SitRepNet CommPlan

Combined Package

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Contents

https://sitrepnet.com/

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SitRepNet CommPlan

Preparation and Operation

Overview

The SitRepNet Communications Plan (CommPlan) provides the tools and structure for a resilient, decentralized way to share Situation Reports (SitReps), arrange impromptu nets to address specific events, and collect and distribute information. The SitRepNet project is designed to allow individual stations to more effectively communicate without the command structure of an organization or conventional net. Decisions are made by “boots on the ground” rather than those in another part of the country. There are no failure points from a command structure whose removal could collapse the system. It is a *network*, but not a *net*. Nets are important, and they serve a different function than SitRepNet. SitRepNet is designed to work alongside established organized nets (such as AmRRON, MAGNET, SEEN, ERIN, PrepperNet, etc.), in addition to the Bulletin Distribution Net (BDN), to share information that FLDIGI nets cannot efficiently do while maintaining their core objectives.

Core principles of SitRepNet:

- SitRepNet is completely open. There are no “secrets - just in case”. There is no “membership” in a group, no cost, no fees, and no records. All plans and resources are available to anyone by going to https://sitrepnet.com/.
- SitRepNet is decentralized and resilient. There is no “command structure”. It is designed to be used by any licensed ham radio operator, and it depends on individual ham operators taking the initiative and doing what needs to be done.
- SitRepNet is not affiliated with any other group or organization. At the same time, SitRepNet encourages participation in established nets. Those established nets serve vital functions that SitRepNet cannot provide.
- Simplicity is how an effective network can be built without a central command structure. It depends on individual radio operators combining their own initiative with the basic SitRepNet plan and making it all work together.

There are three basic “layers” of the SitRepNet plan:

1. JS8Call and JS8Spotter - MCForm reports are used to share SitReps and other information, either actively by initiating the transmission, or passively by having those reports available for others to download. This is the primary layer of SitRepNet.
2. FLDIGI modes - These are used to pass traffic with more detail than JS8 can efficiently handle, using the Bulletin Distribution Net (BDN), impromptu nets, and scheduled traffic handling nets.
3. Local modes. This is the collection and distribution of information to local areas by any means available, including VHF/UHF, CB, FRS, GMRS, and just observing and talking with your neighbors.

This CommPlan consists of four parts:

- Preparation – The basic set up needed for SitRepNet to function effectively
- Operation – Plans, procedures, and resources to be used when SitRepNet is operating
- Reporting and Bulletin Distribution – Compiling MCForms from multiple stations for a “big picture” view
- Appendix – Additional PDF docs with Quick Reference Guides, reference materials, and information that is likely to be regularly updated, such as available report files, etc.

For more information, visit https://sitrepnet.com/ or contact Stephen Clay McGehee, KN4AM.

Preparation

➤ Links for software and detailed information available here: https://sitrepnet.com/index.php/resources/

Software and Skills Needed

SitRepNet is based on JS8Call and JS8Spotter, so both of these programs are required to have an active role in this. Both programs can run under Windows, Mac, Linux, and Raspberry-Pi. In addition, FLDIGI is used for passing traffic that JS8 cannot efficiently handle. Refer to the *JS8 Quick Reference* (see Appendix) and know how to relay, store, and retrieve messages, query for messages, remote storage, and third-party operations – vital skills in a compromised environment.

Know your 6-character Maidenhead Grid Location

Information without location is often of little use.
In JS8Call, enter this in General>Station>Station Details.
In JS8Spotter, enter this in File>Settings.
Have a Maidenhead Grid map printed and available (included in the SitRepNet CommPlan Combined Package).

➤➤➤ Add @SITREP to your Group Callsigns

Include this in addition to any nets or groups you may follow or participate in. **This is the key to making the SitRepNet system work**. This is similar to @ALLCALL, but not used for general "CQ" or similar calls. @SITREP is essentially an independent, decentralized, unaffiliated group call. It is designed for emergency and grid-down comms, both for routine practice and for operations.

Frequency Selection

Set Waterfall to 2300
• Primary: 7.078 – JS8Call Primary Frequency
• Secondary: 7.107 – Used by the Bulletin Distribution Net, and @GHOSTNET (a decentralized network)

Set up your Expect System in JS8Spotter

This allows other stations to query your station and request reports that you have set up and allowed for downloading. It is important to use the "Expect" tags shown here so we are all using a "common language". Other tags can be added as needed. Following is a suggested setup, but modify and add to as needed:

Expect	Respond	Allowed	Max	(Notes)
CMDS	MCF STATUS COND NOTE	*,@SITREP	99	Expect system commands available
MCF	F!103 F!104 F!304	*,@SITREP	99	MCForms available
STATUS	6-char. grid location w/desc. or NTR	*,@SITREP	99	Brief status description
COND	G (or Y or R color code)	*,@SITREP	99	Subjective ranking of current status
NOTE	(Brief text note if appropriate)	*,@SITREP	99	Station operator discretion
F!104	(MCForm data)	*,@SITREP	99	@SITREP Basic Check-in
F!304	(MCForm data)	*,@SITREP	99	Individual Situation Report

`*,@SITREP` means that response is sent to any station addressing your call sign, or addressing @SITREP. Use a comma to separate items. You can add other groups, such as @GHOSTNET, by separating them with a comma.
`*` will reply to any individual call-sign

Download and add all MCForms to JS8Spotter

F!104 is the primary report form for SitRepNet, but <u>have all of them so you can read what others send</u> even if you don't normally send a more specialized form yourself (see JS8Spotter_MCFormsForSitRepNet.pdf for more information). New forms are being added, so keep your forms up to date. Download from https://sitrepnet.com or from https://kf7mix.com/

Set up a SitRepNet Profile

Items should include @SITREP, F!104, your call-sign, STATUS, plus any current issues you are tracking.
You may want to also include the call-signs of stations you regularly connect with, and other groups such as @GHOSTNET, @AMRRON, @MAGNET, etc.

Operation

A Brief Overview of SitRepNet and how it works

SitRepNet is a system for exchanging SitReps (Situation Reports) between stations. This is done in two ways:
❶ Reports are passively distributed by requests from other stations by using the @SITREP group callsign.
❷ Reports are actively distributed by using the “Send Now” function of the Expect System, addressed to @SITREP.

➤ SitRepNet fills a niche that conventional nets are not designed for and cannot efficiently handle.
➤ SitRepNet cannot efficiently do what conventional nets do.
➤ SitRepNet is designed to work WITH conventional nets where appropriate.
➤ SitRepNet can use F!106 to arrange impromptu nets using FLDIGI modes.

Once information has been received, there is still a need to share it. Established conventional HF nets, such as the Bulletin Distribution Net (BDN), and AmRRON, are designed for this, so they should be utilized where appropriate. If you aren’t already active with nets using FLDIGI modes, you should do so and become proficient at it. You should also look for ways to share that information with others in your local area by using whatever modes are available – VHF/UHF, CB, FRS, GMRS, and just talking to your neighbors. Those same modes, as well as local media, are also useful for collecting local information that you would then distribute using the SitRepNet system.

Routine Operations

❶ Monitor 7.078 using JS8Spotter as much as possible.
❷ Switch to 7.107 during the established GhostNet schedule if you are so inclined.
❸ Use the Expect System “Send Now” function to send F!104 to @SITREP at least once a day.
- Remember to update it each time before sending so that it includes a current time/date code.
- Check the “Send as MSG” box to see who is acknowledging reception.
- In addition to F!104, use F!103 and/or F!304 if appropriate.

