



# Annual SPAD numbers down to new low<sup>1</sup> of 277

## Introduction

This is a four-page summary of the category A signal passed at danger (SPAD) and train protection and warning system (TPWS) activity Q2-2009 report. For further information please refer to [www.opsweb.co.uk](http://www.opsweb.co.uk). All Rail Safety and Standards Board (RSSB) publications are freely downloadable from the RSSB website at [www.rssb.co.uk](http://www.rssb.co.uk).

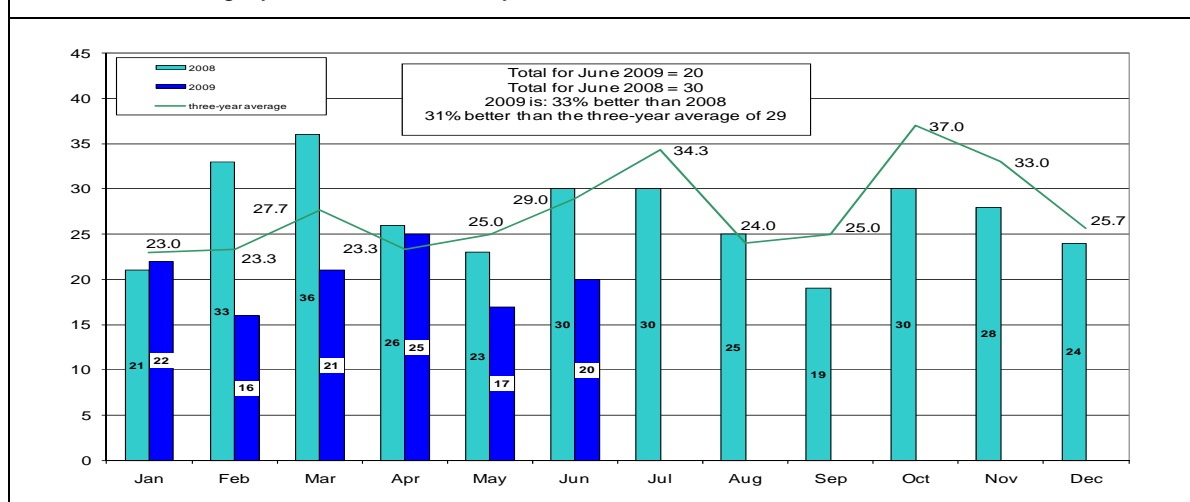
## Key Facts: Q2-2009

<b>Quarter 2:</b>	62 category A SPADs during Q2, which is 17 fewer than Q2 2008, which is 22% better. Q2-2009 was also 20% better than the three-year average of 77.
<b>Risk ranking:</b>	22 SPADs were risk ranked 16 or above (Four of which were risk ranked 20+). This compares to 23 in 2008 (of which three were risk ranked 20+).
<b>TPWS:</b>	18 interventions (TPWS applied the brakes before, or in the absence of, driver action). 15 activations (the driver initiated braking before the system). There were no 'reset and continue' events.
<b>Multi-SPADs:</b>	18 SPADs by multi-SPAD drivers (two or more since qualifying as a driver), nine of which register within the current five-year period. Eight SPADs at multi-SPAD signals (two or more within the current five-year period).

