



The PROPAGATOR

January, 2001

The Monthly Newsletter of South Orange Amateur Radio Association



Happy New Year - 2001

2000 Was a Good Year for SOARA

Although SOARA does not have a general meeting in December, it does hold its Annual Holiday Party. The 2000 event was held at Sarducci's in San Juan Capistrano. On Sunday, December 3, about forty SOARA members (and family members) enjoyed a very good meal and fellowship. The evening included entertainment and the awarding of certificates for achievements during the past year. Awards turned out to be a mix of sincere thanks for dedicated service to the club and some gentle ribbing for humorous behavior.

The really big event of 2000, for Amateur Radio, was the restructuring by the FCC.

As a result, SOARA's test sessions became very busy. Lowering the code "barrier" brought more people into classes and self study programs. Many SOARA members took advantage of the opportunity to upgrade.

With the reduction of the importance of CW — at least in terms of a test requirement — there seemed to be a concurrent increase in interest in digital communications. We learned about one new mode, PSK-31, at the March general meeting. Malcolm, KO6SY, who had given the presentation, organized a local PSK-31 net to help get others started.

The local HRO store burned in January and reopened about three months later. We had speakers at our general meetings on: Repeater Technology, T-hunting, Emergency Communications, building rigs from kits, and Antennas. Field Day was a great success for all who attended. SOARA turned in a very respectful score. Plans for an even better showing are in the works. f



The 20th Century Saw the Development of Radio

The century just departed witnessed the incredible development of radio. It has been called the "Electric Century."

In December of 1901 Gugelmo Marconi sent a wireless message from Poldhu, Cornwall, in England across the Atlantic to St. John's, Newfoundland. On the basis of this demonstration he established a communications company which was to grow to provide world wide communications. (He was sued by the transatlantic cable companies.)

In 1904 an English engineer, John Ambrose Fleming invented the vacuum diode (the Fleming Valve) which made possible greatly improved radio detectors. Two years later Lee de Forest added a third element — the grid — which made possible the first amplification of the received radio waves. (It would be 8 more years before the "audion" was used for other than detecting radio waves.)



1912, Edwin Howard Armstrong was a student at Columbia University in New York City when he found that he could greatly increase the gain of an amplifier by feeding some of the output back into the input. The Regenerative receiver was invented! Six years later Armstrong invented the superhetrodyne receiver. (That's the type of circuit we use today!)

KDKA, the first licensed broadcast station began operation on November 2, 1920. It was the brainchild of Frank Conrad, a Westinghouse engineer and amateur radio operator.

In 1932 Karl Jansky, investigating radio noise sources for Bell Telephone Laboratories discovered radio noise coming from the central region of the galaxy. Bell Labs didn't

SOARA Schedule for 2001

On page three you will find this years schedule of meetings and events for SOARA. The general meetings are *usually* on the third Monday of the month. In January and February the meeting is shifted to the fourth Monday due to national holidays on the third Monday. Testing sessions are held on alternate months.

Other events of importance are listed on the calendar. On the air nets are listed on the back page. All SOARA members and visitors are welcome at the general meetings and on the nets. Several of the SOARA repeaters are open and welcome all licensed amateurs are welcome. f



pursue the discovery and it was left to Grote Reber, an Amateur radio operator (W9GFZ) to start the field of Radio Astronomy. In 1938 Grote built a 9 meter parabolic dish antenna to study these radio emissions from beyond the solar system. This is the same year that Xerography was invented.

The first television (experimental) broadcasts were started and advances in RADAR were being made in England. Both the Magnetron and the Klystron were developed.

On April 30, 1941 the FCC approved the broadcast TV standards recommended by the National Television Standards Committee (NTSC). (Not color yet, but your present TV would still accept signals to this 60 year old standard!)



In 1943 a practical method of making printed circuits was developed. In 1945 the ENIAC (electronic numerical integrator and computer) was developed to calculate the

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The Way I See It: An invitation to join the fun

Regular readers of this column know that the emphasis has been on understanding how things electronic work. This month's column is different — it is a "How To" article. More than that, it is an invitation to you, gentle reader, to consider sharing some amateur radio knowledge. Our topic today is "How to Write an article for the Propagator."

If you can share some knowledge which will make Amateur Radio more enjoyable for your fellow SOARA club members then you should consider writing an article about it. Have you gained experience in a new area of operating, built a new circuit or type of antenna? Would your experience make a good article? Here are a few questions which will guide you in turning out an interesting article.

