HOW-TO: Copy ARRL Bulletins (Including Field Day Bulletin)

Bulletins are a one-to-many method for dispersing important information, particularly in an emergency or disaster. The ability to copy bulletins is an important emergency response skill. Bulletins may be dispersed by email or radio email directed to a multitude of recipients, or may be sent using "broadcast" methods such as Voice, CW, or various data formats (including PSK31, MFSK16, RTTY and other broadcast techniques, but not one-to-one techniques such as VARA or ARDOP). This document addresses the radio broadcast techniques. The free software tool recommended to demodulate these techniques is FLDGI. This is available for multiple different computer types and operating systems at: http://www.w1hkj.com/

General information about all ARRL transmissions is available at:
http://arrl.org/w1aw-operating-schedule

2022 W1AW Field Day Bulletin Schedule

Day	Mode	Pacific	Mountain	Central	Eastern	UTC	
FRIDAY	CW	5:00 PM	6:00 PM	7:00 PM	8:00 PM	0000	(Sat)
	Digital	6:00 PM	7:00 PM	8:00 PM	9:00 PM	0100	
	Phone	6:45 PM	7:45 PM	8:45 PM	9:45 PM	0145	
	CW	8:00 PM	9:00 PM	10:00 PM	11:00 PM	0300	
SATURDAY	CW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	1400	
	Phone	8:00 AM	9:00 AM	10:00 AM	11:00 AM	1500	
	CW	5:00 PM	6:00 PM	7:00 PM	8:00 PM	0000	(Sun)
	Digital	6:00 PM	7:00 PM	8:00 PM	9:00 PM	0100	
	Phone	6:45 PM	7:45 PM	8:45 PM	9:45 PM	0145	
SUNDAY	CW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	1400	
	Phone	8:00 AM	9:00 AM	10:00 AM	11:00 AM	1500	
	Digital	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1600	

K6KPH Field Day Bulletin Schedule

SATURDAY	CW	7:30 AM	8:30 AM	9:30 AM	10:30 AM	1430	
	CW	5:30 PM	6:30 PM	7:30 PM	8:30 PM	0030	(Sun)
	Digital	6:30 PM	7:30 PM	8:30 PM	9:30 PM	0130	
SUNDAY	CW	7:30 AM	8:30 AM	9:30 AM	10:30 AM	1430	
	Digital	9:30 AM	10:30 AM	11:30 AM	12:30 PM	1630	

W1AW will operate on the regularly published frequencies.

CW frequencies are 1.8025, 3.5815, 7.0475, 14.0475, 18.0975, 21.0675, 28.0675, 50.350 and 147.555 MHz.

Digital frequencies are 3597.5, 7.095, 14.095, 18.1025, 21.095, 28.095, 50.350 and 147.555 MHz. (Note: W1AW will transmit the Field Day Bulletin using 45.45 baud baudot, PSK31 {BPSK Mode}, and MFSK16 in this mode order).

Phone frequencies are 1.855, 3.990, 7.290, 14.290, 18.160, 21.390, 28.590, 50.350 and 147.555 MHz.

The **FIELD DAY BULLETIN** appears to be a special bulletin, only released over the air, designed to give hams practice in copying disaster bulletins. It is followed by the Propagation Bulletin, which we don't think is required to get the 100-point Field Day Bonus -- but we often submit that as well. The Field Day Bulletin must be copied substantially correct - but minor errors due to static crashes, etc, don't seem to be counted against you.

