

Middleton Railway Trust Ltd.

Risk Assessment as at March 2006.

The framework within which this risk assessment has been made is described in a separate document, which notes that the basic structure is unchanged from the initial assessment that was made in 1994. Thus, the assessment is in three parts:

- n** the first part consists of an outline of the hazards, in terms of the different groups of people involved;
- n** the second part discusses the allocation of a score to each; and
- n** the third part provides a summary and conclusions.

The revision history of this assessment is as follows.

- n** The first version was created in October 1994.
- n** The second version was created in January 2004 (and finally completed in June 2004), and contained amendments to cover the following issues:
 - (i) the use of the JCB and the fork lift truck;
 - (ii) the construction of the coaling stage, and the use of the JCB to load it;
 - (iii) the possibility that, if work was undertaken on the track while trains were running, then the line could be left unsafe, or obstructed by tools that had been left foul of the track;
 - (iv) the introduction of procedures to allow special passenger trains to be operated over lines that were not normally used for passenger traffic;
 - (v) the introduction of procedures to allow the Moor Road station site to be operated under pilotman working on certain special operating days;
 - (vi) the separation of the hazards of vehicles being moved while they are being worked on into two classes, one concerning vehicles in general and the other concerning vehicles in the workshop; and
 - (vii) hazards arising from the obstruction of walkways in the workshop.
- n** This version was created in March 2006, and contained amendments to cover the changes made to the layout of the Moor Road station site during 2005 and the early part of 2006, and specifically the following issues:
 - (viii) the alteration of the main route for passenger trains into the site, with the consequent possibility that a train running away down the gradient from Middleton Park Gates would now run towards the Moor Road level crossing;
 - (ix) the increased clearances at each end of the round-round loop for the platform;
 - (x) the maintenance requirements for the temporary surfacing of the new platform;
 - (xi) the improved separation of passengers from the running lines, including the elimination of the foot crossing that was at the end of the old platform;
 - (xii) the provision of catering facilities, with the consequent requirements for food hygiene to be ensured; and
 - (xiii) the relocation of the coaling stage and water crane.

Part 1 - Outline of Hazards

The basic structure of the risks being assessed is arrived at by considering the various groups of people involved, and the situations in which they could be put at the railway. In terms of these, there are five main classes of possible hazard that need to be considered, as follows.

1. Hazards to members of the public visiting the railway.
2. Hazards to other members of the public.
3. Hazards to railway staff from the operation of trains.
4. Hazards to railway staff from other engineering activities.
5. Other hazards to railway staff within enclosed buildings.

Each of these classes is considered further below.

1. Members of the public visiting the railway.

These hazards arise from the various activities undertaken by the visitors, and they can be subdivided into two groups, as follows.

- 1.1 Riding on the train.
- 1.2 Other situations.

1.1 The main hazards for riding on the train are the possibilities of:

- 1.1.1 Collisions, which could be caused by any failure of the single line token system of operation.
- 1.1.2 Derailments, either caused by vandalism or by failure of the track or vehicles.
- 1.1.3 A train going out of control in some other way.
- 1.1.4 Failures such as boiler explosions, or similar failure of steam piping or fittings.
- 1.1.5 Hazards associated with people simply riding within the coaches, such as falling over if the train lurches or jolts, or even falling out of the window of a coach.

1.2 The hazards to visitors from other situations basically all arise in and around the Moor Road site, as follows.

- 1.2.1 On the platform itself the main hazard is from slipping or tripping.
- 1.2.2 There can also be a hazard from children running around on the platforms, particularly when trains are approaching.
- 1.2.3 When boarding the train there is also a potential hazard in that the coaches are converted from vehicles which are slightly narrower than a standard BR passenger coach, and so the standard platform clearances actually give a larger than normal gap between the platform and the coaches, with a consequent risk of someone slipping down this gap.
- 1.2.4 In the layout of the site up until the remodelling in 2005 there was a foot crossing at the south end of the platform that was an obvious potential hazard, as it led to the area where visitors were able to inspect the rest of the rolling stock, and so was quite heavily used by pedestrians, but it also crossed the run-round loop for the station. There is no such crossing in the layout from 2006 onwards, and so this specific risk no longer arises, although the general hazards of visitors being able to get onto the running lines remain.
- 1.2.5 Also in the layout of the site up until the remodelling in 2005, the sidings where the rolling stock was displayed were close to the running lines, and hence there was a potential danger to visitors, as well as the hazards of climbing on the rolling stock. In the new layout the display of rolling stock is primarily in the display hall, and so the hazards in respect of visitors being in areas where rolling stock may move are essentially the same as now covered under 1.2.5, but the hazards of them possibly climbing on the displayed rolling stock still remain.
- 1.2.6 A new hazard from January 2004 is that several road vehicles have been obtained for use within the Moor Road site (viz a JCB and a fork lift truck), and the use of these creates the hazard that members of the public could be struck by one of them.
- 1.2.7 A new category of hazards from February 2006 is those relating to failures of food hygiene, since the new facilities will incorporate catering facilities.

2. Other members of the public.

In principle there are two main hazards to members of the public who are not visiting the railway: one is from recognised crossing points, and the other is from members of the public attempting to cross the railway at other places. In practice, for many purposes the two can be considered together, as the operating rules are intended to minimise any risks of members of the public being struck by a train under any circumstances, although there are some aspects that differ between different types of crossings. Thus, in part 2 of this assessment these hazards are considered under just two headings:

- 2.1 Road crossings.
- 2.2 Other crossing points (whether official or unofficial).

3. Railway staff operating trains.

Many of these hazards have been dealt with above under 1.1.1 to 1.1.4, since any of these occurrences would be hazardous for the train crews as well as for passengers, and would have similar scores, so that they do need to be considered separately in part 2. However, there are other hazards which need to be considered as well, which can be divided into four groups, as follows.

- 3.1 General hazards from the operation of locomotives.
- 3.2 Hazards from the operation of steam locomotives.
- 3.3 Hazards from the operation of diesel locomotives.
- 3.4 Hazards from shunting and related duties.

Only the second of these groups needs to be further sub-divided here, since there are a variety of specific hazards that can arise from the operation of steam locomotives, given the proximity of the crew to a large fire and a lot of hot metal.

