



THE

# PROPAGATOR

The Monthly Newsletter of the South Orange Amateur Radio Association

September 2013

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## Amateur Radio In The 21st Century...

Neither our Constitution nor Bill of Rights create any entitlement in the Amateur Radio Service. Rather, we are expected to earn our keep, per paragraph 97.1 of the FCC Rules. So how are we doing? Ask a Ham and you'll probably hear that we're doing OK. Ask an elected official or a member of the general public and you'll likely get a blank stare. In this case, ignorance is not bliss. Government and public perceptions will continue to influence how Amateur Radio fares into the 21st century.

How can we determine the public benefit of the Amateur Radio Service? How can we get our report card out to decision-makers and the public? Who should do it?

Our guest speaker is Art Goddard, W6XD. Art is well known for his involvement and promotion of Amateur Radio. Licensed for 57 years, he is Past Director, ARRL Southwestern Division.



## Meeting

September  
16th, 2013

7:00 PM

N.P.

Murray  
Center

Veterans  
Way

Mission Viejo

## QST de AE6SH



Hello members, it has been a while since I have written an article for The Propagator. To say it has been busy is grossly understating the situation but I guess it keeps me

out of serious trouble and that is a good thing. I hope everyone had a wonderful summer and got to enjoy the sunshine and great southern California weather! As summer comes to an end and the kids return to school it is also time for our membership renewals to go out. I know it seems like we just did this but it was in fact a year ago (time flies....). Please take a moment and review your dues notice and send your

dues either by US mail or by PayPal it is very simple and easy to do or even in person at the meeting.

We still have lots of activities coming up through the end of the year: Auction, SOARA Saturday's, and of course the Holiday Party! So just because the summer is over, it does not mean that the fun is over as well. (I am sure if you ask your kids they will have a different opinion)

Also special thanks to Howard KG6GI and Ray AE6H for working on giving the Trabuco 2 meter repeater back its voice. It is almost back in service (at last). An upgraded repeater and controller is in progress and should be in service soon, stay tuned.

I hope to see all of you at the next meeting!

73' Tom Hobbs AE6SH



### HF Useful Links:

- [Contests](#)
- [DXpeditions](#)
- [NOAA - Space Weather](#)
- [Propagation de K7RA](#)
- [ARRL Propagation Charts](#)
- [VOACAP Online](#)

### CW Class



If you are disappointed that your amateur radio license comes without any knowledge of Morse code, we have a deal for you.

We would like to start a Morse code class for beginning operators.

If you are interested please send me an e-mail or see me at the meeting and we'll see what we can do.

Heiko  
[ad6oi@soara.org](mailto:ad6oi@soara.org)

## From the V.P.

It's been a good summer but fall is on the way. There are many things to look forward to in the coming months. Starting with our next meeting on Monday Sept. 16 with Art Goddard (W6XD) coming to talk to us about the future of amateur radio. Our October speaker has not yet been determined. In November we have another ham radio auction with many chances to buy or sell. Our December meeting will be the annual Holiday Party on Sunday the 1st at Antonucci's Ristorante on Alicia Pkwy. in Mission Viejo. We will meet for dinner and celebrations at 6:30 pm. The cost is \$30 per person and includes tax, tip, and a dessert. For those who enjoy their wine I will try to find another bottle of wine to complement the food. I have been assured that one of the dishes will be vegetarian. For those of you who are new to the club, this is a chance to celebrate our accomplishments and adventures in amateur radio land, as well as some of the follies and faux pas that have happened to us and others.

Heiko AD6OI



### Biography: Art Goddard W6XD

Art Goddard became interested in Short Wave Listening in 1954, using the family's Philco console radio. In 1956, he earned his novice Amateur Radio license. He worked his way up through the ranks to Amateur Extra class. Art's radio activities include HF/VHF, DX, contests, satellites and digital communications.

Art is a life member of ARRL and Past Director of ARRL Southwestern Division. Professionally, he is a consultant in electronics systems, retired from Boeing (formerly Collins Radio and Rockwell International). Art and his wife Mary Ellen live in Costa Mesa, CA.

