Scenario

On October 19, at 10:19 AM your local time an earthquake with Modified Mercalli Intensity 5+ rocks your area.

Please use the Winlink Express to send a USGS DYFI Exercise report with Exercise ID: 2023SHAKEOUT to USGS.
Objectives

- Send a **Winlink DYFI report to USGS** and tactical address, QUAKE-23, within 1 (one) hour of the earthquake at 1019 your local time.
  - *Note: It is okay to send your DYFI report later in the day. Some radio operators send their reports after work, for example. But please ensure that your time is 10:19 on the report, regardless.*
  - We coordinated the **Exercise ID 2023SHAKEOUT** with USGS to make Shakeout reports easy to identify. Please use it!
- Use RF if you can, but Telnet is okay, too.

**How to Send a Winlink DYFI Report**

*Note: Please also ensure that your Winlink Express is a current version. The version number is in the top left of the main window. Example: Winlink Express 1.7.9.1. Form updates are very important as well, and also update, automatically.*

<table>
<thead>
<tr>
<th>On the Winlink Express Menu bar, Click on Message &gt; New Message…</th>
<th>Enter a new message</th>
</tr>
</thead>
<tbody>
<tr>
<td>On New Message form, Click on Select Template</td>
<td>Post to Outbox Select Template</td>
</tr>
</tbody>
</table>
1. Double-click on **Standard Templates**
2. Double-click on **USGS**
3. Double-click on **USGS DYFI.txt**

After double clicking on USGS DYFI TXT, the report below will appear in your web browser.

Fill out the form as shown in the example below if you wish to use the minimum default values of a Level 5 Intensity. Items highlighted in **YELLOW** should be entered as noted below.

Lastly, regardless of when you fill out the DYFI report, please set the **Date** and **Time** to **10/19/2023**, at **1019** local time for this exercise.
# Example Winlink DYFI Form Entries for SHAKEOUT (Intensity Level 5)

**Earthquake: Did You Feel It?**

Did You Feel It? (DYFI) collects information from people who felt an earthquake and helps create maps that show what people experienced and the extent of damage.

The USGS email address is filled when clicking SUBMIT below.

Send the DYFI report to USGS via Winlink Tether or via RF through any internet connected RMS.

Use this Winlink form to submit EXERCISE and REAL EVENT earthquake reports to USGS.

Learn more about earthquake hazards at the USGS Earthquake Hazards Website (available online only).

What is DYFI & More?

<table>
<thead>
<tr>
<th>&gt;&gt;&gt;&gt; This Earthquake report is a(n)</th>
<th>EXERCISE</th>
<th>REAL EVENT</th>
</tr>
</thead>
</table>

Did you feel it? (REQUIRED)

- **Yes**
- **No**

<table>
<thead>
<tr>
<th>Time of earthquake: (REQUIRED)</th>
<th>Local Date and Time Format: 1/21/2020 09:15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date: 01/21/2020</td>
<td>Time: 09:15</td>
</tr>
</tbody>
</table>

Click Date or Time Field to Modify

(Opening this form inserts your current Date & Time, you may manually change by click in the field)

Your location - street address, city, and state when the earthquake occurred: (REQUIRED)

- **4874 Mount Leo Drive, Los Angeles, CA 90065**

For accurate mapping of your location enter GPS coordinates in the following format: 32.544802 -118.342486

LAT 32.544802  LON -118.342486

If you have a Winlink Express connected GPS device, the LAT/LON in decimal degrees will be entered for you.

The remainder of this form is optional. If you indicated NO, then do not answer the questions below. If you indicated YES, then the answers below will help to create intensity info for the USGS.

**What was your situation during the earthquake?**

- **Not specified**
- **Inside a building**
- **Outside a building**
- **In a stopped vehicle**
- **In a moving vehicle**
- **Other: Describe**

If you were inside a building, what floor were you on?

- **Not specified**
- **Underground**
- **Ground floor**
- **2nd floor**
- **3rd floor**
- **Other: # higher, please type in the floor**

If you were inside a building, how tall was it?

- **Not specified**
- **1 Story**
- **2 Stories**
- **3 Stories**
- **More than 3 Stories**

Were you asleep?

- **Not specified**
- **Yes**
- **No**
- **Slept through it**
- **Woke up**

Did others nearby feel it?

