

Root Cause Analysis Report

RCA Example - Hawaii False Alarm (Revision 1)



Problem Statement

Report Number		RCA Owner	Chris Eckert
Report Date	5/13/2018	RCA Facilitator	Brian Hughes

Focal Point: Widespread panic and confusion in the State of Hawaii, USA

When

Start Date: 1/13/2018	End Date: 1/13/2018
Start Time: 8:07 AM	End Time: 8:45 AM
Unique Timing	After Day Warning Officer misunderstood a drill for a real attack.

Where

Other	Hawaii Emergency Management Agency (HI-EMA), Emergency Alert System (EAS), Wireless Emergency Alert System (WEA)
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Actual Impact

Safety	No safety impact	\$0.00
Customer Experience	Mass fear and confusion across the entire State of Hawaii	\$0.00
Reputation (External)	Negative impact on confidence that the State of Hawaii can responsibly manage the attack warning system	\$0.00
Reputation (Internal)	Workers required mental health counseling	\$0.00
Investigation Costs	Two separate investigations took place, one at the state level and another at the federal level. Costs estimated.	\$250,000.00

Actual Impact Total: \$250,000.00

Frequency	1 times Overall
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Potential Impact

Safety	People could have been injured or killed as a result of mass panic.
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Report Summaries

Executive Summary

LISTEN UP! SOLOGIC DID NOT INVESTIGATE THIS INCIDENT IN ANY OFFICIAL OR PROFESSIONAL CAPACITY. THE SOLE PURPOSE OF THIS EXAMPLE IS TO BE USED AS A LEARNING OPPORTUNITY TO DEMONSTRATE HOW A HIGH-VALUE, HIGH-RISK INCIDENT *COULD* BE ANALYZED USING THE SOLOGIC METHOD OF ROOT CAUSE ANALYSIS AND CAUSELINK SOFTWARE. WE HAVE SIMPLY RESTATED INFORMATION PREVIOUSLY PUBLISHED BY OTHERS. ENJOY!

This example is relatively simple. There are fewer than 30 causes and it is not very challenging to understand because it's not very technical. However, it offers some valuable lessons in how a simple event can have a massive impact if given the right platform. It follows the same pattern as a quality escape in that the "product" (in this case, the alert) was incorrect and it was "shipped" (via the statewide alert system) to the "customer" (several million people in the State of Hawaii). In order to solve it, we need to understand how the error was made, why the error was allowed to be broadcast, and also why the response was delayed by 38 minutes.

There are many systemic pathways to explore. For instance:

- Why would the alert system's user interface be used for both drills and actual alerts? By design, a drill can be mistakenly broadcast as real.
- Why would such an alert be generated by a single individual employee?
- Why was there no plan for responding to a false alarm?
- Why was a reportedly "troubled" employee allowed such a great responsibility?

Many questions remain and when the final FCC report is issued, we will update our RCA accordingly.

Cause and Effect Summary

On January 13, 2018 at 8:07AM a statewide alert was issued in Hawaii stating: "BALLISTIC MISSILE THREAT INBOUND TO HAWAII. SEEK IMMEDIATE SHELTER. THIS IS NOT A DRILL." People naturally experienced terror as they rushed to shelter or to be with their loved ones. It is a wonder no one was hurt or killed during the ensuing panic, which lasted 38 minutes. Of course, we all know the rest of the story at this point: The alert was a false alarm.

The Hawaii Emergency Management Agency is responsible for issuing alerts for disaster events, such as tsunamis, volcanos, earthquakes, and lately (due to tensions with North Korea) for nuclear attack. Drills for a potential nuclear attack had taken place at least twice since the Fall of 2017.

In this case, a night-shift supervisor decided to run a drill to test the incoming day-shift staff. He posed as a U.S. Pacific Command official and played a recorded message to the emergency workers which included the phrase "Exercise, exercise, exercise." But it also included the phrase "This is not a drill."

The day-shift supervisor was aware of the drill, but thought it was intended to test the night-shift workers and was therefore not prepared to actually play a supervisory role in the drill.

The day-shift Warning Officer heard most of the recording, but did not hear the "Exercise, exercise, exercise" part at

the beginning of the warning. Therefore he thought the warning was real and proceeded to issue the statewide alert. The Warning Officer is able to do this on his/her own without input from anyone else.

The mistake was realized very quickly after the alert went out. However there an update was not issued for 38 minutes because there was no system in place to manage a false alarm. An approved message needed to be crafted and permission from FEMA had to be obtained prior to sending the update. An interim plan for the Governor of Hawaii to issue a correction via Twitter was delayed when he could not remember his password.

Solutions:

- Hawaii authorities to require additional approvals before alerts and tests are transmitted.
- The state suspended emergency alert drills after the false alarm and will provide more warning before drills.
- Officials in Hawaii now require a second person to confirm sending out alerts.
- The FCC issued new requirements to enhance the geo-targeting of cellphone alerts.
- The FCC will require cellphone carriers to allow consumers to review any alert for up to 24 hours after they receive them.

