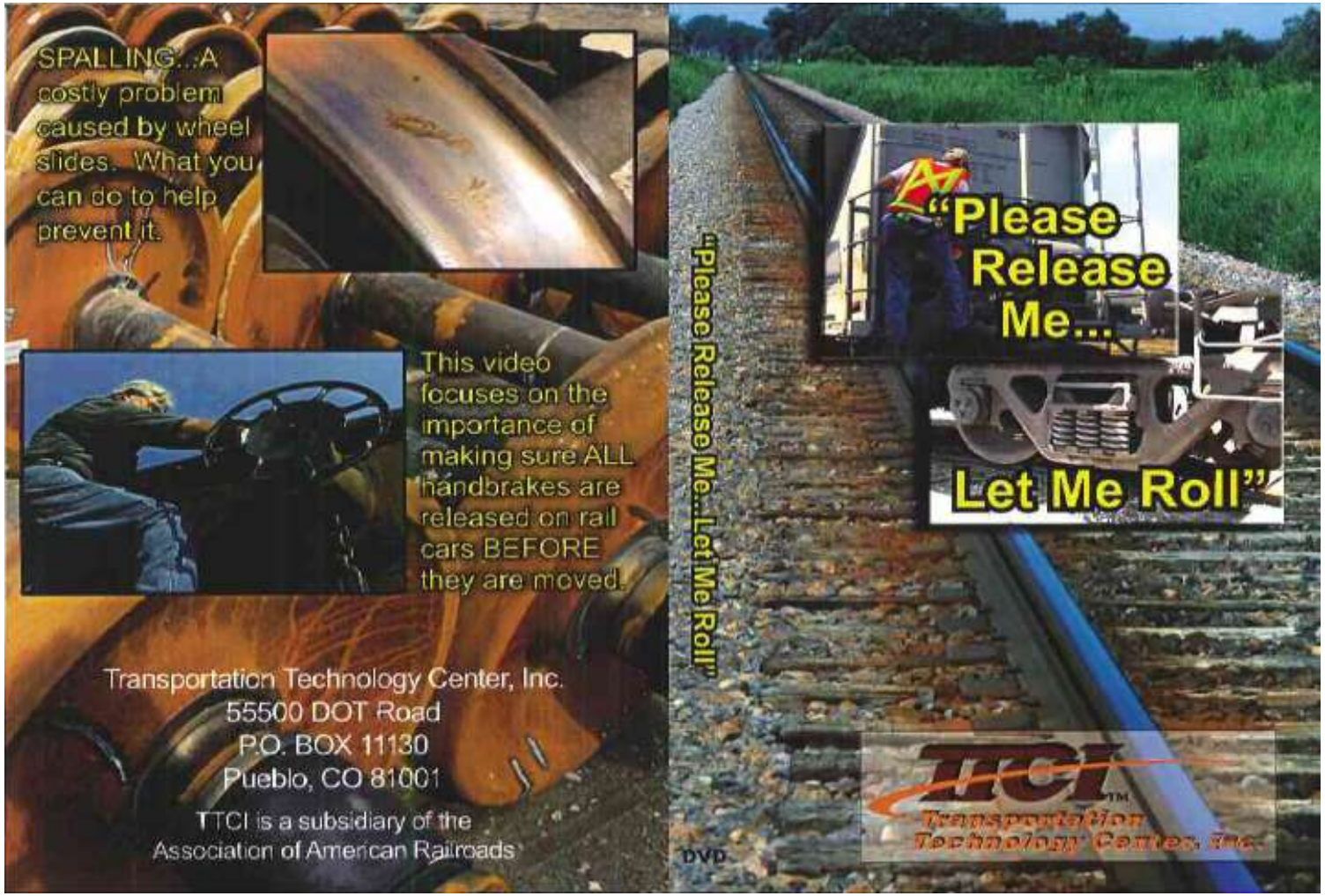
Implications of Remote Monitoring to Rule 95 Handbrake Left Applied

Mitsui Rail Capital, LLC - RSI - Sept 20, 2011

“Please Release Me… Let Me Roll”



The link between inadequate release of the handbrakes and wheel damage has already been established as a significant industry issue.

Case Study: (500) ‘05 Built - 53’ Well Cars w/Truck Mounted Brakes

The repair billing records show 1022 wheelsets were replaced between 6/30/2005 and 1/19/2009 at a cost of $1.19M (excluding labor and jacking).