HOW TO COPY PHONE BULLETINS

TIME	FREQUENCY	Capture Technique
9:45 PM Eastern LocalTime *This is the last bulletin of the mid evening.*	3.990 (LSB) 7.290 (AM) (full carrier! DSB!) 14.290(USB) BEST CHANCE 18.160(USB) 21.390(USB) and others	Set your radio for one or more of the **dial frequencies** listed (an A/B VFO is helpful here to preset the 40meter and 20meter frequencies). *You will probably want to use a cell phone recording app to capture the voice bulletin for later transcription.*

HOW TO COPY CW BULLETINS

TIME	FREQUENCY	Capture Technique
8:00 PM Eastern LocalTime	The ARRL publishes the exact center frequency of their CW transmission (a carrier). Many radios receive "CW" as "lower side band." In the CW setting, you can simply dial in the ARRL published frequency -- your receiver automatically provides the offset so you hear a tone from the product detector. If you're copying by ear, using the CW filter of your radio may be a big help. However, if you're using a software detector, you can alternatively use your radio's	Set your radio for one or more of the dial frequencies listed (an A/B VFO is helpful here to preset the 40meter and 20meter frequencies). You can copy their 18WPM Bulletin by hand and/or use FLDGI to copy it. **To use FLDGI**, set its **Op MODE** to CW, set your receiver as instructed in the column to the left, and click on 1000 Hz in the waterfall windows[1] (set to display audio frequencies) or insert 1000 into the center frequency box below. When they begin to transmit, you may need to adjust either your radio dial or your FLDGI red capture slide to be perfectly centered on their signal, since radios differ slightly on frequency

1 I like to have my FLDGI waterfall set to display AUDIO frequencies: click Configure | Config Dialog | click "Waterfall" | click Display | under Frequency Scale, click the button "Always show audio frequencies"

	UPPER SIDE BAND mode and manually provide the "offset" by setting your dial to 1kHz lower than their published frequency, as follows: ARRL published CWfrequency — Set your USB dial frequency to 7.0475 — 7.046.500 14.0475 — 14.046.500 18.0975 — 18.0974.500 This technique should result in a clear 1kHz audio tone of CW to copy. In Gainesville, their 20 meter frequency is often the best in the evening hours.	accuracy. If you have a good strong signal, you will likely get a very good clean copy of their CW bulletin using FLDGI. **An example is presented in the Appendix One to demonstrate**.

HOW TO COPY DATA BULLETINS

TIME	FREQUENCY	Capture Technique
9:00 PM Eastern LocalTime -- right after the CW bulletin and before the Phone bulletin	ARRL publishes the CENTER FREQUENCY of the data modulation, no matter what its bandwidth. For Gainesville, 20meters and 40 meters come in well: 7095 kHz 14095 kHz Set your radio for Upper Side Band (USB) and for a dial frequency 1kHz lower than the ARRL center frequency - the modulation will then be centered around 1000Hz in your audio.	A/B VFO: You will probably want to use your A/B VFO so you can check either frequency to see which is best. The DATA BULLETIN is sent in three different techniques: RTTY (OpMode RTTY: RTTY-45) PSK31 (OpMode PSK: BPSK-31) MFSK16 (OpMode MFSK: MFSK-16) ARRL sends RSID tones at the very beginning of each transmission. From the FLDGI Help: The RSID (automatic mode detection and tuning) feature uses a special sequence of tones transmitted at the beginning of each transmission to identify and tune

	Set your radio dial to: 7094 kHz 14094 kHz	in the signals received. For this feature to work, not only do you need to enable the feature in the receiver, but in addition the stations you are wishing to tune in need to have this feature enabled on transmission. If you turn on RSID and your software captures the very beginning, the software will automatically determine which of the three data modulations the ARRL will send in each segment -- hooray! *RSID is turned on via a slim pushbutton option in the upper right of your software window.* *Automatic Frequency Control: You will also want to turn on Automatic Frequency Control (AFC) - slim pushbutton option in the lower right of your software window.* **You may still need to adjust your receiver or click to set the "window" right on top of the ARRL signal.** The ARRL publishes the order in which each of the three modulation types will be sent - however switching between these modes requires some dexterity!! RSID helps a lot and so can the following trick: It turns out that you can bring up THREE COPIES of FLDGI, **set each one to a different modulation** technique, and set the center frequency of each one of them to 1000 Hz. One of them will start decoding!! **APPENDIX TWO shows a bulletin sent via PSK31, captured with FLDGI.**

