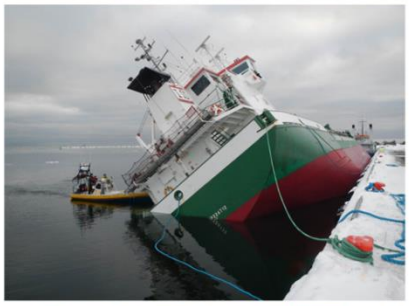
Statens haverikommission
Swedish Accident Investigation Authority



Annual report

[Translation from the Swedish original]

Financial year 2013

The annual report can also be found on SHK's website: www.havkom.se

This is a translation into English of the original Annual Report in Swedish. This translated version does not contain the purely financial parts that form the second half of the Swedish original report.

Contents

1. FOCUS OF OPERATIONS 4

1.1 Duties ..... **Fel! Bokmärket är inte definierat.**

1.2 Provisions which regulate SHK's operations 4

2. PROFIT AND LOSS ACCOUNTING**FEL! BOKMÄRKET ÄR INTE DEFINIERAT.**

2.1 Requirements of the appropriation directions 5

2.1.1 Goals 5

2.1.2 Reporting requirements 5

2.2 OPERATIONAL DEVELOPMENT 5

2.2.1 Overall assessment 5

2.2.2 Division of the profit and loss accounting**Fel! Bokmärket är inte definierat.**

2.2.3 Investigation of accidents and incidents 8

2.2.4 Other safety work 23

2.2.5 Retention of expertise 24

2.2.6 Efficiency and good economy 28

2.2.7 Costs 33

1. FOCUS OF OPERATIONS

1.1 Tasks

Since 1 July 1990, the Swedish Accident Investigation Authority (Statens haverikommission, SHK) has been tasked with investigating serious accidents and incidents in air traffic, at sea, in rail traffic, in road traffic and in other operations, all from a safety perspective. “Other operations” means all other operations in society besides air traffic, maritime operations, rail traffic or road traffic. SHK's investigative duties cover both civilian and military operations. SHK also cooperates with the various safety authorities in their accident prevention operations, as well as with the investigative bodies of other countries and certain international bodies working in the field, such as the European Aviation Safety Agency (EASA), the European Maritime Safety Agency (EMSA) and the European Railway Agency (ERA).

The purpose of SHK's investigations is to

- clarify, as far as possible, the sequence of events and their causes, as well as damages and other consequences,
- provide the basis for decisions aiming at preventing similar events from occurring again, or limiting the effects of such events, and
- provide a basis for an assessment of the operations performed by the public emergency services in connection with the event and, if there is a need for them, improvements to the emergency services.

The sole purpose of SHK's operations is to improve safety. The authority has no inspection remit, nor is it any part of its task to deal with issues of blame, liability, damages or matters of certification, disciplinary measures, etc. This means that such matters are neither investigated nor discussed in connection with an investigation.

1.2 Provisions which regulate SHK's operations

SHK's operations are primarily regulated by the Accident Investigation Act (1990:712) (LUO), the Accident Investigation Ordinance (1990:717) (FUO), the Ordinance (2007:860) with instructions for SHK, as well as Regulation (EU) No. 996/2010 of the European Parliament and of the Council on the investigation and prevention of accidents and incidents in civil aviation, and Commission Regulation (EU) No. 1286/2011 on adopting a common methodology for investigating marine casualties and incidents. Also of great importance to the investigations are Directive 2009/18/EC of the European Parliament and of the Council establishing the fundamental principles governing the investigation of accidents in the maritime transport sector (the Marine Accident Investigation Directive), and Directive 2004/49/EC of the European Parliament and of the Council

on safety on the Community's railways (the Railway Safety Directive).

2. RESULTS

2.1 Requirements of the appropriation decision

2.1.1 Goals

The investigations of accidents and incidents carried out by SHK shall be concluded as soon as possible, and if possible within twelve months of the accident or incident.

2.1.2 Reporting requirements

The number of occurrence reports received and closed and the number of investigations launched and concluded shall be reported, by category.

SHK shall report and comment on the handling time for investigations over the past three years. SHK shall also analyse and explain the most common causes for the handling time for certain accident investigations exceeding twelve months. In addition, SHK shall report on the measures taken to reduce handling times.

2.2 OPERATIONAL DEVELOPMENT

2.2.1 Overall assessment

SHK makes the overall assessment that the authority has fulfilled the goals of its operations to a great extent, albeit not entirely. The proportion of investigations that were concluded within twelve months has increased considerably since 2012. The handling times for investigations has been reduced. SHK's cooperation with the concerned safety authorities is generally going well and continues to develop.

The operations are almost entirely event-driven. The events reported to SHK vary greatly from time to time and from one area of investigation to another. The criteria that make an occurrence "obligatory" to investigate also vary from one area of investigation to the next. This means that the number of investigations instigated has been larger in the field of aviation (low threshold for an investigation to be considered obligatory) than in other areas (high threshold). On the other hand, the investigations that do have to be carried out in these other areas are on average more complex, extensive and time-consuming.

New accidents and incidents call for quick handling initially, partly in order to make a correct assessment of whether or not they should be investigated and partly to ensure no investigation material is lost. This in turn means that, repeatedly, investigations already underway must

be set aside. Furthermore, in civil maritime operations, it is now a statutory requirement for a formalised preliminary assessment to be carried out of certain categories of incidents, even if these do not result in an investigation in the end. An assessment of this nature most often requires an initial investigation directly at the scene of the accident, which in turn means a disruption to the work with other ongoing investigations.

Overall, this means that handling times are very difficult to predict. In some cases, primarily where international collaboration is involved, they can also be difficult – if at all possible – for SHK to influence. It is therefore far from always "possible" to conclude an investigation within twelve months of the event. Of course, this does not alter the fact that the authority is obliged to constantly strive towards that goal.

Measures to improve the planning and follow-up of the investigative work have also been implemented. A goal has now been set in the overall work plan; that the vast majority of SHK's investigations shall be concluded within twelve months and that no investigation shall take longer than 20 months. All ongoing investigations are now reviewed monthly by management in order to uncover bottlenecks and facilitate the implementation of prioritisation measures. An in-depth tertiary follow-up procedure with the same purpose has also been introduced. Both on a departmental level and for each investigation, systems for more meticulous planning and follow-up have been introduced. An electronic support system for file handling was also launched on 1 January 2014. The work to introduce a comprehensive operations management system continues.

Overall, these measures are deemed to have positive effects on handling times and the proportion of investigations that can be concluded within twelve months of the event. The proportion of investigations concluded within twelve months has now also increased from 46 per cent in 2012 to 62 per cent in 2013.

At the same time, there is a great difference between the different areas of investigation. This is primarily due to the fact that – as previously mentioned – the investigations carried out in the areas of maritime operations and rail traffic, as well as in the field of "other accidents", are more extensive and complicated on average than in civil aviation where the threshold for when an investigation is obligatory is significantly lower. The number of events in civil maritime operations that go to investigation also increased in 2013. Staffing has also been a problem, primarily in maritime operations. It has led to delayed investigations and backlogs. Due to new recruitments, however, there are good prospects for tackling these backlogs in 2014.