SOARA thanks its 3rd annual Fair presenters last month. The meeting was well attended, as always and many interesting aspects of ham radio were on display.

## From Membership

This month we welcome two new SOARA members:

**Bob McFadden**, KK6CUS a General from Aliso Viejo, CA.

**Steve Siemer**, KJ6EZT, a General from Huntington Beach, CA.

We welcome you and hope you will enjoy the club's activities and opportunities for using and advancing your radio skills.

We'd like to remind all members that it is that time again to renew your membership and pay your dues. Dues are \$50 for regular members and \$25 for family and student members.

SOARA has 214 members now.

Horst and Marie Zitzmann





**SOARA**  
Saturday  
Sep 21

**JOTA**  
Oct 19-20

**SOARA Holiday**  
Party  
Dec 1



**VEC**  
License  
Exams

Next session:  
(6:00pm),  
before the  
meeting at the  
Norman P.  
Murray Center  
Contact Sean  
[AJ6B](mailto:AJ6B) for info.

Walk-ins ok.

Extra | General |  
Technician  
Exams

[SOARA](#)  
[Website](#)

## APRS

If you are a fan of APRS, the Automatic Packet Reporting System that was developed by Bob Bruninga, WB4APR, and want to build a standalone, small footprint APRS tracking station, the TNC-Pi may be a fun project for you.

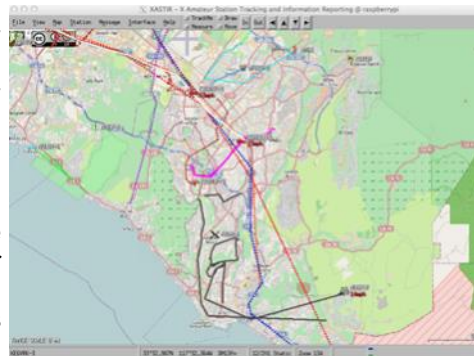


The finished kit is plugged into the GPIO connector on a Raspberry Pi (RPI) which is then attached to a HDMI monitor,

mouse, and keyboard. The Xastir application that runs on the RPi downloads maps as necessary from the Internet. Just about any handie-talkie or mobile radio can be used with the TNC-Pi to enable reception of position reports, position reporting, messaging and more advanced functions as well. The kit consists of through-hole only parts and takes about an hour or so to assemble, depending on your kit building skills. Once installed on the Pi, simple instructions included with the kit will have you up and running quickly. The kit does require some prior experience with loading the operating system (Raspbian Wheezy) onto the Raspberry Pi, and basic file editing skills to configure the RPi's serial port for use with TNC board.

You will also have to build or buy an interface cable to the radio transceiver. I used an old HTX-202 handie-talkie with mine and would be happy to supply the pinouts for building the necessary cable. I hope that you enjoy building and using your TNC-Pi as much as I have. For more information about the TNC-Pi kit, visit: <http://tnc-x.com/TNCPI.htm> for more information about APRS, visit: [www.aprs.org](http://www.aprs.org)

Vy 73 de NJ6N



## SOARA Raffle:

Hal Silverman

The August raffle took in \$158 total. The breakdown for the \$5 raffle was \$125 and for the \$1 raffle the total was \$33.

The \$5 prize is a Comet triband antenna and the Comet trunk mount. We needed to sell 38 tickets to break even, but we sold 25 tickets. We will continue the raffle for the antenna and trunk mount and expect it will be sold at the September meeting.

The \$1 raffle prizes consisted of a selection of prizes from both Harbor Freight and HRO. For the September raffle, I will try and get some line ferrites and some StackPole connectors. I had intended to get some ferrites, but wanted to use the prizes that were on hand. We have raffled them off in the past.



If there are any comments or suggestions for either the \$1 prizes or a future \$5 prize, please contact me at [WB6WXO@SOARA.org](mailto:WB6WXO@SOARA.org)





### Propagation de K7RA

Solar activity was very, very quiet over the past week. For the reporting period September 5-11, the average daily sunspot number was only 37.7. Average daily sunspot numbers as reported in this bulletin have not been nearly this low since Propagation Forecast Bulletin ARLP024, reporting for June 6-12 of this year, when it was 39.6. The last time it was lower was June 21-27 of last year, when it was 26.3, as reported in Propagation Forecast Bulletin ARLP026 in 2012.