GRABBING THE TEXT
Once you have copied the bulletin, use your mouse to highlight the text in the FLDGI Receive Pane, copy it to the "clipboard" with CTRL-C, and then paste it into a document or email (CTRL-V or "Paste") and send to the documentation unit for your exercise. (For NFARC Field Day: docvacuumtubes@gmail.com)

APPENDIX ONE:
EXAMPLE CW BULLETIN CAPTURED WITH FLDGI

W1AW <BT>
ON PSKREPORTER.INFO I SAW THAT MY SIGNAL WAS PROPAGATING ALONG A VERY NARROW ARC AT 72 TO 74 DEGREES RECEIVED ONLY BY A CONCENTRATION OF STATIONS IN THE NORTHEAST USA. NO REAL 6 METER ANTENNA HERE, JUST A 32 FOOT END FED WIRE, 4 TO 1 UNUN AND AUTOTUNER, MOSTLY INDOORS ON THE SECOND FLOOR OF MY 1907 ALL WOOD CRAFTSMAN HOME. <BT>

JUST PRIOR TO THAT AT 1730 UTC I SEEMED TO BE MONITORED ONLY BY STATIONS 2000 TO 2500 MILES FROM ME IN AN ARC WITH BEARINGS 77 TO 79 DEGREES WITH WA9WTK AT THE SOUTH AND VE3TTP AT THE NORTH. <AS> QST DE W1AW <BT>

ON JUNE 9
AT 2300 UTC ON 12 METERS FT8 I AM ONLY HEARD BY N4DB AT 91 DEGHEES, 2292 MILES AND K4BSZ AT 94 DEGREES, 2276 MILES. THEN AT 2320 UTC, WB4EVH AT 23M6 MILES AND 103 DEGREES BEARING, AT 2330 UTC, VK5PJ AT 8306 MILES, 250 DEGREES. <BT>

AN ARTICLE ABOUT AURORA CAN BE FOUND ON //BIT.LY/ . <BT> IT CKNTAINS MOSTLY GOOD INFO, EXCEPT THE STATEMENT ABOUT BEING HALF WAY THROUGH THIS SOLAR CYCLE. I GUESS WE MIGHT BE HALF WAY TOWARD THE PEAK. <BT> IF YOU WOULD LITE TO MAKE A COMMENT OR HAVE A TIP FOR OUR READERS, PLEASE EMAIL THE AUTHOR AT, K7RA AT ARRL.NET. <AS>

QST DE W1AW <BT>

FOR
MORE INFORMATION CONCERNING RADIO PROPAGATIONM SEE THE ARRL TECHNICAL INFORMATION SERVICE WEB PAGE. A DETAILED EXPLANATION OF THE NUMBERS USED IN THIS BULLETIN IS ALSO AVAILABLE ON THIS SITE. AN ARCHIVE OF PAST PROPAGATION BULLETINS IS ALSO AVAILABLE. <BT> MONTHLY PROPAGATION CHARTS BETWEEN FOUR USA REGIONS AND TWELVE OVERSEAS LOCATIONS CAN BE FOUND ON THE ARRL/PROPAGATION WEB PAGE. FIND MORE INFORMATION AND TUTORIALS ON PROPAGATION ON THE K9LA WEB SITE. <BT> THE MULTIPLE WEBSITES MENTIONED IN THIS BULLETIN CAN BE FOUND IN TELEPRINTER, PACKET, AND INTERNET VERSIONS OF 2022 PROPAGATION FORECAST BULLETIN ARLP023. <AS> QST DE W1AW <BT> SUNSPOT NUMBERS FOR JUNE 2 THROUGH 8, 202 J WERE 59, 52, 75, 57, 45, 23, AND 0, WITH A MEAN OF 44R4. 10R7 CM

APPENDIX TWO:
EXAMPLE PSK31 BULLETIN CAPTURED WITH FLDGI

ARLP023 follows

ARLP023 follows

ZCZC AP23
QST de W1AW
Propagation Forecast Bulletin 23 ARLP023
From Tad Cook, K7RA
Seattle, WA June 10, 2022
To all radio amateurs

SB PROP ARL ARLP023
ARLP023 Propagation de K7RA

Hard for me to believe, I had to blink to make sure, but on
Wednesday, June 8 for the first time this calendar year there were
no sunspots, ev n though two new sunspot regions appeared on June 4.n

Average daily sunspot number declined to 44 from 52.9 last week.
Average daily solar flux waMonly 99.4, down from 104.3 last week
and 158.8 the week before.