955 B-end vs. 67 A-end Wheelsets

93.5% on the B-end!

Resulting in an expense of

$1.03M on the B-end & $160k on the A-end

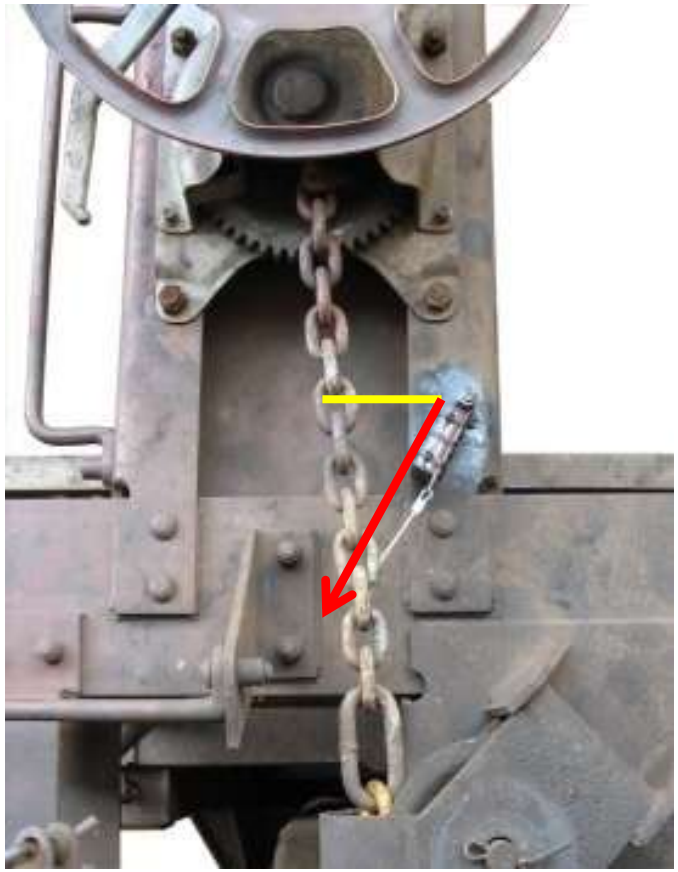
Additionally, there were 260 open EHMS WILD alerts;
242 B-end vs. 18 A-end wheels

Case Study: (500) ‘05 Built - 53’ Well Cars w/Truck Mounted Brakes

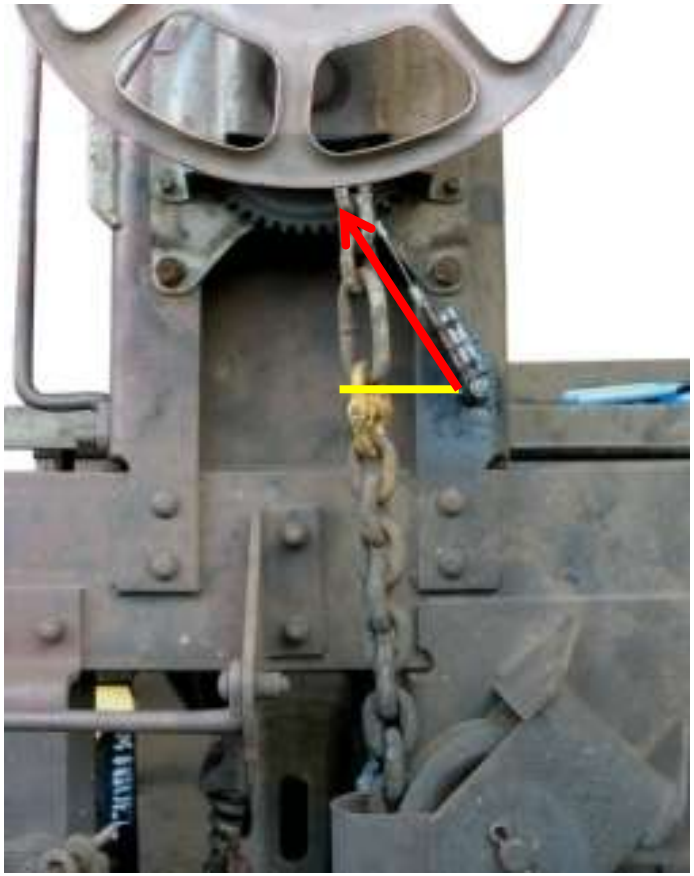
A typical example of handbrake induced tread damage repaired and reported as a Rule 41 “Why Made 65”

Remote Monitoring of the Handbrake

MRC equipped 30 cars with remote handbrake monitoring devices and has actively collected data on railcars moved with and without the handbrake applied since February 2009.