At the same time, there is no escaping the fact that the authority needs additional budgetary funds for human resources in order to sustainably achieve the goal of shorter handling times in all areas of investigation

in the long term, and so that the preparedness to handle major accidents which the authority is required to have, can be maintained also in future. This matter is touched upon briefly in the following, but above all, SHK will have to come back to it in the budget proposal for 2015-2017.

2.2.2 Structure of the Results section

General

"New cases" are all accidents and incidents reported to SHK over the year. "Concluded cases" are all cases concerning accidents and incidents on which SHK has made decisions over the year. "Commenced investigations" are the cases that SHK has decided to investigate over the year, and "issued final reports" are investigations concluded over the course of the year for which final reports have been published.

SHK's reporting of operations is divided into: civil aviation, civil maritime operations, rail traffic, military operations and other operations.

SHK has chosen to fulfil its reporting duty by reporting statistics from each area for the past three years, and then to comment on these statistics and on other factors which are of interest to the achievement of the goal.

Statistics on the total number of cases received and concluded, plus the opening and closing balance (backlog), are presented for each area, as well as the number of cases in which the decision was made to launch an investigation or to carry out a formal preliminary assessment (applicable in the field of maritime operations only), the number of final reports and the extent to which the likely cause of the accident could be established, the number and proportion of final reports produced within twelve months and the average and median handling times in months. Finally, a report is given of SHK's assessment of the responses to its recommendations to e.g. supervisory authorities received over the year.

Incidents

In this context, it should be pointed out that incidents are not reported separately from accidents. The reason for this is primarily that it is often purely down to chance whether an event has had such consequences as would lead it to be classified as an accident or as an incident in accordance with the law. In many cases involving minor accidents, there are often circumstances which mean that the event can also be considered a near-miss in terms of a larger, serious accident.

Handling of recommendations

Safety recommendations are reported in terms of the number of recommendations issued over the year, how many were deemed by

SHK as having been implemented and how many not, including an opening and closing balance (backlog). A recommendation is considered to have been implemented if its purpose has been fulfilled, even if the addressee has chosen another way to implement it than what SHK has proposed. If a recommendation is not considered implemented, this means the recipient has taken a final stance on the matter and decided not to take any measures in response to the recommendation, or at least not any measures that SHK considers suitable, or that the recipient has not submitted an account within the prescribed time and SHK has come to the conclusion that there is no purpose in allowing the case to be left open.

2.2.3 Investigation of accidents and incidents

Civil aviation

For the area of civil aviation, investigations which in accordance with Annex 13 of the Chicago Convention are carried out by accident investigation authorities in other countries – but where SHK shall and is entitled to appoint an "accredited representative" – are reported separately. The possibility for SHK to influence the handling time for these investigations is almost non-existent, and the cases are concluded only once a final report is issued by the accident authority of the other country. Therefore, no statistics are given with respect to the handling times of these investigations. Safety recommendations issued by the foreign investigative body are followed up by that authority and not by SHK, for which reason statistics on the handling of recommendations is also not presented for these cases.

To a varying degree, however, also these investigations require work contributions from SHK. In this way, they also have a negative impact on SHK's own investigations in terms of handling times and the total number of investigations carried out.

Table 1. Total no. of cases

Year	2011	2012	**2013**[1]
Opening balance	22	22	**44**
New cases	119	135	**168**
Closed cases	119	138	**177**
Closing balance	22	19	**35**

[1] The opening balance for 2013 also includes foreign aviation cases which SHK is assisting in but which have not previously been reported among the total number of reported cases, and which were therefore not included in the closing balance for 2012.

Table 2. Investigations initiated by SHK

Category	2011	2012	**2013**
Large aircraft[2]	9	5	**2**
Multi engine light aircraft	0	0	**1**
Single engine light aircraft	6	4	**8**
Seaplane	1	1	**0**
Helicopters	3	2	**3**
Gliders	0	3	**1**
Hot air balloons	0	1	**1**
Total	19	16	**16**
Of which commercial aviation	9	7	**4**
Of which private aviation	10	9	**12**

Table 3. Final reports issued by SHK

	2011	2012	**2013**
Large aircraft	6	13	**6**
Single engine light aircraft	4	2	**6**
Seaplane	1	1	**1**
Helicopters	6	4	**2**
Gliders	0	0	**3**
Hot air balloons	0	1	**1**
Total	17	21	**19**
Of which commercial aviation	8	9	**6**
Of which private aviation	9	12	**13**
Likely cause of accident established	17	20	**19**

Table 4. Number and proportion of SHK's investigations concluded within 12 months and average and median handling times in months

	2011	2012	**2013**
Total number of reports published	17	21	**19**
Of which concluded within 12 months	9	12	**17**
Percentage of which concluded within 12 months	53	57	**89**
Average investigation time	14.7	14.4	**9.1**
Median investigation time	11.9	11.6	**9.7**

[2] Large aircraft are aircraft with a maximum permissible mass exceeding 5,700 kg.

Table 5. Recommendations

Year	2011	2012	**2013**
Opening balance	6	17	**29**[3]
Issued	20	28	**13**
Implemented	9	16	**23**[4]
Not implemented	0	2	**0**
Closing balance	17	27	**19**

The number of *occurrence reports received* has increased when compared with figures for both 2012 and 2011; by over 17 and 32 per cent respectively. In terms of commenced investigations, these are on the same level as in 2012 but have decreased somewhat in relation to figures for 2011. The backlog of aviation cases has decreased since the previous year.

The average *handling time* for investigations concluded in 2013 was slightly over nine months, which is a considerable improvement in relation to both 2012 and 2011, where the average handling time for the published final reports was 14.4 and 14.7 months respectively. The median time has also increased to a not insignificant extent – around two months in fact – when compared with both 2012 and 2011. Both average and median times have thus decreased continuously over the past three years.

The closing *balance* of ongoing investigations in the field of aviation at the end of 2013, included only three that had a handling time exceeding twelve months by the end of the year. This is on the same level as in 2012, but an improvement from 2011, when there were six cases like this. Considering the phase of the investigation of the cases still underway at the end of 2013, SHK's assessment is that by the end of 2014 there should be no civil aviation cases remaining which are older than twelve months. To summarise, the above indicates that the authority's active efforts to bring down investigation times has produced results.

Over the year, 19 *final reports* have been issued, which is a marginal decrease compared with 2012 but an increase from 2011.

Likely *causes* of the accidents and incidents have been established in all cases. In 2012 there was one case in which the likely cause could not be established, whilst the likely cause could be established for all cases in 2011.

Of the final reports published over the year, 89 per cent were produced within a period *shorter than twelve months*. This is a marked improvement compared with both 2012 and 2011, not least

[3] Two recommendations are missing from the closing balance for 2012.
[4] Of which four have been deemed partially implemented.

considering the increase in the number of occurrence reports received. The two investigations for which the investigation time exceeded twelve months are commented below.