## All category A SPADs

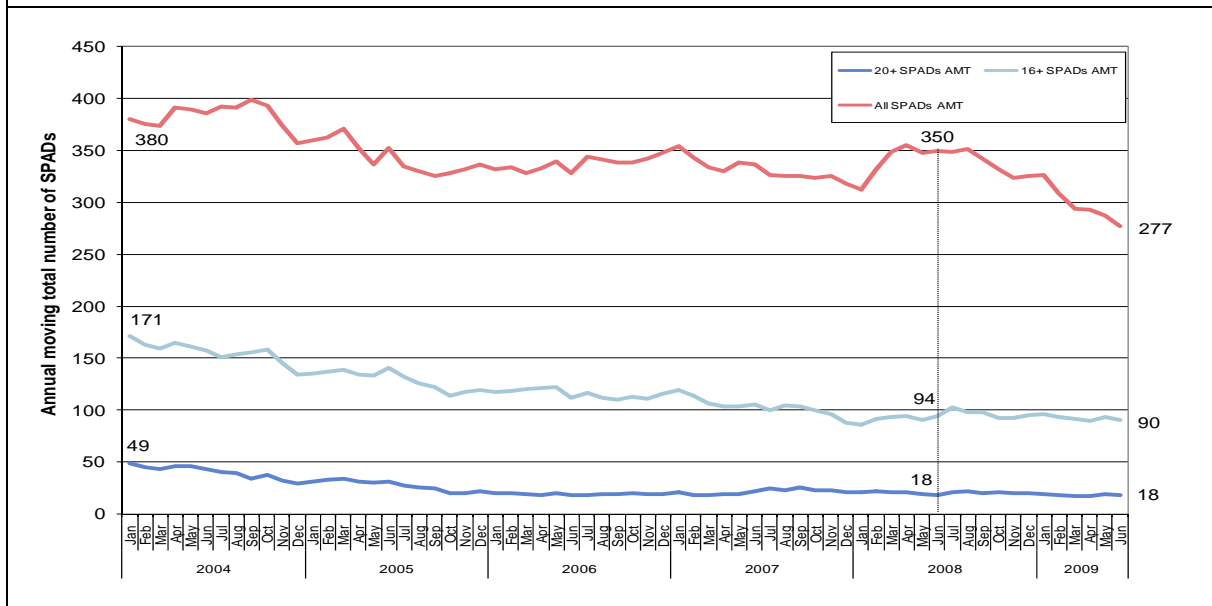
During Q2 there were 62 SPADs, which compares with 79 during the same period in 2008. This represents a decrease of 22%, and also a decrease of 20% against the three-year average of 77. Q2-2009 saw the lowest<sup>1</sup> number of SPADs recorded during any Q2.

Chart 1 - All category A SPADs – monthly variation



<sup>1</sup> Since the systematic collection of SPAD data started in 1985

Chart 2 - Annual moving totals – All SPADs, 16+ and 20+



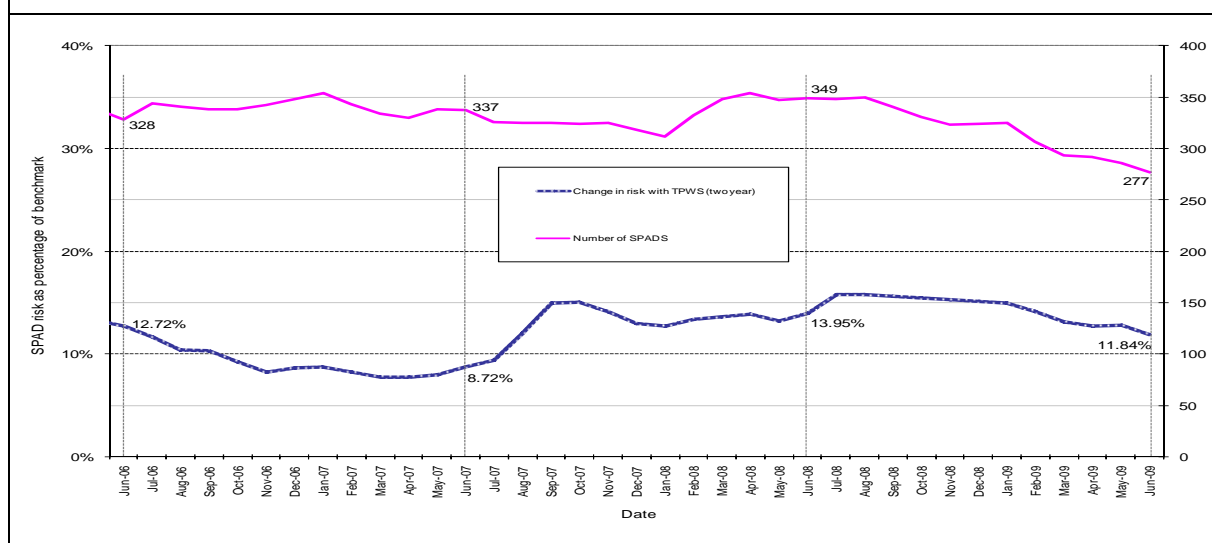
### Comparison of annual moving totals

It may be seen from this chart that the annual moving total (AMT) for 'all SPADs' has been decreasing since reaching a peak, in April 2008. As at the end of Q2 2009 this AMT had fallen to 277, which is its lowest recorded figure<sup>2</sup>. The AMT for '16+ SPADs' has fallen over the past year, from 94 to 90, whereas that for '20+ SPADs' has remained at 18.