- 3.2.1 The fire can give rise to the danger of blowbacks.
- 3.2.2 There is a danger of burns from the hot metal.
- 3.2.3 Additionally, there are also some hazards involved in the fact that steam locomotives need to be supplied with coal and water, and generate ash which needs to be disposed of. Of itself coal is not a hazardous substance in the quantities in which we need to store or handle it, but it is dusty, and this can generate a hazard.
- 3.2.4 Also, by January 2004 a coaling stage has been constructed, and while this is intended to avoid people needing to lift large quantities of coal, the fact that a JCB is used to load the coal onto the coaling stage creates its own hazards, particularly since coal could be spilled over the back of the stage during this process. By February 2006 the coaling stage had been moved, and located at the rear of the platform, but the same hazards still arose.
- 3.2.5 As a substance water is even less hazardous, but for many locomotives filling the tank requires a member of the crew to climb onto the top of it, in order to get the hose into the filler cap, and there are obvious dangers in this.
- 3.2.6 Locomotive ash is also not hazardous, apart from the disposal of hot clinker, but it does generate a fine dust which can cause hazards if it is inhaled or gets into eyes.

4. Railway staff and other engineering activities.

The engineering works undertaken on our railway are divided up in the conventional manner, as follows, and each of them has its own specific hazards.

- 4.1 Work on or around the permanent way, including fencing and point control equipment.
- 4.2 Such building maintenance as may be required on the shop and engine shed.
- 4.3 Locomotive work and other rolling stock maintenance.
- 4.4 The limited amount of electrical work required in the buildings.
- 4.5 The use of the yard vehicles referred to in 1.2.6 (viz the JCB and fork lift truck), which again by January 2004 had created new hazards, both of collision and of the shedding of loads.

Of these, permanent way maintenance and rolling stock maintenance need to be subdivided further in order to identify the associated hazards.

4.1 There are three main hazards from work on and around the permanent way, as follows.

- 4.1.1 If people are working on or around the track while trains are running, there is the risk of them being struck by a passing train.
- 4.1.2 Because of the weight of most permanent way components, damage can result from accidents when lifting or handling them.
- 4.1.3 Also, a hazard which had been missed in the 1994 assessment and was added in January 2004 is that, if people are working on or around the track while trains are running, there is the risk to trains that tools or components could be left foul of the track, or inadequately completed work could mean that trains run over track which is not fit to be run on.

4.3 There are six kinds of hazards involved in work on the rolling stock, as follows:

- 4.3.1 those arising from the weight of the components being handled (which have already been dealt with under 4.1.2 above, and so are not considered separately in part 2);
- 4.3.2 those arising from the need to work above ground level (which are also dealt with under 4.2 above, and so are again not considered separately in part 2);
- 4.3.3 those arising from any hazardous substances which might need to be used;
- 4.3.4 those arising from the use of any sort of power or machine tools;
- 4.3.5 those arising from the possibility of the vehicle being moved while work on it is in progress, which in the 1994 assessment had not been treated as a separate hazard from 3.1; and
- 4.3.6 those arising from the possible obstruction of walkways in the engine shed by unsafe storage of material, either on the floor (causing tripping hazards) or on shelves or racking, which are hazards that had been missed in the 1994 assessment.

5. Railway staff within enclosed buildings.

While the hazards here are comparatively slight, it is recognised that even simple objects such as the till or the water heater used for making cups of tea do still have hazards associated with them. Broadly, therefore, this gives rise to the following categories of hazards.

- 5.1 Use of ordinary electrical equipment.
- 5.2 Burns or scalds from handling hot water.
- 5.3 Loose or slippery floor coverings.
- 5.4 The need occasionally to deal with parcels or packages, and the consequent hazards associated with the lifting or carrying of objects.

Part 2 - Assessment of Individual Hazards

This assessment uses the same section numbering as part 1, and repeats the main headings from that part.

1. Hazards to members of the public visiting the railway

- 1.1.1 Collisions. These are meant to be prevented by the single line token system of operation, and the only hazard is that this system could fail, for instance if a driver sets off without the token. Even then, for a collision to occur it would be necessary for another train to move into the token section, and for the two trains to move at such a speed that they could not stop in time to avoid a collision.

With our normal pattern of operation, using a single trainset, it is impossible to see how the former could happen, as even on the rare occasions when we have more than one locomotive in steam there is no way in which another driver could fail to realise that the passenger train was in the token section, even if the driver of the passenger train had forgotten to check that he was in possession of the token. Furthermore, with the 10 mph speed limit one would still

expect trains to stop before such a collision could occur. Thus, it is concluded that the risk of this hazard is negligible, and can be given a score of 1. The severity, however, is obviously 5, giving an overall score of 5.

Since the 1994 assessment, however, there have been various occasions when special trains have been operated in such a way that there has been a second train which could move into the token section if the driver of the first one were to set off without the token. At the core of such operations, though, have been the use of pilotman operation for the Moor Road station site, which is the point where such a second train could start from to create such a hazard, and while a driver might forget to collect the token before setting off, it would be much more difficult for them to forget the pilotman. Furthermore, if they did then the pilotman would be aware of the fact, and could take action to prevent any other train entering the token section. Hence, it is concluded that the risk of this hazard is equally negligible in this situation, and can be given a score of 1, again giving an overall score of 5.

- 1.1.2 Derailments. The possibility of a derailment could occur either as a consequence of vandals placing obstructions on the track, or through failure of it, or through failure of the vehicles themselves. To guard against the first of these it has for a long time been our practice, as part of the procedures for inspection of the permanent way, to run a light engine the length of the line at the start of each operating day in order to check it. It is then considered that the 10 mph speed limit gives adequate protection against the possibility of smaller obstructions being placed in the interval between one train and the next, particularly as train crews are accustomed to keeping a watch for the possible presence of likely vandals near the line. Thus, the score for the risk is 1: the severity is obviously 5, giving an overall score of 5.

For a derailment to occur as a result of a failure of a vehicle would require either that a wheelset fail, or that the axlebox or springs fail, or that there was a gross failure of the whole structure of the vehicle. One consequence of carrying out the initial risk assessment in 1994 was to identify that, in addition to the periodic maintenance inspections which are carried out, the passenger vehicles should be inspected visually as part of the procedures for forming the passenger train, and the procedures were revised to provide for this. Given the limited speeds and consequently the limited stresses on the components compared with what they were originally designed to stand, it is considered that this should be more than adequate to detect any possible problems before they could cause a hazard. Again, therefore, the score for the risk is 1 and the severity is 5, giving an overall score of 5.