❹ Participate in FLDIGI-based nets if you are able to, and try to establish local comm links.
❺ Respond to F!107 – *Request for Information* when you are able to assist in that effort.

Emergency Operations

❶ Monitor 7.078 using JS8Spotter as much as possible.
❷ Switch to 7.107 during the established GhostNet schedule or as needed.
❸ Use the Expect System “Send Now” function to send F!104 to @SITREP *at least* once a day (preferably more).
- Remember to update it each time before sending so that it includes a current time/date code.
- You can also use the `Auto TX Schedule` function to send automatically at multiple times.
- Add any “Other relevant current report(s)” to F!104, and confirm that they are included in your Expect system.
- Check the “Send as MSG” box to see who is acknowledging reception (optional).
- In addition to F!104, use F!304 as appropriate.

❹ Update any MCForms that apply to the current situation, and add them to your Expect System and the MCF item. MCForms that are not currently active should be set to “NTR” in the Expect system.
❺ Monitor and participate in the Bulletin Distribution Net, and other FLDIGI-based nets during their scheduled traffic-passing time. Return to the SitRepNet frequency when a net is concluded.
❻ If your local area is affected by a disaster, complete the applicable MCForms and add them to the “Other relevant current report(s)” field in F!104. Send those reports out as described in item ❸ (above). When and how often is a judgment call on your part.
❼ Use F!106 to schedule an impromptu net on FLDIGI if needed. Download and use the set of FLDIGI macros available on SitRepNet.com ➤ SitRepNet-macros.mdf or use your own.
❽ Respond to F!107 – *Request for Information* when you are able to assist in that effort.

Reporting and Bulletin Distribution

Brief Overview

By adding reporting and bulletin distribution to the SitRepNet system, we greatly increase the information sharing capability; more importantly, we greatly increase the usefulness of that information. Instead of just sharing information from one station to another station, this enables SitRepNet to request specific information, take in reports from many stations, compile that raw data into useful information, and then send it out in the form of a bulletin on the Bulletin Distribution Net (BDN) and other nets. This helps give us a “big picture” view of current events.

❶ The Initiating Station uses JS8Spotter to request specific information about a situation or event.
❷ Responding stations complete the appropriate MCForm(s) and send to @SITREP
❸ The raw data is compiled and formatted into a useful report.
❹ The prepared report is sent out as a signed FLAMP file, primarily using the Bulletin Distribution Net (BDN).

⚑ “Bulletin” and “Report” are used fairly interchangeably here, with “Report” generally being shorter in length and referring to the data being collected or the finished product, and “Bulletin” being more detailed or including multiple reports.

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Initiating Station

Requesting Information - The Initiating Station will use JS8Spotter and F!107 to request specific information. The F!107 report will be sent out several times over a 48 hour period to @SITREP on 7.078 and 7.107, as well as being available from @SITREP using the JS8Spotter Expect system by sending `@SITREP E? F!107`. The F!107 report includes a serial number and an expire date to aid in accuracy.

Responding Stations

Providing Information – Responding Stations that are able to provide the requested information take the following steps:

1. Complete the requested MCForm(s) and add to your Expect System with `*,@SITREP` in the `Allowed` field.
   1. In the Comments field, include the serial number shown on the F!107 *Request for Information*.
   2. Check the expire date on the F!107 to confirm it is a current request.
   3. Remove any reports from your Expect System that are replies to an expired information request.
2. Send the requested reports to @SITREP on 7.078 and 7.107 at intervals over a 48 hour period by manually sending, or by using Auto TX Schedule. Reports should be sent during prime propagation times for 40 meters.
3. **All SitRepNet Stations** - Relay F!107 to @SITREP to get it distributed as widely as possible. Check the Expire Date so you only relay current *Requests for Information*.

Collection / Distribution Station(s)

Collect, Compile, and Analyze – The Collection Station is normally the same as the Initiating Station. There may be other stations wishing to collect, compile, and analyze, and all are encouraged to do so. This is crowd-sourced intelligence gathering and analysis, so additional viewpoints may help provide a better picture of a situation.

1. Collection Stations should keep their station up as much as possible, especially during prime propagation hours for 40 meters.
2. On or about the Expire Date on the F!107, use `MCForms-Form Responses` to copy all applicable MCForms and then paste them into a spreadsheet. After eliminating duplicates and any obviously bad data, use that information to compile the raw data into useful information. Exactly how that is done will vary widely depending on the situation and person doing it.

Create the Bulletin / Report – The typical report should be done using the following format. If circumstances clearly call for a change in format, just use your best judgment; however try to use this standard format if possible.

1. Basic Format – All reports are prepared as a plain text document. Do not use FLMSG or a word processor, etc.
2. Report Header
   1. DATE: Report creation date, should be no later than the Expire Date on F!107 that initiated the report.
   2. SUBJ: Event or Situation being reported on
   3. FROM: Station / person / group writing the report or bulletin
   4. SIGNED BY: Station / person / group taking responsibility for authenticity, and whose public key is used to verify authenticity. Always use the same description that appears on the PGP Public Key being used to authenticate the report.
   5. SOURCE: SitRepNet reports / SW Broadcast / First Person Observation / Relayed report, etc.
   6. SUMMARY: Brief summary of report if applicable. This field is optional.
3. Report Text – Raw data turned into useful information / intelligence. Also include:
   1. Input stats – Number of reports this is based on, and the location of reporting stations if applicable.
   2. Call signs and locations of all reporting stations.
4. Footer - "/ / / END OF REPORT / / /"
5. Authentication – Use Single File Signing as shown in the *Kleopatra Quick Reference*. PGP authentication is an important part of the SitRepNet. If you must send without FLAMP and a signature, be sure to remove the "SIGNED BY:" line from the header, as well as the PGP signature.

Distribute the Bulletin / Report – The Bulletin Distribution Net (BDN) is the primary outlet for handling distribution of SitRepNet bulletins. To submit for distribution, check into the BDN, and follow the instructions of NCS. Be sure to have your bulletin ready to go in FLAMP

- The BDN meets every Friday at 9:00 pm Eastern Time on 7.107 – 900 offset.
- The net starts with Contestia 4/250, and continues with MFSK32.
- Mode is determined and set by NCS, so make sure your TxID is off, and FLAMP is set so it will send in the mode set by the NCS.
- All bulletins are sent using FLAMP.
- SitRepNet bulletins may also be sent through any other traffic net; if so, be sure to send using FLAMP in order to maintain the signature authentication. Authentication is an important part of SitRepNet.