Ten years ago, prior to the Ladbroke Grove collision (5 October 1999), the 'all SPADs' figure was 674 (having reached a peak of 881 at the end of 1989). When train miles are taken into account, this gives a national SPAD rate of 2.67 SPADs per million train miles. In comparison with the SPAD rate of 0.66 as at the end of Q2-2009, this represents a decrease of 75.3%.

### SPAD risk

Chart 3 - Change in SPAD risk over time



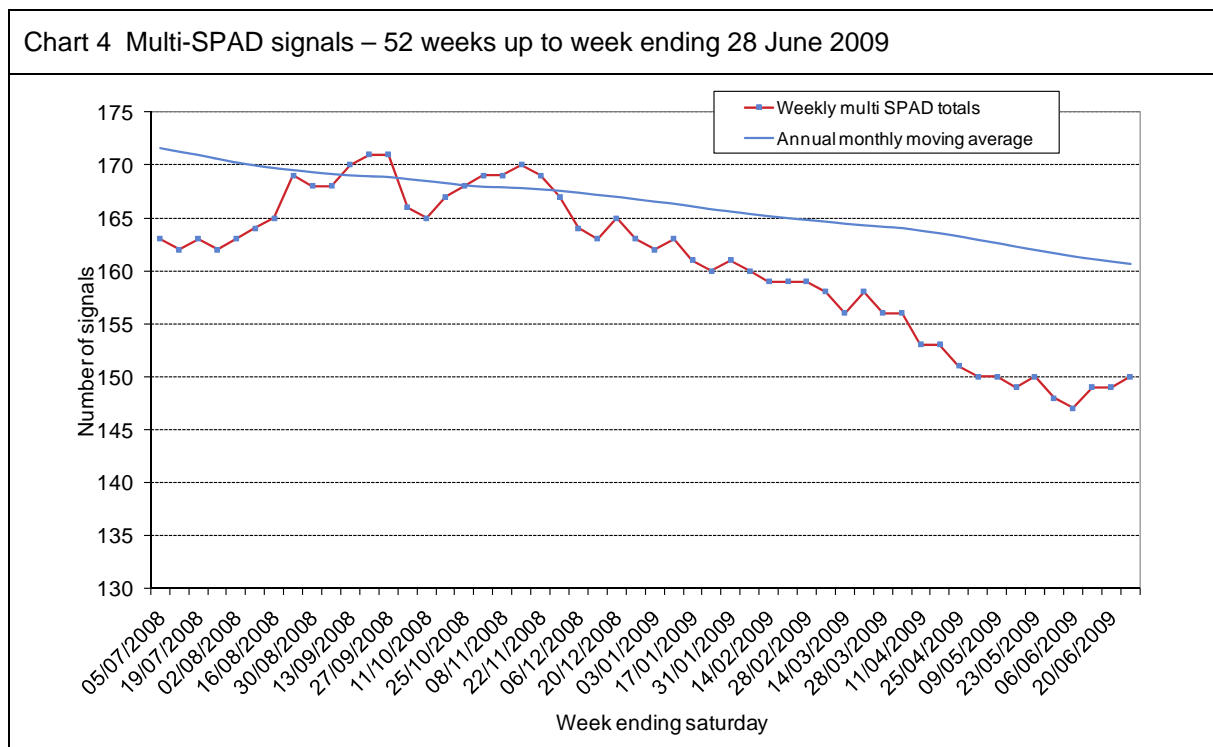
<sup>2</sup> Since the systematic collection of SPAD data started in 1985.

Chart 3 shows SPAD numbers and SPAD risk over the last three years. This shows that the risk from SPADs increased between between April 2007 and August 2008, but has decreased since then. During the past twelve months, the level of risk has decreased from 13.95% of the baseline to 11.84%. This 2.14% change represents a 15% decrease in SPAD risk over that period.