Solutions

SO-0001	Solution	Hawaii authorities now require additional approvals before alerts and tests are transmitted.	
	Cause(s)	Day Warning Officer initiated the alert	
	Note	No additional notes.	
	Assigned	Brian Hughes	Criteria Passed
	Due	5/17/2018	Status Completed
	Term	short	Cost \$0.00
SO-0002	Solution	The state suspended emergency alert drills after the false alarm and also plans to provide more warning before drills.	
	Cause(s)	Day Warning Officer initiated the alert	
	Note	No additional notes.	
	Assigned	Brian Hughes	Criteria Passed
	Due	5/17/2018	Status Completed
	Term	short	Cost \$0.00
SO-0003	Solution	Officials in Hawaii now require a second person to confirm sending out alerts.	
	Cause(s)	Gaps in State alert system	
	Note	No additional notes.	
	Assigned	Brian Hughes	Criteria Passed
	Due	5/17/2018	Status Completed
	Term	short	Cost \$0.00
SO-0004	Solution	The FCC issued new requirements designed to enhance the geo-targeting of cellphone alerts.	
	Cause(s)		
	Note	This will make the distribution of alerts more accurate so that those outside of an emergency area will not receive warnings that do not affect them.	
	Assigned	Brian Hughes	Criteria Passed
	Due	5/17/2018	Status Completed
	Term	short	Cost
SO-0005	Solution	The FCC will require cellphone carriers to allow consumers to review any alert for up to 24 hours after they receive them.	

Cause(s)	Gaps in State alert system	
Note	Carriers will have until November 2019 to implement the changes.	
Assigned	Brian Hughes	Criteria Passed
Due	5/17/2018	Status Approved
Term	short	Cost

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Team

Facilitator

Brian Hughes

brian.hughes@sologic.com

Owner

Chris Eckert

Participants

Melani Egbert

melani.egbert@sologic.com

Cory Boisoineau

cory.boisoineau@sologic.com

www.sologic.com

Evidence

EV-0001	Evidence	Washington Post Article: "Hawaii's false missile alert sent by troubled worker who thought an attack was imminent, officials say." By Mark Berman and Brian Fung January 30, 2018
	Cause(s)	<ul style="list-style-type: none"> Correction not issued for 38 minutes Day Warning Officer believed an attack truly was imminent Day Warning Officer did not hear the message that it was a drill Day Warning Officer initiated the alert Day Warning Officer received a recorded message of an attack Day Warning Officer's job involves initiating alerts Drill initiated by Night Supervisor Gaps in State alert system Governor could not remember his Twitter password Heightened tensions with North Korea Important for message to be effective - needed to get it right It was possible for a single person to issue a statewide alert No approved message was available No process in place to issue false alarm correction Other means of alerting to false alarm were delayed Recorded message system of alert is in place for real and drills State has been conducting drills of emergency alert system Statewide warning that a ballistic missile threat was "Imminent" Supervisors' job includes initiating surprise drills Day Warning Officer "pushed the wrong button?" Single drop menu in the interface to select real or drill System design Alert sent to millions of cell phones in the area Potential job performance gaps from this employee?
	Location(s)	https://www.washingtonpost.com/news/the-switch/wp/2018/01/30/heres-what-went-wrong-with-that-hawaii-missile-alert-the-fcc-says/?utm_term=.511cae925ac3
	Attachment(s)	
	Contributor	Brian Hughes
	Type	URL
	Quality	★★★★★

EV-0002	Evidence	FCC Report
	Cause(s)	
	Location(s)	

Attachment(s)	FCC Report DOC-348923A1.pdf
Contributor	Brian Hughes
Type	Document
Quality	★★★★★

EV-0003 **Evidence** Washington Post Article: "Hawaii missile alert: How one employee 'pushed the wrong button' and caused a wave of panic." By Amy B Wang January 14, 2018

Cause(s)

- Correction not issued for 38 minutes
- Day Warning Officer believed an attack truly was imminent
- Day Warning Officer did not hear the message that it was a drill
- Day Warning Officer initiated the alert
- Day Warning Officer received a recorded message of an attack
- Day Warning Officer's job involves initiating alerts
- Drill initiated by Night Supervisor
- Gaps in State alert system
- Governor could not remember his Twitter password
- Heightened tensions with North Korea
- Important for message to be effective - needed to get it right
- It was possible for a single person to issue a statewide alert
- No approved message was available
- No process in place to issue false alarm correction
- Other means of alerting to false alarm were delayed
- Recorded message system of alert is in place for real and drills
- State has been conducting drills of emergency alert system
- Statewide warning that a ballistic missile threat was "Imminent"
- Supervisors' job includes initiating surprise drills
- There was no actual ballistic missile emergency
- Time required for message to be crafted
- Want to ensure system works properly/ effectively
- Single drop menu in the interface to select real or drill

Location(s) https://www.washingtonpost.com/world/national-security/is-this-the-end-of-my-life-false-alert-of-missile-attack-sends-hawaii-scrambling/2018/01/13/78c86054-f8a0-11e7-b34a-b85626af34ef_story.html?utm_term=.d3cd5f5d5d8a&tid=a_mcntx