What should I write about?

If you look at the range of publications by the ARRL, or even at the chapter titles in the *ARRL Handbook for Radio Amateurs* you find that the topics cover a wide range. Write about some aspect of the hobby with which you are familiar. You will probably have to do some research in completing an article. You should have a topic that you will enjoy researching.

Who will read the article?

Have in mind a target reader. A review of the club roster will quickly show that the club has members at all levels of proficiency in the hobby. We have large numbers of beginners, of experts, and "just average" hams. In any issue of QST you will find articles targeting all levels.

What will the article teach the reader?

When you have a clear idea of who your article is targeting, then decide exactly what you want to tell them. What do you expect them to be able to do with your information? Will they be able to use a new mode of communication? Will they be able to build some equipment, an antenna, or will they be

a better operator?

How long should the article be?

Article for a newsletter must be fairly short. The propagator is only four to six pages long. An article much longer than one page would be out of place. If the topic required many pages it could be published in installments.

Lets assume that you have an idea for an article, but it has been a long time since you have had to write a paper. How do you go about it? Here is a brief outline of the steps to take.



- 1) Formulate the idea and discuss it with one or two friends to get their reaction.
- 2) Do some research in the Amateur Radio literature (QST, CQ, etc.) and on the Internet to become familiar with what has been written on the topic.
- 3) Write an outline of the material you want to cover. Are all of the points (and sub points) included?
- 4) Think through the article. Will it cover what you want to cover, and will it be the right length?
- 5) Expand the outline headings into sentences and paragraphs. A paragraph should stick to one idea. You may have to go through this several times,
- 6) Find or draw any illustrations (schematics, etc.) that you will need.
- 7) Write the rough draft. You should have:
 - An **introduction** that tells the reader what you intend to do in the article. It should generate enough interest to inspire your audience to read the entire article.
 - The **body** of the article, where you make your main points. Make sure you adequately cover the material here.
 - A **conclusion** where you briefly wrap up the article.

What about spelling and grammar and all of that there kind of stuff? Not everyone with useful information is an expert in English. If you submit an article you will be given help. Spelling and grammar will be checked on any submissions. If some part of the article is not clear, the editor will ask for clarification

before it is published.

Contact the editor well before the publication date for the newsletter.

E-mail is a convenient means of doing this. Don't worry about formatting the material. It will have to be reformatted to fit the newsletter. Simple ASCII text files are most convenient.

Material sent in the body of an e-mail avoids any problems of opening attachments.



Do consider submitting an article or even a brief note if would be of interest to the readers. Original cartoons or jokes related to amateur radio would be welcome. f

New SOARA Repeater

SOARA has a new 2 meter repeater on the air in a test mode. Now operating on a coordinated frequency of 145.240 - it requires a PL of 110.9 Hz.

Howard, KG6GI, SOARA's Repeater Director, plans to work out all of the bugs before moving the unit to its final location at the Trabuco Canyon site. In addition to the PL which is required to bring the machine up, the unit transmits a PL so that users can program their receivers to ignore other machines on that frequency.

Until the machine is moved its coverage will be limited due to a low antenna height. While in the test mode there are no phone patch provisions. f

Feel free to try it out:

145.240 - 110.9

There are three kinds of people in the world:

**Those who understand Math
And those who don't.**

Year 2001	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
General Meeting 7:00 PM	22	26	19	16	21 Auction	18	16	20	17	15	19 Auction	No meeting
VEC Testing 5:30 PM	22	—	19	—	21	23	16	—	10	—	19	—
Propagator Deadline	6	10	3	1	5	2	1	4	1	9/29	3	—
Board Meeting	29	3/5	26	23	TBA	25	23	27	24	22	26	
Spring Auction					21							
ARRL Field Day						23 - 24						
SOARA picnic									4			
Fall Auction												19
SOARA Holiday Party												2

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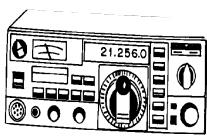
paths of artillery shells. It used 18,000 vacuum tubes. That same year John von Neumann proposed a model for a stored program computer (upon which all modern computers are based.)

At Bell Labs, on Dec. 23, 1947 John

Bardeen and Walter Brattain demonstrated the first transistor. By September of 1950 AT&T was offering manufacturing licenses for the transistor.