### The multi-SPAD signal population

A multi-SPAD signal is defined as one which has had two or more SPADs in the preceding five years

Chart 4 shows that the number of signals listed as being multi-SPAD has been decreasing, over most of the past year. However, there has been a slight increase during the most recent weeks. The situation will continue to be monitored over the coming weeks and months.



### TPWS ‘reset and continue’

There were no post-SPAD ‘reset & continue’ incidents during Q2-2009. The most recent such incident was in October 2008.

As at the end of June the proportion of the last 50 interventions which were ‘reset and continue’ events stood at 4%.

### SPAD performance by Railway undertaking

Table 1 shows the SPAD performance of each of the Railway Undertakings (RUs), normalised by million train miles run. This allows a comparison of RU SPAD performance over time, between RUs and national SPAD rates at the top of the table.

This table is divided into three sections: All SPADs, 16+ SPADs and 20+ SPADs. The national SPAD rates for each risk ranking band are also shown, highlighted in yellow. Those RUs which have a SPAD rate which is lower than the national rate for both ‘all SPADs’ and for ‘16+ SPADs’ are coloured green. Those with one such rate lower than the national rate, and one higher are coloured orange, whereas those with both rates higher than the national rate are coloured red. The ‘20+ SPAD’ rates are not reflected in the colour coding, due to the small number of events per company.