RL 2013:06 concerns an accident involving a helicopter in Ånn, Jämtland county. The investigation time was 18 months. The main reason why the handling time exceeded twelve months is that the Investigator in Charge for this investigation also was performing the same role in the large-scale and resource intensive investigation of the accident involving the Norwegian military Hercules aircraft at Kebnekaise. In addition, it was also necessary to conduct investigative measures abroad. Naturally, this affected the handling time.

RL 2013:10 concerns a serious incident following take-off from Stockholm Bromma Airport in which the commander fell seriously ill. The investigation time was 15 months. The investigation was mainly of a medical nature and looked at the risks of contaminated air, among other things. These relatively complicated matters contributed to the longer handling time.

In 2013, 13 new *recommendations* were issued whilst 23 were considered by SHK as implemented. The closing balance of 19 recommendations consists of cases in which either the time to respond to recommendations has not yet expired or the responses have not yet been finally assessed by SHK. Among the recommendation responses assessed by SHK during 2013, 19 have been considered implemented and 4 partially implemented. Below follows an account of the *recommendations which have been considered only partially implemented.*

RL 2013:07 concerns a serious incident (infraction of minimum separation) between two aircraft. The cause of the incident was that altitude restrictions set for noise-related reasons had come to be used in order to separate traffic, without clearance having been given. SHK recommended that the Swedish Transport Agency investigate the flight safety consequences of the noise restrictions at Swedish commercial airports and how these, where applicable, are handled by providers of air traffic control services. The response given by the Swedish Transport Agency was considered to be of a fairly general nature. As far as could be understood from the response to the recommendation, however, an investigation of the kind recommended by SHK would not be carried out. Instead, it was stated that these issues would be taken into consideration within the scope of the agency's general supervision tasks and also if individual events or trends call for a more detailed investigation of the matter. As the question of the flight safety consequences of noise restrictions would still be taken into account in the scope of the agency's supervisory operations, SHK's assessment was that the recommendation could be considered partially implemented.

RL 2012:09 concerns an accident involving a helicopter. The investigation revealed that the principles for managing air rescue services need to be developed and that tools for sharing information should be introduced to ensure that the concerned rescue and coordination centres can have a common perception of a situation in real time.

Recommendation R2 in the report, which was directed to the Swedish Transport Agency, concerned the matter of limited opportunities for concerned rescue and coordination centres and involved rescue units to share information and to have access to the same maps in realtime. SHK's assessment was that the Swedish Transport Agency's response – that the agency would strive for improvement within the context of a fairly recently formed cooperative body – constituted too little commitment to the issue. The recommendation was therefore considered to be only partially implemented.

Recommendation R3 in the same final report was also directed to the Swedish Transport Agency and entailed ensuring that the Swedish Maritime Administration develops methods for management at the Joint Rescue Coordination Centre (JRCC) with the intention of improving the quality of the management of air rescue services. The Swedish Transport Agency's response indicated that measures would be taken to ensure management quality, but contained nothing about the development of management methods. SHK's assessment was therefore that the planned measures did not go far enough, for which reason the recommendation was considered to be only partially implemented.

RL 2011:06 concerns an accident involving an aircraft in connection with landing. The pilot in command performed a go-around at a late stage, i.e. aborted the landing attempt with the intention of making a new attempt. The aircraft then flew into a forest 10 metres beyond the end of the runway. The accident was a result of a failure to apply safe methods for identifying and aborting an unsafe approach. SHK recommended that EASA ensure that safe methods for identifying and aborting an unsafe visual approach at an early stage are included in future syllabi for flight training. In its response to the recommendation EASA stated that the traning and examination for private pilot licence, PPL(A), includes a go-around at low altitude. In SHK's opinion, it is safer to abort a landing and perform a go-around at as early a stage as possible. It could therefore be beneficial to safety to train pilots to identify the need to perform a go-around at an early stage so as to avoid having to perform this manoeuvre at low altitude. SHK therefore deemed the recommendation to be only partially implemented.

Table 6. Foreign aviation investigations in which SHK is assisting

Year	2011	2012	**2013**
Opening balance	10	15	**25**
New cases	9	12	**10**
Closed cases	4	2	**15**
Closing balance	15	25	**20**

Over the year, SHK has had either an accredited representative or an expert in accordance with Annex 13 of the Chicago Convention appointed to ten new investigations abroad. In 2012, SHK was engaged in twelve such investigations and in 2011 the corresponding figure was nine. In 2013, 15 such cases could be concluded. The closing balance has thereby decreased to 20.

Civil maritime operations

Where civil maritime operations are concerned, all investigations in which SHK has decided to delegate the task of leading the investigation or has delegated certain specific tasks involved in the investigation, to the investigative body of another state, in accordance with Section 8 d of the Accident Investigation Ordinance (1990:717), are dealt with separately below. These decisions are motivated by the requirement in the same provision for each accident or incident at sea to be subject to only one investigation carried out by an EU Member State. According to the Marine Accident Investigation Directive, concerned Member States shall therefore agree on who shall lead an investigation of this nature.

However, unlike international aviation investigations, also these investigations are formally SHK's responsability, which is why handling times for these are also accounted for below. Any recommendations in such cases are however followed up by the foreign investigative body and not by SHK, for which reason the handling of recommendations issued in these investigations is not included in this report.

Table 1. Total no. of cases

Year	2011	2012	**2013**
Opening balance	2	6	**10**
New cases	190	204	**171**
Closed cases	186	200	**160**
Closing balance	6	10	**21**

Table 2. Preliminary assessments, commenced investigations and published final reports – investigations led by SHK

Year	2011	2012	**2013**
Preliminary assessments	0	15	**23**
Commenced investigations	4	4	**6**
Published final reports	1	0	**1**
Likely cause of accident established	1	–	**1**

Table 3. Number and proportion of investigations concluded within 12 months and average and median handling time in months – investigations led by SHK

	2011	2012	**2013**
Total number of reports published	1	0	**1**
Of which concluded within 12 months	0	–	**0**
Percentage of which concluded within 12 months	0	–	**0**
Average investigation time	31.1	–	**16.3**
Median investigation time	31.1	–	**16.3**

Table 4. Recommendations – investigations led by SHK

Year	2011	2012	**2013**
Opening balance	3	4	**0**
Issued	9	0	**8**
Implemented	7	4	**0**
Not implemented	1	0	**0**
Closing balance	4	0	**8**

The number of *occurrence reports* received has decreased in 2013 when compared with both 2012 and 2011. The number of *commenced investigations led by SHK* has increased from 4 to 6. Over the year, 23 *preliminary assessments* have been made by SHK, which is an increase of around 53 per cent compared with 2012.

Over the year, one *final report* has been published. *The handling time* was around 16 months and *the cause of the accident has been established*. *The balance (backlog)* of maritime cases has increased when compared with both 2011 and 2010. The reason for this increase, as for the handling time, is that the number of commenced investigations and preliminary assessments has increased to a great extent, and at the same time there has in practice only been one maritime investigator in service during much of 2013. Two new operative maritime investigators were hired in 2013, which at present is deemed sufficient for SHK to handle the current volumes of very serious and serious accidents at sea in the long term. However, SHK is

not ruling out the possibility that further recruitment in this area will be required in order to ensure shorter handling times.