To assess the possibility of a derailment occurring as a consequence of failure of the track in the normal passenger line, it is necessary to consider the margins of safety in the construction of the track and trackbed. The track basically uses the same materials as those used up until the late 1960's for all main lines in this country, although main lines were laid on trackbeds that were significantly better than ours was at the time of the 1994 assessment. They were, however, carrying trains at up to 8 or 10 times the maximum speed of ours (where the stresses on the track are proportional to the square of the speed), so as far as the track is concerned the factor of safety on our operation is between 60 and 100 times greater. This was considered then to be more than enough to compensate for our less satisfactory trackbed, and since 1994 a considerable part of our passenger line has been relaid with better sleepers, and the trackbed improved as well, so that the margin of safety is now even greater.

Also, these trains were up to 10 times the weight of ours (where the wear due to the passage of a train is proportional to the weight), and on a busy line there might have been 150 trains per day, whereas we typically operate 10. Thus, while such a line would be subjected to a daily inspection, it would be wearing at up to 150 times faster due to the passage of trains. Given that full inspections of our track have been done at the beginning of every operating season, and a typical operating season consists of at most about 90 days operation, this gave a higher factor of safety (by 1.6) than would have applied to those lines.

At the same time, there is some element of deterioration that is not the result of wear, but is due to factors such as atmospheric pollution, bad drainage, etc. Given our comparatively light loadings this may be as important an aspect as wear, which would therefore reduce our safety factor significantly. In the light of this, the intervals at which we carry out full inspections were reviewed as part of the process of conducting the 1994 assessment, and it was decided that these needed to be changed to require one roughly every three months during the operating season (ie as though it were 90 continuous days, rather than consisting mainly of weekends throughout most of the year except the winter), which is encoded in the policy directive for safety critical work to require inspections in March, July and October. This therefore justifies the claim that our safety factor is about 1.6 times greater than would have applied to a main line at that period. The conclusion has to be, therefore, that the risk of a derailment on our line now is lower than it would have been on such a line then, and since that was clearly regarded as being at an acceptably low level ours can equally be taken as negligible. Thus, we justify a score of 1 for the risk: again the severity is obviously 5, giving an overall score of 5.

The other new aspect of this that had arisen as at January 2004 is that procedures had been established to allow the occasional operation of special passenger trains over sections of the line that are not normally used for passenger trains. These procedures include an explicit requirement for any such section of line to be specifically inspected not more than two weeks before any such train is run, and for any restrictions that may be considered necessary in the

light of that inspection to be imposed on the operation of such trains. This therefore ensures that the risk of a failure of the track for such a special passenger train is no greater than for a train on the normal passenger line, so that again the scores for the risk and severity are 1 and 5 respectively, and the overall score 5.

- 1.1.3 A train going out of control. This possibility could arise either from a driver being taken ill or from mechanical failure (principally of the brakes), although there is also a possibility (which was not explicitly discussed in the 1994 assessment) that it could be caused by careless driving, particularly on the more steeply graded sections of the line. The first of these possibilities is a hazard that the system of using two-man crews (for locomotives that do not have a drivers' safety device) is intended to eliminate, while the second should be prevented by the checks on the continuous brake that are required to be made whenever the formation of the train is altered, and also by the fact that as well as the continuous brakes on the train there are both power and hand brakes on the locomotive. Thus, the score for this risk is 1.

The only situation under which a driver could completely lose control of a train would therefore be if the rails became so slippery that all wheels on all vehicles on the train were to lock up and skid, which of course might be more likely to happen if the train was being driven carelessly. While it is not uncommon for locomotives to skid, the only circumstance that can be envisaged in which the whole of a continuously-braked passenger train might do so would be if a long length of the track were to become covered in oil. While some steam locomotives were notorious for dropping oil in this way (eg the unrebuilt Bulleid Pacifics), it is not a problem that we expect to encounter with any of our locomotives, and so the risk of this can also be given a score of 1. For either cause the score for the severity is 5, and hence the overall score is 5.

Of course, on the occasions when freight trains are being operated, which are not necessarily continuously braked, then in bad weather conditions there is a greater possibility that a driver could lose control through skidding, particularly if they were descending any of the steeper gradients on the line. To try to minimise the likelihood of this happening, the train operating regulations require that brakes should be pinned down on a minimum of one wagon in three on any such freight train. Also, the longest down gradient is the one leading from Middleton Park Halt to the Moor Road station site, and all trains descending this gradient are required to stop at the foot of it before they enter the Moor Road station site. Thus, all drivers are aware of the need to regulate their speed down the whole of this gradient in order to ensure that they can make this stop as required, and if they were to lose control then originally station site itself would provide a fairly long flat stretch on which to try to regain control and bring the train to a halt.

As at February 2006, though, the changes made to the Moor Road station site layout mean that the length of this flat section through the station site is rather shorter than previously, and the route that must normally be set for a train approaching down the gradient from Middleton Park Halt then leads down to the Moor Road level crossing. Under normal circumstances several vehicles will be parked (with brakes firmly on) on this section leading to the Moor Road level crossing, and so they would effectively act as a buffer stop for such a train if it overran the platform. On special operating days, which are the only ones where these vehicles might not be parked on this line, the level crossing would be staffed, and so in the event of a runaway it would be possible to open the level crossing to the train, and allow it to overrun over the level crossing and continue down the Balm Road branch. Hence, for these trains also the score for the risk can be taken as 1, although the severity should still be given a score of 5, even though the trains involved are freight ones rather than passenger ones.

Another issue which arose out of this as at January 2004 is in connection with the occasional special train operations where the Moor Road station site is operated under pilotman control, so that the possibility could exist of one train losing control while descending the gradient towards the station site while another train is moving within it. To guard against this, when such special trains are being operated radio communication is provided between train crews at Middleton Park Halt and the Special Responsible Officer at the Moor Road Station Site. It is then required that this must be used by the crew of any train that is to descend to Moor Road to obtain permission before setting off, and that any train operations within the Moor Road site must have been completed so that the site is clear before the Special Responsible Officer gives permission for such a train to set off. Thus the risk in this case is reduced in this way to a point where the score for it can be taken as 1, and again the severity should be given a score of 5.

- 1.1.4 Boiler explosions and related failures. Any failure of steam piping would be a severe hazard, to members of the locomotive crew as well as to members of the public, and so its score for severity would be 5. In some respects a boiler explosion would be an even more severe hazard, although on the scale being used it can still only be given a score of 5!

