SOUTH WEST TRAINS

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Dear Ms Pidgeon

Rail Services into London during recent adverse weather

Thank you for your letter of 15th January 2010. I can understand your concern about rail services during the recent exceptionally cold weather period and I welcome the chance to set out how South West Trains (SWT) planed for, and managed through, the recent period of extreme weather which saw the worst weather on parts of our network for 30 years.

In this letter I will set out the following:

- How SWT prepares for cold weather and what changes we made to our processes and equipment following the disruption caused by snow in February 2009
- The level of service we managed to provide between 4th and 14th January this year
- What lessons we have learnt from the most recent period of snow and ice and how we are planning to further improve our capability to operate effectively during cold weather.

Preparation for Snow and Ice

SWT and Network Rail (NR) have developed plans to manage train service delivery during cold weather and it is important to remember that NR are responsible for ensuring that the infrastructure is open, is fit for purpose, and available for use.

SWT electric trains take power from a "third" or "conductor" (DC) rail, which runs alongside the tracks. "Shoes" on the trains slide along the top of this rail to pick up the power needed to move the train. This fairly basic electrification system design dates from the early twentieth century and is used in South London, Kent and Sussex as well as our area. It is not commonly used in other countries, which normally have an overhead electrification (AC) electrical supply. In very cold weather this UK conductor rail can become coated in ice, which acts as an insulator and stops electricity from getting to the train and stops the train drawing power. In this instance the train will

stop and "fail". The problem is more serious if freezing ground temperatures are combined with snow/sleet/rain.

To counteract the effects of ice forming on the conductor rail, Network Rail operates a number of nighttime "anti-icing" circuits using its specialist fleet of multi-purpose vehicles. These are special trains, which spray an anti-icing agent onto the third rail to prevent the formation of ice. To supplement this, and to take account of the fact that these anti-icing circuits do not cover all lines on the network, Network Rail also asked us to operate additional nighttime "ghost trains." These are empty trains, using our normal passenger rolling stock. Where necessary, Network Rail cancelled non-essential engineering work, which would otherwise have blocked lines at night, so that these anti-icing trains and ghost trains could operate.

The anti-icing trains and ghost trains are also designed to provide some defence against heavy snowfall. In addition, Network Rail divert resources towards keeping essential junctions operational, including switches and crossings that allow access to the network from our depots and sidings so that train services can commence in the morning. Whilst point heating systems can do this job effectively, they can become overwhelmed during heavy snow and very cold temperatures, hence the need for manual de-icing to supplement.

When the forecast shows that extremely heavy snow will fall, and particularly where it falls at night, Network Rail, adopt a "key routes strategy." This allows them to prioritise their efforts on the main routes and junctions when the conditions mean that they will not be able to keep all elements of the network open.

Since the period of snow in February 2009 SWT and Network Rail have enhanced plans to deal with snow and in particular we increased the level of detail in the plans for individual managers to enable them to operate a reduced "Snowplan" service if needed. We also reviewed the performance of our rolling stock as we did suffer a number of reliability problems associated with snow and cold weather in February 2009.

Specifically in February 2009 there were a number of failures of line filters on Class 450 rolling stock. There are two line filters on each 4-car unit and each one weighs approx 3 tonnes and they are part of the electrical system, which maintains a constant voltage for the traction package on the train. They can only be replaced or repaired at locations, which have heavy lifting equipment (Northam Depot and Eastleigh Works) and specialist staff. Prior to the end of autumn 2009 our supplier Siemens removed and stripped every line filter. Each one was cleaned and fitted with enhanced insulation to reduce the likelihood of damage caused by a build up of ice.

So, in summary this winter our preparations and joint planning with Network Rail to address the risks of snow and the build up on the conductor rail has probably been the best ever with changes made to Network Rail's de-icing regime, rolling stock modifications and extensive ghost train provision.

There are a number of differences between the LUL and DLR "third rail" systems which make it harder to keep services running on National Rail. The LUL system has trains operating with much shorter service intervals so there is less time for snow and ice to build up in extremely low temperatures. On the DLR current is supplied from below rather than on top of the conductor rail, which ensures ice and snow cannot form an insulating layer and this is similar to the small number of continental networks that run on third rail (DC) electrical supply. SWT operate over 616 route miles with some significant service intervals.