Handbrake Off: tilt sensor rotated below horizontal



Handbrake On: tilt sensor rotated above horizontal

A separate solar-powered GPS device records and transmits car position, car movement and handbrake sensor data.

Request for AAR Rules Review – January 20, 2010

Mitsui Rail Capital, LLC
An affiliate of Mitsui & Co., Ltd.

January 20, 2010

Thomas J. Stahura
Executive Director, Rules and Standards
Association of American Railroads
50 F Street N.W.
Washington D. C. 20001-1564

Subject: Wheel Damage from Inadequate Release of the Handbrake

Mr. Stahura,

Over the past several years, the Advanced Technology Safety Initiative (ATSI) has resulted in changes to the Interchange Rules that are intended to reduce stress on the rail infrastructure and improve safety. The most significant change is related to the introduction of Wheel Impact Load Detectors (WILD). Implementation of WILD has significantly increased the number of wheels being replaced each year.

As currently written, we believe Rule 41 requires wheels to be replaced prematurely due to high impact readings, resulting in significant cost for the car owners, without sufficient recourse to the party responsible for the damage to the wheels. The following case study clearly illustrates wheels replacements that were caused by inadequate release of the handbrake prior to moving the cars. As such, we are proposing a change to Rule 95 to address this issue.

CaseStudy:

Florida East Coast, LLC has a group of five hundred (500) railcars built in 2005 with handbrakes that only affect the wheels on one end of the railcar (commonly known as the B-end of the railcar). The repair history data for these railcars (see FECB-19-09.pdf) shows there were a total of 1022 wheelsets replaced in the period from 6/30/2005 thru 1/19/2009. The breakdown of wheelsets on the A-end (see FECB-19-09 cars12.pdf) and B-end (see FECB-19-09 cars35.pdf) of the cars demonstrates the following:

- *868 B-end wheelsets for tread defects (such as out-of-round, shelled treads, and tread build-up.)*
- *87 B-end wheelsets for wheel wear defects (such as high flange and/or thin flange).*
- *37 A-end tread defects (such as out-of-round, shelled treads, and tread build-up.)*
- *30 A-end wheel wear defects (such as high flange and/or thin flange).*

Chicago Bee Metres

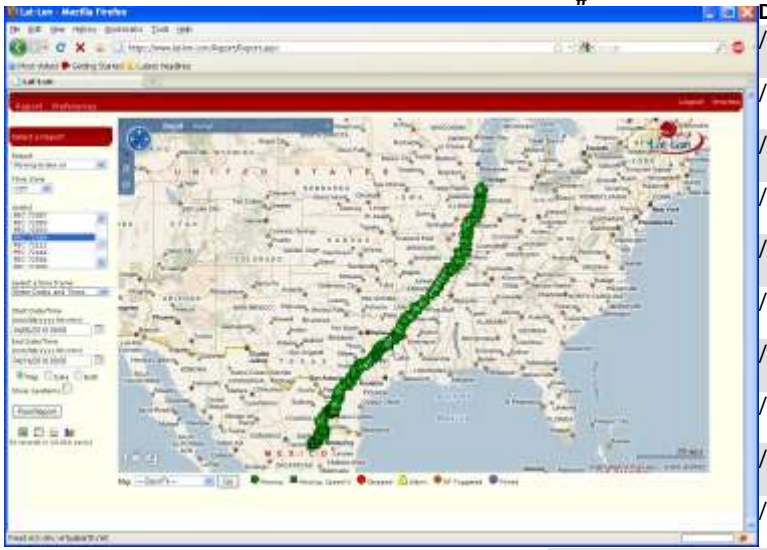
Billing Repair Card

OnTrax 1.0

Billing Repair Card

OnTrax 1.0

Handbrake & GPS sensors record when and where a handbrake is applied and released along with the movement of the railcar.