Notes

- Bulletins are normally signed using a PGP signature. Have Kleopatra installed on your system, and learn how to use it (see the *Kleopatra Quick Reference*).
- You will also need to download the Public Keys from SitRepNet.com or from other sources.
- If you will be creating and signing SitRepNet bulletins, then you will need to post your Public Key on SitRepNet.com

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JS8Call Quick Reference for SitRepNet

Version 1.3 - KN4AM

Waterfall

Initiating a QSO or message – select an offset not currently being used
Replying in a QSO – select same offset as the other station

User Interface

- Left Pane - Incoming message area. 2-click to move to Selected area.
- Middle Pane top (yellow) - Selected message area
- Middle Pane bottom (white) - Type message area
- Right Pane - Call Activity, heard list of call signs

<u>CALL-A is **initiating**, CALL-B is **middle**, CALL-C is **receiving**</u>

Relaying

❶ Right click on CALL-B from Call Activity (right) pane.
❷ Select *Directed to CALL-B*
❸ Select *>[MESSAGE] – Please relay this message to its destination*
❹ Edit message to `CALL-B > CALL-C > this is the message text`

Remote Message Storage at Recipient

❶ Right click on CALL-C from Call Activity (right) pane.
❷ Select *Directed to CALL-C – Please store this message in your In-Box*
❸ Edit message to `CALL-C MSG this is the message text`

Retrieval of Message left

❶ CALL-C sees flag icon ⚑ next to CALL-A in Call Activity pane
❷ CALL-C right clicks on CALL-A, select *Show message inbox*

Message to Mailbox at 3rd Party

❶ Select CALL-B from Call Activity (right) pane.
❷ Select Directed to CALL-B. Select *MSG TO:[CALLSIGN] [MESSAGE] – Store for later retrieval by [CALLSIGN]*
❸ Edit message to: `CALL-B MSG TO:CALL-C this is message text`
❹ CALL-C uses Query Message procedure to retrieve message

Local Message Storage and Retrieval

❶ Select CALL-C from Call Activity (right) pane, Right-click
❷ Select Store message from the menu
❸ Type message in dialog box, then click OK
❹ CALL-C uses Query Message procedure to retrieve message

Query Stations for Messages

❶ CALL-C selects a Group or a Station from Call Activity (right) pane
❷ CALL-C clicks on Directed to <selection> and select *QUERY MSGS – Do you have any messages for me?* from menu

```
CALL-C: CALL-B QUERY MSGS
CALL-B: CALL-C YES MSG ID 123
```

Retrieve a Stored Message

❶ CALL-C selected CALL-B from Call Activity (right) pane
❷ CALL-C clicks on *Directed to <selection>* and selects from menu *QUERY MSG [ID] – Please deliver complete message … ID*
❸ CALL-C edits the message in outgoing pane and sends it

```
CALL-B QUERY MSG 123
```

❹ CALL-B verifies message ID number, sends message and checksum
❺ CALL-C verifies checksum, message is saved in in-box, alert box is displayed. If checksum test passes, ACK is sent to CALL-B

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Grid-Down Conditions - Set Timing

Time Delta must be within 2 seconds to decode. Goal is < 300 ms.
❶ Menu>View>Show Time Drift Controls
❷ Menu>View>Show Band Activity Column>Time Delta (check this)
❸ Watch signal on Waterfall. When signal stops, <u>immediately</u> click on *Set Time Drift to Now (TX End)*.

Fine Tuning the Time Delta to match another station

❶ Right-click on the station’s call-sign
❷ Select *Jump to xxx ms time drift*. Your station will now match theirs.
❸ When QSO is finished, click *Reset Time Drift* to return to zero.

JS8Spotter Quick Ref for SitRepNet

Version 2.3 – for JS8Spotter117 - KN4AM

Enter MCForm Info

❶ `Tools > MCForms - Forms`
❷ Click form to use
❸ Click on `Load Posted Expect Form` to edit existing form and update the Date/Time code -or- complete a new form
❹ Click `Post Form to Expect`

Send Expect System Item:

❶ `Tools > Expect System`
❷ Right-click on item
❸ Click `Send Now`
❹ Enter call sign or @*GroupName*
❺ Check Send as MSG if needed
❻ Click `Send`

View Received MCForm

❶ `Tools > MCForms - Responses`
❷ Double-click or Right-click on form to display
❸ `Copy All`, then `Save As` to save a copy to print or relay

View Expect System Item:

❶ `Tools > Expect System`
❷ Double-click on item to display

Edit Expect System Item:

❶ `Tools > Expect System`
❷ Double-click on item
❸ Edit item, then click `Save`

Schedule Auto-Send for Expect System Item:

❶ `Tools > Expect System`
❷ Double-click on item
❸ `Auto TX-Schedule`, enter system time to send
❹ `Auto TX-Target`, enter callsign or group
❺ Click Save.
⚑ `Tools > Expect – Pause Auto TX` to temporarily disable
⚑ JS8Call Outgoing Messages must be empty in order to send.

Request a SitRep from any @SITREP station:

`@SITREP E? F!104`
⚑ Use this same format for any Expect System item.

Standard Expect System Items (with SitRepNet suggested)

CMDS – Commands in your Expect system (items below)
MCF – MCForms available for download that are not set to NTR
STATUS – Grid location + brief description (NTR if all is normal)
NOTE – Optional brief note. General purpose. (or NTR)
INTEL – Locally sourced intel (or NTR)
GRID – Your Maidenhead Grid location (6 character preferred)
⚑ `Expect > Allowed Calls/Groups` - Set to `*,@SITREP` (plus any other call signs or groups you want to include. Separate each with a comma). Default can be set in Settings.

MCForms

- F!104 is the primary Situation Report for the SitRepNet. Keep it updated, and send to @SITREP routinely and as conditions warrant.
- For MCForms not currently active – enter NTR in Expect System.

Misc. Notes:

- Profile Background Scan ON
- `View > Highlight Range` 15 Minutes or more
- Scheduled Auto-TX can be combined with Frequency Schedule in JS8Call to send reports on one frequency while primarily monitoring another frequency
- Allow one minute for JS8Call to change frequency before JS8Spotter is scheduled to Auto-TX,

<u>MCForms Datecode</u>

Use `Tools > Datecode Tool`
1st character – Month: A-L = 1-12
2nd character – Day: A-Z – 1-26, 0-4 = 27-31
3rd character – Hour: A-W = 0-23
4th character – Minute: (2 min. resolution): A-Z, 0-3 (A=0, B=2, C=4...)

⚑ See SitRepNet CommPlan at SitRepNet.com for more information.

Kleopatra Quick Reference

Version 1.0 - KN4AM

✯ ✯ ✯ Authenticating ✯ ✯ ✯

Single File Verification

⚑ Signature code is added to start and end of the signed file.
❶ Click Decrypt/Verify from menu.
❷ Browse and select the file to be verified.
❸ Click Open to verify the file.
❹ *Optional* - Click Save All to save copy of file with signature removed. File is saved with `.out` file extension.

Two File Verification

⚑ Signature code is contained in a separate file with the same name, but `.sig` at the end of the file name.
⚑ Both signature file and signed file must be in the same folder.
❶ Click Decrypt/Verify from menu.
❷ Browse and select the `.sig` file for the file being verified.
❸ Click Open to verify the file.

✯ ✯ ✯ Signing a File ✯ ✯ ✯

Single File Signing

⚑ File being signed gets modified – do not use for binary files.
❶ Click the Notepad tab.
❷ Type or Copy-Paste the text into the Notepad.
❸ Click the Recipients tab. Only Sign as should be checked.
❹ Click Sign Notepad. You will be prompted for password.
❺ Select the entire text in the Notepad, and Copy.
❻ Paste into the destination file

Two File Signing

⚑ Signature code is contained in a separate file with the same name, but `.sig` at the end of the file name. Signed file is unchanged. Use Two File Signing for any binary file.
❶ Click Sign/Encrypt
❷ Browse to select file to sign. Click Open
❸ Encrypt section boxes should NOT be checked for radio use.
❹ Click Sign

Key Certification

⚑ Keys need to be “certified” before use or they will show a Failed to Verify error.
❶ Right-click on a key, and select Certify.
❷ If not already selected, check the box for that key.
❸ Click the Certify button.

