides."

"I do applaud the Amateur community for the way it made known its side of the issue. I'm not speculating one way or the other about whether the approach will be successful, but I think it was a good approach. Many of the comments were not emotional, but were well thought-out comments explaining what the band is being used for, and the damage that would be suffered by the Amateur Service if the proposal is adopted."

N4RH's CONCLUDING REMARKS

"I feel very strongly that if you rely only on your government to find solutions, you'll get solutions you don't like. I urge you to put comments in [on all amateur] dockets. It may well be one comment from one person who almost didn't write in, that turns the direction of an entire docket and rule-making. It is very important that you keep up with what the Commission is doing, not only in the Amateur Service, but also in services that may have some kind of relationship with the Amateur Radio Service." [Meeting held 6/21/88, FCC, Washington, D.C.]

W2NSD TO START NIAC BALL ROLLING

As a follow-up to his presentation at the Dayton Hamvention industry meeting, **Wayne Green/W2NSD/1**, (publisher of "73" magazine) has sent a letter to members of the amateur radio industry concerning the need for forming a **National Industry Advisory Committee** (NIAC). The NIAC would act as a liaison between the amateur radio community and the FCC.

Green says that a previous NIAC was funded by the FCC who provided a meeting room and support materials, but "austerity programs finally doomed the group." Wayne wants to revive it again.

"We've let what was a hobby which once provided virtually all of the R&D for the the communications industry rot. By allowing about 90% of the school radio clubs to die 25 years ago we've cut off the input of youngsters -- the people who were doing most of the inventing and pioneering." He wants NIAC to research ways of attracting youngsters to ham radio ...and to provide a voice with the FCC to help stave off a further loss of frequencies."

AMECO LICENSE PREPARATION MANUALS - Contain all Amateur Radio Examination questions, multiple choice questions, and explanation why answer is correct

NOVICE AMATEUR RADIO COURSE - Complete with 2 cassette Morse code pours and ill-puted pool

Eviling Inee to know to become a Novice amateur radio operator - or to teach an

Wayne wants NIAC to meet four times a year. Once main annual meeting in Washington, D.C., with additional meetings at three major ham-fests - Orlando/winter, Dayton/spring, and Atlanta during the summer. There also would be a monthly NIAC newsletter. Green is asking members of industry to each ante up \$100 a year to get the group going. The closing date for **Charter NIAC Membership** is July 31st. Checks go to: NIAC, WGE Center, Peterborough, NH 03458.

Eventually the yearly investment will be \$1,000 in campaign donations to senators and congressmen. "As a voter you automatically get the ear or at least an eye from your congressman's staff. As a supporter of his campaign you will get his undivided attention when you need some help in Congress -- or when you want to make sure the FCC people are actually listening. This is the way Washington works," Wayne says.

"With one hundred industry firms supporting the NIAC, we're talking \$100,000 in campaign contributions. A \$250 donation outshouts a thousand form letters." Green wants to set up a special bank account for NIAC and register it as a non-profit membership corporation in New Hampshire.

● **Back-and-forth fight for 220.** The ARRL filed a "Motion to Strike" TV Answer's Request (RM-6196) for a half megahertz in the 216-222 MHz band. TV Answer wants spectrum for a two-way return link from television viewers to cable/broadcast stations or programmers. TV Answer, Inc. responded with an "Opposition to Motion to Strike" filing. Now the ARRL has filed a "Reply to Opposition" with the FCC.

● **Technician Book Available Nationwide.** Radio Shack will soon have its second amateur radio self-learning manual. Gordon West's "New Technician Class" study guide takes Novices to the Technician level. The 112-page fully illustrated book contains the 288 exact Element 3(A) questions and multiple choice answers - plus chapters on license privileges, getting ready for and taking the examination ...and more! WB6NOA includes an explanation why each multiple choice answer is correct. Bound in the book is a tear-out FCC Form 610. Radio Shack item No. 62-2403 \$3.95. (We also have a quantity of this manual available for mail order - \$3.95 plus \$1.00 for immediate shipping. Order from: W5YI; P.O. Box #565101; Dallas, Texas 75356.) We also understand Gordo is working on

the a General Class training package which (in addition to a textbook) will contain two code learning cassette tapes. Radio Shack has sold thousands of the Novice packages.