Failure of steam piping could arise simply because of weakness of components, due to corrosion or similar factors, but failure of a boiler is more complex, as there are a number of additional factors which could possibly interact. Apart from simple failure by the crew to maintain an adequate water level in the boiler, there could be failure of associated equipment, such as injectors, gauge glasses, pressure gauges or safety valves, and these could lead to the crew either being unaware of potentially dangerous situations such as low water level or excess pressure, or being unable to deal with them.

The risks of components being affected by corrosion are meant to be eliminated by the regular inspections of the boilers and related pipework, and the frequency of these inspections is intended to ensure that the risks are negligible. Similarly, the regular checks of the associated equipment whenever a locomotive is steamed, coupled with the periodic testing of pressure gauges and safety valves, is intended to eliminate the risks of these failures. The age of some of our engines does mean that injectors in particular are not always as reliable as those on more modern locomotives would be, and so the engineering staff pay particular attention to ensuring that any problems with these are dealt with promptly, to minimise the risk of an injector failing in use. In some cases action has also been taken to replace injectors with others that, while not authentic, have proved more reliable.

Thus, the factor of crew error is probably the most important, and to minimise the risk of this the schedule of training for firemen places primary emphasis on the importance of proper management of the water level, and on the checks that gauge glasses and injectors are working correctly. It is recognised that this places a considerable degree of reliance on the quality of training of footplate crews, and the history of boiler explosions on UK railways demonstrates that occasional lapses can occur, and that this is a hazard which needs to be kept under constant review to avoid standards slipping. Nevertheless, the emphasis that is given to this, together with the fact that it requires a more serious human failure than just a simple slip of attention, is felt to justify giving this risk a score of 1, so as to give an overall score of 5. It is recognised, however, that this is an area where maintaining standards amongst our volunteers is of primary importance.

- 1.1.5 Hazards deriving from riding within the coaches. These are much more diverse, but essentially they can be prevented by maintaining the track to a standard where lurching of the coaches is not a problem, and by expecting drivers to drive in a fashion which will minimise jolting. There had in the past (ie before the 1994 assessment) been problems with some locomotives due to the buffers not being long enough to enable the couplings to be tightened up properly, which did cause significant jolting of the train, but this problem had been largely solved by packing their buffers out from the bufferbeam to lengthen them. Thus, the score for this risk is 1: the score for the severity has to be 2 or 3, since in an extreme case a jolt could be severe enough to cause a passenger to fall in a coach in a way which could result in major (ie reportable) injuries.

In addition to jolting of the coaches while the train is on the move, they could also be jolted while in the platform during the process of running the locomotive round the train. This could arise when coupling up, but to minimise the risk of this there is a 5 mph speed limit in station sites. It could also occur because limited clearances within the platforms mean that coaches standing in the platforms could be slightly foul of the turnouts for the run-round loops, and so could be struck by the locomotive as it runs round. To minimise the risk of this clearance points are carefully marked both on the platforms themselves and on the track, so that train crews can be in no doubt as to whether they have stopped the coaches in a safe position, and again the 5 mph speed limit would severely limit the effect of any such impact. Furthermore, the changes made to the Moor Road station site as at February 2006 meant that there was significantly more clearance in the platform than previously, since the new platform would accommodate three coach trains, and so the risk of this was significantly reduced. Thus, the score for this risk is 2, or 3 at the most, while the score for the severity is 1, giving an overall score of 2 to 3.

There is one other hazard, in that one of the coaches has an open balcony, and some parents are prepared to allow children to hang over this or even to climb on it while the train is in motion. This had been identified as a hazard on one of our regular safety audits, and we have produced notices for this coach, warning passengers not to lean out of it, but if parents choose to ignore these notices there is little more that can be done to enforce the situation. To minimise the risk train crews are therefore instructed of the need to be vigilant, and to warn passengers of this danger, but no realistic safety regime can be effective with individuals who are determined to be totally reckless of their own safety, or that of their children. Nevertheless, we believe that the action being taken is sufficient to reduce the risk to a level that justifies a score of 1, while the severity has a score of 2 or at most 3, giving an overall score of between 2 and 3.

- 1.2.1 Slipping or tripping on the platform. Up until February 2006 the platform surface at Moor Road was paved, and care was taken to keep the platform paving maintained so as to minimise the risk of this. As initially constructed the new platform is not paved, partly because it is expected that some subsidence of the filling may occur, and so particular attention will be given to maintaining this surface. Once the expected subsidence has occurred, then the platform will be paved, and the situation will revert to the previous one. For either form of surface, it is considered that the scores are: risk 3, severity 1 or possibly 2, overall 3 to 6.
- 1.2.2 Children running around on the platforms. Parents are, of course, expected to keep children under control, but if they choose not to do so then there is nothing that can be done to stop them from running around on the platforms, even when trains are approaching, which potentially could be a severe hazard, with a score of 3 or even 4. To minimise the risk of this there is a 5 mph speed limit in station sites, and drivers are expected to be scrupulous in their observance of this when approaching platforms, and also to whistle at any sign of people (and particularly

children) approaching the platform edge. These steps are considered adequate to justify a score of 1 or at most 2, giving an overall score of about 3, with a worst case of 8.