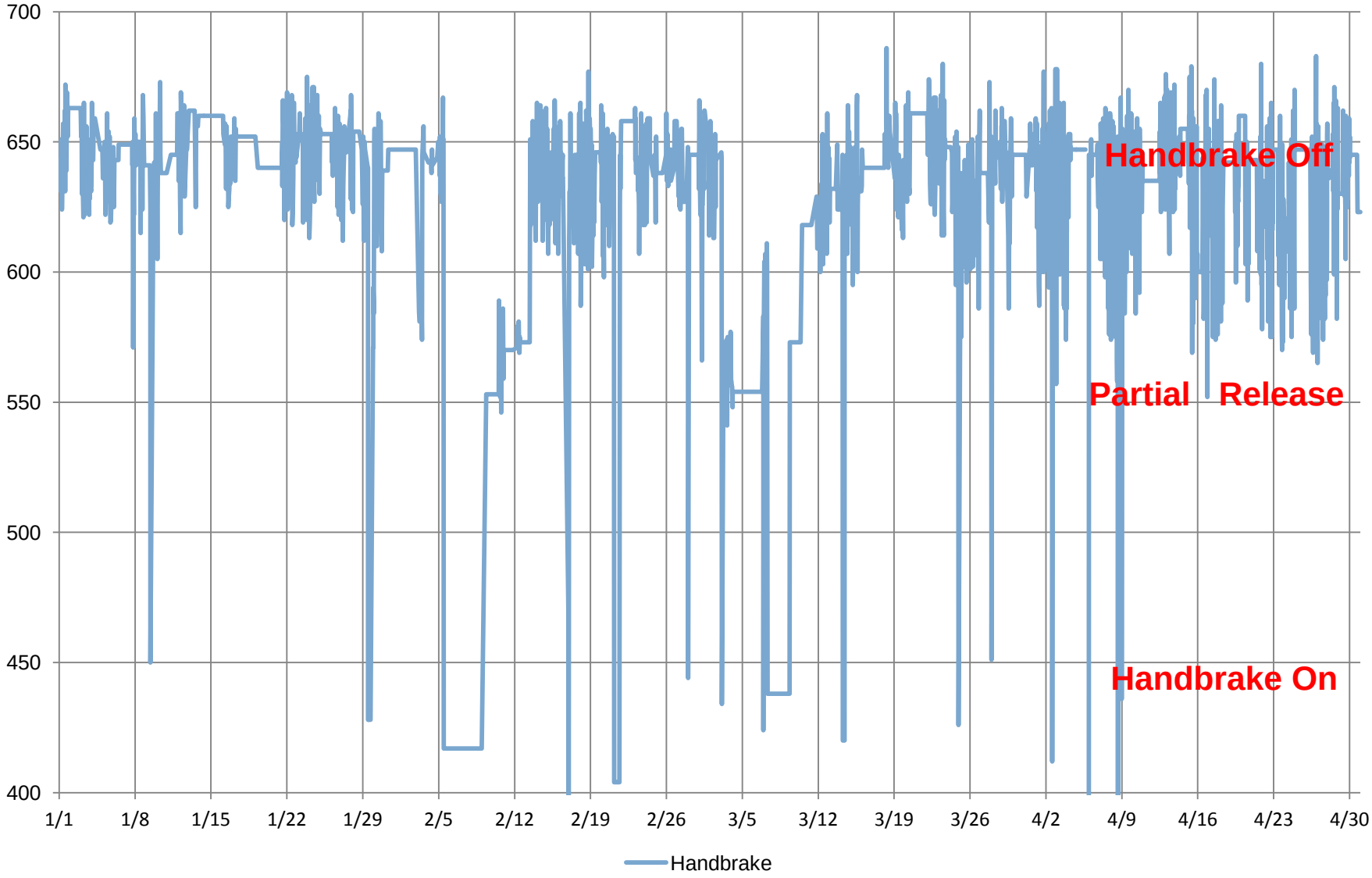


#	Date/Tim	S1 Trans D/T	Unit	Msg Type	Location	Speed	Direction	S1 y tilt	S1 y dig
	/6/2010 7:45	FEC 72088		Move Timed	1.16 mi NW of Ejido Angostura, Coahuila de Zaragoza, MX	28	184	428	0
	/6/2010 7:45	FEC 72088		Move Timed	1.36 mi NW of Encantada, Coahuila de Zaragoza, MX	0	0	428	0
	/6/2010 8:45	FEC 72088		Move End	1.37 mi NW of Encantada, Coahuila de Zaragoza, MX	0	0	521	1
	/6/2010 9:45	FEC 72088		Timed	1.37 mi NW of Encantada, Coahuila de Zaragoza, MX	0	0	519	1
	/6/2010 10:45	FEC 72088		Timed	1.37 mi NW of Encantada, Coahuila de Zaragoza, MX	0	0	518	1
	/6/2010 10:45	FEC 72088		Move Begin	1.95 mi W of Encantada, Coahuila de Zaragoza, MX	8	226	518	1
	/6/2010 11:45	FEC 72088		Move Timed	1.97 mi SE of Refugio Jose de la Joya, Coahuila de Zaragoza, MX	0	0	451	0
	/6/2010 11:45	FEC 72088		Move End	1.97 mi SE of Refugio Jose de la Joya, Coahuila de Zaragoza, MX	0	0	451	0
	/6/2010 12:45	FEC 72088		Timed	1.97 mi SE of Refugio Jose de la Joya, Coahuila de Zaragoza, MX	0	0	539	1
	/6/2010 12:45	FEC 72088		Move Begin	2.01 mi SE of Refugio Jose de la Joya, Coahuila de Zaragoza, MX	0	0	539	1