The final report published included eight *recommendations*. The responses to these are expected to be received in 2014, when SHK's assessment of responses to recommendations will also be carried out.

Table 5. Preliminary assessments, commenced investigations and published final reports – investigations led by another state

Year	2011	2012	**2013**
Preliminary assessments	0	0	**1**
Commenced investigations	1	0	**5**
Published final reports	0	1	**0**
Likely cause of accident established	–	1	**–**

Table 6. Number and proportion of investigations concluded within 12 months and average and median handling time in months – investigations led by another state

	2011	2012	**2013**
Total number of reports published	0	1	**0**
Of which concluded within 12 months	–	0	**–**
Percentage of which concluded within 12 months	–	0	**–**
Average investigation time	–	35	**–**
Median investigation time	–	35	**–**

Over the year, one *preliminary assessment* has been conducted and five *investigations have been launched in which the investigative bodies of other countries are responsible for leading the investigation* and in which SHK is assisting. These concern, for example, accidents involving foreign ships in Swedish territorial waters where SHK has come to an agreement with the flag state that the investigative authority of that country shall lead the investigation. They also concern accidents abroad involving a Swedish ship and where a similar agreement has been made. Under this type of agreement, SHK often has the clear role of handling a certain part of the investigation. Just how much work must be carried out does however tend to vary greatly. Beyond SHK's own contributions in such investigations, SHK has very limited possibilities to influence the investigation work and thereby also the handling time for these investigations.

Over the year, no *report* has been published for investigations which are led by foreign bodies and in which SHK is assisting.

Rail traffic

Table 1. Total no. of cases

Year	2011	2012	**2013**
Opening balance	7	9	**8**
New cases	88	79	**56**
Closed cases	86	80	**59**
Closing balance	9	8	**5**

Table 2. Commenced investigations and published final reports

Year	2011	2012	**2013**
Commenced investigations	5	5	**1**
Published final reports	4	5	**4**
Likely cause of accident established	4	5	**4**

Table 3. Number and proportion of investigations concluded within 12 months and average and median handling times in months

	2011	2012	**2013**
Total number of reports published	4	5	**4**
Of which concluded within 12 months	2	1	**0**
Percentage of which concluded within 12 months	50	20	**0**
Average investigation time	15.4	21.4	**20.1**
Median investigation time	14.3	23.3	**17.9**

Table 4. Recommendations

Year	2011	2012	**2013**
Opening balance	15	3	**6**
Issued	16	10	**10**
Implemented	20	4	**13**[5]
Not implemented	8	3	**2**
Closing balance	3	6	**1**

The number of *occurrence reports* received has decreased in 2013 when compared with both 2012 and 2011. The number of *commenced investigations* has also decreased.

Over the year, *final reports* were published for four cases, which represents a slight decrease when compared with 2012 but is on the same level as 2011. The likely *cause of accident* was established in all investigations, which was also the case in 2012 and 2011. The closing *balance* has decreased in relation to both 2012 and 2011.

[5] Of which one has been deemed partially implemented.

None of the four investigations closed over the year could be *finalised in under twelve months*. In 2012, one of five was closed in under twelve months and in 2011 it was two of four. The average *handling time* for investigations concluded in 2013 was over 20 months, which is an improvement in relation to 2012 but a deterioration when compared with 2011, where the average handling time was slightly over 15 months. If we look at the median times, these are just under 18 months for 2013, just over 23 months for 2012 and over 14 months for 2011.

There are no specific factors in the individual investigations which explain the longer investigation times. The explanation is rather to be found primarily in general factors. A relatively large staff turnover among rail investigators in recent years has had a negative impact on investigation times. A newly employed member of staff cannot be as productive as an experienced investigator. The longest serving rail investigator at present began working for SHK in autumn 2010. The others began either in autumn 2011 or spring 2012. As pointed out initially, the investigations to be carried out in the rail traffic area are typically more extensive than many of the cases on the aviation side of operations.

Over the year, ten *recommendations* have been issued. SHK has assessed 15 responses to recommendations. Of these, twelve have been considered implemented, one as partially implemented and two as not implemented. Specific comments pertaining to the latter follow below.

RJ 2012:04 concerns a serious near-miss in which two personnel working on the track by Skavstaby station were nearly run down. In the report, it was established that the Swedish Transport Agency's supervisory activities had failed to uncover shortcomings in the observance of rules and routines for work in the rail track environment with infrastructure managers and entrepreneurs. The Swedish Transport Agency was recommended to analyse and evaluate its supervisory methods with the purpose of increasing the capacity to detect deviations which the agency's supervisor system has not been able to uncover (recommendation R1).

The Swedish Transport Agency's response to the recommendation contained information that the agency had decided to establish a process for all supervision of infrastructure managers and railway undertakings. However, the final contents of that process had not yet been decided, which SHK found understandable considering the relatively short time that had passed since that decision was made. At the same time, the Swedish Transport Agency had not commented in any greater detail on SHK's express intention with the recommendation, i.e. to increase the agency’s capacity to detect such deviations which the agency's supervisory systems had not been able to uncover. In light of this, it was difficult to determine whether or not the Swedish Transport Agency shared the opinions expressed by SHK

in the report, i.e. that probably there is significant potential for development in this area in terms of the manner of conducting supervision.

SHK also noted that the Swedish Transport Agency had stated in its response that it would continuously work with the analysis and evaluation of its working methods for supervision within the scope of its own supervision process. However, no greater detail was provided in terms of how this work was conducted and documented. Nor was it clear what the result of these efforts had been, especially with respect to the content of the issued recommendation.

In summary, SHK appreciated that work on the supervision process had begun. As it was not possible to determine whether the purpose of the recommendation would be specifically taken into account within the scope of this work, the recommendation was considered to have been only partially implemented.

RJ 2012:05 concerns an accident involving a dropped load at Frövi station. In the report, four recommendations were given to the Swedish Transport Agency. SHK considered two of these to be not implemented (R1 and R2).

SHK established in the report that there are now many actors in the rail area and that parts of the legislation in this area are outdated. The rules governing who is responsible for the different aspects of securing loads, for example, are outdated and unclear. The investigation also revealed that the actors involved had not satisfactorily regulated the matter in their mutual agreement. The actors had different loading instructions and these had not been followed. Furthermore, all involved parties made it clear that they were of the understanding that someone else was responsible for securing loads. SHK also established in its report that the shortcomings regarding loading and securing loads for the train in question, could have been discovered if the railway undertaking had worked more actively with the risk analyses of its operations.

In light of this, SHK recommended that the Swedish Transport Agency, both in the context of permit examinations and in its supervisory role, focus on the roles and responsibilities of different actors in order to ensure safe operations (R1), and put particular emphasis on the systems of different undertakings for handling risk management (R2).

In its response, the Swedish Transport Agency stated that the railway undertakings themselves are responsible for ensuring that risk management is conducted for their operations. The agency also reported on the applicable rules in the area and referred to updates tha will be taking place in respect of the regulations, including with respect to the responsibility of operators to monitor their own processes.

