

SUMMARY IN ENGLISH

During the year of 2012, 28 accidents and near-misses regarding work in railway tracks was reported to the Swedish Accident Investigation Authority (Statens haverikommission - SHK). The number of reported occurrences prompted SHK to initiate a thematic investigation. SHK has in previous investigations within this area identified risks related to the type of planning used, if risk evaluations have been carried out before the work, the contractors' local knowledge and the chosen type of protection. Nevertheless, similar events have continued to occur.

From available statistics and data it is not possible to draw the conclusion that the number of occurrences has increased. Furthermore, there is no information on the number of track works where the protection only consists of using a lookout for incoming trains. As a consequence it is not possible to get an overall picture of all the track work performed. Conclusions regarding whether the number of occurrences has increased or decreased is therefore uncertain.

SHK has reviewed information of the accidents and near-misses regarding work in railway tracks that has been reported to SHK during 2012. Data has also been gathered from the three large contractors Infranord AB, Strukton Rail AB and Balfour Beatty Rail Skandinavien. The information shows that there is a correlation between the level (type of planning and execution) of preparation for the track work and the consequences of an occurrence. When the planning is made in advance (compared to direct planning) the procedure to a greater extent involves risk evaluations and the choice of the strongest type of protection ("A-skydd" = the track is closed for trains). The consequences of accidents and near-misses that occur during the execution of these pre-planned works tend to be less serious than the consequences of the occurrences during direct planned work where no risk evaluation has been performed and where a lookout is used as protection or even no protection is used.

During 2012 the Swedish Transport Administration (the state-owned and largest infrastructure manager in Sweden) performed approximately 450 work place controls. The documentation that SHK has studied indicates the same problem as mentioned above, namely deficiencies in; the execution of risk evaluations, the documentation of the protection type and the safety measures taken. The selection of work place controls are based on the capacity allocation plan (banutnyttjandeplan) which mainly consists of pre-planned works. The documentation from the work place controls does not give a complete picture since the pre-planned works to a greater extent are performed with "A-skydd".

During procurement of contractors the Swedish Transport Administration requires that the contractors shall have a safety management system, that the work shall be executed in accordance with applicable regulations and that a safety plan shall be drawn up for the work. However, these requirements are not included in the evaluation but they are examined after the contract signing. The Swedish Transport Administration justifies the approach with the argument that safety should not be viewed as an added value, it should be viewed as a minimum requirement. The Swedish Transport Administration claims that it is difficult to change the model for procurement but it does consider some of the details in the requirements. It has happened that there has been a requirement in the procurement process that the work should not affect the adjacent track. Such a requirement might affect the risks especially when large work vehicles are involved and it is not allowed to close the adjacent track for trains. Excluding those kinds of requirements would probably have a positive effect on safety. SHK concludes that it is essential that persons with competence regarding the conditions for track work participate in the procurement process in order to avoid that requirements are designed in a way

that has negative effects on safety. While this investigation has been made, the Swedish Transport Administration has decided that safety related document will be reviewed by staff with adequate skills.

The safety management system of the Swedish Transport Administration shall among other things ensure that engaged contractors are familiar with relevant rules and requirements, which shall be controlled through audits and work place controls. At the time when interviews were conducted for this report, the Swedish Transport Administration had not yet conducted any revision of safety management systems of contractors but stated that it has the intention to start to look into how to perform these revisions during the autumn 2014.

Besides the work place controls the Swedish Transport Administration also to some extent follow up performed work projects. But when it comes to safety and environment it is only the environmental part that is evaluated. SHK's conclusion is that evaluation of performed work projects from a safety perspective could be a possible way to secure a high safety level on site. Such an evaluation will of course not affect the particular work project that is evaluated but it might have long term effects. If the contractors are aware that such an evaluation is normally conducted it could motivate contractors to ensure and document the safety aspects.

SHK has also reviewed the supervision of the Swedish Transport Administration, which is made by the Swedish Transport Agency (the national safety authority). The resources that the Swedish Transport Agency has allocated for supervisory tasks as audits and inspections are limited in relation to the task of supervising such a large organization as the Swedish Transport Administration and also many other smaller infrastructure managers. The Swedish Transport Agency relies on the mandatory internal controls of the infrastructure managers. SHK has in other investigations concluded that the internal control has not functioned as intended and has identified a need for the Swedish Transport Agency to increase measures to verify and control the systems of the infrastructure managers.