26	4/6/2010 14:00	4/6/2010 13:45	FEC 72088	Move Timed	2.3 mi SE of Refugio Jose de la Joya, Coahuila de Zaragoza, MX	0	0	540	1
27	4/6/2010 14:30	4/6/2010 13:45	FEC 72088	Move End	2.3 mi SE of Refugio Jose de la Joya, Coahuila de Zaragoza, MX	0	0	540	1
284	4/14/2010 2:02	4/14/2010 1:45	FEC 72088	Move End	1.03 mi S of Dolton, IL, US	0	0	533	1
285	4/14/2010 3:00	4/14/2010 2:45	FEC 72088	Timed	1.03 mi S of Dolton, IL, US	0	0	533	1
286	4/14/2010 4:01	4/14/2010 3:45	FEC 72088	Timed	1.03 mi S of Dolton, IL, US	0	0	532	1
287	4/14/2010 5:00	4/14/2010 4:45	FEC 72088	Timed	1.03 mi S of Dolton, IL, US	0	0	531	1
288	4/14/2010 6:00	4/14/2010 5:45	FEC 72088	Timed	1.04 mi S of Dolton, IL, US	0	0	531	1
289	4/14/2010 7:00	4/14/2010 6:45	FEC 72088	Timed	1.04 mi S of Dolton, IL, US	0	0	531	1
290	4/14/2010 8:02	4/14/2010 7:45	FEC 72088	Move Begin	1.01 mi S of Dolton, IL, US	0	0	429	0
291	4/14/2010 8:30	4/14/2010 7:45	FEC 72088	Move Timed	1.13 mi N of South Holland, IL, US	3	358	429	0
292	4/14/2010 9:01	4/14/2010 8:45	FEC 72088	Move Timed	0.49 mi NW of South Holland, IL, US	8	178	429	0

AC 2586: AAR Arbitration and Rules Committee Tag witnessed the installation of 5 addition handbrake sensors at GRS Tucson 9-14-10