Attachment(s)

Contributor Brian Hughes

Type URL

Quality ★★★★★

EV-0004 **Evidence** Atlantic Article: "Pandemonium and Rage in Hawaii A false alert of an impending missile attack highlights just how unprepared the country is for nuclear disaster." By ALIA WONG, JAN 14, 2018

Cause(s)

Location(s) <https://www.theatlantic.com/international/archive/2018/01/pandemonium-and-rage-in-hawaii/550529/>

Attachment(s)

Contributor

Brian Hughes

Type

URL

Quality

★★★★★

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Notes

NO-0001	Note	Reports said that this employee has a history of past performance gaps. Workers apparently did not trust his/her work. Additional information is being gathered - nothing has yet been released. As of the time of this report, he/she had been fired.
	Cause(s)	Potential job performance gaps from this employee?

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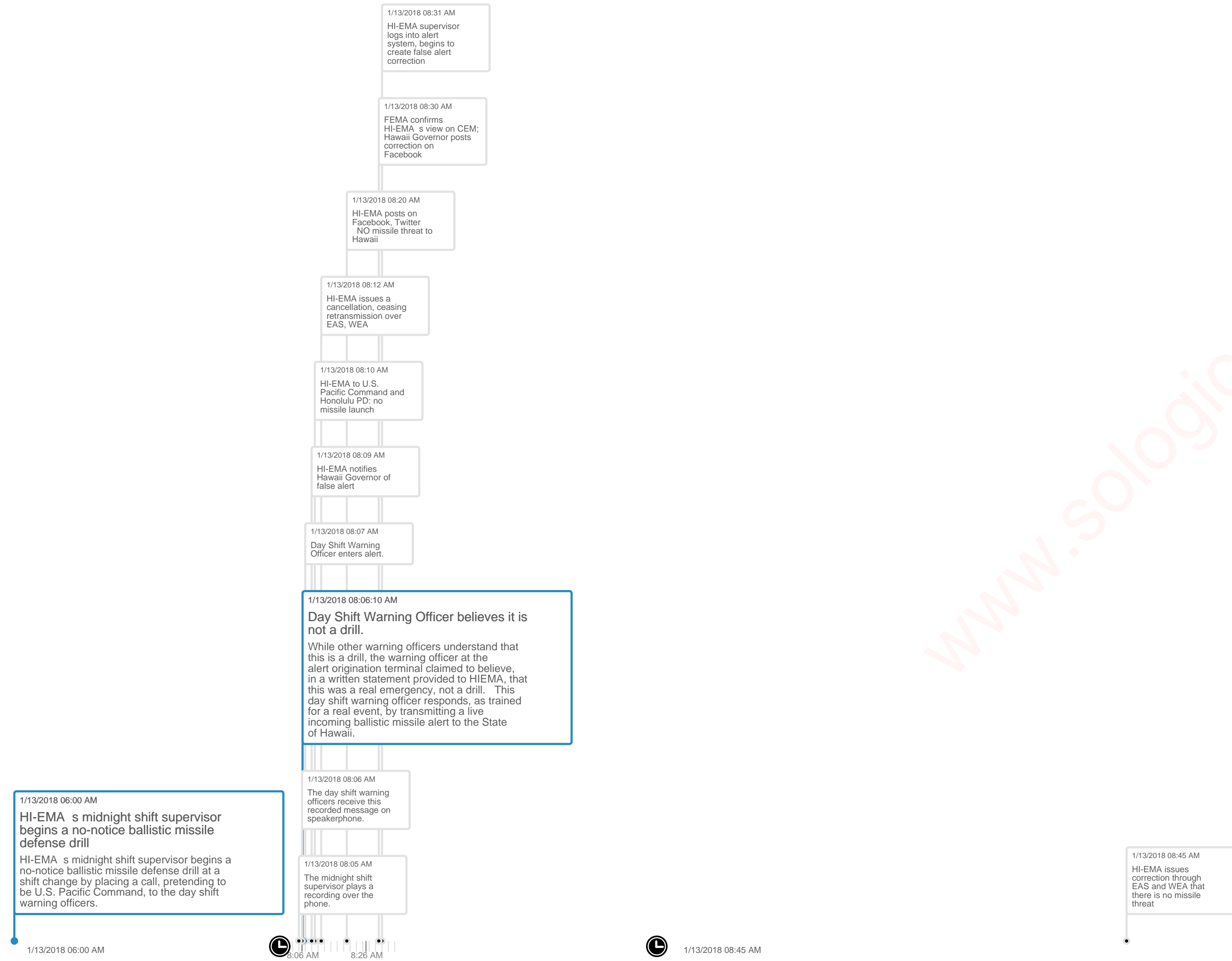


Chart Key

- Transitory
- Non-Transitory
- Transitory Omission
- Non-Transitory Omission
- Undefined
- ▲ Chart Quality Alert
- ★ Focal Point
- 🔍 Evidence
- 📝 Notes
- 🔧 Solutions
- 📌 Tasks

