

National Aeronautics and  
Space Administration

**Ames Research Center**  
Moffett Field, CA 94035-1000



## C<sup>3</sup>RS Alert Message Memo

The Confidential Close Call Reporting System (C<sup>3</sup>RS) is a partnership between the National Aeronautics and Space Administration (NASA) and the Federal Railroad Administration (FRA), in conjunction with participating railroad carriers and labor organizations. The program is designed to improve railroad safety by collecting and analyzing reports which describe unsafe conditions and events in the railroad industry. Employees are encouraged to report safety issues or "close calls" voluntarily and confidentially.

When C<sup>3</sup>RS receives a report(s) describing a hazardous situation - for example, a railroad system problem, a confusing procedure, or any other circumstance that might compromise safe operations - it will issue an Alert Message. Alert Messages have a single purpose: to relay safety information to individuals in a position of authority so that they can evaluate the safety information and take corrective action as needed. C<sup>3</sup>RS has no direct operational authority of its own. It acts through, and with, the cooperation of others. Alert Messages are classified as Alert Bulletins or For Your Information Notices and may be included in ad hoc C<sup>3</sup>RS Safety Teleconferences.

**Alert Bulletins** – Alert Bulletins (ABs) are utilized for significant or time-critical safety Issues.

**For Your Information Notices** – For less critical topics, For Your Information (FYI) Notices are issued.

**Safety Teleconferences** – C<sup>3</sup>RS will conduct Safety Teleconferences on an ad hoc basis between C<sup>3</sup>RS and others within the railroad community. These teleconferences alert appropriate personnel to safety issues identified in some selected C<sup>3</sup>RS Alert Messages by engaging in dialogue about the event(s) presented.

All Alert Messages are issued using de-identified information provided in the reports.

Sincerely,

A handwritten signature in cursive script that reads "B. Hooey".

Dr. Becky L. Hooey, Director  
NASA Confidential Close Call Reporting System  
NASA Aviation Safety Reporting System  
Email: [Becky.L.Hooey@nasa.gov](mailto:Becky.L.Hooey@nasa.gov)  
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## About C<sup>3</sup>RS Reports & Alert Messages

### C<sup>3</sup>RS Report Records

The C<sup>3</sup>RS Expert Analysts provide the analysis for each report record in the C<sup>3</sup>RS Database. Information in a C<sup>3</sup>RS report record includes two types of information – fixed and text.

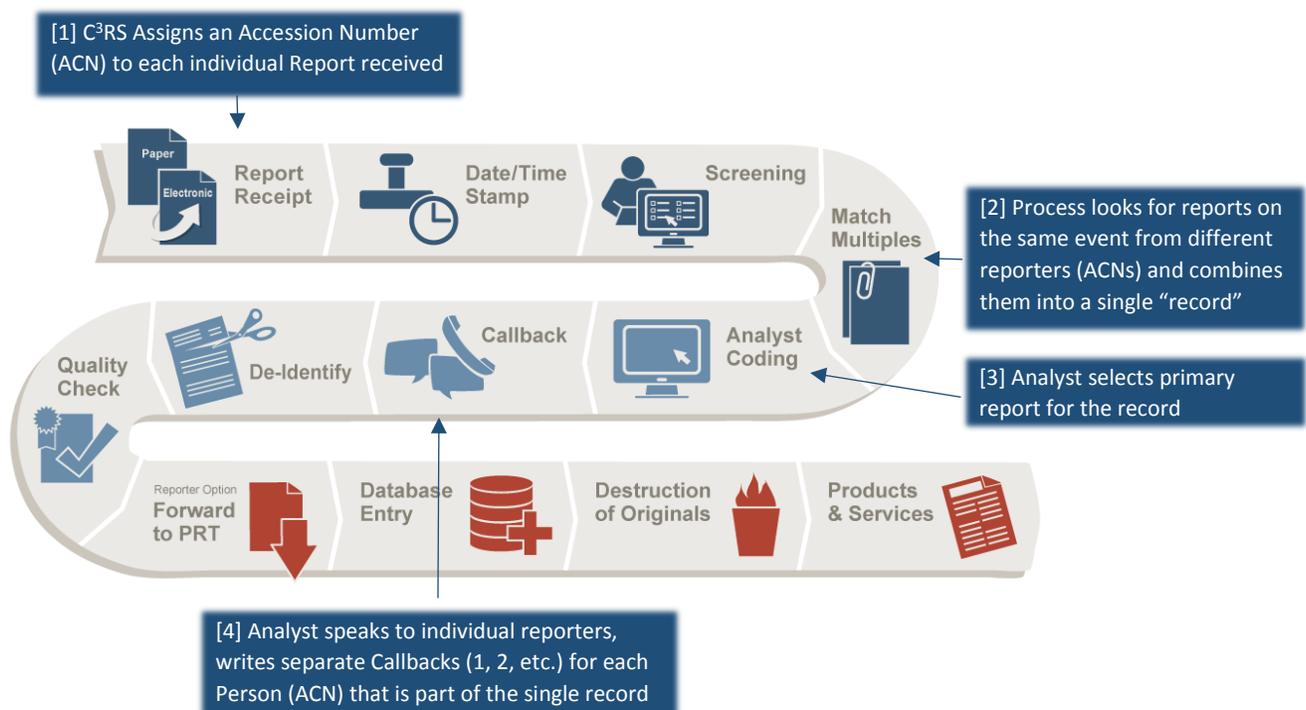
- **Fixed** fields contain information such as Types of Track Authority, Method of Operations, Speed Restrictions, etc.
- **Text** fields include the reporter's Narrative, Callback and Expert Analyst Synopsis.