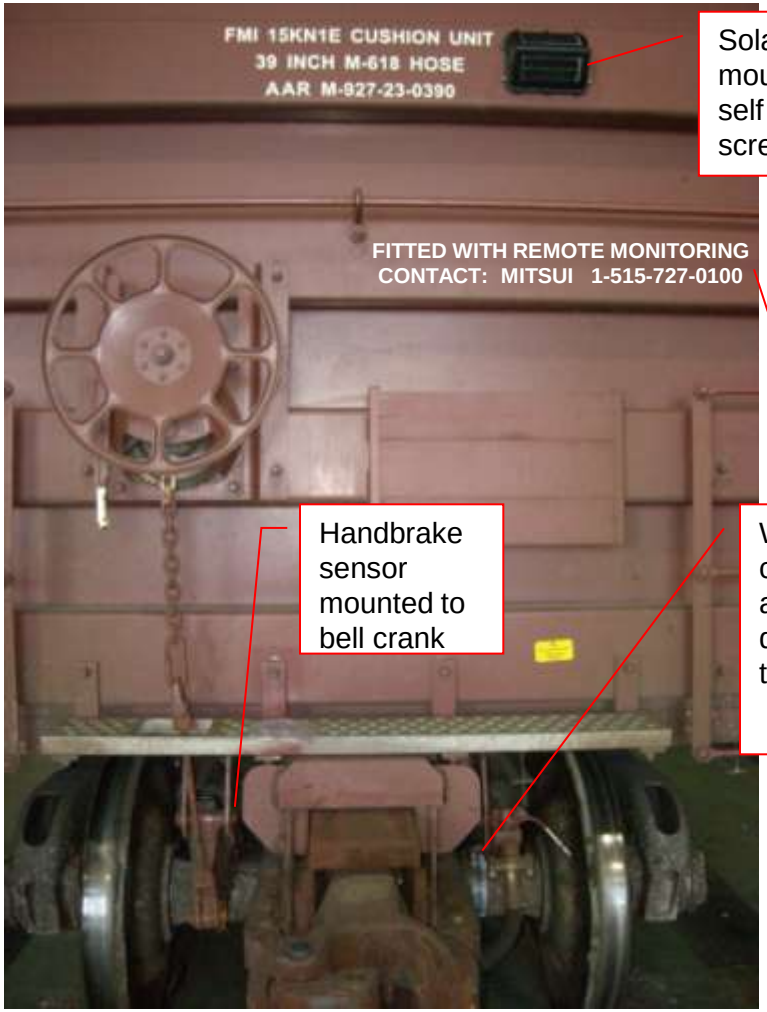
Following the installation the AC2586 Tag were given on-line access to monitor the five (5) cars. Three (3) of the cars were subsequently moved with their handrake applied and have either had B-end wheel replacements or have open Wild alerts.

FEC71632 - Handbrake Tracking from 1/1/11 to 4/30/11



All the wheels shown were replaced as impact wheels under Rule 41

MRC also installed 5 handbrake sensors on a group of box cars - all 5 cars were moved with the handbrake applied.



Solar tracking unit mounted with (4) self -tapping screws

Contact Info Stencil

Handbrake sensor mounted to bell crank

Wheel rotation counter with an additional axle decal identifying the sensor

Proposed AAR Interchange Rules Revision – November 11, 2010

•New item (15). Added to Field Manual Rule 95 Section A: (15). ***Car equipped with handbrake remote monitoring equipment and moved with the handbrake applied.***

•New item (9). Added to Office Manual Rule 94*: (9).* ***If a Field Manual Rule 95, Section A. 15 condition is detected, the car owner may generate an unfair usage incident report in the AAR DDCT system. Such record must include the date, time, GPS coordinates and last available CLM detail.***

•New item (8). Added to Office Manual Rule 44: (8). ***Counter Billing Authority shall be issued against the handling line indicated in the DDCT record for any wheel set replacement Job Code billing referencing Why Made Codes 61, 65 or 67, plus jacking charges, occurring within 4 years or 100,000 miles of the DDCT incident date. Only one CBA per car location, affected by the handbrake, will be allowed. If mileage criterion is used, car owner must provide mileage documentation when requesting CBA.***

REASON: Compensate car owners for wheel set removals caused by moving cars with applied hand brakes. Foster improved hand brake release compliance by train crews.

Proposed AAR Interchange Rules Revision – November 11, 2010

Process Flow for Cars Moved with Handbrake Applied:

- Car arrives location
- Car handbrake is applied, in accordance with operating practice of the location
- Car is moved without release of the handbrake
- Remote Monitoring Equipment (RME) on the Car detects the movement of the car and the failure to release the handbrake.
- RME reports to the Asset Owner the Car has moved without release of the handbrake
- RME back office system will create a record of the date, time, GPS coordinates and the last available CLM.
- Asset Owner may create a DDCT incident report using the CLM data to determine the handling line.
- Asset Owner will pay BRC's per current AAR Rules.
- Asset Owner may then submit repair data for wheel set and jacking charges, once per car location under the influence of the handbrake, in 500-byte format to the DDCT within 4 years or 100,000miles of the incident.
- CBA with be issued against the handling line through the DDCT for wheel set and jacking charges for wheel set removed for Why Made Codes 61, 65 or 67 within 4 years or 100,000miles of the incident.