- **Not specified**
- **No others felt it**
- **Some felt it, most did not**
- **Most felt it**
- **Everyone/almost everyone felt it**
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>How would you describe the shaking?</td>
<td>Not specified, Not felt, Weak, Mid, Moderate, Strong, Violent</td>
</tr>
<tr>
<td>How did you react?</td>
<td>Not specified, Somewhat frightened, Very frightened, Extremely frightened, Excitement</td>
</tr>
<tr>
<td>How did you respond?</td>
<td>Not specified, Took no action, Ran outside, Moved to doorway, Other Describe: Please describe</td>
</tr>
<tr>
<td>Was it difficult to stand and/or walk?</td>
<td>Not specified, No, Yes</td>
</tr>
<tr>
<td>Did you notice any swinging of doors or other free-hanging objects?</td>
<td>Not specified, No, Yes, slight swinging, Yes, violent swinging</td>
</tr>
<tr>
<td>Did you hear creaking or other noises?</td>
<td>Not specified, No, Yes, slight noise, Yes, loud noise</td>
</tr>
<tr>
<td>Did objects rattle, topple over, or fall off shelves?</td>
<td>Not specified, No, A few toppled or fell off, Many fell off</td>
</tr>
<tr>
<td>Did pictures on walls move or get knocked askew?</td>
<td>Not specified, No, Yes, but did not fall, Yes, and some fell</td>
</tr>
<tr>
<td>Did any furniture or appliances slide, topple over, or become displaced?</td>
<td>Not specified, No, Yes</td>
</tr>
<tr>
<td>Was a heavy appliance (like a refrigerator or range) affected?</td>
<td>Not specified, Yes, shifted by inches, Yes, shifted by a foot or more, Yes, some contents fell out, Yes, overturned</td>
</tr>
<tr>
<td>Were free-standing walls or fences damaged?</td>
<td>Not specified, Yes, some partially fell, Yes, some fell completely, Yes, some were cracked</td>
</tr>
</tbody>
</table>
Winlink DYFI Form Entries

Entries highlighted in YELLOW are the same for all Shakeout participants using Winlink.
Entries highlighted in GREEN are user specific.

<table>
<thead>
<tr>
<th><strong>This Earthquake report is</strong></th>
<th><strong>EXERCISE</strong></th>
<th><strong>USGS is asking that all Winlink participants use the same Exercise ID of 2023SHAKEOUT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exercise ID:</strong></td>
<td><strong>2023SHAKEOUT</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Did you feel it?</strong></td>
<td><strong>YES</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Date:</strong></td>
<td><strong>10/19/23</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Time:</strong></td>
<td><strong>10:19</strong></td>
<td><strong>Note: time is local time</strong></td>
</tr>
<tr>
<td><strong>Your location:</strong></td>
<td><strong>Enter your complete street address (No P.O. Box numbers, Please)</strong></td>
<td><strong>Format example: 1234 Main St., Anytown, CA 11111, USA</strong></td>
</tr>
</tbody>
</table>
### GPS coordinates:
Although marked "Optional," please attempt to fill out the decimal coordinates.

Enter your latitude and longitude in decimal degrees.

**Example:** 34.1431, -118.3215

[Youtube: How to check your latitude and longitude using Google Maps.](https://www.youtube.com/watch?v=dQw4w9WgXcQ)

### Intensity Survey Questions:
Answer as if reporting an earthquake with Modified Mercalli intensity of 5 or higher.

**Example Answers for MMI 5 Earthquake**

**Use these settings to achieve a Default Intensity Level 5 result.**

- What was your situation during the earthquake? **Inside Building**
- If you were inside a building, what floor were you on? **2nd Floor**
- If you were inside a building, how tall was it? **2 stories**
- Were you asleep? **NO**
- Did others feel it? **Everyone/most everyone felt it**
- How would you describe the shaking? **Strong**
- How did you react? **Excitement**
- How did you respond? **Dropped and Covered**
- Was it difficult to stand/and or walk? **NO**
- Did you notice any swinging of door or other free-hanging objects? **Yes, slightly Swinging**
- Did you hear any creaking or other noise? **Yes, Loud noise**
- Did objects rattle, topple over, or fall off shelves? **Rattled loudly**
- Did Pictures on walls move or get knocked askew? **Yes, but did not fall"**
- Did any Furniture or appliances slide, topple over or become displaced? **NO**
- Was a heavy appliance (lie a refrigerator or range) affected? **NO**

[PDF: Winlink USGS DYFI Step-by-step Instructions](https://www.winxlink.com/dyfi/)

[Example Answers for MMI 5 Earthquake](https://www.winxlink.com/dyfi/answers.html)
- Were free standing walls or fences damaged? **Not specified**

- Was there any damage to the building? **Hairline cracks in walls**

Additional comments: Enter any additional information.