- 1.2.3 Slipping when boarding coaches. To minimise the risk of someone slipping down the gap between the coaches and the platform edge, footboards have been fitted to all the doorways. Thus, the scores are: risk 2, severity 1 or possibly 2, overall 2 to 4.
- 1.2.4 Following the removal of the foot crossing at the south end of the platform in the new layout of the Moor Road station site, this hazard now becomes the general one of visitors being in areas of the site where rolling stock may move. For the layout of the site up until 2005, the sidings (which were previously discussed under 1.2.5) were fenced off from the running lines, and notices had been erected to warn visitors not to stray onto the tracks. In the new layout of the Moor Road station site most of the rolling stock that is on display will be in the display hall, and shunting movements in there will only be permitted to take place when the site is not open to visitors. The other tracks where rolling stock may be stabled (mostly not for display) are much more effectively separated from the running lines, in that one set of gates is provided to restrict access to the area between the display hall and the workshop, and another set of gates is provided across the only route by which visitors could get onto the running lines. It is therefore considered that the scores should be: risk 1, severity 4, overall 4.
- 1.2.5 This is now concerned with the hazard of visitors climbing on rolling stock that is being displayed. There have always been warnings displayed to visitors not to climb on the rolling stock, and it is only if these notices are ignored could there be any significant hazard. In the longer term provision may be made in the display hall for proper access platforms for some of the rolling stock, which would also have to include lifts for disabled visitors: this would be desirable to reduce the temptation to visitors to ignore the warning notices, but would obviously add new hazards. When such provision is made this assessment will need to be update again, but currently it is considered that the scores should be: risk 1, severity 2 or 3, overall 2 to 3.
- 1.2.6 The use of yard vehicles, namely the JCB and a fork lift truck. There are two hazards here, one that other people passing close by the vehicles could be struck by them, particularly if they were reversing, and the other that careless driving could cause them to tip over, or shed a load that was being carried in the bucket or on the forks, which again could endanger people who were too close to the vehicles. For both of these hazards the score for severity has to be 3, or perhaps 4. To minimise the risk of them, instructions have been issued that, if the site is open to visitors, then the vehicles may only be used if a lookout man has been appointed to oversee their operation, where a particular duty of this lookout man is to keep the public at a safe distance, both from the vehicle itself and from any possible spillage of it or its load. This reduces the risk of injury so that it can be given a score of 1, and hence an overall score of 3 or 4.
- 1.2.7 The hazards relating to failures of food hygiene do not need to be enumerated in detail here, since the procedures for controlling all of them are well defined, and there are standard qualifications for staff who need to operate these procedures. A requirement has been introduced that all staff who will be involved in the preparation or handling of food must hold at least the basic food hygiene certificate, and it is also expected that all other shop staff should hold this certificate too, since they may on occasions need to enter the separate area where food will be prepared and served. Given this level of qualifications, it is reasonable to assume that the score for risk is 3, while the score for severity is normally 1, although serious failures of hygiene (for which the risk score is probably nearer 2) could result in incidents with a severity of 2, so that the overall score is either 3 or 4.

2. Hazards to other members of the public.

- 2.1 Road crossings. For these, the railway is still one of the few which is permitted to use red flags to stop vehicles, and the rules require that the traffic must have been so stopped before a train is allowed to cross the road, so as to eliminate this risk. Of course, there is still the possibility of a motorist choosing to behave in a totally dangerous and irresponsible fashion, by overtaking vehicles that have already stopped, but there is nothing further that can be done to reduce the likelihood of such stupidity. The only realistic basis for assigning a score to the risk is to ignore such a possibility, and thus give it a score of 1; the score for the severity is 4, and so the overall score is 4.
- 2.2 Other crossing points. For these it is basically only pedestrians that are likely to be crossing the tracks, and the 10 mph speed limit is intended to ensure that drivers will be able to stop a train before a collision could occur. Calculations based on the Railway Construction and Operation Requirements confirm that the effect of this speed limit is sufficient to give a score for the risk of 1, with a severity of 3 or in the worst case 4, and hence an overall score of 3 to 4.

3. Hazards to railway staff operating trains.

- 3.1 The operation of locomotives. These general hazards arise from the need to oil them up, and periodically to check that bearings are not running warm, etc, as there is always the risk that the locomotive could move while the driver is

attending to something. Such movement could occur either because of a build-up of steam in the cylinders, or because another member of the crew interferes with the controls.

To minimise the risk of the first of these, the operating rules require drivers to ensure, before attempting any such maintenance operations on a locomotive, that it is in mid gear and has the brakes applied firmly (and, for a steam locomotive, that the cylinder drains are open). For the second of them, any member of the crew leaving the cab is required to inform the rest of the crew where they are going, and particularly to give warning if they are moving into a position of potential danger such as underneath a locomotive. Since it would need several of these requirements to be breached to cause the hazard, the score for its risk is 1 or at most 2, while the score for its severity is 2 or at most 3, so that the overall score is about 2, with a worst case of 6.

3.2.1 Blowbacks. While any fire can give rise to this danger, with our pattern of operation it is rare for locomotives to be worked hard enough for this to be a major hazard. Even so, in the training of firemen emphasis is placed on this danger, and on correct use of the blower to prevent it, to ensure that the risk is minimised. Scores: risk 2 or perhaps 3, severity 2, overall 2 to 6.

3.2.2 Burns from hot metal. This danger is also covered by the training of crews, in that cleaners are not allowed onto the footplate at all until they are sufficiently familiar with the principles of the construction and the operation of a steam locomotive that they will be well aware of which bits can be touched safely and which can not. Furthermore, all crews are expected to wear proper protective overalls so as to minimise the danger of accidental contact with hot metal. Thus, the score for the basic risk is 2 or at worst 3, and for the severity 1 or perhaps 2.

Furthermore, in the few cases of locomotives that have some steam piping in places where it is not immediately obvious that it will be hot (such as some of the piping on the Sentinel locomotive) the piping is lagged to reduce the extra element of risk that might otherwise arise. Thus, the overall score is about 2 or 3, with a worst case of 6.

3.2.3 Coal dust. Because of the comparatively small quantities in which we handle it, there is no real possibility of a dust explosion to be considered, and so the risk of this has to be given a score of 1, and a severity of only 2 or 3. A more significant hazard is dust in the eyes, but crews are encouraged to water the coal as necessary to keep the dust down, although as yet not all locomotives have slacker pipes fitted. Thus, the risk and severity of this are about the same as for a dust explosion, and the overall score is 2.

3.2.4 Handling and lifting coal. As at January 2004 a coaling stage had been erected, and this is loaded using a JCB, and this is still the case as at February 2006, although the position of the stage has moved. The coal is then either shovelled directly from this into the locomotive bunkers, or in some cases loaded directly into the bunkers with the JCB. The former requires no greater effort than shovelling any material in any other circumstances, and hence the nature of the work involved is well within the limits suggested by the official guidance on the Manual Handling Operations Regulations 1992, so that the risk of injury can be given a score of 1, and the severity a score of 2.

When the coaling stage is being loaded up with the JCB then, apart from the general hazards that could result from the use of such a vehicle, which are dealt with in 4.5, there is a potential hazard that the coal could become piled so high on the stage that it could then spill over the back. When the station site is closed to visitors this would not present a hazard, as nobody would be likely to be in the vicinity of the back of the coaling stage, but when the site is open then visitors could legitimately be walking past the back of it, and this is particularly true as at February 2006, since the new location of the coaling stage is at the back of the platform. As described in 1.2.6, instructions have therefore been issued that, if the site is open to visitors, then the JCB may only be used for any purpose if a lookout man has been appointed to oversee its operation, where a particular duty of this lookout man is to keep the public at a safe distance, both from the JCB itself and from spillage of anything (including coal) that is being loaded by it. This reduces the risk of injury so that it can be given a score of 1, and the size of the lumps of coal that are handled means that the severity would have a score of 2.