It is notable that despite the significant improvement in the design of trains in recent years third rail operated services continue suffer significant problems due to snow and ice on the conductor rail. Train Operators on routes north of the River Thames using identical rolling stock operating via an AC electrical supply from overhead lines are able to operate much more easily during periods of snow and severe frost. We have asked for more work to be done on this issue and it is mentioned later in this letter. It is also notable that our diesel trains on our London-Exeter route were able to operate normally despite heavy snowfalls in the Basingstoke, Andover and Salisbury areas.

Train Services 4-14 January 2010

Train services were disrupted during the period 4-14 January and I have appended a detailed daily list to this letter. The services we were able to offer to and from London were impacted by the weather outside of the London area because most of our trains start up outside London.

One of the problems encountered was the problems our staff had getting into work as they often use other transport operators or the roads to get to work. Many of our trains are stabled in Surrey and Hampshire where there was significantly more snow than fell within Greater London. The Haslemere area for example had over a foot of snow and many roads were impassable.

SWT staff made incredible efforts to get to work and almost all got in although in a few cases slightly later than usual. They had to drive on roads, which were covered in deep snow and, in one instance, an individual walked across several snow-covered fields to reach a train depot. In some cases this meant that there were some delays in the start up of the train service to and from London. In my view, Network Rail staff in the Wessex area also did their very best to help us deliver a service in very difficult circumstances.

SWT has developed a basic timetable called "Snowplan," which dovetails with NR key routes strategy. It is only used when triggered by the appropriate alert in the weather forecasting system, as was the case for Wednesday 6th January, and we used it as a last resort. It is based on running trains on main routes for the same period as the normal timetable (first and last trains are at almost the same times) but with a reduced number of trains per hour and no service on some minor routes. This enables resources to be concentrated on key routes and services and minimise the overall effect of the poor weather. For SWT, this was the only day the Snowplan was used throughout this 10-day period.

On the morning of 7th January there were 24 trees or parts of trees on the main line between Guildford and Portsmouth with the worst affected area around Haslemere. It took NR several hours of hard work in sub-zero conditions before the route was reopened and trains could pass through this area.

On other days, which were affected by snow and ice, we aimed to operate the full timetable with some reductions in the suburban service, including the use of a Hampton Court to Surbiton shuttle, and the withdrawal of London Waterloo to Dorking services. On all days we operated throughout the normal period of operation from first to last train.

We did suffer a number of component failures, particularly line filters, on some of our trains caused by ice entering into electrical equipment. This did result in some trains failing and did cause some delays and cancellations on some routes particularly on the 8th and 13th of January. The damage to our trains also meant that we had to run some of our services with reduced train lengths whist we and our train maintenance supplier fixed the damage and/or inspected the condition of the trains.

Throughout this period our train maintenance supplier Siemens was working round the clock on measures to reduce snow and ice ingress into the line filters. Specifically we have fitted new blanking sheets and additional filters to prevent snow ingress and currently we are rolling out a software modification, which will reduce the consequences of any future line filter failures. All this work has involved depots working 24/7 to ensure that train carriages are returned into service as soon as possible to minimise the number of trains when we needed to operate with fewer vehicles. In the longer term Siemens are investing further in upgraded line filters, which have enhanced insulation, for class 450 trains and we expect them to have replaced every line filter before the end of November.

I am aware that our passenger information systems did not always perform, as we would like them to. On the two or three days of greatest disruption the web and telephone based systems were overloaded and we were not able to update them in real time. On 6th January (when we ran our Snowplan) NR, despite great efforts, had not managed to fully upload the Snowplan timetable because of the sheer volume of trains involved into the IT systems which feed both operational IT and also passenger information systems both via NRES and station Customer Information Systems (CIS). However we did manage to update the CIS manually that day so that SWT screens showed the correct information. On most days our web and telephone based systems did deliver accurate information and we also posted other useful information about our services on the website. We also provided information to the media and supported ATOC who provided regular national updates.

On the days when CIS was not adequate we deployed Managers and Directors at key locations, including Clapham Junction and London Waterloo, working with local staff to provide information to passengers and give advice on their travel plans. Also if staff or managers could not get to their normal place of work they would report to their local station and assist with snow clearance or provide customer service to passengers.

A lot of our staff have "adopted a station" close to their home and help out during this type of event. It was pleasing to get many complimentary comments from passengers for the efforts we did make particularly at London Waterloo station.