For example, As an option, enter your agency or group name (FEMA Region 5 Winlink Net, Boone County EMA ACS, etc.) or the mode (Telnet, VARA FM or HF, Packet, PACTOR, Mesh)

**EEW Survey:** Optional Earthquake Early Warning (EEW) survey (does not affect the intensity calculations). You may provide USGS with sample data, if you wish, however, **not required**.

**ONCE you have filled out the Report, Click on SUBMIT, but first review “WHO GETS THE MESSAGE” and “Submitting the Report” (below).**

Once you Submit the Form, the Intensity level will appear. Click on CONTINUE. Then close the Browser.

You will see the outgoing message. Then **Post to OUTBOX.** (For more detailed information, see the sample report on page 8)

**WHO GETS THE MESSAGE?**

Winlink DYFI Message To and CC

(VERY IMPORTANT: Please manually add the Tactical Address QUAKE-23 to the CC of the Message).

To: **dyfi_reports_automated@usgs.gov**
Note: this is the official USGS address; it is automatically filled in; leave as is please.

Note: You must send the report via an internet connected RMS gateway or via Telnet for USGS to receive it. USGS does not monitor P2P or Radio-Only.

Cc:  **QUAKE-23**

**Note: please add the CC addresses manually.**

Explanation of (CC:)  **This is very important:**
- **QUAKE-23**  tactical address that provides your DYFI to a number of government agencies other than USGS.

You may add additional localized CC: addresses if you and your group wish to receive DYFI reports locally.

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### Submitting the Report.

Once responses are complete, please Submit. The resulting intensity level will appear, then click on Continue.
Close your Browser, and view the message. Place the Tactical address, QUAKE-23 in the CC: and Post to Outbox.

Send message!
ShakeOut Resources for Exercise Participants:

RATPAC
Planning for the Great California Shakeout '22

WaveTalkers
Check out the WaveTalkers Shakeout presentation by Oliver, K6OLI.

Chapters
ShakeOut Exercise for Volunteer Radio Groups (10:15)
Survey and Respond with Winlink (16:53)
Winlink GPS Information (34:00)
Winlink DYFI Form Step-by-step Walk-through (35:34)
Mapping Received DYFI Reports Locally in Winlink (49:31)
Questions and Answers Session (53:34)

Shakeout and USGS Resources

Register Your Group/agency with ShakeOut

Although, not required, group coordinators are encouraged to register their volunteer group, or agency. Registration is free and ShakeOut will provide a Certificate of Participation.

Register here

See the other Volunteer Radio Groups registered for Shakeout.
# Modified Mercalli Scale

The table below shows the Modified Mercalli Intensity scale, which describes the intensity of earthquake shaking and the effects of that shaking at a given place.

Modified Mercalli Intensity (MMI) is based on human perception and traditionally designated by Roman numerals (for example, I, II, and III), however the ShakeAlert system uses instrumental measurements to estimate instrumental intensity and uses Arabic numbers for example, 4, 5, and 6.

<table>
<thead>
<tr>
<th>Intensity</th>
<th>Shaking</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Not Felt</td>
<td>Not felt except by a very few under especially favorable conditions.</td>
</tr>
<tr>
<td>II</td>
<td>Weak</td>
<td>Felt only by a few persons at rest, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.</td>
</tr>
<tr>
<td>III</td>
<td>Weak</td>
<td>Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed, walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.</td>
</tr>
<tr>
<td>IV</td>
<td>Light</td>
<td>Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.</td>
</tr>
<tr>
<td>V</td>
<td>Moderate</td>
<td>Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.</td>
</tr>
<tr>
<td>VI</td>
<td>Strong</td>
<td>Damage slight in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures, some chimneys broken.</td>
</tr>
<tr>
<td>VII</td>
<td>Very Strong</td>
<td>Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls; heavy furniture overturned.</td>
</tr>
<tr>
<td>VIII</td>
<td>Severe</td>
<td>Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings with partial collapse. Buildings shifted off foundations.</td>
</tr>
<tr>
<td>IX</td>
<td>Violent</td>
<td>Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations pulled down.</td>
</tr>
<tr>
<td>X</td>
<td>Extreme</td>
<td></td>
</tr>
</tbody>
</table>

Acknowledgements

The ARSFI, which operates and funds Winlink, would like to acknowledge Greg Kruckewitt, KG6SJT, and Phil Sherrod, W4PHS, for their major contribution in the development and use of the DYFI Report as a function of Winlink, all with the cooperation and collaboration with USGS. Much thanks also go to Chris Mattia, W6AH, for his editorial work with this project.

Much thanks go to the 10 FEMA Regional RECCWG’s, and their stakeholders, CISA SHARES, the ARRL, and many other organizations for their part in presenting this exercise to potential participants.