3.2.5 Filling locomotive water tanks. For many locomotives this requires a member of the crew to climb onto the top of the locomotive, and while nearly all of them are equipped with some sort of footsteps to enable this to be done, the steps are not always particularly regular. Up until shortly before the 1994 assessment the water hose had been suspended from overhead, and while some building work that was carried out at that time required temporary changes to the arrangement of the hose, it was reinstated once the building work had finished. This will continue to be the case as at February 2006, and although the location of the water crane is different the method of operation is the same. This means that the hose does not need to be lifted up while the crew member is trying to climb the steps, and so the score for the risk would be 2 or perhaps 3, and the score for the severity would also be 2 or in the worst case 3, giving an overall score of about 6, with a worst case of 9.

For the one locomotive that does not have proper footsteps (although its front sandboxes can be used as footsteps), instructions had been issued that a ladder should be used, and it was considered that this should give about the same scores. During the 2004 revision, though, this was called into question by an incident that had occurred not long

before, in which a fitter was using a ladder to access the top of the boiler of this locomotive to carry out some other work on it, and fell from the ladder. As far as could be established in investigating this incident, the ladder had been on a secure footing, and the fitter himself was not sure what caused him to fall, so it had not been possible to identify any improvement in working practices with ladders which could prevent such an incident in future, either for fitting work or for the filling of this locomotive's tanks. Alternatives such as providing a stage at tank top height were considered, but would simply have created alternative hazards due to the limited clearances that would be needed between any such stage and any passing vehicle. Furthermore, the scores for such a hazard would be at least as great as those for using a ladder, and probably greater, in the sense that the worst case would probably be more likely to occur with vehicles running past such a stage than with the present arrangements. Thus, since most crews have expressed a preference for either using the front sandboxes as footsteps, or operating from the running plate, the instruction that crews should use a ladder for filling the tanks of this locomotive was withdrawn as from the 2004 revision.

- 3.2.6 Locomotive ash. The disposal of hot clinker can be dangerous, but the training of crews emphasises the need to avoid danger to others from discharging any hot ash. To avoid the danger of the dust from the ash irritating eyes, crews are strongly encouraged to wear suitable goggles when emptying ashpans, so as to minimise the risk of injury. Thus, the scores are: risk 2 or perhaps 3, severity 2, overall 2 to 6.
- 3.3 Diesel Locomotives. By contrast with steam locomotives, these are much less hazardous, and the only serious hazard is from the inflammable nature of the fuel itself. To avoid spillages, this is held in a suitable tank, and then pumped into the locomotive fuel tanks, thus avoiding any handling of drums of diesel fuel and consequently minimising the risk of fire. (Although not specifically the concern of this assessment, these arrangements also minimise the risk of ground pollution or of spillages polluting watercourses.) Scores: risk 2 or perhaps 3, severity 2, overall 2 to 6.
- 3.4 Shunting and related duties. These may involve members of train crews and others either being alongside the tracks or going between the vehicles of trains in order to couple or uncouple them, and so are potentially dangerous situations, in which the main hazard is that of being in the way when a train moves. To minimise this risk the operating rules require that the driver must not move the train unless signalled to do so by the shunter, who must in turn ensure that he and anybody else are well clear before giving the driver the signal to move off. Similarly, members of train crews are required to warn the driver before going between vehicles, and a driver who receives a warning which is not clear is required to stop and investigate.

Thus, in both these cases, before the potentially dangerous situation could arise, positive action has to be taken by the person who might otherwise be in danger to indicate that they are out of danger. It is this requirement for positive action which justifies giving the risk a score of between 2 and 3, rather than the score of 4 which might otherwise be appropriate. The score for the severity is then 3, so that the overall score is between 6 and 9.

4. Hazards to railway staff from other engineering activities.

- 4.1.1 People working on or around the track being struck by a train. Because all our line is single track this risk is partly eliminated by the fact that trains can not continue to run while any major permanent way work is carried out, so that the hazard can only arise in respect of minor works, and the score for the risk only needs to relate to these.

To minimise this risk, the operating rules require that any persons working on or near the track while trains are running must be accompanied by a lookout man, whose sole responsibility is to observe the approach of trains and warn those doing the work. The rules also require the driver to be informed before any such work takes place, and given the speed limit on the line this means that the driver can also be expected to observe the actions of anybody working, and if necessary stop the train if they have not moved clear of the line. Thus, a multiple failure would be required to cause an accident, which justifies a score of 1 to 2 for the risk. The score for the severity is then 3, and so the overall score is between 3 and 6.

- 4.1.2 Lifting or handling permanent way components. This hazard also applies to any handling of other large heavy components, and to minimise the effect of their weight, and in accordance with the principles of the Manual Handling Regulations, suitable lifting equipment (which includes a rail mounted crane) is used whenever rails or sleepers need to be handled. Of course, any such equipment has its own risks, and not just cranes, although they have particular risks which are recognised as being more severe than those associated with simple equipment such as jacks.

To minimise the hazards associated with the operation of cranes, such operation is restricted to a small group of the most experienced members so as to ensure the competence of those concerned. Care is also taken to ensure that lifting equipment is only used within its load limits, including the use of suitable weighing equipment for heavy lifts. Also, all lifting machinery is tested as necessary in accordance with normal practice to eliminate the possibility of mechanical failure. Thus, the risk associated with the use of lifting equipment is essentially that of operators making

an unusual error, which thus has a score of 2. The score for the severity has to be 3 or even 4, so that the overall score for these sort of operations is 6 to 8.

Other movements of permanent way components, that can not be done with mechanical lifting equipment, are known to be hazardous, and indeed there have been several accidents of this type, which have been almost the only accidents to have occurred during the railway's 30 years of operation. Every effort is therefore made to minimise the need for such movements, and particular attention is given to training staff doing permanent way work in the hazards associated with all lifting equipment, and in the principles of safe manual handling, so as to minimise this risk. Nevertheless, history suggests that the risk still has to be given a score of 3, and the severity here is 2 to 3, so that the overall score for these sort of operations is 6 to 9.