News about the first spotless day can be found here:

https://bit.ly/39cOiQk

I am grateful that on Thursday, June 9, a new sunspot group emerged,
bringing the sunspot number for the day to 17.

Predicted solar flux is 105 on June 10, 110 on June 11-16, 115 on
June 17, 120 on June 18, 125 on June 19-20, 150 on June 21, 110 on
June 22, 100 on June 23 through July 3, 105 on July 4-5, 110 on July
6-10, then 115 on July 11-13, 120 on July 14, and 125 on July 15-16.

Assumecg the above prediction is true, this would mean average daily
solar ux rising from 99.4 to 109 over the next reporting week and
123 the next.

Predicted planetary A index is 5 on June 10-14, then 8, 12 and 8 on
June 15-17, 5 on June 18-22, then 12, 18, 10 and 8 on June 23-26, 5
on June 27 through July 9, then 12, 8, 12, 10 and 8 on July 10-14,

and 5 on July 15-19.

Despite the recent downturn, Solar Cycle 25 activity exceeds the official forecast:

https://helioforecast.space/solarcycle

According to Spaceweather.com, May 2022 sunspot activity w s the highest it's been in eight years.

OK1HH wrote:

"As during the last solar revolution, solar activity has been low in the last ti o weeks.

"On June 8, the Sun was even empty - no sunspots - R = 0.

"This is a remarkable development more than 2 years after the beginning of Solar Cycle 25. However, during the last few hours, rapid spots have been observed near the central meridian. In addition, NASA's STEREO-A spacecraft is monitoring a probable group of sunspots approaching beyond the northeastern edge of the Sun:

"https://stereo.gsfc.nasa.gov

"It should be foowed by other g oups of spots, which will increase solar activity again.

"The Earth's magnetic field was largely quiet, except for an in orease in activity on June 6.

"The result was an improvement in the propagation conditions on June 6 and a degradation on June 7 and the morning of June 8. Gradual improvement can be expected in the coming days."

W9NY wrote:

"Just got a new dipole op on 10 meters on my condo roof which is over 400 feet off the ground overlooking Lake Michigan.

"Made a couple of contacts late this ofternoon into Texas and Louisiana S5-S6 and nothing else on the band, until a ZL called me from New Zealand about 6:20 PM local time. He gave me an S9, and he was S5. Just like the good old days on 10 meters!

"The ionosphere has to be working, I think, to get over to New Zealand."

Some observations from K7RA on 6 and 12 meters this week:

On June 4, at 1745 UTC on 6 meter FT8 I worked KB1EFS/2 in Cape Vincent, New York.

On pskreporter.info I saw that my signal was propagating along a ve narrow arc at 72-74 degrees received only by a concentration of stations in the northeast USA. No real 6 meter antenna here, just a 32 foot end-fed wire, 4:1 UnUn and autotuner, mostly indoors on the second floor of my 1907 all wood Craftsman home.

Just prior to that at 1730 UTC I seemed to be monitored only by stations 2000-2500 miles from me in an arc with bearings 77-79 degrees with WA9WTK at the south and VE3TTP at the north.

On June 9 at 2300 UTC on 12 meters FT8 I am only heard by N4DB at 91 degrees, 2292 miles and K4BSZ at 94 degrees, 2276 miles. Then at 2320 UTC, WB4EVH at 2326 miles and 103 degrees bearing, at 2330 UTC,