### Multiple Reports

One of the great strengths of C<sup>3</sup>RS is the ability to combine information from multiple reports on the same event that provides each person's unique perspective, experience, background and knowledge. In a hypothetical example, a train arrives at a station with one or more of the cars off the platform and one of the crew opens the door. Reports may be received from the Engineer, the Conductor, and the Assistant Conductor; all who have been involved in or observed the event. In this example, C<sup>3</sup>RS could have three reports that describe the same incident. All reports are combined into a single database record. Each person who reported is coded in the report record by reference number (PERSON 1, 2, etc.). Every report to C<sup>3</sup>RS receives a unique Accession Number (ACN). Each person's narrative is entered as NARRATIVE 1, 2, etc. The C<sup>3</sup>RS Expert Analysts may perform a telephone Callback to clarify or confirm information. A summary of the Callback is written by the analysts and included in the CALLBACK 1, 2, etc. section of the report record.

### Alert Messages (Alert Bulletin & FYI Notices)

The ACN number presented on the Alert Message is the primary ACN in the single or multiple report record. Each Alert Message includes a front-page introduction and relevant report records. See the graphic below for a summary of the matching and C<sup>3</sup>RS report record processing steps.



# ALERT BULLETIN

AB 2023:3/2-1

5/23/2023

28332, 27837, 27965, 27988

TO: FRA-RRS

INFO: FRA-RCC, PRT, AAR, APTA, ARASA, ASLRRRA, ATDA, BLET, BMWED, BRS, IAMAW, IBB, IBEW, IBT, NRC, NTSB, NYA, SLSI, SMART, TCU, TWU, VOLPE

FROM: Dr. Becky L. Hooley, Director  
NASA Confidential Close Call Reporting System (C<sup>3</sup>RS)

SUBJ: Locomotive and Railcar Hand Brakes

We recently received C<sup>3</sup>RS reports describing a safety concern that may involve your area of operational responsibility. We do not have sufficient details to assess either the factual accuracy or possible gravity of the report. It is our policy to relay the reported information to the appropriate authority for evaluation and any necessary follow-up.

Summary: C<sup>3</sup>RS is issuing Alert Bulletin 2023:3/2-1 to inform the rail industry of recent close call events that were voluntarily reported involving the use of locomotive and railcar hand brakes. These events can lead to serious incidents and the possibility of injury or damage. We feel you should be aware of the following de-identified reports:

(ACN 28332) A Train Crew reported operating a train with a hand brake applied after completing a brake test. Immediately after realization, the train was stopped, and the hand brake was released without damage.

(ACN 27837) A Conductor reported finding a hand brake applied on a car after taking over the equipment that had operated from the initial terminal. The hand brake was released, and the car was inspected with no exceptions found.

(ACN 27965) A Student Engineer reported operating equipment with the hand brake applied. Immediately after noticing, the equipment was stopped, and the hand brake was released without damage.

(ACN 27988) A Conductor reported a Yardmaster informed the Train Crew additional hand brakes on a cut of cars were unnecessary after cutting away the locomotives, resulting in train cars rolling out of a yard track.

To properly assess the usefulness of our alert message service, we would appreciate it if you would take the time to give us your feedback on the value of the information that we have provided. Please contact Becky Hooley at (408) 541-2854 or email at [Becky.L.Hooley@nasa.gov](mailto:Becky.L.Hooley@nasa.gov)



Confidential Close Call Reporting System  
P.O. Box 177 | Moffett Field, CA | 94035-0177



## ACN 28332

### DATE / TIME

Date of Occurrence	2023-04
Local Time Of Day	1801 - 2400

### ENVIRONMENT

Weather	Clear
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### TRAIN / EQUIPMENT A

Operation Type	Passenger / Commuter
Train / Equipment Location	Main Track
Train / Equipment Location	Passenger Station
Methods Of Operation	Centralized Traffic Control
Methods Of Operation	Automatic Cab Signals
Train Activity at Time of Event	Enroute