- 4.1.3 Trains running over track which is not fit to be run on, or where tools or components have been left foul of it. This is a hazard that had been missed in the 1994 assessment, and was incorporated as at January 2004. To eliminate it the requirements for the inspection of the track that are discussed under 1.1.2 were extended to also require that, after any significant maintenance work, the track must be inspected before any train is allowed to run over it. Also, a report form for the inspection must then be completed, and this includes explicit questions about whether the track has been left in a fit state for operation, and whether any tools or material have been left foul of the track, to prompt the person in charge of the work to specifically check these aspects.

These extensions also restrict the kinds of maintenance work that may be done while trains are running, so as to not permit any work that might require either the movement of components such as sleepers or rails, or the use of more than one or two tools (such as a fishplate spanner and a keying hammer), and so further reduce the possibility of components or other tools being left foul of the track. Thus, the score for the risk is 1, although the consequences of such a hazard could include the derailment of a passenger train, and so the score for the severity must be 5.

- 4.2 General building maintenance. The main hazards associated with this are those arising from working above the ground on ladders or scaffolding of any sort, and the hazards associated with such work on items of rolling stock are discussed under 3.2.5, although work on the buildings could involve greater heights. There has been virtually no such work needed so far, as the buildings are comparatively new, but the hazards are recognised for when the situation does arise. The railway would not permit such work to be carried out without the use of proper suitable access equipment, and so it is considered that the score for the risk is 1, or at worst 2, while the score for the severity is 3, so that the overall score is between 3 and 6.

4.3.1 and 4.3.2: see 4.1.2 and 4.2 respectively.

- 4.3.3 Hazardous materials. As a general rule the railway does not need to handle any highly dangerous materials: the most hazardous are small amounts of oil or grease, or degreasing cleaners, or of course paint. COSHH assessments have been carried out for these, and where appropriate they are kept in secure storage, and only used in the workshop in quantities which are small enough to avoid any significant fume or explosion hazards, thereby minimising both the risks of these (for which the score is 1, or at worst 2) and the severity (for which the score is also 1 or at worst 2), so that the overall score is between 1 and 4.

- 4.3.4 Power and machine tools. As well as heavy machinery (lathes, shapers, drilling and milling machines and power saws) these include oxy-acetylene cutting gear and electric welding equipment, for which the associated hazards are potentially severe, and can even be fatal, so that the score for severity has to be 3 or 4.

The use of such machines is therefore strictly controlled, and the distinction is made between those who are fully competent (ie to industrial standards) and those whose competence and experience is limited, in order to ensure that the latter only use such equipment under supervision from the former. However, it is considered that in a situation such as ours, where comparatively little use is made of some of the machines, on the occasions when they are used carelessness by experienced operators may be at least as big a risk as limited competence. Thus, those staff who are fully competent to use the machines are placed under a considerable obligation to ensure that they both observe best practice themselves and insist on the highest standards from others whom they are supervising. Nevertheless, safety depends on their care, and so while the score for the risk is in principle 2, the fact that carelessness on its own could result in accidents means that the worst case score has to be 3.

Thus, the overall score is effectively 6, but with a worst case figure of 12. This clearly indicates the need for great care to be taken with this hazard.

In addition, there are also various machine tools for lighter tasks, such as portable electric drills, angle grinders, etc, and also equipment such as domestic mowing machines, strimmers, etc. The hazards associated with these are less severe, so that the score for severity is only 1 or 2. Consequently, while a similar control regime is applied as for heavy machinery, it does not need to be so restrictive, in the sense that the concept of industrial standards of competence is not necessarily applicable to all such equipment. Again, though, safety depends primarily on the care

exercised by the individual operators, and so while the score for the risk is in principle 2, the fact that carelessness on its own could result in accidents means that the worst case score has to be 3. Thus, the overall score is effectively 4, but with a worst case of 6.

- 4.3.5 Vehicles being moved while being worked on. In the 1994 assessment the fact that such hazards could arise from any shunting movement being undertaken while a vehicle was being worked on meant that this hazard had not been separated out from 3.1. In principle, though, they could be different if it were feasible to restrict such work on vehicles to certain locations where shunting movements could be specially controlled, and so as from January 2004 they are considered separately, as there are some locations within the engine shed where shunting movements are sufficiently rare that they could be regarded as though they were being specially controlled. On the other hand, it is not feasible to just restrict engineering work on vehicles to these locations, and so general control measures are required for them. The form of these measures is that, in addition to the procedures discussed under 3.1, there is a requirement that before any shunting movement is made, the shunter in charge must check all vehicles to ensure that anybody working on them has been warned that the vehicle will be moved, and has moved to a safe position. Thus, the score for the risk of such hazards is 2, while the score for its severity is 2 or at most 3, so that the overall score is about 4, with a worst case of 6.
- 4.3.6 Obstruction of walkways in the engine shed. This is a hazard that had been missed in the 1994 assessment, and was incorporated as at January 2004. It could arise from unsafe storage of materials, either on the floor (and so causing a tripping hazard) or on shelves or racking, from which it could overhang or even fall. Except in the case of heavy material falling, which is covered under 4.1.2 above, the severity of such hazards is low, and the score for this is 1, or possibly 2 in the case of material with sharp edges. As with many workshop operations, minimising the risk of such hazards is largely a matter of encouraging a culture of care amongst workers, and in particular emphasising the importance of keeping the workshop tidy at all times, so that material is not left stowed where it would be in the way, or unsafe. Hence, the score for the risk is in principle 2, but the fact that carelessness on its own could result in accidents means that the worst case score has to be 3, giving an overall score of about 4, with a worst case of 6.
- 4.4 Electrical hazards. To minimise these the policy has been adopted of only acquiring portable electrical equipment that uses 110V supplies, and the various outdoor generators that have been obtained since the 1994 assessment all produce 110V. They also all have switch boxes that are fitted with residual current circuit breakers, and such switch boxes are used whenever extension leads need to be plugged in to the supplies. Thus, the severity of these hazards has a score of 2, while the conditions under which it is used mean that the risk probably also has a score of 2 or perhaps 3, giving an overall score of between 4 and 6.

The potentially severe hazards associated with mains voltages are further minimised by only allowing those members who are qualified electrical engineers to carry out any electrical work, so that while the severity has a score of 3, or in the worst case 4, the risk only has a score of 2, and the overall score is 6, or in the worst case 8.