● **Morse code taught by computer.** While we are on the subject of training material, we reviewed the **Morse Tutor** (IBM compatible) program for teaching the International Morse Code that is available at \$19.95 from: GGTE (21881 Summer Circle, Huntington Beach, CA 92646 - Telephone: 714-968-1571) This is a great program and the best code software we have seen (and we have reviewed several.) Among the features we liked best were: (1.) a calibration/timing test routine to insure that your PC transmits code at the correct speed, (2.) ability to adjust the output code to either standard or Farnsworth character spacing at any speed, (3.) code is taught via a novel "flashcard" method we have not seen before and (4.) Lesson 12 automatically transmits Morse code examinations. Different QSO-type tests are assembled by the software. (The user guide says over a billion randomly selected QSO test combinations are possible!) Unfortunately each QSO does NOT contain all required letters, numerals, and required procedure signs and punctuation so it can't be used for actual testing. Each QSO does contain a very good mix of characters, however. We strongly recommend this software for learning or increasing your code speed to any level. (For MS-DOS/PC-DOS IBM-PC, XT, AT or compatibles.)

● **DX software.** Well known DXer, **Jim Rafferty/N6RJ** has a new "Electronic Second Op" computer program that offers a host of features essential to the DX'er, contester or any amateur seriously interested in reliable long-haul communication. An installation procedure (enter station longitude/latitude) customizes the program to the user's exact QTH. The program then calculates precise long/short/return path beam headings to each DXCC/ITU country, CQ Magazine zone (and nearly 200 other cities) and advises the distance in statute/nautical miles and kilometers. Also included is a real-time GMT clock, postal rates, QSL routes, 3rd party traffic/reciprocal licensing information, sunrise/set times for any location, and all sorts of DX stuff you didn't know you needed! You can log QSO/QSL notes on each "page." Information is saved to disk which can be sorted/printed out in a number of ways. This is a very sophisticated DX program for IBM/compatibles with 640K of memory. Available only from:
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MAY VE PROGRAM STATISTICS

	May	1986	1987	1988
No. VEC's:		*75	*59	*62
Testing Sessions:		334	400	484
VEC	1986	1987	1988	
ARRL	51.2%	45.3%	39.9%	
W5YI	16.6	26.8	36.4	
CAVEC	6.1	6.3	6.0	
DeVry	8.4	8.0	5.4	
Others	17.7	13.3	12.4	
Year-to-Date Sess:		1561	1790	2002
Elements Administ.		6259	8160	9817
VEC	1986	1987	1988	
ARRL	55.4%	50.4%	51.1%	
W5YI	13.5	21.6	25.3	
CAVEC	5.1	8.8	7.6	
DeVry	6.9	6.4	3.9	
Others	19.1	12.8	12.1	
Year-to-Date Elem.		28378	34543	41576
Applicants Tested		4366	4931	5858
VEC	1986	1987	1988	
ARRL	55.0%	48.4%	47.0%	
W5YI	11.5	22.1	26.3	
CAVEC	5.5	3.5	6.9	
DeVry	7.9	6.5	4.2	
Others	20.1	19.5	15.6	
Year-to-Date Tested:		19443	22047	24504
	May	1986	1987	1988
Pass Rate - All		60.4%	60.9%	60.8%
Pass Rate - W5YI		59.5%	59.4%	57.5%
Applicants/Session		13.1	12.3	12.1
Appl./Session W5YI		13.1	12.1	9.2
Elements/Applicant		1.4	1.7	1.7
Sessions Per VEC		4.5	6.8	7.8

Administrative Errors by VE's/VEC's

	May	1986	1987	1988
Defect. Applications		0.5%	0.3%	0.4%
Late Filed Sessions		1.2%	2.0%	2.3%
Defective Reports		1.2%	0.8%	0.6%

*Note:

The FCC Considers ARRL, W5YI and DeVry to be 13 VEC's each since VEC's are appointed on a regional basis. The 13 regions are: Call Sign districts 1 through 0, plus: Alaska (11), Carribean (12) and Pacific Insular areas (13).

Source: Pers.Rad.Branch/FCC; Washington, D.C.

(From page 5, column 2)

Radio Amateur Callbook, Inc., 925 Sherwood Drive, Lake Bluff, IL 60044. Tel: (312) 234-6600 (\$59.95 plus \$3.00 shipping) Rafferty is Vice President of the seven store California Ham Radio Outlet chain. [Since some of the DX information contained in the program will change from time to time, I wonder how he will keep it updated.]

● **Due to Privacy Act limitations**, amateurs in Canada are having to take their license with them when applying for vehicle call-sign plates. They no longer can get their current amateur license status verified by a *Communications Canada* (formerly DOC) amateur listing since CC no longer discloses Canadian ham radio licensing information to anyone.