However, SHK was of the opinion that it is not enough that the Swedish Transport Agency simply check s that railway undertakings have procedures for risk management; it should also check that these procedures are followed and that they work in practice. SHK expressed its understanding for the Swedish Transport Agency having a delicate task of prioritising between its supervisory tasks based on available resources. Nevertheless, SHK took the view that the Swedish Transport Agency cannot avoid its responsibility for supervision by pointing to the operators themselves. Even if the railway undertakings have their own responsibility for addressing shortfalls, it is the role of the supervisory authority to check that this is actually done.

SHK therefore considered the recommendations not to have been implemented.

Military operations

Table 1. Total no. of cases

Year	2011	2012	**2013**
Opening balance	3	3	**2**
New cases	11	14	**18**
Closed cases	11	15	**19**
Closing balance	3	2	**1**

Table 2. Commenced investigations and published final reports

Year	2011	2012	**2013**
Commenced investigations	1	1	**1**
Published final reports	1	2	**2**
Likely cause of accident established	1	1	**1**

Table 3. Number and proportion of investigations concluded within 12 months and average and median handling times in months

	2011	2012	**2013**
Total number of reports published	1	2	**2**
Of which concluded within 12 months	0	0	**0**
Percentage of which concluded within 12 months	0	0	**0**
Average investigation time	16.8	28.2	**29.1**
Median investigation time	16.8	28.2	**29.1**

Table 4. Recommendations

Year	2011	2012	**2013**
Opening balance	0	6	**15**
Issued	6	9	**22**
Implemented	0	0	**0**
Not implemented	0	0	**0**
Closing balance	6	15	**37**

The number of *occurrence reports received* has increased in 2013 when compared with both 2012 and 2011. One *investigation* has been launched this year, which is on the same level as 2012 and 2011.

Two *final reports* have been published. The average *handling time* was over 29 months, which is an increase from both 2012 and 2011.

RM 2013:02 concerns the accident of 15 March 2012 involving an aircraft of type C 130J 30 Super Hercules from the Norwegian air force at Kebnekaise. The investigation, which was concluded in just over 19 months, required extensive resources and was prioritised over other military investigations, primarily due to the fact that several people perished and that there was great interest, both from those directly involved and from the public, in finding an explanation for what happened. The international character of the accident – and the fact that there were no international agreements in this area which regulate how an accident investigation is to be carried out – presented exceptional challenges and, together with the general complexity of the investigation, explain the lengthy investigation time.

RM 2013:01 concerned the generation of smoke in an aircraft and the final report was published after an investigation time of 39 months. Such a long investigation time can in principle never be considered acceptable. In this case, the investigation was quite simply put aside whilst other investigations were prioritised.

The likely *cause of accident* was established in one of the two cases, which mirrors the results for 2012. In 2011, the likely cause of the accident was established for the only investigation closed that year.

One further accident investigator with special expertise in the area of military operations was recruited in autumn 2013. At the end of 2013, SHK had only one investigation underway of a military event; a serious incident which occurred on 06 November 2013. There should therefore be good conditions to conclude military investigations within 12 months in future.

Over the course of the year, 22 *recommendations* have been issued, all of which are found in the report on the Hercules accident in Kebnekaise. The response deadlines for these recommendations has not yet expired. Of the 15 recommendations still awaiting response at

the start of 2013, all directed to the Swedish Armed Forces, none had received a final assessment from SHK by the end of the year. Contacts hve been ongoing between SHK and the Armed Forces concerning the measures that the Armed Forces intends to take in response to these recommendations. The Armed Forces has however not yet produced a final response.

Other operations

Table 1. Total no. of cases

Year	2011	2012	**2013**
Opening balance	1	1	**3**
New cases	17	13	**11**
Closed cases	17	11	**13**
Closing balance	1	3	**1**

Table 2. Commenced investigations and published final reports

Year	2011	2012	**2013**
Commenced investigations	1	2	**1**
Published final reports	1	0	**3**
Likely cause of accident established	1	–	**3**

Table 3. Number and proportion of investigations concluded within 12 months and average and median handling times in months

	2011	2012	**2013**
Total number of reports published	1	0	**3**
Of which concluded within 12 months	1	–	**1**
Percentage of which concluded within 12 months	100	–	**33**
Average investigation time	10.4	–	**22.6**
Median investigation time	10.4	–	**18.8**

Table 4. Recommendations

Year	2011	2012	**2013**
Opening balance	14	0	**0**
Issued	0	0	**15**
Implemented	14	–	**4**[6]
Not implemented	0	–	**0**
Closing balance	0	0	**11**

[6] Of which one has been deemed partially implemented.

The number of *occurrence reports* received has decreased in 2013 when compared with both 2012 and 2011. One new *investigation has been launched*; it concerns a fire in a residential care home for adults with special needs, where three people are feared to have died.

Three *final reports* have been published, which is an increase from both 2012 and 2011. Only one of these investigations was concluded *within twelve months*.

The average *handling time* was over 22 months and the median time was less than 19 months.

RO 2013:02 concerned a death at Karolinska University Hospital's Cardiology Unit in Solna. The investigation was concluded in 37 months. Even if there are reasons for this, such a lengthy investigation period is not acceptable. The investigation concerned an area which is entirely new for SHK and which demanded special external expertise to be contracted. It also required a long preliminary study before a formal decision to investigate the incident could be made. In addition to this, both the Investigator in Charge and the Chairperson for the investigation were involved in the Hercules accident at Kebnekaise, which was very time consuming and resource intensive.

RO 2013:03 concerned the collapsing of a building in Ystad. The investigation took just under 19 months. This was also a new area of investigation which required special expertise not found internally at SHK. In addition, the event came to SHK's attention almost one month after it occurred. This meant it was particularly difficult to gather facts.

In 2013, 15 new *recommendations* were issued. Four responses to recommendations were received and assessed by SHK. Of these, three have been considered implemented and one partially implemented. The latter is commented on in the following.

RO 2013:01 concerns a fire involving two biogas fuelled buses in city traffic in Helsingborg. In the report, SHK gave one recommendation to the Swedish Civil Contingencies Agency and three recommendations to the Swedish Transport Agency. SHK has deemed one of the recommendations directed to the Swedish Transport Agency to be only partially implemented.

The Swedish Transport Agency was recommended to take measures to expand the requirements for training of drivers in commercial traffic and adapt it by adding fire safety and evacuation exercises. The Swedish Transport Agency's response revealed that since 2008 there had been a training course which is obligatory for bus drivers and that there is a requirement for bus drivers to apply correct measures in the event of a fire. The matter of the extent to which practical exercises are included in the training was however not clarified in the response. According to the Swedish Transport Agency, many bus drivers had

not yet had time to take the new training course and it was therefore too early to assess its impact. There was no mention of any plans to evaluate the aspects of the training course brought into question here. On the contrary, the Swedish Transport Agency stated that it did not intend to take any additional measures. In light of this, and considering that the bus drivers SHK had interviewed in connection with the investigation did not feel that the training exercises they had undergone were sufficient in scope or even realistic in character, SHK considered the recommendation to be only partly implemented.