## T-Hunt Report

After last month's hunt Karl and I discussed possible locations for hiding the "T". We realized that none of the current hunters were on the hunt a few years ago when we hid it in Newport Beach. There is a hill, not far from Signal Hill, that has several "good" (for hiding, not for hunting) characteristics. It is called Spyglass Hill, and has a buried water reservoir buried at the top. There is a very small park - essentially a playground - over the reservoir at the end of a cul-de-sac. It has a great view, i.e. a great shot at any where you want to aim your 9 element (14dB) antenna. Just to ensure that the hunters can hear it we used an amplifier to get 60 Watts of power to the antenna. [A little quick and easy math to figure out what that the antenna gain does to that: lets treat the number 14 as 20 - 6. 20dB is a gain of 100X and -6dB is a loss to 1/4 the power for a total gain of 25. 25 X 60 Watts is 1.5 kW effective radiated power in the direction the antenna was pointed.] I'm surprised anyone had to even turn on their radio. Unfortunately all of that power bounced around the Irvine Spectrum and trapped the hunters in that area for a lo-o-o-ong time. A final benefit of Signal Hill is that the streets on this little hill formed a sort of confusing maze. once you got close to the transmitter.

The first hunter to find the transmitter was (surprise!!!!) the team of Richard and Mike. They were quite happy to find it, and not at all sure that after hunting for one and a half hours that they were first. It was a challenging hunt on a hot day. There was a nice breeze on the top of the hill, and Karl had furnished snacks and ice cream (yes still frozen - he got dry ice, expecting the hunters to dally along the way).

Dale, W8RRV

## Jamboree On The Air (JOTA)

The next Jamboree on the Air is on October 19 and 20. The Jamboree-on-the-Air, or JOTA, is an annual Scouting event that uses amateur radio to link Scouts around the world, around the nation, and in your own community. Held on the third full weekend of October each year, this worldwide jamboree requires no travel, other than to a nearby radio amateur's ham shack. Many times the hams will come to you by setting up at a Scout camporee, or perhaps they already have a ham shack at your council's camp. There are many ways to get your Scouts involved in JOTA.

SOARA has received a request from a Cub Scout troop that would like some SOARA members to assist their pack in demonstrating Amateur Radio. If interested, please contact Michael Frank at [KJ6QIK@soara.org](mailto:KJ6QIK@soara.org).



## Mark Your Calendars for the SOARA Holiday Party!

WHEN: First Sunday in December (December 1, 2013)

TIME: 6:30pm - 9:30pm

WHERE: Antonucci's (Italian), 24190 Alicia Pkwy, Mission Viejo CA 92691

COST: \$30.00 per person

More information and payments accepted at: <http://www.soara.org/activities/holiday-party/>

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# PSK – 10 Years On

*This year we celebrate the 10th anniversary of one of the most popular Amateur Radio digital modes ever created.*



Steve Ford, WB8IMY

In the middle of a humid New England summer in 1999, I received a curious e-mail message from Peter Martinez, G3PLX. It seemed that Peter had been experimenting with a new type of HF digital communication built around a single phase-shifting carrier. This unusual mode operated at a signaling rate of 31 baud within an RF bandwidth of less than 50 Hz. Peter called it PSK31.

My interest was definitely piqued, but what really grabbed my attention was the fact that Peter was working his magic with a software application that ran under *Windows* and used a sound card to handle the analog/digital conversion.