● **Novice application survey.** The FCC in Gettysburg has instituted a procedure by which volunteer examiners listed on Novice applications are contacted to insure that they indeed did participate in a Novice examination. One day a week, the FCC writes VEs to get verification "whether the certification and signature appearing on the enclosed application is yours." Over 600 letters have been sent out already. One Novice application had W5YI and WB6NOA's signatures (authors of Radio Shack's Novice package) copied from the sample provided on how to complete a Form 610! This one was caught by Gettysburg since, being a VEC, they are very familiar with our signature. [Neither signature in the textbook was made by myself or Gordo - instead was completed by the publisher.] FCC's *Larry Weikert* advises that they are indeed finding other Novices that apparently were never tested by the examiners listed on the application! Some VE's, not knowing the reason for the random survey, are objecting to having their Novice applications questioned.

● **FCC has new Part 97.** The Commission now has available, through the Government Printing Office's *Superintendent of Documents*, Part 97 FCC Rules in loose-leaf form. Order Stock No. 004-000-00468-0. FCC said further ordering information may be obtained from the GPO Bookstore at (202) 783-3238. Cost is \$3.00 each.

● **Sunspot Cycle 22** (which began last September) is on the upswing! Many DXers are reporting increased solar activity - and greatly improved international contacts even on the upper HF bands.

backwards." So says Toledo (Ohio) amateur **Bob Solon, WD8LKI**, who did a study of the census figures we have published over the past four years. He also adds, "With a 1.93% average growth, amateur radio is stagnant at best. At the current progress, it will take 7.3 years to reach 500,000 and 43.5 years to reach one million amateurs."

● **Electricity and cancer.** A *Science and Technology* column in a recent issue of "The Economist" tells of a University of Colorado study of 344 children that died from cancer matched with 344 "control" children who never had the disease. "The children's exposure to electromagnetic fields were estimated from looking at the overhead power cables near their homes. The study concluded that exposure to electromagnetic fields was associated with a threefold increase in risk of childhood cancers."

● The **World Future Society** (Bethesda, MD) is a group that looks into important developments that could occur in the future. They seem to be pretty high on cable. They say that currently 57% of U.S. homes have cable TV now and that proportion will reach 87% by 1992. Magazines in the year 2001 will be on floppy disk, allowing readers to interact, play with, and manipulate the information on their PCs. Mass media will be more personalized as consumers use pay-to-view television to select their entertainment. Viewers will download their choices from a teledelivery service, paying for the program when they want to see it. A theater network will offer satellite-transmitted movies and other events for the affluent (who represent the upper 2% of the population and spend 28% of domestic disposable income.) Racing fans will watch races from their homes via cable TV, placing their bets through handheld portable betting terminals connected to the track's on-line computer network. Winnings will be automatically credited to the bettors' bank account; loser's bank accounts will be debited. *The Internal Revenue Service will also be automatically informed.*

● A "**ransom demand**" **computer parasite** is the latest virus disease program getting publicity. A statement pops up on your PC screen telling users where to send \$2,000 for immunity software.

● **Electronic Toilets!** Three Japanese firms (one the Nippon Telegraph & Telephone Co.) are

teaming up to develop **the intelligent toilet**. The toilet of the future will double as a home health-monitoring system. Five vital signs are checked as you go potty; blood pressure, pulse, weight, temperature and urine. The results are displayed on an LCD monitor and transmitted automatically by telephone to a doctor, hospital or computer center for evaluation. The results of these analyses are stored on a "**smart card**" that the user inserts in the toilet automatically building up a medical file as you use the toilet. Public toilets would be programmed to recognize individual users as they check into the toilet with their smart cards. Two models are under development. A home use \$2,000 version and a fully-automatic state-of-the-art \$20,000 model.

● Researcher, *Touche Ross & Company*, says (in their **Electronic Shopping Outlook 1988-1992** report) interactive home shopping is expected to grow by about 30% a year and provide more than \$3 billion in retail sales over the next three years. "Personal computers and compact discs will play an important role, ...videotapes offer significant potential."

● **Animation by PC.** Desktop video could be even bigger than desktop publishing. A stationery picture, in considerable detail, can now be activated to move using a personal computer. You can add voice, adjust timing, add graphics - and, with a device called a "**chromatron**" transfer your "movie" to your VCR.

● **United Parcel Service is now No. 2** in the overnight delivery business. They hope their new digital data system (on 220-MHz ham frequencies) will catch Federal Express which is number 1. The U.S. Postal Service, which dropped to No. 4, is banking on their new \$8.75 Express Mail letter rate (down from \$10.75) to regain their position. Federal Express has a 50% share, UPS 15%, Airborne Freight Corp. 13% and USPS 10% of the whopping \$6 billion market. (The postal service used to have a 15% share.) Airborne met their success by copying Federal Express' sophisticated tracking and billing process and then underpricing them, something that UPS is well aware of.

