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Speeding Up Sailmail and Winlink

Are you getting the best possible connections with your Sailmail or Winlink e-mail? Do your messages zip through or are you plagued by dropped connections, slow transmissions or the dreaded message that you're using too much connection time?

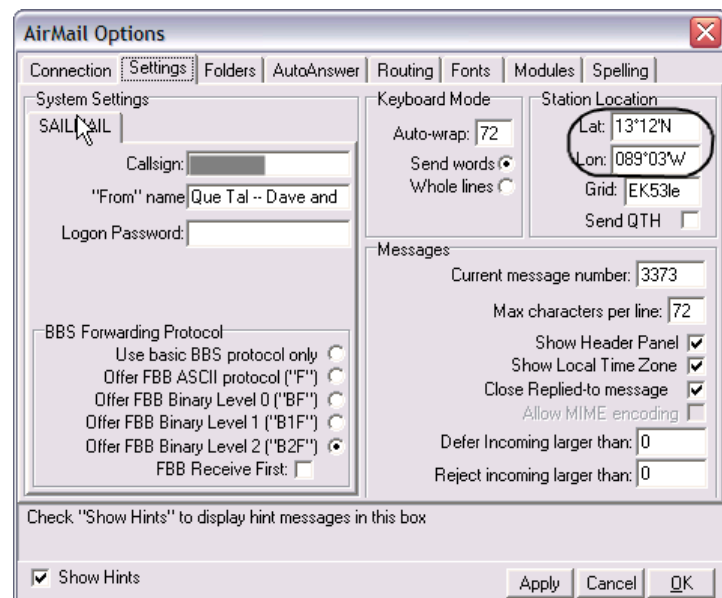
For the past several months, we've been part of a cruiser's e-mail group that has been passing around information on the Pacific Central American coast. One day, I found that a group of three e-mails that I had uploaded in less than two minutes had taken another boat in the same marina almost 30 minutes to download! They were talking about either asking to be removed from the list, or having the messages sent only to their shore e-mail address.

Soon, there were about a dozen cruisers talking on the dock. Some had consistently good transmission speeds while others just as consistently had problems. What was the difference? Sure, hardware could account for some of the difference, as could Pactor II versus Pactor 3. And connections are almost always better at anchorage or at sea than in a marina with nearby masts and electrical interference. But there was still something more . . .

As we talked, a pattern emerged. Sailmail and Winlink have an excellent propagation table feature but unfortunately little documentation on how to get the most from it. Those with good transmission speeds all offered tips on getting better predictions, as well as two other tips.

Tip 1: Make sure the clock setting on your computer is correct. Because the propagation tables are really looking at the current GMT, both the time and time zone (GMT offset) settings must be correct. If you only change the time but not the time zone setting when you cross a time zone, the propagation tables will be off by an hour per time zone! To access the time settings (on a Windows computer), right-click on the current time at the bottom right of the screen. Make sure that the current time, the time zone and the daylight savings time setting are all correct (or change them as necessary), click on Apply, then OK.

Tip 2: Make sure that your location is correct. In Sailmail or Winlink, go to Tools, Options, Settings and enter your current location in the "Station Location" box at the upper right corner (the "Grid" will automatically change). Click on Apply at the bottom of the box, then OK. Every time the boat is moved, this should be updated; you absolutely should update it any time you've moved more than 100 miles. If you are underway, be sure to update your location before looking at the propagation tables. If you cross the equator, the prime



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meridian or the international date line, be sure to change the North/South and East/West designations.

When you use the propagation tables, the stations should appear in order from nearest to furthest away in the list on the left side of the screen. If the list appears wrong (for example, you're in California and it shows the nearest station being in Africa), check that you correctly entered your present location.

Tip 3: Choose Signal to Noise Ratio for predicting propagation. On the propagation table (press F8 or View, Propagation) there are two radio buttons at the upper right. The default is for the table to show "Rel" (Relative) signal strength, but clicking over to "SNR" (Signal to Noise ratio) often gives a better prediction of the best station and frequency. With SNR, the table will appear in pink-purple-blue colors instead of the yellow-orange-green colors of "Relative". The higher the number, the better the connection is likely to be -- over 70 will generally give a good connection (sometimes you can get a good connection in the upper 60's) and 73 or 74 is great.

Tip 4: Always check the propagation tables before trying to connect. To check a particular station, double click on that station's name. The current time (GMT) will be marked in dark gray above the table, and you can quickly see if there are any frequencies with good propagation at the current time and if so, what they are. Usually the closest two or three stations (those at the top of the list) are the only ones that will have acceptably high numbers, so you don't have to check all the stations.

Every time you connect, information on solar flares and sunspots is automatically updated in the propagation program. This can change the best frequencies from day to day. As daylight lengthens and shortens (due to changing seasons and boat movement), the best frequencies also change. Thus, you need to check the propagation tables **every time** you connect in order to ensure the best connections.

The screenshot shows the 'Propagation' software window. On the left, a list of stations is shown under the 'SAIL MAIL' system, with 'Panama-west' circled. The main area displays a table of Signal to Noise Ratio (SNR) values for various frequencies (4075, 5735, 8185, 10450, 13880, 18240, 18440, 23050 kHz) across 24 hours. The current time is 21:00. The 'Update' button is also circled.