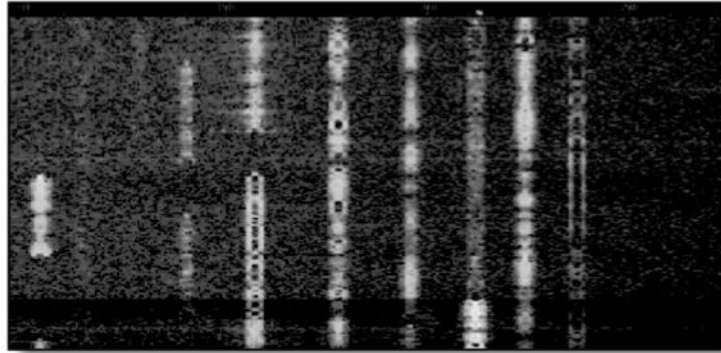
I was incredulous. "You mean the same sound card I'm using to listen to game noises can actually be put to use for digital communication?" Peter assured me that this was indeed the case and sent along a copy of the software.

After creating a crude transmit/receive switching interface, I booted up Peter's software and went hunting for PSK31 signals. There were only a handful in those days, but after nearly a week of searching and calling, I made contact with a fellow in Alaska. He said, to my astonishment, that he was running only 20 W to a dipole antenna. As the software extracted perfect text from his barely audible signal, a chill raced down my spine. In that moment I knew that Peter had stumbled onto something big.

## Getting the Word Out

I quickly made arrangements to republish a PSK31 article by G3PLX that had recently appeared in the *Radio Society of Great Britain's RadCom* magazine. Our version went to press in the November/December 1999 issue of *QEX*, *QST's* sister publication for experimenters. At the same time, Peter and I collaborated on a *QST* article titled "PSK31 — Has RTTY's Replacement Arrived?" It debuted in the May 2000 issue.

The timing could not have been better. There were an awful lot of amateurs with *Windows* PCs in 2000, and most of those also had sound cards. Within weeks after the May *QST* hit the streets, you could tune around 14.070 MHz at any time and hear the gentle warblings of PSK31 signals.



The next jolt occurred later in 2000 when Skip Teller, KH6TY and Nick Fedoseev, UT2UZ, released their free *DigiPan* software. Unlike Peter's program that required operators to carefully tune individual PSK31 signals, *DigiPan* swept through the entire receive audio passband and displayed every signal it encountered. It displayed the signals as thin lines on a continuously scrolling "waterfall." To tune in a signal, you simply clicked your mouse cursor on the line of your choice.

*DigiPan* was an enormous hit and its "panoramic reception" technique became the standard. At the same time, both sound cards and sound card software were rapidly evolving. By 2001 we saw several new sound card modes such as MFSK16 and a growing number of commercial off-the-shelf sound card interfaces.

Even RTTY (radioteletype) operators, who prior to 2000 had been using hardware terminal units and multimode controllers, gradually made the shift to sound card technology. The RTTY transition was greatly accelerated by the introduction of *MMTTY*, a high-performance RTTY sound card application created by Makoto Mori, JE3HHT.

## So Did PSK31 Replace RTTY?

Well ... yes and no. Ten years after the debut of PSK31, RTTY remains the king of digital contesting. There are a number of PSK31 contests, but none that have yet matched the popularity of the established RTTY competitions. RTTY also holds the top spot for digital operations during DXpeditions. Some DXpeditions will use PSK31 on occasion, but most still prefer RTTY.

There is a reason for the RTTY preference among contesters and DXers. When it comes

to reception, PSK31 tends to exhibit a "capture effect" where only the strongest signal among many is demodulated. In contrast, a RTTY operator can often pick up whole call signs or fragments of call signs even when several stations are calling at once. This is a strong advantage during a contest, or when you are on the "business end" of a DXpedition.


But PSK31 has clearly replaced RTTY for casual HF digital conversation. Depending on conditions, you'll always find someone to chat with around the common PSK31 watering holes at 3.580, 7.070, 10.140, 14.070, 21.070 and 28.120 MHz.

## PSK31 Today

PSK31 has become a favorite among digitally savvy hams, especially those operating in antenna restricted environments. I routinely work amateurs who say they are running only 10 or 20 W to indoor antennas. Even with the poor HF propagation conditions we face today, the extraordinary performance of PSK31 allows these hams to enjoy operating and DX chasing whenever the bands are open.

Other "flavors" of PSK such as PSK63, PSK125 and PSK250 have entered the stage since 1999. And now PSK31 is turning up as a "feature" built into several transceivers, along with devices such as the NUE-PSK ([www.nue-psk.com](http://www.nue-psk.com)) that do not require computers at all.