● DART, the **Dallas Area Rapid Transit** system, is adding cellular telephones to its long trip Express buses. They say that the Express rider has an annual income of \$50,000 while the shorter distance local bus rider has a lower income.

1 Ea. 5-9 \$3.50 \$3.00 plus postage
10 or more (Qty.) \$4.00 \$3.50 plus postage

TEST MANUAL
Novice 2
Technician (A)

AMATEUR RADIO QUESTION POOLS
Order Form:
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1 Each = \$1.25 Each
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Dallas based, *Texas Instruments*, has developed a cost effective way to merge *gallium-arsenide* (GaAs) and *silicon* semiconductor materials which could mean faster transistor operating speeds.

● Due to a recent **Department of Justice opinion**, telephone companies are now censoring and disconnecting "976" information services that they consider "detrimental" (but not necessarily illegal) ...such as sexually explicit, excessively priced, financial "nuisance" and other exploitive, deceptive, discriminatory or objectionable material. Phone companies provide the billing for "976" programs.

● **Tandy's Thor-CD** isn't the only huge capacity erasable optical disk system in the works. Contrary to what Tandy said, they did not develop the secret erasable CD metallic coating "in house." Another firm (Optical Data of Beaverton, Oregon) licensed the dye-polymer coating to Tandy. The huge digital storage capability of CD ROMs comes from their ability to vertically stack information in microscopic pits, one on top of the other - rather than on side-by-side tracks. The disks are read or written to by lasers. Many firms, such as Thompson CSF, Maxtor, Ricoh, Sony Corp., Phillips, Dupont Optical Co., Panasonic, Verbatim, Hitachi and Eastman Kodak have competing erasable optical disk systems in development. The biggest advantage of the Tandy Thor-CD seems to be its lower price and compatibility with current CD's. Verbatim says they will ship their 50 megabyte 3.5" optical disks this fall. The cost will be about 50% of current media storage costs - which will be high when you figure how much storage capacity is available.

● **Computer Stuff!** IBM will soon begin taking older IBM XT's and AT's (discontinued a year ago) as trade ins on their newer machines! Some dealers are speculating that they are doing this because their PS/2 sales have not been that good. IBM has no plans to take clones in trade for their machines. **Dell Computer** was founded by 23 year old Michael Dell. Apparently he is having his problems since several top management people have left charging that Dell is hard to work with. Dell must be doing something right, however. He sold \$159 million worth of Dell PC's with 1987 earnings of \$9.4 million. **Tandy is test marketing** a specially configured 2-drive version of the Tandy 1000-SX in 50 Wal-Mart stores. Tandy's 1000-SX (\$899) only has one drive. Tandy Computer Store salesmen are not happy about the move since they fear Wal-Mart will sell the upgraded machine for less!

● **Digital Audiotape (DAT) recorders** are already in widespread distribution in Japan and Europe - but not the U.S. At least two companies (Marantz and Casio) plan to market them over the objections of the *Recording Industry Association of America*. Casio is already testing the DAT waters via mail order. RIAA, who says they will sue, fears high quality copies could lead to widespread unauthorized DAT reproduction of copyrighted records, tapes and compact discs.

● A new satellite delivered TV network was launched June 6th. **Channel America** provides programming to low-power (LPTV) stations from GTE's Spacenet II transponder. They plan to originate 3 hours of programming by year end. LPTV stations are small television broadcasters with a 20 mile service radius. There are about 300 LPTV's on the air now. In a report issued by the NTIA, the Reagan administration has recommended that telephone companies be allowed to transport (but not originate) cable TV programming. NTIA sees no reason to require America being wired twice, once for entertainment and again for telephone. FCC has called on the Justice Dept. to take a firm stand against the estimated 250,000 home satellite pirates who receive cable programming illegally.

OSCAR-13 IS LAUNCHED INTO ORBIT!

Special report by: AMSAT's Vern Ripportella, WA2LQQ

On Wednesday, June 15th, Amateur Radio celebrated the birth of its newest star. **AMSAT OSCAR-13** came to life right on schedule after a letter-perfect launch by the new Ariane-4 rocket. Elated listeners around the world listened in on an international teleconference network as the launch ticked off every milestone on schedule. Hundreds of thousands of Amateurs in every region of the world were tuned in to hear the countdown and then the good news of AO-13's birth. Two hours and 50 minutes after launch, AO-13 sprang to life, its first telemetry indicating it was alive and well!