### COMPONENT 1

Mechanical Component	Hand Brake
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### PERSON 1

Accession Number	28332
Function	Engineer

### PERSON 2

Accession Number	28340
Function	Conductor

### EVENTS

Anomaly	Braking Event - Securing Of Equipment
Anomaly	Procedural Deviation - Operations Policy
Detected by Person	Train Crew
General Result	Stopped Train / Equipment
Transportation Result	Returned To Compliance

### NARRATIVE 1

Hand brake applied at [the] turnaround, Station X. Completed brake test with [the] Conductor from the extra list. I had a Student Engineer operating the train. After [the] successful brake test, I received 2 buzzers to go. I instructed [the] Student Engineer to proceed. After crossing a Crossing, I heard the squeal of a brake applied. I looked at [the] Aspect Display Unit (ADU) and noticed [the] hand brake applied light was on. I instructed [the] Student Engineer to stop the train, and I ran out of the cab and released [the] brake. Student Engineer had never stopped [the] train, and we were traveling at approximately X MPH. Notified [the] Dispatcher that we were stopping [the] train to inspect at Station Y. Inspected [the] train and found no defect. Informed [the] Dispatcher of such and given permission to proceed. Arrived in Station Z on time.

### CALLBACK 1

The reporter, an Engineer, stated when the Crew changed operating ends at the turning point in the trip, the Student Engineer did not realize the hand brake was applied on the cab car. The Conductor applied the hand brake for securement when the train was stopped while the Crew changed operating ends. The Engineer let the Student Engineer set up the cab car and perform the brake test with the Conductor, just as it would be if the Student Engineer was operating without an Instructing Engineer. The Student Engineer contacted the Dispatcher and departed after the brake tests. The Engineer looked at the Aspect Display Unit and realized the

hand brake light was illuminated, immediately releasing the hand brake. The Engineer then had the Student Engineer stop the train and inspect the train for defects. There were no defects, as the train only moved approximately two train lengths with the hand brake applied. In the future, the Engineer will double-check with the Student Engineer that all hand brakes are released prior to departure.

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## **NARRATIVE 2**

Hand brake was applied to do [the] brake test. At [the] scheduled leaving time, I gave two buzzers to go. Enroute, the Engineer and I heard squealing and realized the hand brake was still applied. Engineer had his Student Engineer stop the train, remove the brake, and notified the Dispatcher. We also did a visual inspection of the wheels for any flat spots, and none [were] seen. Once again notified the Dispatcher and reestablished scheduled train movement on [the] Train to Station Z.

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## **SYNOPSIS**

A Train Crew reported operating a train with a hand brake applied after completing a brake test. Immediately after realization, the train was stopped, and the hand brake was released without damage.

## ACN 27837

### DATE / TIME

Date of Occurrence	2023-02
Local Time Of Day	1201 - 1800

### ENVIRONMENT

Weather	Clear
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### TRAIN / EQUIPMENT A

Operation Type	Passenger / Commuter
Train / Equipment Location	Passenger Station
Methods Of Operation	Centralized Traffic Control
Train Activity at Time of Event	Enroute

### COMPONENT 1

Mechanical Component	Hand Brake
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### PERSON 1

Accession Number	27837
Function	Conductor

### EVENTS

Anomaly	Braking Event - Securing Of Equipment
Anomaly	Procedural Deviation - Operations Policy
Detected by Person	Train Crew
General Result	Requested Assistance / Clarification
Transportation Result	Returned To Compliance

### NARRATIVE 1

While walking through the train doing the setup, I noticed the hand brake was applied after taking over the equipment. I then grabbed the Engineer to show him. We then realized it was still applied, so I then pulled the hand brake and released it. I then reported it to the Conductor in charge.

### CALLBACK 1

The reporter, a Conductor, stated the equipment was fresh from the yard at the initial terminal. The reporter walked the equipment to the eighth car to do the air test. The hand brake was applied between the seventh and eighth cars. The reporter noticed the brake chain when changing operating ends and was confused until realizing the brake was applied. Roughly forty miles were traveled with the brake on, but there were no flat spots or other damage. The brake was released without any exceptions. The reporter expressed that making sure Crews walk the trains was a possible corrective action.

### SYNOPSIS

A Conductor reported finding a hand brake applied on a car after taking over the equipment that had operated from the initial terminal. The hand brake was released, and the car was inspected with no exceptions found.