Peter Martinez is still at work today, still innovating. But he will always be remembered by thousands of amateurs throughout the world as the man who introduced us all to a new way of "talking" — just in time for a new century.

Steve Ford, WB8IMY, is the Editor of *QST*. You can reach him at [sford@arrl.org](mailto:sford@arrl.org). 

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# 6 2013 SOARA Calendar THE PROPAGATOR

Year 2013	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
<b>General Meeting</b> 7:00 PM	28	25	18	15	20	17	15	19	16	21	18	—
<b>Program</b>	Digital Radio	Tropo Ducting	DX Pedition	K6ACJ	Spring Auction	Field Day Prep	2 DXp's	SOARA Fair	Ham Radio in the 21st Century	TBD	Fall Auction	—
<b>VEC Testing</b>	28	25	18	15	20	Field Day	15	19	16	21	18	—
<b>SOARA Saturdays (9am)</b>	Feb 2	Mar 2	23	20	25	—	20	24	21	26	23	—
<b>SOARA T-Hunt</b>	6	10	10	14	12	9	14	11	8	13	10	8
<b>Board Meeting</b>	Feb 4	Mar 4	25	22	Jun 3	24	22	26	23	28	25	—
<b>Special Events</b>		Yuma 15-16			Dayton 17-19	ARRL Field Day 22-23		SOARA Picnic 4		JOTA 19-20		SOARA Holiday Party 1
<b>Major HF Contests</b>		ARRL DX-CW CQWPX RTTY	ARRL DX-SSB CQWPX SSB 30-31		CQWPX CW 25-26	ARRL Field Day 22-23			CQWW RTTY 28-29	CQWW SSB 26-27	CQWW CW 23-24	

**SOARA** meets at the Mission Viejo Community Center, 26932 Veterans Way, Mission Viejo, the third Monday of every month at 7:00 PM. For the months of January and February the third Monday is a holiday and the meeting is held on the fourth Monday.

**License Exams:** Amateur License Exams are given prior to SOARA meetings. **Exams are at 6pm.** Prior registration is not required and walk-in applicants are welcome. For further information, email Sean Reigle, AJ6B, at [aj6b@soara.org](mailto:aj6b@soara.org).

**SOARA Library:** SOARA has many amateur radio related books such as hand books, books about electrical theory, etc. available to lend out to club members. Contact Heiko Peschel [ad6oi@soara.org](mailto:ad6oi@soara.org) for more info.

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

**Repeaters:** The Laguna Beach, San Clemente, and Trabuco repeaters are open. The Santiago Peak repeaters are closed. For details or questions on the repeaters contact the Repeater director, KG6GI.

- |               |      |                        |                    |
|---------------|------|------------------------|--------------------|
|               | 2m   | — 147.645 - (110.9)    | Laguna Beach       |
|               | 2m   | — 146.025 + (110.9)    | San Clemente       |
|               | 2m   | — 145.240 - (110.9)    | Trabuco            |
| <b>D-Star</b> | 2m   | — 146.115 + (K6SOA C)  | Laguna Beach       |
|               | 220  | — 224.100 - (110.9)    | Laguna Beach       |
|               | 220  | — 224.640 - (123.0)    | Santiago Peak. (C) |
| <b>D-Star</b> | 440  | — 445.660 - (K6SOA B)  | Laguna Beach       |
|               | 440  | — 447.180 - (131.8)    | Santiago Peak. (C) |
| <b>D-Star</b> | 1.2G | — 1282.600 - (K6SOA A) | Laguna Beach       |

**Nets:** UHF/VHF (447.180, 147.645 & 224.640): Tuesdays 8:00 PM  
 D-Star (146.115 C module): Wednesdays 8:00pm  
 40 meter HF (7.200 MHz +/- for QRM), Sundays 8:00 AM.  
 Gordo Net (HF 7.250 MHz +/- for QRM), Weekdays 8:30AM

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| <a href="mailto:nj6n@soara.org">nj6n@soara.org</a>   |              |
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