The **AMSAT Launch Information Network Service (ALINS)** used telephone lines to link together major HF facilities in the U.S. and overseas. Re-transmission from nodes in England (**G3RWL**), Argentina (**LU1AHC**), Japan (**JA1ANG**), Southern Africa (**ZS6AKV**) and others provided excellent coverage to all continents. In the U.S., **W1AW** (ARRL), **W6VIO** (JPL/Pasadena), **WA3NAN** (Goddard Space Flight Center/Maryland) and **W5RRR** (Johnson Space Flight Center/Houston) did yeoman

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duty in blanketing the ionosphere with launch audio.

Audio feeds from NASA mission communications, Kourou and nodal managers such as **JA1ANG** and **LU1AHC** added a realism and scope to the event. Video broadcasts on *SPACENET-1* and *Galaxy-3*, together with CATV coverage on *C-SPAN* allowed many to obtain multi media coverage of the launch ...all in real-time.

Other outlets for the ALINS network included dozens of VHF and UHF repeaters around the country ...and around the world. Those overseas were typically fed by the major overseas nodes via land-line or by patch from excellent HF feeds from W1AW and the other HF stations on board. The *C-SPAN* cable network coverage was somewhat of a disappointment, however, as the hosts were clearly unprepared and the AMSAT video tape did not air either. The coverage by Arianespace on *SPACENET-1* on the other hand was superb.

The weather was perfect for the launch. Skies over the Kourou Space Center in French Guiana was clear and blue. After a six minute hold, the 20-story tall Ariane-4 three-stage rocket leaped from the jungle floor with its cargo of two commercial and one amateur telecommunications satellite. Launch time was put at 11:19:04.33 UTC or just over 6 minutes into the first of two launch windows. Performance of the launcher was apparently perfect and the planned trajectory was followed with negligible deviations.

Twenty minutes into the mission *Meteosat* was the first satellite to be deployed followed 4 seconds later by **AMSAT's Phase 3C** in its canister. Finally, *Panamsat* sprang from launch vehicle and it too became a new earth satellite. But it would be another 60 minutes before AO-13 would be officially born. For a full hour it rode within its metallic cocoon ...the cylindrical carrying structure.

Then, at exactly 12:39:04 UTC, **Phase 3C** was ejected from the carrying structure and officially became AO-13. This sequence was not instrumented but can be inferred as occurring on time by other circumstantial evidence. It would, however, remain unknown for another hour and a half that the ejection had taken place OK.

The stage was set. AO-13 was then at nearly 17,000 miles altitude over the Indian Ocean. Would the beacon be heard as expected?

Yes! At precisely 14:03:38 UTC the new babe uttered its first telemetry. This was immediately acquired by listeners across the Pacific and Indian Oceans. AO-13 was not only BORN but unequivocal in its birth cries. It was alive, well and anxious to tell the world of its existence. ZL1AOX reported the beacon on 145.812 MHz steady and strong. The telemetry values showed all important parameters were "on the money." The temperature was about 10 degrees C. Power was good. Spin was 7.9 rpm. Pressure in the Helium tank was nominal. In general, this was a very healthy baby indeed!

Soon, more reports of AO-13 telemetry reception began to arrive. **JA1ANG** and **JAMSAT** (Japan) had acquisition of signal (AOS) at 14:03:55. **ZS6AKV** and colleagues in **SA-AMSAT** (South Africa) had AOS virtually at the same moment. Throughout the Indian Ocean and Western Pacific, AO-13's footprint spread north and west and then blossomed as apogee was approached.

By 1700 UTC, much of central Europe was in the footprint. Soon Peter Guelzow, **DB2OS** in Germany would obtain AOS. He was to initiate the first commands to begin re-orienting the spacecraft and start the spin-up to an intermediate attitude on the way to the first kick motor firing attitude scheduled to be accomplished within a week.

The beacon frequencies are: **Mode B:** General Beacon 145.812 MHz, Engineering Beacon: 145.985 MHz; **Mode L:** General Beacon 435.651, Engineering Beacon 435.677 MHz. AO-13 may be heard on any one of these frequencies. The transponders will be available for general amateur use in about 4 to 6 weeks.

Prospective operators should look forward to being on AO-13 not later than August 1 if the kick motor burns all go according to plan. AO-13 carries 4 transponders ranging in frequency from 145 to 2400 MHz. Two of the transponders are broadband, linear repeaters; one is suitable for FM only; one is a type of Digipeater optimized for AO-13 use.

Details concerning frequencies of operation and suitable ground station equipment may be found in articles in the June "QST" and May "73" magazines. For more information on getting started in satellites and on AMSAT membership, call AMSAT at 301-589-6062 or write: **AMSAT, P.O. Box #27, Washington, D.C. 20044.**