✯ ✯ ✯ Notes ✯ ✯ ✯

⚑ Instructions are for Signing only. Check the Encrypt boxes for encrypting for non-radio usage.
⚑ Kleopatra cannot access hidden files and folders, such as `.nbems` where FLAMP files are stored. Move files to another folder when working with Kleopatra.

FLAMP Quick Reference

Version 1.4 - KN4AM

✯ ✯ ✯ Receiving ✯ ✯ ✯

Receive a file

❶ Select Receive tab – all else is automatic
❷ Click Save button after file is received
❸ File > Save Relay File

Read/Display a received file

❶ File > Folders, select file from /NBEMS/FLAMP/rx

Request missing blocks or Preamble

❶ Click Report, then FLDIGI Transmit

Send report of 100% copy (not normally used with nets)

❶ Click Report, then FLDIGI Transmit

✯ ✯ ✯ Sending ✯ ✯ ✯

Send a file

❶ Select Transmit tab
❷ Click Add then browse to select file to send
❸ Add description for that file (optional)
❹ Have Comp checked
❺ Set FLDIGI to mode to be used
❻ Click file in list, then click Xmit
-or- click Xmit All to send all in that list

Fetch and Send missing blocks or Preamble

❶ On the Transmit tab, click Fetch button
If relaying, and on Receive tab, click Fetch button
❷ Missing blocks may be manually entered in blocks; separate blocks with a comma. Enter zero to send missing Preamble.
❸ Click Xmit to send

Send Fills for all queued items

❶ Hold down Shift key, click Xmit All button
Note: *Xmt All without holding Shift Key will transmit entire contents of queue*

✯ ✯ ✯ Relaying ✯ ✯ ✯

Relay a file you have just received

❶ Start with current file as 100% received
❷ Select the file in the bottom pane of the Receive tab
❸ Click Relay button to send
⚑ This is all done on the Receive tab

Relay a file previously received and saved

❶ File > Load Relay Files
❷ Select Relay folder, then select the file to be relayed
❸ The file will appear in the Receive Queue window
❹ Click the Relay button to send
⚑ This is all done on the Receive tab

Schedule a one-time transmission

❶ Set FLDIGI to MFSK-32 (or other mode, as needed)
❷ Set FLDIGI RxID to OFF
❸ Add files to be sent to the Transmit Queue
❹ Select the Events tab, then the Timed sub-tab.
❺ Check Scheduled times of TX
❻ On the `Interval` list, select One time at
❼ Enter time to TX, using HHMM format
❽ Click Start Events
⚑ For multiple TX, use a space between times: HHMM HHMM

✯ ✯ ✯ Notes ✯ ✯ ✯

❶ If JS8Call is open, turn TX OFF when using FLAMP or FLDIGI.
❷ Use standard file naming format for files used with FLAMP:

- `CallSign-ST-RR-YYYYMMDD-HHMMZ-SIT`
- Start file name with sending station's call sign, followed by State (ST), Precedence x2 (RR), Date, Time, and File Description or Type of Report (SIT).
- File naming options: Time only if applicable, 2 or 4 digit year.
- Add `-Sig` to end of file name if file is signed with PGP signature.

JS8Spotter MCForms for SitRepNet

KN4AM • for JS8Spotter Ver. 1.17

⚑ Primary form. F!104 should always be kept current and available in Expect, with others optional.
✪ Keep this form listed in Expect, but replace with “NTR” when form is not currently active.
Download all the latest forms from https://sitrepnet.com/index.php/mcforms-descriptions-and-uses/

F!100 - Amateur Operator Information
10 Items covering your ham radio interests and activities.

F!101 - Amateur Station & Equipment Details
9 items describing your radio, antenna, power, modes, and grid-down capabilities.

F!102 - JS8Call Operation Details
6 items about how you use JS8, experience and comfort level, and bands

⚑✪ F!103 - Net Check-in
4 items for a basic, standard net check-in.

⚑ F!104 - @SITREP Basic Check-in
6 items for basic check-in and independent information sharing. Designed as a Top Level form that points to any currently active reports. For SitRepNet, this should be kept current and available in Expect.

F!105 - Information Exchange Planning
5 text entry and 6 MC items to initiate information exchange during both normal times and in times of crisis. The focus here is on creating decentralized, independent connections.

F!106 - Impromptu Net Notice
2 text entry and 8 MC items to announce details of an impromptu net to address a specific event. It is not for routine scheduled nets. An “Impromptu Net” could be just 2 stations passing traffic.

F!107 - Request for Information
6 text entry and 3 MC items to request information and gather intelligence. This is used to analyze and compile reports and information bulletins that are sent out QST. It includes an expire date and a serial number to keep things organized and current.

✪ F!300 - Situation Report
12 items and 7 sub-forms reporting on post-disaster conditions.

✪ F!301 - Field Situation Report
9 items. This covers all the basics in a quick, easy-to-use format.

F!302 - Hospital Bed Report
8 items reporting available hospital beds by specialty.

F!303 - Hospital Status Report
10 items reporting on the infrastructure required to keep a hospital operational.

⚑✪ F!304 - Individual Situation Report
8 items reporting on current infrastructure conditions at your location.

✪ F!305 - Early Warning Awareness/Alert Report
4 items and 4 text entry fields. Early Warning Awareness/Alert for an anticipated event in which net activation, further communications, or preparedness actions may be called for, along with net and other followup information.

✪ F!306 - Power Stability Report
1 item reporting on electrical power stability at your location over the last 48 hours, plus 1 item on your station backup power capability.

F!307 - Wildfire Status Report
2 text entries and 7 MC items to report the status of a wildfire.

F!308 - Open Source Information Report
4 text entries and 4 MC items to report open source information for news bulletins.

✪ F!500 - Local Supply Survey
15 items used to gauge availability of supplies and level of consumer anxiety.

F!501 - Weather Report, Basic
10 items for a basic report on weather conditions.

F!502 - Weather Report, Detailed
10 items for a more detailed report on weather conditions.

✪ F!505 - Area Assessment
32 items for a very detailed assessment of an area.

F!700 - 4SQRP Net Checkin
6 items used for low power JS8 nets.

F!701 - MAGNET Information & Observation Report
6 items and 3 optional sub-forms to report observations and information.

F!702 - SEEN Operator Station & Equipment Details
9 items to report station and equipment details. Used to assess capabilities in both grid-down and “normal” operating environments.

Bulletin Distribution Net (BDN)

The Bulletin Distribution Net (BDN) is for the distribution of information bulletins to all interested amateur radio operators. These will vary depending on need and availability.

Bulletins sent may include Regional Risk bulletins, bulletins produced by other radio groups, and reports from government agencies. The bulletins sent are for practice. What is sent during routine times isn't as important as how it is sent. Think of the bulletins as "test content".

A primary goal is to fully integrate the BDN with the SitRepNet Bulletins, with SitRepNet Bulletin being the "input" or news gathering portion, and BDN being the "output" or distribution portion.

This is not a conventional traffic net. The NCS starts the net using Contestia 4/250 for the introduction, then switches to MFSK32. Bulletins are sent using FLAMP with block fills as needed. Bulletins are normally signed using Public Key signatures to verify authenticity. A relay station in another part of the country will then relay the file(s) using the same format as received.