## ACN 27965

### DATE / TIME

Date of Occurrence	2023-03
Local Time Of Day	1801 - 2400

### ENVIRONMENT

Weather	Clear
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### TRAIN / EQUIPMENT A

Operation Type	Yard Assignment
Operation Type	Shoving
Train / Equipment Location	Yard
Methods Of Operation	Centralized Traffic Control
Methods Of Operation	Other Than Main Track Rules
Train Activity at Time of Event	Switching In Yard

### COMPONENT 1

Mechanical Component	Hand Brake
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### COMPONENT 2

Mechanical Component	Brake Equipment
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### PERSON 1

Accession Number	27965
Function	Student Engineer

### EVENTS

Anomaly	Mechanical - Less Severe
Anomaly	Braking Event - Securing Of Equipment
Anomaly	Operating Cab / Car Event - Smoke / Fire / Fumes / Odor
Anomaly	Procedural Deviation - Operations Policy
Detected by Person	Train Crew
General Result	Stopped Train / Equipment
Transportation Result	Returned To Compliance

### NARRATIVE 1

Working [the] Job, tied equipment down after completing first list of tasks for lunch break. Upon returning from lunch break, prepared equipment to proceed up to [the] Tracks to begin switching. Had a hold of one engine and three cars. Started engine up from auto shutdown, and [the] Conductor called [the] Yardmaster for railroad to the shop. As we were going uphill (4 percent grade), I noticed a burning smell, as did my Instructing Engineer. We stopped for the Assistant Conductor to hand line a switch. It then clicked that I never released the hand brake. As soon as I did, we both had the "ah ha" moment. The electronic hand brake has two indicators that it is set, both failed. There are lights on the mechanism itself, which in this unit's case, only light up when pushed; they do not remain illuminated like others. There is also a light on the control stand that shows it's set, which is also conveniently burnt out. It has been about a year since I have operated this model of locomotive between working road services and these units being shopped constantly, so I have limited experience on them, along with zero formal training on any Yard Diesel.

### SYNOPSIS

A Student Engineer reported operating equipment with the hand brake applied. Immediately after noticing, the equipment was stopped, and the hand brake was released without damage.

## ACN 27988

### DATE / TIME

Date of Occurrence	2023-03
Local Time Of Day	1801 - 2400

### ENVIRONMENT

Weather	Clear
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### TRAIN / EQUIPMENT A

Operation Type	Freight
Operation Type	Pulling
Train / Equipment Location	Yard
Methods Of Operation	Other Than Main Track Rules
Train Activity at Time of Event	Switching In Yard

### COMPONENT 1

Mechanical Component	Hand Brake
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### PERSON 1

Accession Number	27988
Function	Conductor

### EVENTS

Anomaly	Braking Event - Securing Of Equipment
Anomaly	Procedural Deviation - Operations Policy
Anomaly	Safety Concern
Detected by Person	Train Crew
General Result	No Action Taken

### NARRATIVE 1

We were instructed by [the] Yardmaster to remove the power off the east end of Track X and put it into Track Y. Train was tied down on the west end by Carmen, and they just worked it. We were told not to tie brakes on the west end. We went to the power and asked if we were good to make this move and if there were any Remote Control Limits. Yardmaster replied yes and no limits. We did a release test, and no movement after knocking off [the] brakes. We cut away from the cars and worked as directed. When we got to the terminal, we were told to see the on-duty Manager. The whole move ended at XA:45 PM. We were told the cars had rolled out of the track, and [they] saw it on the cameras. After a discussion with [the] Manager, I returned and asked about preventive measures in the future and offered suggestions. I was told they were in the information gathering process.

### CALLBACK 1

The reporter, a Conductor, stated another crew brought the train into the yard and tied hand brakes on the west end. The Conductor mentioned being new to the territory and had never worked in the yard before. The Conductor explained the Yardmaster notified the Crew the Mechanical Department was finished inspecting the train, prepared it for switching, and Blue Signal Protection was released. The Yardmaster and Manager instructed the Crew to uncouple the locomotives on the east end and take them to the locomotive facility. The Yardmaster also mentioned to the Crew that no hand brakes were tied on the east end. The Conductor noted that the Crew asked the Yardmaster if hand brakes needed to be tied on the east end, and the Yardmaster indicated to the Crew that it was unnecessary. The Conductor explained that when the Crew arrived at the locomotives, the air hoses had already been separated. The Conductor noted that the Crew only had to do a set and release, then uncouple the locomotives from the train. The Conductor mentioned that the

locomotives were taken to the locomotive facility without incident, and on the trip back to the yard office in the van, the Crew saw the train still sitting in the track. The Conductor stated that by the time the Crew arrived back at the yard office, the train had rolled out of the track approximately 300 feet and fouled the adjacent track. The Conductor mentioned the track was full but did not know how many cars were in the track or how many hand brakes were tied on the west end. The Conductor stated that there were no yard instructions that indicated how many hand brakes needed to be tied to secure a train or on which end of the track. The Conductor mentioned that better communication from the Yardmaster and Supervision could have prevented this incident.

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## **SYNOPSIS**

A Conductor reported a Yardmaster informed the Train Crew additional hand brakes on a cut of cars were unnecessary after cutting away the locomotives, resulting in train cars rolling out of a yard track.