Latest "lessons learnt" and Next Steps

There are number of internal and national reviews being conducted into the operation of train services during this period. The National Task Force (NTF is a joint DfT/NR/ATOC organisation to improve overall railway performance) have launched a comprehensive immediate review of the impact of the severe weather and the ability of the railway to provide train services and timely information.

Additionally the three train operators from Kent, Sussex and Wessex (Southeastern, Southern and SWT) have asked the National Task force for a technical review of third rail technology how it could be improved in winter weather conditions. We are concerned that despite significant improvements in the capability of rolling stock and signalling equipment trains are still sometimes unable to operate reliably due to a build up of ice on the conductor rail. Currently industry processes do not always keep the whole railway open in exceptionally icy or snowy conditions and too often de-icing fluid washes off the rail.

Internally we realise that in retrospect we may have attempted to run too many trains on 7th January when many passengers did not try to travel and when parts of the network were still iced up. The operation of trains on this day did cause a number of component failures and as a consequence we suffered a shortage of rolling stock for a longer period whist components were repaired or replaced.

We know that at times the quality of customer information was poor for some passengers. There is a problem with both SWT CIS systems and the web and other systems, which draw information from NRES. This is most severe when there is significant disruption and the systems cannot be manually updated in real time. We are working with industry partners and our supplies for both short-term temporary fixes (where possible) and longer term improvements. We are reviewing IT systems to improve data transfer and therefore improve customer information.

Summary

SWT and its people worked very hard during the period of snow and ice to maintain services and whilst we did not get everything right we believe we offered a credible overall performance compared to the national and local road system particularly outside of the London area. In particular on Tuesday 5 January when over 2000 cars were abandoned in Basingstoke SWT services continued to run to and from London and many people were able to home by train. We have received comments from many passengers saying that they appreciated the efforts we made across all our routes. I believe that our staff did an excellent job in exceptionally challenging circumstances.

We only sought to operate a reduced Snowplan timetable on one day. The conditions were extreme and the consistently very low temperatures had not been seen in our area of operation for many years. We know that we did not get everything right and that the quality of customer information must improve. We will also ensure that our rolling stock is modified before next winter.

However the key to significant further improvement in the railway's ability to operate in these conditions will only come if we can resolve the third rail issues. Therefore the in depth technical investigation which we and other Southern Region Train Operating Companies have requested into the operation of the third rail is vital. This will provide data and options for an informed debate about the level and type of investment required to enable a resilient service to be run under different winter weather scenarios.

I hope that you find this response helpful.

Yours Sincerely,

A. C. Pitt

Andy Pitt
Managing Director

Question	How many and what proportion of services into and out of London were changed because of the weather		Comment
1	Mon 4 Jan	Full timetable with no weather disruption.	
2	Tue 5 Jan	Full timetable with some disruption in the evening due to heavy snowfall which brought down trees. This was a particular issue between Guildford and Portsmouth.	
3	Wed 6 Jan	Ran our snowplan timetable, which contains approximately two-thirds of normal trains with no trains on the Chessington South, Shepperton and Hampton Court branches, between Virginia Water and Weybridge, and two trains per hour on the Hounslow loop instead of the normal four trains per hour. Significant service disruption occurred because of snow and ice on the conductor rail.	Decision taken 1230 on 5 Jan.
4	Thu 7 Jan	Full timetable but heavily disrupted by icing problems with units suffering iced up line filters resulting in a number of train failures. No service between Virginia Water and Weybridge for much of the day.	
5	Fri 8 Jan	Slightly reduced timetable with no Dorking services and a shuttle between Surbiton and Hampton Court. Service disrupted by icing problems and some peak trains were of reduced length owing to snow damage caused the previous day.	
6	Sat 9 Jan	Full timetable ran.	
7	Sun 10 Jan	Full timetable ran.	
8	Mon 11 Jan	Full timetable ran but with some peak trains of reduced length owing to snow damage.	
9	Tue 12 Jan	Full timetable ran but with some peak trains of reduced length owing to snow damage.	
10	Wed 13 Jan	Full timetable but with some peak trains of reduced length owing to snow damage. Heavily disrupted by fresh snowfall and conductor rail icing.	Weather forecast was for snow W of line Southampton – Basingstoke. SSWT services affected were E of this line.
11	Thu 14 Jan	Full timetable ran but with some peak trains of reduced length owing to snow damage.	

Yours sincerely