- Every Friday, beginning at 9:00 pm Eastern time
- 7.107 with 900 offset
- Introduction – Contestia 4/250, then Bulletin Distribution – MFSK32 (or possibly MFSK64)
- Format: FLAMP with block fills as needed
- All traffic on this net is handled as ROUTINE traffic.
- **FLDIGI Macros** for the BDN, and **Public keys** for bulletin authentication can be downloaded from SitRepNet.com

Net Sequence:
⚑ (No early check-ins)
1) Start Info and announcements
2) Check-ins (Bulletin TFC, Relay stations, and Reception reports)
4) Listing of checked-in stations
5) Bulletins sent by NCS, followed by block fills
6) Bulletins sent by check-in stations, followed by block fills
7) Relay station(s) with full copy send as directed by NCS
8) Net sign-off
9) Block fills of more than 5 blocks if needed
10) Return to Contestia 4/250

IMPORTANT: If the Bulletin Distribution Net fails to begin on time, then "pick up the flag" and start the net yourself. This should not be dependent on any individual station. Others need to be ready, willing, and able to keep things going at any time.

✯ ✯ ✯ **Keep it decentralized** ✯ ✯ ✯

(See Notes on following page)

Notes:

❶ Bulletins sent will vary depending on need and availability.
❷ KD8NOA is located in Michigan and is typically NCS and Northeastern station for the BDN.
❸ KN4AM is located in Florida and is typically the Southeastern relay station. Others are encouraged to join in as relay stations in other parts of the country.
❹ Brevity is a high priority, so transmissions other than the actual bulletin(s) are kept to a minimum.
❺ The BDN is closely tied to the “SitRepNet” project, but is an independent net. Reports compiled from the previously received SitReps and other reports may also be sent as the situation calls for.
❻ Bulletins are normally signed using a PGP signature. Have Kleopatra installed on your system, and learn how to use it (see the Kleopatra Quick Reference for more information).
❼ You will also need to download the Public Keys from SitRepNet.com or from other sources.
❽ If you will be creating and signing SitRepNet bulletins, then you will need to post your Public Key on SitRepNet.com

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How the SitRepNet CommPlan and JS8Spotter Work
Scenario-based Examples

Scenario: You wake up in the morning, and nothing is working. No electrical power, no Internet, not even your battery-operated radio is picking up anything. Is it just your neighborhood, is it local – or something bigger? Is this a short-term outage, or something worse? What actually happened?

If you have backup power for your HF radio station, then JS8Spotter is a great tool to help you find out. It is also the tool to let others know about your situation. The SitRepNet CommPlan provides the framework for making the most of JS8Spotter in situations like this. It is all about exchanging information in an efficient manner.

Let's use this scenario to illustrate what to do next. If we can work with a worst-case scenario such as this, anything else is going to be easy. We'll cover how to set up for this on pages 4 and 5 of this paper. Be sure to download and read the JS8Spotter Manual for details on how to use the program, and there are some great instructional videos at https://kf7mix.com/js8spotter.html

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There are currently two "Primary" report forms in JS8Spotter that can point to other, more specific reports, depending on the scenario. Here's a quick summary of those report forms and how they point to more specific ones.

F!104 - @SITREP Basic Check-in: Designed as a *Top Level form* that points to any relevant current reports.
F!308 - Open Source Information Report: open source information for news bulletins.

F!104 - @SITREP Basic Check-in
The F!104 is used in different ways at different times.

- **During "routine" times** when all is well, it's a notice that says, "I'm here, and I'm OK", while also serving as a practice exercise of the system.
  - Go to `Tools > MCForms-Forms`, select F!104
  - Click `Load Posted Expect Form` to fill in previous info and make any changes needed, or complete the fields as needed. Be sure to include your state and Maidenhead Grid Square.
  - Click `Post Form to Expect`. This updates the Date/Time code to show that it is current.
  - **ACTIVE DISTRIBUTION:** Click `Tools > Expect System`, then right-click on F!104, confirm that you have @SITREP included in `Allowed Callsigns/Groups`, and click on `Send Now`.
  - If it is not already there, add @SITREP in the `Send To` field, and check the `Send as MSG` box. Click `Send`.

    - **PASSIVE DISTRIBUTION:** Other stations can request your F!104 by sending @SITREP E? F!104. If you have @SITREP included in `Allowed Callsigns/Groups,` then your station will reply by sending your F!104 report.
- **During emergency times**, F!104 is used as the primary form – the foundation that the full story is built upon.
    - Most of this is exactly the same as we did during "routine" times, and that's the whole point of using it for routine "I'm OK" reports.
    - Go to F!304 - Individual Situation Report, complete that report to describe your current situation, make sure that @SITREP is included in `Allowed Callsigns/Groups`, then click `Post Form to Expect.` F!304 is the SitRep detail, while F!104 is pointing to that and any other relevant Situation Reports.
    - Next, go to F!104. When you have F!104 up, we'll select the Situation Report field and change that to `Situation Report currently active - E? F!304 for details`. If there are other relevant reports (F!306 Power Stability Report, for example), enter those in `Other relevant current report(s)` after completing those reports and posting them to Expect. Click `Post Form to Expect.`
    - We now have the @SITREP Basic Check-in loaded and ready to go, along with any other reports to give a good picture of conditions where you are right now. Since we have included @SITREP in `Allowed Callsigns/Groups` anyone who is looking for that information need only send @SITREP E? F!104 to receive your current SitRep and a list of any associated reports.
    - You can also send your F!104 to @SITREP, and those stations will receive it, with JS8Spotter recording it. Click `Tools > Expect System`, then right-click on F!104, confirm that you have @SITREP included in `Allowed Callsigns/Groups`, and click on `Send Now`.

F!308 - Open Source Information Report

With cyber-attacks now routine, and a standard part of current military doctrine, it's very reasonable to expect that at some point. How would news and information be gathered, compiled, and distributed? There are already several news bulletins prepared and distributed on a weekly basis via amateur radio, but without the internet, where would they get their raw information? One solution is based on JS8Spotter and SitRepNet, and F!308 is the primary report for it.

There are several different reports that could be used here, so which one to request or to send? F!308 provides a subject, the location, the time-frame, source reliability, the basic category, and points to other MCForms related to the subject. Think of it as the Table of Contents rather than the book. The `Additional Information` field will probably contain a brief description as well as the supporting reports.

Alternative Methods

While using the MCForms for sharing local and open source information is generally the most efficient method, there are some cases where direct text entry is needed. There are two basic ways to handle this, depending on how the information collection and distribution system is set up. Each has its advantages and disadvantages, depending on your situation. Note that these are not using MCForms, so they are not displayed as reports in JS8Spotter – only as text in JS8Call.

⚑ JS8 is a very slow mode, so always try to keep the number of characters to a minimum.

Two-Step Method
In this method, there is one Expect System item that responds with either NTR (Nothing To Report), *or* with one or more Expect System items that contain the text to be sent. There will be one List item, and one or more Content items. For this example, we'll create an Expect System item named INTEL that will be the List item. You can use anything of 6 characters or less. You may want to name it with your bulletin name, such as "NIB" – whatever your group decides to use.

The List Item
Expect: INTEL
Response: EDSW, EFNG
Allowed Callsigns/Groups: (as appropriate for your situation)

The Content Items (then repeat for the second report, EFNG)
Expect: EDSW
Response: EDSW THIS IS THE TEXT YOU WANT TO SEND FOR ANALYSIS AND COMPILING.
EDSW is the Date/Time code that JS8Spotter creates (Tools>Datecode Tool), and is used as a serial number to identify this report. You could also use any other system to identify the individual reports.