2.2.4 Other safety work

According to Section 1 of the Ordinance (2007:860) providing instructions for SHK, SHK shall cooperate with the concerned safety authorities in their efforts to prevent accidents.

In accordance with Section 6.2 of the Accident Investigation Ordinance (1990:717) (FUO), the Swedish Transport Agency, the Armed Forces and the Swedish Civil Contingencies Agency (MSB) have a right to follow SHK's investigations. This allows them, where necessary, to take supervisory measures without delay. These authorities follow the SHK's investigations by appointing an advisor in each investigation, who can then keep the respective authority informed of the progress of the investigation, without however being a part of the investigation team. SHK also has regular meetings with these and other relevant authorities in order to discuss working routines of common interest, as well as specific recommendations issued in the investigations. At these meetings, also changes in legislation are discussed, as well as other current areas of interest from a safety perspective.

In addition to the contacts that go on continuously within the scope of the various accident investigations, in 2013 SHK has had two meetings with the Swedish Transport Agency's Road and Rail Department and two meetings with its Maritime and Aviation Department. SHK has also had two meetings with the Swedish Armed Forces' Security Inspectorate, one of which dealt with the issue of military accidents abroad.

Over the year, no meetings have been held with MSB. There was however one meeting planned, which unfortunately had to be cancelled. Nevertheless, SHK has assisted in MSB's training cooperation in the event of major accidents. In 2012, two meetings were held. At one of these, a complete review was conducted of the recommendations SHK has made to MSB since 2005. A collaborative meeting has also been planned with the Swedish Maritime Administration, though this has not yet come about. The collaboration with the Swedish Maritime Administration was deemed to be a priority for SHK and one of the matters that will be discussed is the conditions for the Joint Rescue and Coordination Centre's (JRCC) reporting of maritime accidents and incidents to SHK.

SHK has also participated in collaborative work in the scope of Nationellt Forum för Olycksutredning [National Forum for Accident Investigation] (NFO), which is a network between authorities, industry and research institutes.

2.2.5 Mantaining of staff competence

Reporting requirements in accordance with Chapter 3, Section 3 of the Annual Reports and Budget Documentation Ordinance (2000:605)

The authority shall report on measures taken to ensure that competence is available to complete the tasks laid down in the authority's instructions and, where applicable, in the Government's appropriation letter to SHK or in other decisions. The report shall include an assessment of how the measures taken have contributed overall to the completion of these tasks.

Reporting

General

Section 4 of SHK's instructions clarifies which different types of expertise shall be represented among the authority's accident investigators. At least one accident investigator aside from the Director-General shall be a lawyer with experience of working as a judge. There shall also be accident investigators with operational and technical expertise from the aviation, maritime and rail sectors, general technical expertise, expertise in the area of civil protection and rescue services, as well as expertise in behavioural sciences.

By the end of 2013, SHK had 29 employees; 9 female and 20 male. In addition to this, there were three employees at the authority who at the turn of the year were on leave of absence from their respective positions. The average age at the authority was 47. Over the year, six new employees were taken on and five persons left. Of the five who are no longer employed, two had temporary positions.

Apart from this, SHK employs, in accordance with its instructions, experts and specialists in different areas to assist the authority.

Attracting and recruiting

Those applying for work at SHK should meet a recruitment process that is professional, efficient and open. Information on available positions is disseminated via SHK's website, the Swedish Public Employment Service, daily press and various professional magazines.

When recruiting investigators, they are required to have several years of experience from the relevant area of expertise and a good ability to express themselves in speech and writing. The applicants' expertise is tested via both theoretical and practical tests.

In 2013, SHK employed six people. Two of these were for new positions, two were replacements and the remaining two were for

temporary positions in order to cover for lack of resources in the field of maritime operations and for employees on parental leave in the area of rail traffic.

Experience from recruitments shows that the authority is perceived as an attractive workplace and that it is not difficult to recruit personnel.

SHK use the services of contracted external experts in a number of areas. These experts are required to have a high level of expertise in their respective areas and the successful candidates must follow developments in their field of expertise and are responsible for their own professional development.

Developing

SHK's task places high demands on the experience and expertise of sraff members. The compulsory requirements for candidates consist of theoretical knowledge and practical experience in their individual area of investigation. All newly employed investigators then begin with an induction which, apart from internal rules and routines, includes training in advanced accident investigation, knowledge of public administration, safety at accident sites and other work environment issues. The accident investigators' training must be constantly updated, maintained and developed using various follow-up and refresher courses.

For training investigators in civil aviation there are detailed recommendations issued by the International Civil Aviation Organisation (ICAO). An air accident investigator must have considerable experience from the field of aviation as a base for further training to become an accident investigator. Individual development plans corresponding to ICAO's *Training Guidelines* are available for all investigators in the field of aviation. These are followed up continuously and, where required, supplemented with additional training with the purpose of updating the investigators' knowledge in line with developments in the area. Training in advanced accident investigation with a focus on civil aviation takes place abroad as such courses are not available in Sweden.

Also within the field of maritime investigation, there are relatively clear demands on investigators' expertise and professional background. The International Maritime Organisation's (IMO) code on Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) and EU Directive 2009/18/EC, establishing the fundamental principles governing the investigation of accidents in the maritime transport sector, both refer to the part of IMO Res. A.996 (25) which concerns expertise criteria for marine accident investigators. In order to meet training requirements, SHK has performed a survey of the investigators' expertise and produced individual development plans which are supplemented when the need for new expertise is identified.

Work is underway within the European Railway Agency (ERA) to develop a training programme for rail traffic investigators. The head of department for rail traffic accidents at SHK is assisting in this development work.

At least one personal development review per year is conducted with all employees, in which existing expertise is surveyed and individual expertise development needs are identified.

Over the year, the following training courses of a more general character have been carried out at SHK: training in the word processing program Word, media training, heart-lung rescue (D-HLR) and first aid (L-ABC), crisis management, SHK's new file management system, the on-call duty system, safety at the site of an accident, and meteorology.

Retaining

The staff turnover was 15.6 per cent in 2013, a reduction of 3.2 percentage points from the previous year when the staff turnover was 18.8 per cent. An investigator in the field of civil maritime operations and an investigator with specialisation in behavioural sciences – the latter having been on leave of absence for an extended period – chose to leave their position. Two temporary positions in the areas of civil maritime operations and rail traffic came to an end and one of SHK's employees died in 2013.

SHK offers interesting and stimulating tasks of an advanced nature with good opportunities for professional development. The authority applies an individual pay structure for each employee, has flexible/non-regulated working hours and works actively with work environment issues as well as equal treatment and discrimination. The authority also offers its employees' health examinations, one hour a week for physical excersise and a yearly allowance to pay for the cost of such activities. In the past year, a sports association by the name of SHK IF has formed. Among other things, the task of the sports association is to organise and propose organised activities in sports, health and preventive healthcare and the purpose of this is to promote health, wellbeing and good colleague relations. Over the year, SHK has also signed an agreement to be able to offer occupational massage.