1951 was a year of victory for CBS in the debate over the means of transmitting color television. The FCC gave the nod to CBS's color sequential system. In the mean time RCA was busy producing B&W sets — sets that would be incompatible with the CBS color system. The NTSC was reestablished (not with the blessing of the FCC) and they proposed a compatible color system based largely on the developments of RCA. On December 17, 1953 the FCC reversed its 1951 decision and accepted the system that the NTSC had been demonstrating for over a year. (If you don't have one of the new digital receivers your set still receives color signals to this 1953 standard.)

Video tape recorders were first used to record "Douglas Edwards and the News" on CBS, November 30, 1956. Charles P. Ginsburg and Ray Dolby (yes, the same Dolby whose name you see on your audio cassette player) developed the recorder while



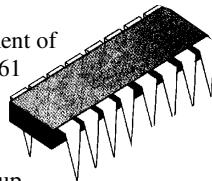
working for Ampex.

In 1957 the world entered the space age with the launch of Sputnik I on October 4. A month later a much heavier Sputnik II was launched. The first U.S. satellite, Explorer I was launched on Feb. 1, 1958.

1958 also saw the first integrated circuit (IC), developed by Jack Kirby of Texas Instruments. On September 12, 1958 he demonstrated a complete oscillator on a chip. The idea for the IC had been presented in 1952 in a talk given by the English engineer G. W. A. Dummer.

1960 saw the development of the first LASER. In 1961 the first OSCAR (orbiting satellite carrying amateur radio) was launched. The backup resides in the Hall of Satellites at the Smithsonian's National Air and Space Museum in Washington, DC. OSCARS I and II were essentially beacons. OSCAR III was launched on March 9, 1965, about a month before the first commercial communications satellite, INTELSAT I.

July 20, 1969: Buzz Aldrin and Neil Armstrong walked on the moon. This was also the year that the Advanced Research Projects Agency of the DOD established Arpanet to link four universities. Arpanet was to grow into the present Internet and the World Wide Web.



Marcian E. ("Ted") Hoff of Intel developed the first microprocessor — the Intel 4004. It was intended for use in a scientific calculator built by a Japanese company. This small (16 pin) chip contained all of the components of a general purpose computer. The year was 1971.

In 1976 Steve Jobs and Steve Wozniak incorporated Apple Computer Company. Other companies had offered personal computers but the apple II computer found a ready market and greatly expanded the number of users.



1981 saw the introduction of the IBM personal computer. This design quickly became the most popular, but IBM lost control of the market as large number of "compatible" machines flooded the market. Microsoft, a small software company started by Bill Gates offered the most appealing operating system for this new PC and profited more from the PC than did IBM. In 1988 Microsoft became the world's most valuable company. Only a year later it was surpassed in value by Cisco Systems, a supplier of Internet backbone equipment.

We have come a long way in 100 years — from the spark gap transmitter to our modern solid state rigs, from Marconi's transatlantic station to the ubiquitous cell phone. f

The PROPAGATOR

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Meeting: Monday, 1/22/01 at 7:00 PM.
Program: ARRL Video on ???

☛ SOARA meets at the Mission Viejo Community Center, 26932 Veterans Way, Mission Viejo, the third Monday of every month at 7:00 PM. Changes to the meeting time or place are announced in this newsletter and on the two-meter repeater.

☛ **License Exams:** Amateur License Exams are given prior to most SOARA meetings. Exams are from 5:30 to 7:30 PM. You must make an appointment at least a week in advance. Call Lou Parker, KA6BJO, at 951-0336. (No calls after 9:00 PM please.)

☛ **Contacting SOARA:** Questions about SOARA? Send e-mail to: info@soara.org, or leave a message at 949-249-1373.

☛ **Web Site:** SOARA maintains a web site with current club information. The URL is: <http://www.soara.org>.

☛ **Repeaters:** The SOARA 2-meter and 70 cm repeaters are open to all licensed hams.

SOARA 2m — 147.645 - (110.9)

SOARA 440 — 445.660 - (110.9)

The SOARA 220 and HROC 440 repeaters are shared by members of both clubs. Each machine is subject to the operating rules of its respective club. Call KG6GI for details.

SOARA 220 — 224.100 - (110.9)

SOARA 220 — 224.640 - (123.0)

HROC 440 — 447.180 - (131.8)

☛ **Nets:** SOARA 2 m repeater open net is held on Tuesdays at 8:00 PM following the Laguna and M.V. emergency nets.

 40 meter HF net (7.262 MHz +/- for QRM), Sunday 7:30 AM
 PSK-31 net: 28.120 USB 1 KHz meets Fridays at 6:00 PM.

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