



**NATIONAL SAFETY TEAM  
SMART-TRANSPORTATION DIVISION**

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RE: RRD19FR001- Granite Canyon Investigation

SMART-Transportation Division concurs with the findings of this investigation. The organization does want to point out a few other major concerns, which we feel must be addressed for the future of rail safety. We ask for the following improvements to operating procedures, equipment and education:

**Physical improvements:**

1. The development and implementation of crush proof and kink proof air hoses between cars and engines.  
This will ensure that blockages in the train airlines do not occur.
2. Radio repeaters must be installed at Mile Post 546.5.
3. Adequate radio communication testing to be conducted regularly and reported on at the location of the tunnel and other similar locations.
4. Study the effectiveness of head end of train and end of train communication on excessively long trains to evaluate and report if current Code of Federal Regulations are effective at protecting communities, crews and equipment.
5. Mandate that technology in end of train devices be improved to reduce the time before a crew is notified of a critical error in communication and the loss of emergency brake application. Current regulation (CFR 242.407) allows for 16 minutes and 30 seconds of time to elapse before the crew is notified of communication loss or failure. The time between communication loss/failure and notification needs to be more immediate.
6. Mandate the head of train device does not stop sending an emergency signal until the end of train device acknowledges the emergency signal and shows compliance. The Head of Train device was determined to be working per the manufacturer's specifications in this incident, per the records it shows the Head of Train Device stopped sending the emergency signal to the End of Train device after two minutes. Note: if another attempt of emergency signal is triggered during the first 2 minutes, the device is designed to stop sending the signal after

two minutes, meaning it does not reset or continue to send the signal for longer than two minutes. For another signal to be sent it would have to be triggered again after two minutes from the original signal or emergency application from the Head of Train device.

7. Mandate an operating rule that would require trains on grades of more than .5% immediately stop the train until communication with the end of train device can be restored.
8. Mandate all trains are limited nationwide to the proven effective communication ability of end of train devices (EOT) without the aid of a repeater or other similar device based on the following information:

Prior to 2008, when the majority of current EOT devices were designed, freight trains averaged 70 car lengths. By 2017, the average length of a freight train had grown nearly 70% to approximately 120 car lengths. (GAO, 2019) Originally when tested and regulated, unobstructed EOT devices were shown to have a maximum effective range of 3 kilometers (9842.52ft.).

Rail carriers currently operate trains that far exceed what the regulation describes as an effective range for EOT communication, often in areas that have more than one obstructive feature. (FCC, 2019) Electronic devices such as repeaters are the exception, not the norm and therefore cannot be relied upon to alleviate this issue.

Unfortunately, this specific fatal accident is an example of this unreliability. With a train length of 105 cars (6581ft) and the loss of communication a clear contributing factor in the outcome, the effective range of the EOT was found deficient and therefore calls into question, what train length should be operated in areas known to have obstructions.

#### Educational improvements:

1. Educate crews on limitations of end of train device technology. Specifically, the time between actual communication loss and notification of communication loss (16 minutes and 30 seconds) and that head of train device will stop trying to communicate an emergency application to an end of train device after two minutes.
2. Develop specific training and procedures for crews to follow when they have a run-away train. Particularly, at what speed is it safe to jump from a moving train with reasonable survivability? How to determine if there is a train line blockage during operations and what to do in that scenario.

SMART-Transportation Division thanks the NTSB for allowing us to participate in this process and looks forward to working with all parties involved to provide a safer railroad for workers and communities affected.

If the NTSB elects not to bring this accident to the full board for a public hearing, it is our request that a special hearing or safety forum be held to discuss our concerns regarding this accident.

Sincerely,

Carl Smith

A black rectangular redaction box covers the signature of Carl Smith. There are faint blue lines and arrows pointing to the right and down from the bottom right corner of the redaction box.

Party spokesperson  
SMART-Transportation Division Safety Team

Cc: JL Gibson, SMART-TD Safety Team  
K McDaniel

**References:**

Federal Communications Commission. (2019, December 6). *Title 47 Telecommunication* (Title 47, Ch 1, Sub. Ch. D, Part 90.205) 2019

Fleming, Susan A. United States Government Accountability Office. (2019, May 29). *RAIL SAFETY: Freight trains are getting longer, and additional information is needed to assess their impact.* (GAO-19-443) 2019