In order to provide all employees with the opportunity to follow developments within the authority, monthly information meetings are held. Departmental meetings, which are also an important source of information, are held regularly. In addition to this, all employees take part in a two-day planning conference aiming at preparing next year’s work plan.

Phasing out

The training period for a new investigator is long, and in order to ensure transferral of expertise, replacements must be recruited in good

time prior to retirement. This makes them expensive. Two investigators in the area of civil aviation will reach retirement age in three years, and in order to avoid the risk that a great deal of SHK's expertise in this area will be lost, replacements must be recruited over the next few years. In the area of civil protection and rescue services too, the transfer of expertise must be secured by means of recruiting replacements. One of SHK's two investigators in this field reaches retirement age in 2015. An investigator in the field of military operations was recruited in 2012 and started his position in autumn 2013. This investigator will eventually replace the investigator in the field of military operations who announced his intention to retire within a year or so.

Overall assessment

SHK fulfils the competence requirements laid down in its instructions.

SHK considers the measures taken in the human resources area has contributed to the agency's ability to fulfil its duties in accordance with its instructions. However, the fact that the authority has not fully achieved the goal for accident investigations to be concluded, if possible, within 12 months of the event may be partially explained by the relatively high staff turnover in the past three years. The supply of staff has primarily been a problem in the area of maritime operations, where three of SHK's four investigators commenced employment in summer 2012 or later.

A necessary condition for SHK to be able to work efficiently, fulfil its duties and reach the set goals is that the agency has qualified personnel on permanent contracts with a long experience and a high level of expertise. SHK has therefore had the strategy of increasing the number of investigators with permanent contracts before using contracted external consultants. The strategy has contributed to an increase in efficiency in the form of shorter investigation times and a reduction of the costs for consultants by over 60 per cent in recent years.

As mentioned above, the training period for a new investigator is long. Persons who both fulfil the high requirements in terms of experience and theoretical knowledge in their respective field of investigation and have prior experience from work as a qualified accident investigator are seldom found.

This means the authority is very vulnerable not only in the event of retirement in old age, which is of course predictable and yet still costly if a replacement is to work in parallel with the individual who is to leave so as to ensure that the expertise is transferred. It also means that any other leave of absence, e.g. for studies, parental leave, due to illness or in order to gain experience in other areas, leads to a considerable setback in the investigative work. It is often the case that by the time a temporary replacement has trained to a level sufficient in

order to take independent responsibility for an investigation, not much of the period of employment remains. This in turns leads to hiccups in the planning and, not least, works against the ambition to shorten investigation times. Put simply, additional human resources are required in order to address the problem.

Even apart from this, more staff will be needed in order to ensure that the current goal – a handling time of a maximum of twelve months for what are typically more extensive investigations in the area of maritime operations, rail traffic and other accidents – can be fulfilled also in the long run. SHK intends to return to this matter in its budget application for 2015-2017.

2.2.6 Efficiency and sound economic managment

Reporting requirements

By means of key performance indicators, key figures, or otherwise, SHK shall show whether or not the authority's activities have been run efficiently and in a sound economic way. Where possible, the report shall provide a comparison with the two previous years. The development shall be analysed and commented on.

Reporting

SHK has chosen to use four key performance indicators as a basis for the assessment of whether or not operations have been run efficiently and in a sound economic way:

1. The number and proportion of investigations concluded within twelve months and the average and median handling times, as per each area of investigation.
2. How the total number of working hours have been distributed between the different performance areas.
3. The number and proportion of full time employees (FTE) in administrative or other supporting functions, as percentage of the total number of FTE.
4. Costs for administrative support in relation to total administrative costs.

Key performance indicator no. 1 – The number and proportion of investigations concluded within twelve months and the average and median handling times, as per each area of operations

SHK uses these statistics to verify whether or not the authority has succeeded in its ambition to increase the efficiency of its investigative operations so that the handling times go down over time in order to achieve the goal of a handling time of, if possible, less than twelve months.

Table 1. Number and proportion of investigations concluded within 12 months

Area of investigation	2011			2012			**2013**		
	Number of reports	Of which concluded within 12 months	Percentage of which concluded within 12 months	Number of reports	Of which concluded within 12 months	Percentage of which concluded within 12 months	Number of reports	Of which concluded within 12 months	Percentage of which concluded within 12 months
Aviation	17	9	53	21	12	57	**19**	**17**	**89**
Marine	1	0	0	0	–	–	**1**	**0**	**0**
Rail	4	2	50	5	1	20	**4**	**0**	**0**
Military	1	0	0	2	0	0	**2**	**0**	**0**
Other	1	1	100	0	–	–	**3**	**1**	**33**
Total	24	12	50	28	13	46	**29**	**18**	**62**

Table 2. Average and median handling times in months

Operations	2011			2012			**2013**		
	Number of reports	Average investigation time	Median handling time	Number of reports	Average investigation time	Median handling time	Number of reports	Average investigation time	Median handling time
Aviation	17	14.7	11.9	21	14.4	11.6	**19**	**9.1**	**9.7**
Marine	1	31.1	31.1	0	–	–	**1**	**16.3**	**16.3**
Rail	4	15.4	14.3	5	21.4	23.3	**4**	**20.1**	**17.9**
Military	1	16.8	16.8	2	28.2	28.2	**2**	**29.1**	**29.1**
Other	1	10.4	10.4	0	–	–	**3**	**22.6**	**18.8**
Total	24	15.4	12.3	28	16.6	13.3	**29**	**13.6**	**11.7**

In 2013, SHK published a total of 29 reports, which is an increase in the number of reports in comparison with 2012. In 2011, SHK published a total of 24 reports.

The total number of investigations concluded within twelve months has increased significantly in the comparison period. In 2011 and 2012, 12 and 13 reports respectively were concluded within twelve months. For 2013, the number had risen to 18 investigations.

The proportion of investigations concluded within twelve months has increased from 46 per cent in 2012 to 62 per cent in 2013. In 2011, 50 per cent of investigations were concluded within twelve months.

The total average handling time has decreased from 16.6 months in 2012 to 13.6 months in 2013. In 2011, the total average handling time was 15.4 months. The median time has decreased from 13.3 months in 2012 to 11.71 months in 2013. In 2011, the median time was 12.3

months. The handling times per area of operations has been analysed and commented on in Section 2.2.3 above.

Overall, and in summary, there is, as mentioned previously, cause to underline that in order to also permanently reduce handling times, additional staff on permanent contracts who are qualified experts in accident investigation are required. This is necessary in order to manage more demanding requirements for maritime investigations, bu also the fluctuations in the number of reported events throughout SHK's operations, which are almost entirely event-driven. It is also necessary, in order for statutorily regulated leaves of abcense or normal staff turnover not to be an obstacle to the ambition to shorten investigation times.

Key performance indicator no. 2 – How the total number of working hours have been distributed between the different performance areas

Below is a summary of how the total working hours for all employees, and respectively for investigators only, is distributed among SHK's various performance areas.