In use:
❶ The Collecting Station will send @SITREP E? INTEL
❷ Your station will respond with the Date/Time codes of your reports (EDSW, EFNG for this example).
❸ The Collecting Station will send @SITREP E? EDSW
❹ Your station will respond by sending the EDSW Expect item.
❺ This will then be repeated for the other reports (EFNG).

One-Step Method
This uses the same basic technique as the Two-Step Method, except that instead of a List Item that points to other Expect System items, all information is contained in a single Expect System item.

Expect: INTEL
Response: THIS IS THE TEXT YOU WANT TO SEND FOR ANALYSIS AND COMPILING.

In use:
❶ The Collecting Station will send @SITREP E? INTEL
❷ Your station will respond by sending the contents of that Expect item.

Message Relays

Poor band conditions and station operating schedules can interfere with getting a message through. There are several options for indirectly getting a message through using JS8Call, and instructions for each is in the *JS8Call Quick Reference for SitRepNet*:

- Relaying – You select a station that both you and the receiving station, as well as a "middle station" can reach, then you send your message by way of the middle station. The message is immediately relayed, rather than being stored until requested.
- Remote Message Storage at Recipient – Think of this as storing your message in a mailbox on the recipient's station. It is being received and stored directly on the recipient's system.
- Message to Mailbox at 3rd Party – You store your message at a 3rd party station (the middle station), and it stays there until the recipient requests that message. The "mailbox" is on a 3rd Party station.
- Local Message Storage and Retrieval – Use this method if you want to save a message on your system until the receiving station requests it. In this case, the "mailbox" is on your system.

Instructions for retrieving those messages are also in the *JS8Call Quick Reference for SitRepNet*.

Time Synchronization without Internet or GPS

JS8Call requires that the Sending and Receiving stations have their time set to 2 seconds or less, with the goal of <300ms time delta. The closer you get to an exact match, the better the copy. Without the Internet or GPS, this will have to be done manually. The JS8Call Quick Reference for SitRepNet shows how to do this.

If time synchronization radio stations are available, they are going to be the most accurate method, and should be the first option.

Time Synchronization Resources

2.500	WWV (Fort Collins, Colorado)
5.000	WWV (Fort Collins, Colorado)
7.850	CHU (Ottawa, Canada)
10.000	WWV (Fort Collins, Colorado)
15.000	WWV (Fort Collins, Colorado)
15.000	WWVH (Hawaii)
20.000	WWV (Fort Collins, Colorado)

If Time Synchronization radio stations are not available

Getting time synchronized between two stations is one thing, but how do we get everyone using SitRepNet synchronized? We can't have everyone trying to match every other individual station, so we need a way to get everyone using one time standard without the Internet or GPS or Time Synchronization radio stations. Here's how SitRepNet handles that:

- Each day, starting with the Eastern Time Zone at 18:50 Local and moving westward, one station will send a time synchronization signal using this format:@SITREP TIME SYNC SIGNAL, and repeat this continually until 18:55 Local. It is vital that only ONE station is sending this signal.
  - Time is set to 18:50 to 18:55 to avoid potential interference with nets.
  - Time zones are being used as longitudinal divisions to limit the distance between stations.
- All stations should use the Time Synchronization instructions to set their system time to match this signal. Follow the "Fine Tuning the Time Delta" instructions to get an exact match; however, do NOT click on the "Reset Time Drift" – we want to keep that same time setting.
- As we move from one time zone to the next, the Time Synchronization station will have set the time using the previous (TZ east of you) Time Synchronization Signal. In this way, all stations across the continent should now have a near-exact time match.

Which stations will send the Time Synchronization Signal? That will need to be set up on-the-fly as the grid-down situation unfolds. A station having a Real Time Clock Module with independent power supply would be ideal. This will need to be coordinated among available stations as soon as the need arises.

What About Other Modes?

SitRepNet CommPlan covers the JS8Spotter "layer", but the JS8 is just not a good choice for some types of radio traffic. Here is a very brief outline of how different modes fit into the overall communications needs. There are, of course, other bands that will be used, but for simplicity, we're just looking at the 40m band. SitRepNet stations that are also proficient in CW would serve as gateways to other CW operators who are not using the SitRepNet system.

Content	Mode	Example	40m Freq.	Notes
Long-form text, general info	FLMSG	News bulletins, AIB	7.110	AmRRON, etc.
Event-driven, short-term net	FLDIGI	Impromptu net scheduled F!106	see F!106	SitRepNet See Note ❶
Long-form text, 100% accuracy	FLAMP	Request for medical items or info	7.110	BDN, AmRRON, etc.
Bulletins	FLAMP	Intel compiled via F!107	7.107	Bulletin Distribution Net
Status Reports	JS8Spotter/MCForms	F!104, STATUS, COND	7.078	SitRepNet
Situation Reports	JS8Spotter/MCForms	F!3xx and F!5xx series MCForms	7.078	SitRepNet
Brief text messages	JS8Spotter	Intel reports, active or passive TFC	7.078	SitRepNet
All (If digital unavailable)	Voice/SSB	Reports from SSB-only stations	7.238 LSB	AmRRON, Multi. Freqs.

❶ A complete set of SitRepNet NCS macros for FLDIGI can be downloaded from the SitRepNet.com Resources page. Download now and have it available when needed. File name is `SitRepNet-macros.mdf`

Expect System

This is the key to setting up an efficient JS8Spotter system so that others can request and retrieve information from your station automatically. This is what tells JS8Spotter what to Expect (what to be looking for), who is allowed to retrieve reports, what text to reply with, and how many times a report can be retrieved (enter 99 for unlimited). The asterisk (*) will reply to any individual station call-sign. The @Groups will reply to any requests addressed to that group. Each group or call-sign must be separated by a comma. For example, a station requesting the F!104 report from any @SITREP station on the air would send “@SITREP E? F!104”, and those stations would respond by sending that report if their Expect system is set up as shown below.

Expect	Reply	Who	Qty
F!104	(*Your report*)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!308	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
MCF	100 102 104 105 304 305 306 307 308 500 502	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!307	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!100	(*Your report*)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!103	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!106	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!300	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!301	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!304	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!305	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!306	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!500	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!505	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
NOTE	(Optional / NTR)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
WX	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!502	NTR	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
CMDS	RIG, MCF, URL, COND, STATUS, WX, NOTE, GRID	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
URL	(*see notes*)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
STATUS	(or NTR)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!105	(*Your report*)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
GRID	(*Your Grid Square*)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
F!102	(*Your report*)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
RIG	(*Your radio*)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
COND	G (or Y or R)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99
INTEL	(Optional / NTR)	*,@SITREP,@SEEN,@AMRRON,@MAGNET,@GHOSTNET	99

Notes:
❶ This is just a suggested setup – a *starting point* – so personalize it to YOUR situation.
❷ For (*Your report*), see instructions in the "Routine times" section under F!104.
❸ For URL, you could use your QRZ.com profile page, or SitRepNet.com, or any other page, or simply not use the URL item at all.
❹ Add any other reports that are currently active. Inactive reports should just respond with NTR.

Profiles

A Profile is a set of search terms that JS8Spotter is looking for and then notifying you when found. You can set up any number of Profiles by clicking on File>New Profile.

Profile: SitRepNet
This is the main Profile of search terms you will be watching for. You can use this as a starting point, but adapt it as needed to suit your needs. Be sure to check the Background Scan box.