Table 1 SPAD performance by Railway Undertaking

Data as at the end of June 2009

National rate	Rate per MTM all						Rate per MTM 16+						Rate per MTM 20+					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Total	1.01	0.96	0.97	0.93	0.94	0.66	0.37	0.34	0.32	0.25	0.28	0.22	0.08	0.06	0.05	0.06	0.06	0.00
Passenger/freight train operators	Rate per MTM all						Rate per MTM 16+						Rate per MTM 20+					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Arriva Trains Wales	0.43	0.59	0.58	0.29	0.49	0.20	0.23	0.12	0.11	0.14	0.14	0.00	0.00	0.00	0.00	0.04	0.04	0.00
c2c	1.25	1.49	0.26	0.00	0.49	0.45	0.50	0.50	0.00	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chiltern Railways	0.19	0.74	0.00	0.34	0.50	0.30	0.00	0.19	0.00	0.17	0.17	0.00	0.00	0.19	0.00	0.17	0.00	0.00
CrossCountry	0.56	0.45	0.28	0.50	0.32	0.48	0.34	0.28	0.11	0.11	0.16	0.19	0.00	0.06	0.00	0.00	0.00	0.00
DB Schenker	2.57	2.27	2.31	2.10	2.78	2.17	0.57	0.63	0.58	0.26	0.52	0.76	0.08	0.04	0.27	0.11	0.17	0.10
Direct Rail Services	1.21	0.00	0.00	1.29	2.49	1.24	0.00	0.00	0.00	0.64	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East Midlands Trains	0.95	0.92	0.76	0.27	1.04	0.14	0.41	0.31	0.30	0.00	0.32	0.00	0.00	0.15	0.15	0.00	0.08	0.00
Eurostar	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Capital Connect	0.74	0.48	0.74	0.87	0.74	0.99	0.12	0.21	0.14	0.20	0.14	0.25	0.00	0.00	0.00	0.13	0.00	0.00
First GB Railfreight	2.07	0.77	2.72	2.45	1.65	1.92	0.00	0.00	2.04	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Great Western	0.54	0.36	0.55	0.94	0.69	0.29	0.27	0.12	0.24	0.27	0.27	0.00	0.12	0.00	0.00	0.04	0.08	0.00
First Hull Trains	1.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First ScotRail	0.83	0.78	0.95	1.08	0.53	0.52	0.58	0.21	0.25	0.29	0.20	0.07	0.08	0.04	0.04	0.12	0.04	0.00
First Transpennine Express	0.24	0.25	1.15	0.55	0.31	0.57	0.12	0.12	0.46	0.00	0.21	0.57	0.00	0.00	0.12	0.00	0.10	0.00
Freightliner	2.01	1.37	1.58	1.00	1.80	0.72	0.83	0.53	0.32	0.20	0.38	0.36	0.12	0.00	0.00	0.00	0.09	0.00
Gatwick Express	0.66	0.00	0.67	0.00	0.00	0.00	0.66	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heathrow Connect	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heathrow Express	0.99	5.19	2.14	0.00	1.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
London Midland	0.00	0.00	0.00	4.41	0.74	0.93	0.00	0.00	0.00	1.89	0.16	0.13	0.00	0.00	0.00	0.63	0.08	0.00
London Overground	0.00	0.00	0.00	21.08	1.40	0.88	0.00	0.00	0.00	0.00	0.47	0.88	0.00	0.00	0.00	0.00	0.00	0.00
London Underground	3.34	2.82	2.73	2.33	1.71	1.37	0.00	0.47	0.91	0.47	0.29	0.46	0.00	0.00	0.45	0.00	0.29	0.00
Merseyrail	1.59	1.38	1.66	1.38	1.08	1.02	1.06	0.28	0.28	0.00	0.00	0.00	0.27	0.28	0.00	0.00	0.00	0.00
National Express East Anglia	1.08	1.02	1.06	0.91	1.09	1.13	0.22	0.31	0.35	0.25	0.40	0.38	0.00	0.05	0.05	0.10	0.10	0.00
National Express East Coast	0.42	0.35	0.26	0.51	0.08	0.15	0.34	0.26	0.09	0.26	0.00	0.15	0.08	0.17	0.00	0.00	0.00	0.00
Nexus	2.88	0.56	0.00	1.14	0.56	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Rail	1.94	1.19	0.61	0.65	0.90	0.60	0.78	0.61	0.23	0.19	0.15	0.40	0.19	0.15	0.00	0.00	0.04	0.00
Serco Metrolink	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Serco Rail Operations	0.00	0.00	0.00	0.00	5.79	0.00	0.00	0.00	0.00	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00
South West Trains	0.62	0.89	1.26	1.18	1.00	0.45	0.21	0.28	0.65	0.49	0.36	0.15	0.04	0.04	0.08	0.08	0.16	0.00
Southeastern	1.13	1.36	1.49	1.48	1.14	0.80	0.31	0.63	0.32	0.47	0.31	0.30	0.05	0.10	0.00	0.11	0.00	0.20
Southern	0.85	0.80	0.56	1.23	0.66	0.71	0.40	0.29	0.22	0.33	0.20	0.09	0.11	0.17	0.06	0.11	0.00	0.00
Victa Westlink Rail	12.66	10.20	7.85	0.00	0.00	0.00	12.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Virgin West Coast	0.49	0.50	0.43	0.21	0.36	0.18	0.16	0.36	0.14	0.14	0.24	0.00	0.16	0.07	0.00	0.07	0.00	0.00
West Coast Railway	0.00	12.84	5.99	10.06	0.00	0.00	0.00	0.00	0.00	5.03	0.00	0.00	0.00	0.00	0.00	5.03	0.00	0.00
Infrastructure companies	Number of category A SPADs						Number of 16+ category A SPADs						Number of 20+ category A SPADs					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Amec Rail	2	0	1	3	1	1	1	0	1	1	0	1	0	0	0	0	0	0
Amey Rail	0	0	2	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
Babcock Rail	0	2	3	2	3	0	0	2	1	1	2	0	0	0	0	0	0	0
Balfour Beatty Rail	0	2	4	1	2	1	0	0	0	1	1	1	0	0	0	0	0	0
Carillion Rail	1	2	2	2	0	1	1	1	2	0	0	0	0	0	1	0	0	0
Departmental	1	1	9	2	3	0	0	1	4	0	2	0	0	0	0	0	0	0
Grantrail	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harsco Track Technology	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jarvis Rail	6	4	5	2	5	1	3	2	2	1	2	1	1	0	0	0	0	0
Mowlem Civil Engineering	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Network Rail	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	2	3	2	0	4	0	1	0	1	0	2	0	0	0	0	0	0	0
Serco Rail	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Further information:**

Please refer to [www.opsweb.co.uk](http://www.opsweb.co.uk) for further data. The site contains a spreadsheet containing every SPAD event since 1998, and is updated monthly.

If you would like to discuss any of the material contained in the SPAD report, please contact: Roger Badger, Senior Safety Intelligence Analyst, [roger.badger@rspb.co.uk](mailto:roger.badger@rspb.co.uk)