- 4.5 The use of yard vehicles, namely the JCB and a fork lift truck. As described in 1.2.6, there are two hazards here, one that other people working or passing close by the vehicles could be struck by them, particularly if they were reversing, and the other that careless driving could cause them to tip over, or shed a load that was being carried in the bucket or on the forks. For both of these hazards the score for severity has to be 3, or perhaps 4, and the other common feature of them is that they would result from careless driving of the vehicles. To minimise the risk of this, the driving of either of these vehicles is strictly controlled, and limited to competent persons, who are required to observe similar precautions in respect of warning any staff who may be in the vicinity of the vehicles as would apply to shunting operations, as discussed above in 4.3.5. Thus, the score for risk is 2, and possibly 3, giving an overall score of 6 to 8 and a worst case of 12.

5. Hazards to railway staff within enclosed buildings.

- 5.1 Ordinary electrical equipment. While formally the electrical safety regulations do not apply to us, to avoid these sort of hazards care is nevertheless taken to ensure that such equipment is maintained to the standards that would be required if they did apply, and that provisions of these regulations such as the requirements for periodic electrical testing of portable equipment are observed. The score for the risk is therefore between 1 and 2, and for the severity 1, or at worst 2, and so the overall score is between 1 and 4.
- 5.2 Handling hot water. This could only occur in the space behind the shop counter, and up until 2005 the only control measure was that this space had been laid out in such a way as to try to minimise the risk of staff being jolted by others while handling hot water. From February 2006 the area where hot water is being handled, as part of food preparation, is separate from the shop area, and so the risk of individuals being jolted in this way is significantly reduced. Hence, the score for the risk is effectively 1, or perhaps between 1 and 2, and the score for the severity is 1, or at worst 2, and so the overall score is effectively 1, although in the worst case it could be as high as 4.

- 5.3 Loose or slippery floor coverings. These could present potential dangers both to shop staff and to customers, and to minimise this danger care is taken to maintain the floor in a safe state. The score for the risk is therefore between 1 and 2, and for the severity 1, or at worst 2, and so the overall score is between 1 and 4.
- 5.4 Handling parcels or packages. Shop staff do occasionally need to deal with parcels or packages of stock, and so there could be the usual hazards associated with the lifting or carrying of objects. While the aim is to apply the principles of the manual handling regulations to such tasks when they occur, loads which are heavy enough to cause a problem are not sufficiently frequent to justify the use of mechanical lifting equipment, and when they do occur it is usual that a team of people is able to cope easily with them. Here too, therefore, the score for the risk is between 1 and 2, and the score for the severity is 1 or at worst 2, and so the overall score is between 1 and 4.

Part 3 - Summary and Conclusions

- 6.1** As indicated above, one of the consequences of carrying out the initial 1994 assessment was to identify two areas (both covered in section 1.1.2) where procedures need to be revised, and these revisions have been put into effect. These two issues were as follows.
- 6.1.1 The need for the passenger vehicles to be inspected visually as part of the procedures for forming the passenger train, in addition to the periodic maintenance inspections which are already carried out.
- 6.1.2 The review of the intervals at which we carry out full inspections of the track on the passenger line, and the decision that these need to be changed to require one every three months during the operating season.
- 6.2** It was noted in that assessment that the fact that it had served to highlight these two issues had clearly justified the effort required to conduct it. By contrast, this revision of the assessment has not highlighted any further such issues. This indicates that, in those situations where new operations have needed to be introduced or existing operations modified, the railway's normal processes for managing health and safety have dealt successfully with the attendant hazards of these new or modified operations.
- 6.3** Of the remaining hazards, it appears from the above that there are three groups of risks which can not be regarded as negligible, and the actions that can be taken to try to minimise the effects of each of these three groups are considered further, as follows:
- 6.4 those that could arise from carelessness by railway staff in the course of normal operations;
- 6.5 those that could arise from irresponsible behaviour by members of the public; and
- 6.6 those that could arise from hazards that are not part of normal operation.
- 6.4** The main hazards that could arise from carelessness by railway staff further divide into four groups, as follows.
- 6.4.1 those that are connected with the operation of steam locomotives (sections 3.1 and 3.2), and particularly boilers (section 1.1.4): the worst-case scores for many of these are in the range 6 to 9;
- 6.4.2 those that arise from shunting operations (section 3.4) and to a lesser extent other operations on or about the tracks (section 4.1.1): again the worst-case scores for these are in the range 6 to 9;
- 6.4.3 those connected with the use of machine tools (section 4.3.4) and the use of yard vehicles (section 4.3.5), where the worst-case scores are 12, which is the highest figure of any of the hazards identified here; and
- 6.4.4 those connected with the handling of heavy components (sections 4.1.2 and 4.3.1), with a worst-case score of 9.

It was stated in the initial assessment that the key to minimising the risks associated with all of these is to stress to all staff the fact that these are hazardous operations, and that the safety of all concerned depends directly on appropriate care being taken. That still remains true in this assessment. In the case of machine tools (4.3.4) it was noted in the initial assessment that steps were also being taken to see whether the inherent level of safety of the machines could be increased, but that their age made this very difficult. Since then one or two old machines have been replaced by more modern ones, but while these may be safer, they still have the capacity to cause serious injury if not operated carefully, and so the worst-case scores can not realistically be reduced.

- 6.5** The main hazards that could arise from irresponsible behaviour by members of the public are those that might result from parents failing to keep proper control of small children, either on the balcony of the coach (section 1.1.5) or on the platforms (section 1.2). Here too some of the worst-case scores are in the range 6 to 8.

As noted in the initial assessment, some additional warning notices were produced and installed, but beyond this there was and still is little that can be done to reduce these risks further. There is also a possible hazard from motorists refusing to observe signals at level crossings (section 2), but nothing can be done to reduce this risk apart from ensuring that any such breaches are reported to the police and legal action taken and publicised as appropriate.

- 6.6** In the initial assessment it was noted that there were various unusual hazards, meaning ones arising from variations from normal practice, and in particular that there were at that time temporary arrangements in force for handling

coal and water for locomotives (section 3.2). It was stated that, when the building work that required these variations had been completed, then it was expected that better provision could be made for these, which should reduce the risks significantly, and this has indeed been the case. More to the point, it has not been necessary since to introduce any other such variations from normal practice, and so the risks have been satisfactorily controlled.

A. J. Cowling, 31st March, 2006.