@GHOSTNET	F!106	F!501
@SITREP	F!300	F!502
CMDS	F!301	F!505
F!107	F!302	F!701
F!100	F!303	F!702
F!101	F!304	MCF
F!102	F!305	NOTE
F!103	F!306	STATUS
F!104	F!307	INTEL
F!105	F!500	(*Your call-sign*)

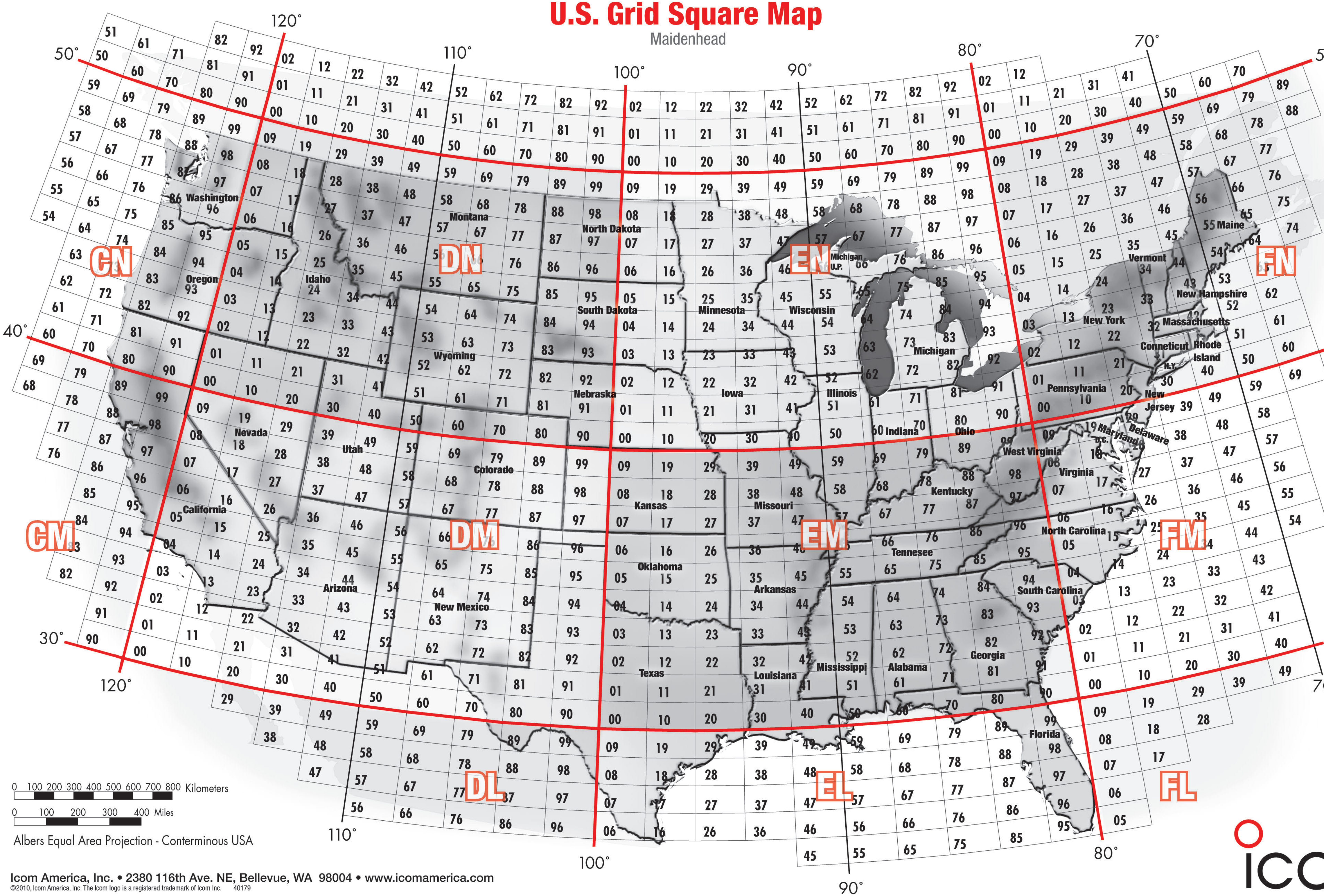
Profile: Alert
These are generic search terms that may indicate alerts. You can use this as a starting point, but adapt it as needed to suit your needs and your location. Be sure to check the Background Scan box.

ALERT	FLASH	SKYWARN
EMCOMM	GNUSAFL	STORM
EMERG	GSTFLASH	TORNADO
F!	HELP	WARNING
F!305	HURRICANE	
FL *(your state)*	SITREP	

Other Profiles to consider adding
- Groups such as @AMRRON, @ARES, @RACES, @MAGNET, @PREPNET, @GHOSTNET, etc.
- SitRepNet Call-signs that reply when you send a MSG addressed to @SITREP
- Personal Call-signs of friends and special interest groups
- Hobby and special interest search terms