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
4075	66	65	63	62	63	63	63	64	64	65	67	62	55	44	30	14				19	41	57	66	69
5735	70	69	68	67	67	68	68	68	68	69	69	66	55	47	32	20	13	18	33	51	66	71	71	
8185	73	73	72	72	72	72	73	72	71	69	72	73	73	74	71	69	50	47	48	55	68	72	73	74
10450	75	74	73	72	70	69	69	71	68	67	70	71	76	76	75	73	70	68	67	71	72	74	75	75
13880	71	66	59	60	56	52	49	63	57	52	59	44	53	55	57	70	72	71	72	73	75	76	76	75
18240	51	35	22	27	21	13	8	42	32	22	31				14	55	61	65	67	69	70	70	69	62
18440	49	33	20	26	19	11	7	41	31	21	30				10	54	61	65	67	69	70	70	69	61
23050	11		4	4				14							6	25	38	47	52	55	56	55	51	28

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NOTE: If you've been away from your boat for several days or haven't connected for other reasons, ask another boat what the current solar flux index (SFI) is and manually enter it on the propagation screen, then press "Update" for the predictions to be recalculated. You can also get the current SFI from the timetick stations, at twenty minutes past the hour.

Tip 5: *Is it close to the next hour?* When looking at the propagation tables, note how close the current time is to the new hour. If it's close to the next hour, particularly in the morning and late afternoon when the sun angle is rapidly changing, the best station and frequency choice may be what is listed for the "next hour." Keep these in mind as an alternate choice.

Tip 6: *Turn off anything that causes electrical interference with your radio.* Likely culprits are fans (even the ones that say they don't cause interference!), refrigerator, fluorescent lights, water pumps, inverters and generators. Sometimes shore power coming through a battery charger will cause problems, particularly when in a "bulk charge" phase. Experiment on your boat to see what, if anything, you need to turn off before trying to connect. To test, turn the radio on and try turning items off one by one. If you hear less static with something turned off, it was causing interference and should be turned off whenever you try to send and receive e-mail (as well as for the best radio reception at other times!). Unfortunately, sometimes equipment on a nearby boat – particularly in marinas where there are lots of boats close together, running lots of electrical equipment – will be the culprit and you won't have much control.

Tip 7: *If a connection is bad, try again.* Once you learn what connection speeds are typical for you, don't hesitate to give up on a slow connection by clicking on "Stop". Try a different station or an alternate frequency. If propagation looks better at a different time of day, try again then. Double-check everything listed above to make sure you haven't missed something.

One boat that hadn't previously done any of the above found that their typical transmission speed increased nearly 10 times. More typical were the cruisers who had previously known some but not all of the above tips, who reported doubling or tripling their average transmission speeds.

SIDEBAR: Useful E-Mail Services

Now that you've got your connection speeded up, here are a few useful (and free) e-mail services to keep you in touch with the weather and what's happening back home. Unfortunately, you have to sign up for some of them via the internet, so you'll have to do it when you're at an internet café. And because I always worry about getting spam in my Sailmail, I have these sent to my "land" e-mail and automatically forwarded from there to my Sailmail address.

- **Saildocs:** A service supported by Sailmail that offers subscriptions to a variety of weather reports and grib files and one-time text retrieval of web pages. Anyone can use the service – you don't have to be a Sailmail member – and you can sign up and make subscription changes via e-mail. To find out more, send the following e-mail:

To: query@saildocs.com
Subject: (anything)

send info
send index

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Two documents will be returned to you – “Info” with details on how to use the system, and “Index” which lists the documents available.

- **NHC Mailing Lists:** You can get the NOAA/NHC forecasts, advisories and discussions via Saildocs (above), or straight from the NHC. The text is identical. The NHC’s e-mails are often out a bit sooner, but Saildocs has the ability to “delete” a superceded forecast so that you only spend time downloading the most recent. Signing up requires an internet connection; go to:

<http://seahorse.nhc.noaa.gov/signup.shtml>

(A link to “E-mail Advisories” is on the left menu bar of every page of the NHC site – www.nhc.noaa.gov)

- **USA Today:** Get the top headlines from USA Today along with a one- or two-sentence summary of the story. The e-mails are generally 9,000 to 10,000 characters and so will be cut off if you’re on Pactor II – but you’ll still get the top 5 or 6 headlines. To sign up, go to:

<http://reg.e.usatoday.com/>

(A link to “E-mail News” is also at the bottom of the USA Today home page – www.usatoday.com).

“Daily Briefing” is what I’ve referred to here, and be sure to sign up for “text only” at the bottom of the subscription form.

- **Yahoo! Alerts:** Follow the stock market (specific stocks or indexes), your favorite college or professional sports team, get your daily horoscope and more. If you have the alerts delivered to your “mobile device” but use your Sailmail/Winlink address (or your shore e-mail with automatic forwarding), it’ll come as a very short (generally less than 300 character) message without advertising. Delivery to “e-mail” will include advertising and thus be a longer message. To sign up, go to:

<http://alerts.yahoo.com>

If you do not already have a Yahoo! username and password, you’ll have to sign up for one (which takes about 30 seconds).