The Swedish Transport Agency has performed an audit of the Swedish Transport Administration's work concerning safety issues at track works. The audit has been terminated and the dossier was closed with reference to that the Swedish Transport Administration had taken actions and that the number of occurrences had decreased. One of SHK's findings in this report is that such a conclusion cannot be made. SHK has identified a need for further supervisory measures within the area and a need to follow up that the actions taken has had the intended effect.

Furthermore, SHK has reviewed and gathered information about the inspections and site visits made by the Swedish Work Environment Authority based on the requirements in the Work Environment Act. SHK concludes that the Swedish Work Environment Authority's inspections of contractors is limited and mostly triggered by accidents or near misses. A closer collaboration between the Swedish Work Environment Authority and the Swedish Transport Agency could be a way to increase the Swedish Work Environment Authority's ability to make inspections and controls of track works.

To summarize SHK concludes that:

- The available statistics has such deficiencies that it is not possible to draw any conclusion regarding the question if the number of occurrences has increased, decreased or if it is stable. The format of reporting has also changed over the years. It should be noted that the statistics used by SHK is not the official statistics as this is not detailed

enough and does not include near misses. The statistics referred to is the more detailed statistics from the infrastructure manager and its contractors. An improved management of the statistics is desirable to increase the possibilities to learn from experiences in order to avoid future unwanted events.

- There is a lack of data at the infrastructure manager and its contractors that limit the possibilities to get an overall picture of track works that are performed and the conclusions regarding risks are therefore uncertain. The reviewed information shows that pre-planned works where risk evaluations have been made tend to lead to less serious occurrences than directly planned works where risk evaluation might be missing or where the work might be performed without protection.
- The work place controls that the Swedish Transport Administration performs are mostly controls of pre-planned works and can therefore not catch all problem areas. The Swedish Transport Administration had when this report was written not yet performed any revisions of the contractors' safety management systems which means that the Swedish Transport Administration's internal control cannot yet be said to be fully functional.
- The resources of the Swedish Transport Agency for audits and inspections are limited and the authority relies on the internal controls made by the infrastructure managers themselves to identify deficiencies. SHK does not consider this to be satisfactory.
- The Swedish Work Environment Authority's inspections of the contractors are mostly triggered by accidents or near misses and limited to aspects concerning the Environment Act. The supervisory measures taken by the Swedish Work Environment Authority during 2012 are limited compared to the range of activities conducted by the contractors.

Safety recommendations

The Swedish Transport Agency is recommended to take the following measures.

- When performing track works it may occur that the contractor has a better knowledge of the premises than the infrastructure manager. It also happens that several levels of subcontractors are used. These factors might affect how local information is transferred and how such measures are documented, which may result in persons performing tasks relating to safety without having the local information needed to be able to perform the work in a safe way. The Swedish Transport Agency is recommended to encourage the Swedish Transport Administration, for example during revision of rules for local information or in other ways, to take these factors into account in order to develop rules and routines that ensure that staff with tasks relating to safety issues has got the local information needed.

- The Swedish Transport Agency is recommended to ensure that the Swedish Transport Administration investigates the possibility to examine safety critical operations and compliance with rules concerning track works when following up on procurements.
- The Swedish Transport Agency is recommended to allocate more resources dedicated to inspections and audits in order to enable more verifications when revising infrastructure managers and railway undertakings.
- The Swedish Transport Agency is recommended to encourage an industry-wide database for accidents and near-misses. This database should be run by an organization with adequate tools and sufficient resources to ensure the maintenance of quality. Within the scope of this the Swedish Transport Agency is recommended to investigate the possibilities to enable anonymous reporting.
- The Swedish Transport Agency is recommended to follow up the revision (TSJ 2010-1860) that the Agency has earlier performed and the measures taken by the Swedish Transport Administration in order to ensure that the measures deals with the deficiencies reported in chapter 3 (mainly lack of local information, lack of documented risk evaluations, work without protection or work with the wrong type of protection).

The Swedish Transport Agency and the Swedish Work Environment Authority are recommended to

- increase their collaboration in order to enhance the Swedish Work Environment Authority's possibilities to make inspections of track works.