U.S. Grid Square Map

Maidenhead



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U.S. Grid Square Map

Maidenhead

Major VHF/UHF Contests

Mid January, Full Weekend
ARRL VHF Sweepstakes

Early March, Full Weekend
ARRL International DX Contest Phone

Early April, Spring Sprint–144 MHz

Early April, Spring Sprint–222 MHz

Early April, Spring Sprint–432 MHz

Early May, Spring Sprint–50 MHz

Mid May, Full Weekend
CQ National Fox Hunting Weekend

Early June, Full Weekend
ARRL VHF QSO Party

Mid June, Full Weekend,
SMIRK 6 meter QSO Party

Mid/Late June, Full Weekend
ARRL Field Day

Mid July,
CQ World Wide VHF Contest

Mid July, Full Weekend
IARU HF World Championships

Early August, Full Weekend
ARRL UHF Contest

Mid September, Full Weekend
ARRL September VHF QSO Party

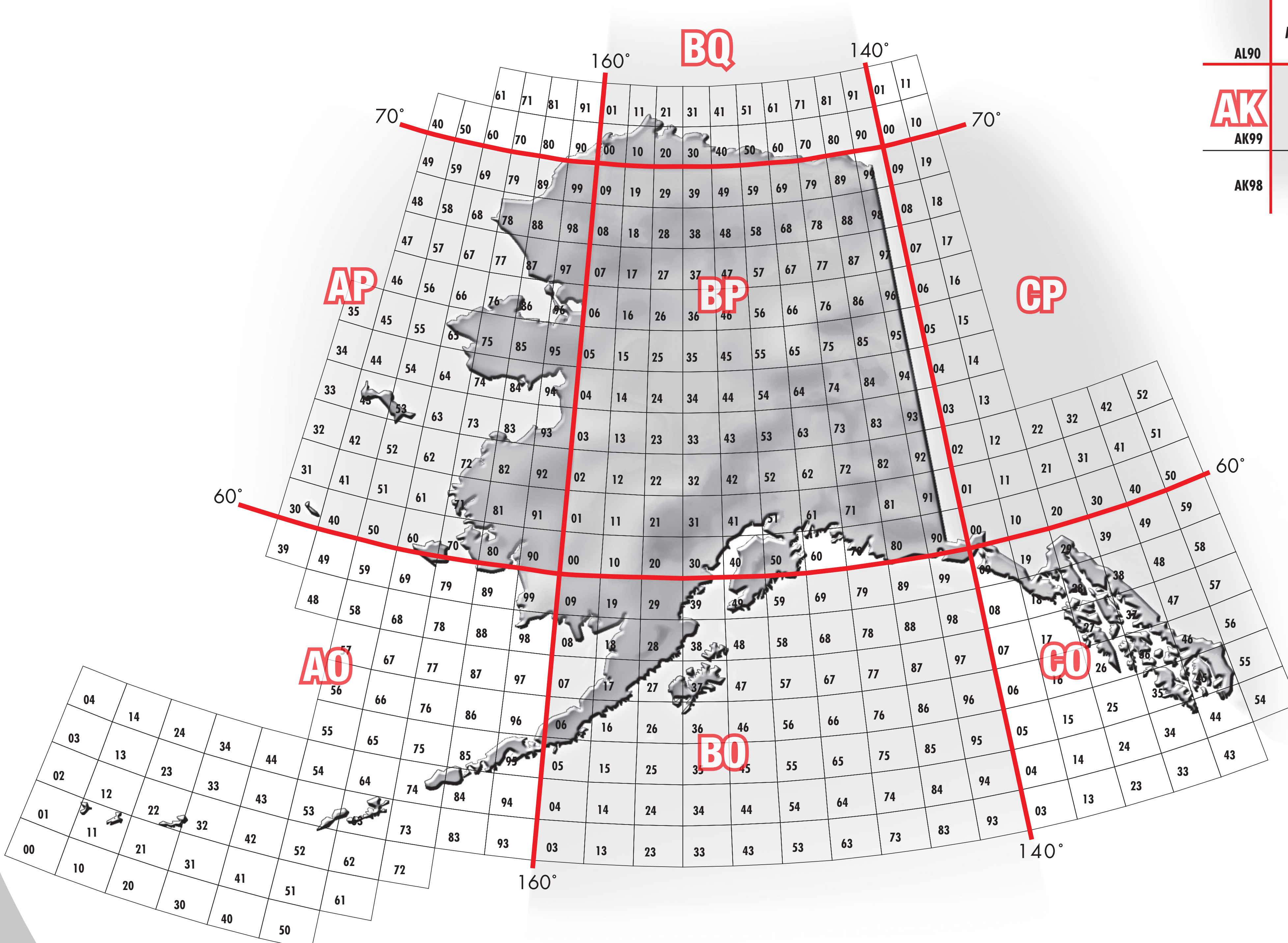
Courtesy: ***CQ Magazine & ARRL***

Icom Grid Square Tips:

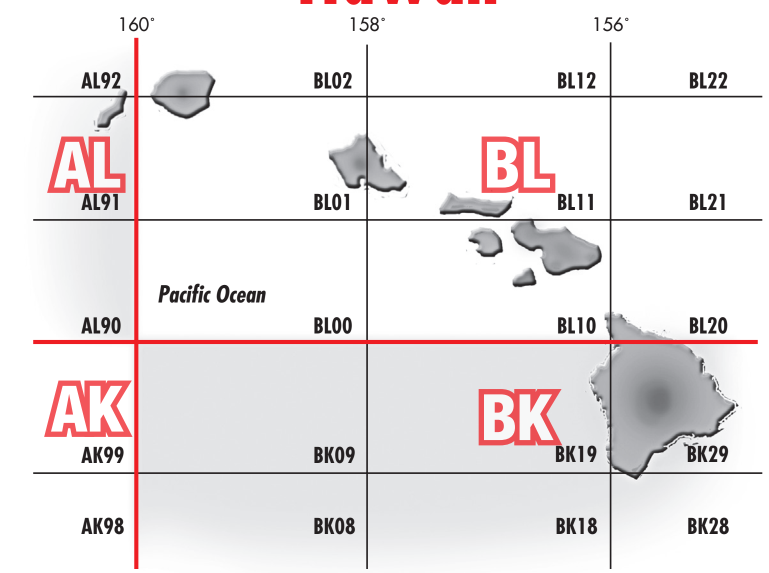
1. Say your grid square location when operating on VHF & UHF bands.
2. Many portable GPS receivers can read out Maidenhead* grid squares automatically.
3. Say your grid square letters phonetically.
   Example: for grid 13 in region DM say "delta, mike, one, three" on air.
4. Give your general location along with your grid square.
5. Have fun on VHF & UHF!

*An instrument of the Maidenhead Locator System (named after the town outside London where it was first conceived by a meeting of European VHF managers in 1980), a grid square measures 1° latitude by 2° longitude and measures approximately 70 x 100 miles in the continental US. A grid square is indicated by two letters (the field) and two numbers (the square).. "
From ARRL source: http://www.arrl.org/locate/gridinfo.html

Alaska



Hawaii**



0 10 20 30 40 50 60 70 800 Kilometers
0 100 200 300 400 Miles
Albers Equal Area Projection - Alaska

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www.icomamerica.com

**All maps except Hawaii use an Albers Equal Area Projection. The map of Hawaii is based on the grid square map information from ARRL.

TIME CONVERSION TABLE							
PACIFIC (Z less 8)		MOUNTAIN (Z less 7)		CENTRAL (Z less 6)		EASTERN (Z less 5)	
GMT UTC Z	Standard (Daylight)	GMT UTC Z	Standard (Daylight)	GMT UTC Z	Standard (Daylight)	GMT UTC Z	Standard (Daylight)
0100	1700(1800)	0100	1800(1900)	0100	1900(2000)	0100	2000(2100)
0200	1800(1900)	0200	1900(2000)	0200	2000(2100)	0200	2100(2200)
0300	1900(2000)	0300	2000(2100)	0300	2100(2200)	0300	2200(2300)
0400	2000(2100)	0400	2100(2200)	0400	2200(2300)	0400	2300(2400)
0500	2100(2200)	0500	2200(2300)	0500	2300(2400)	0500	2400(0100)
0600	2200(2300)	0600	2300(2400)	0600	2400(0100)	0600	0100(0200)
0700	2300(2400)	0700	2400(0100)	0700	0100(0200)	0700	0200(0300)
0800	2400(0100)	0800	0100(0200)	0800	0200(0300)	0800	0300(0400)
0900	0100(0200)	0900	0200(0300)	0900	0300(0400)	0900	0400(0500)
1000	0200(0300)	1000	0300(0400)	1000	0400(0500)	1000	0500(0600)
1100	0300(0400)	1100	0400(0500)	1100	0500(0600)	1100	0600(0700)
1200	0400(0500)	1200	0500(0600)	1200	0600(0700)	1200	0700(0800)
1300	0500(0600)	1300	0600(0700)	1300	0700(0800)	1300	0800(0900)
1400	0600(0700)	1400	0700(0800)	1400	0800(0900)	1400	0900(1000)
1500	0700(0800)	1500	0800(0900)	1500	0900(1000)	1500	1000(1100)
1600	0800(0900)	1600	0900(1000)	1600	1000(1100)	1600	1100(1200)
1700	0900(1000)	1700	1000(1100)	1700	1100(1200)	1700	1200(1300)
1800	1000(1100)	1800	1100(1200)	1800	1200(1300)	1800	1300(1400)
1900	1100(1200)	1900	1200(1300)	1900	1300(1400)	1900	1400(1500)
2000	1200(1300)	2000	1300(1400)	2000	1400(1500)	2000	1500(1600)
2100	1300(1400)	2100	1400(1500)	2100	1500(1600)	2100	1600(1700)
2200	1400(1500)	2200	1500(1600)	2200	1600(1700)	2200	1700(1800)
2300	1500(1600)	2300	1600(1700)	2300	1700(1800)	2300	1800(1900)
2400	1600(1700)	2400	1700(1800)	2400	1800(1900)	2400	1900(2000)