AC2586 – Current Status & Next Steps

- On May 19, 2011, MRC was invited to talk to the AAR EEC about remote monitoring of handbrakes. The next step is a 6month operational and functional trial on the UPRR. MRC has procured Five (5) additional sets of monitoring equipment and is ordering cars into shop.
- *On September 8, 2011, Arbitration and Rules updated MRC that they had met in April 2011, and decided that Mitsui, or any other proponent of remote monitoring equipment should be responsible to develop the standards for the intended devices. Another facet that surfaced was ongoing calibration and maintenance of the devices.*
- While MRC agrees that standards, calibration and maintenance for remote monitoring devices will need to be establish. Such issues are ancillary and dependent on a determination of the main issue presented to the Arbitration & Rules Committee: **Is wheel damage which arises from a handbrake being left applied considered "handling line damage"?**
  - If the Arbitration & Rules Committee has determine that wheel damage arising from handbrakes being left applied is NOT handling line damage, there is no need to establish standards or calibration/maintenance protocols.
  - However, if the Arbitration & Rules Committee has determined that wheel damage arising from handbrakes being left applied is handling line damage, then I believe that Rule 95 will apply and appropriate standards, calibration and maintenance protocols should be established.

Request for AAR Rules Review – AC 2586

MRC believes the current AAR rules should be reviewed and revised to permit the equitable recovery of such costs, if the responsible party can be identified.

CBH Project: 19TAL cars on 16TAL lines in W. Australia

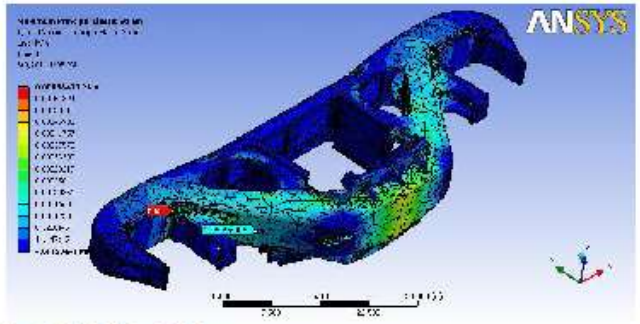


Figure 3 - FEM Analysis of Side-frame

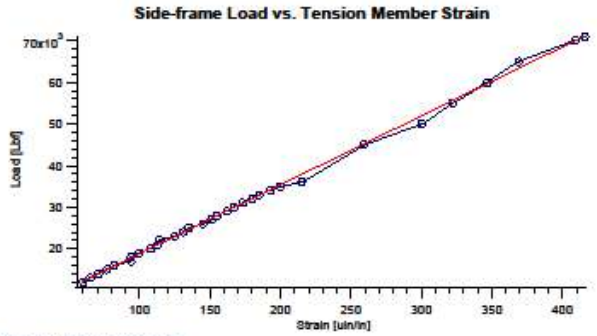


Figure 4 – Static Load Testing

MRC (on behalf of CBH) just awarded a contract to IONX (a division of Amsted) to supply of 574 sets of on-board load weigh systems. The load weigh system will transmit the net weight of product loaded into the car to the loader in real-time; allowing CBH to **maximize gross rail load** for different density products such as grain, barley and oats and **avoid over-loading penalties.**


MRC
MITSUI RAIL CAPITAL

Supporting Data from Other Car Owners with Truck Mounted Brakes

Cars with handbrake applied to one (1) truck - truck mounted brakes

								Av. Cost per W/set	$ 1,164
# W/sets Repl.	**#cars**	**Loc 1**	**Loc 2**	**Loc 3**	**Loc 4**	**Total B**	**Total A**	**Delta B vs. A**	**Cost Delta**
Car Owner "A"	740	1430	1191	346	167	2621	513	**2108**	$ 2,454,513
Car Owner "B"	17403	6834	6912	3444	3671	13746	7115	**6631**	$ 7,721,004
Car Owner "C"	3442	2859	2676	77	79	5535	156	**5379**	$ 6,263,200

Cars with handbrake applied to two (2) trucks - body mounted brakes

Car Owner "C"	4236	369	285	289	361	654	650	**4**	$ 4,658