Table 3. Distribution of total working hours between SHK's various performance areas

Performance area	Proportion in % of total working hours 2011		Proportion in % of total working hours 2012		Proportion in % of total working hours 2013	
	All employees	Investigators	All employees	Investigators	All employees	Investigators
Accident and incident investigations	51	57	55	70	**48**	**62**
Other safety work	8	10	7	7	**6**	**6**
Professional development	4	5	5	6	**8**	**11**
Management and governance	12	15	14	8	**14**	**9**
Operational development	2	2	2	2	**4**	**3**
Administration, etc.	23	11	17	7	**20**	**9**

SHK's core duties include investigative work, national and international security work, i.e., collaboration with other authorities etc. on safety issues, and individual professional development. In 2013, 62 per cent of the total working hours have been spent on SHK's core activities. This is a decrease of five percentage points in comparison with the previous year, when the proportion was 67 per cent. For SHK's accident investigators, the proportion was 79 per cent of the total time, which is a decrease of four percentage points from 2012 when the proportion was 83 per cent.

The reduction in time spent on core activities is explained by SHK's training of all staff in D-HLR, L-ABC and crisis management in 2013, as well as resources being set aside for continued work to develop an operations management system. The introduction of an electronic file

management system has also consumed resources, to the disadvantage of the core activities.

The proportion of time for investigative work has decreased by a total of 7 percentage points in comparison with 2012 and for the group of investigators, it has decreased by 8 percentage points. In addition to the aforementioned reasons, the reduction can be explained by an increase in the amount of time allocated to individual professional development; three percentage points overall and five percentage points for the group "investigators". A number of larger professional development initiatives have been carried out on the investigator side in the form of training in accident investigation and expert investigative methods, technical training in aircraft type SAAB 340/2000, media training and training in meteorology. In 2013, a training course in Word was also provided to all staff.

Key performance indicator no. 3 – The number and proportion of full time employees (FTE) in administrative or other supporting functions, as percentage of the total number of FTE

As a measure of efficiency and sound economic management, FTE in administrative and other support functions are reported as a percentage of SHK's total FTE. A decrease in the proportion of such functions in relation to the number of staff in the core activities may be an indicator that the authority's activities are being run more efficiently. Too small a proportion may however mean that staff in the core activities need to spend more of their working hours on administration at the risk of decreased productivity. Based on the authority's current remit and organisational division, SHK assesses that in order to achieve efficiency and a good balance between supporting and core activities, the proportion of administrative and other support functions should not exceed 30 per cent of the total FTE.

Table 4. Staff and support functions as a proportion of SHK's total FTEs

Year	Total FTE	Number of FTE in administrative and other support functions	Proportion of FTE in administrative and other support functions, of the total FTE.
2011	22.16	5.61	25 %
2012	24.30	5.86	24 %
2013	**27.06**	**6.54**	**24 %**

When looking at the administrative and other support functions as a proportion of SHK's total FTE in 2013, this proportion is the same as in the previous year. In line with an increase in the number of investigators with permanent contracts, the need for administrative support has increased. In order to meet this need, an additional administrator was recruited in 2012, and in 2013 SHK employed a janitor on a permanent contract.

SHK, which is a relatively small authority, procures certain services externally in the area of administration in order to achieve cost effectiveness. These services include the areas of financial and human resource administration, IT operations and support, as well as support for larger public procurement projects. These services are not included in the statistics above.

Key performance indicator no. 4 – Costs for administrative support in relation to total administrative costs

As an additional indicator of efficiency and sound economic management, account is given below of the cost of SHK's various forms of administrative support in relation to SHK's total operational budget (costs attributable to specific investigations not included) and an overview of this cost trend over time.

A reasoning similar to the one above can also be applied here. A reduction of the proportion of costs for the administrative support can be an indication that the authority's operations have been run more efficiently, but reduced resources in the support functions can also mean that staff in the core activities have to allocate more of their working hours to administrative duties at the risk of reduced productivity in the core activities. SHK assesses that in order to achieve efficiency and a good balance between the support and core activities, the costs for administrative support should not exceed 20 per cent of SHK's total operational costs.

Table 5. Costs for administrative support in relation to total operational costs

Year	Costs for administrative support in relation to total operational costs
2011	17.8 %
2012	17.9 %
2013	**16.5 %**

The costs for the administrative support include salaries for staff and services contracted externally within respect to management, finances, registry, IT, communications/information, public procurement and other internal services. SHK's costs for administrative support in relation to the total oeprational costs have reduced by 1.4 percentage points in comparison with the previous year. The actual costs for administration have increase over this period, both in terms of salary costs and the cost of externally contracted services, but the increase in the number of investigators employed on a permanent contract, leads to a decrease of the proportion of costs for administrative support.

Other measures to increase efficiency

In addition to the key performance indicators above, SHK will account below for other significant measures taken in order to increase efficiency and improve resources management in the long term.

SHK's operations management system

The work to develop an operations management system for SHK, which began in 2010, has continued in 2013. The operations management system is expected to add greater clarity to how SHK's operations work and create a comprehensive view in which the core and support activities are well-defined and the division of responsibility clear. Furthermore, the system is expected to facilitate the transfer of knowledge and more uniform working methods, and reduce unnecessary administration. A functioning operations management system will also lay the foundations for suitable procedures for follow-up and evaluation of operational performance.

Introduction of an electronic file management system

With the purpose of increasing the efficiency of SHK's file management, an electronic support system for file management was introduced on 1 January 2014.

2.2.7 Costs

SHK has chosen to account for the costs for 2013 by the categories of specific investigative costs and other operational costs. Specific investigative costs are costs directly attributable to individual investigations and administrative costs are costs for staff, training, competitive intelligence, collaboration with other safety authorities, premises management and other running costs which are not directly attributable to a certain investigation.

Special investigative costs

Table 1. Special investigative costs (SEK thousand)

Year	Civil aviation	Civil maritime	Rail traffic	Military events	Other events	Total
2011	1,978	584	690	426	1,549	5,227
2012	1,344	664	979	11,448	1,360	15,795
2013	**1,458**	**640**	**602**	**1,209**	**1,345**	**5,254**

The specific investigative costs are event-driven and are decided primarily by which investigative initiatives are required and how much support from external specialists is required for ongoing investigations and investigations concluded during the year. The reduction in SHK's specific investigative costs by as much as SEK 10,564,000 when compared with 2012 is a result of the accident which occurred on 15 March 2012 when a Hercules plane belonging to the Royal Norwegian Air Force crashed in the Kebnekaise mountain range, requiring extensive extra resources in 2012. The investigation, which was concluded in 2013, has also generated considerable costs this past year (SEK 1,140,000). With the exception of the costs generated in 2012 and 2013 by the Kebnekaise investigation, the specific investigative costs have continued to decrease in 2013.

Other operational costs

Table 2. Other operational costs (SEK thousands)

Year	Civil aviation	Civil maritime	Rail traffic	Military events	Other events	Total
2011	12,711	5,035	4,987	2,582	4,691	30,006
2012	9,839	5,478	6,489	7,397	2,361	31,564
2013	**12,186**	**7,581**	**7,588**	**6,727**	**2,431**	**36,513**

SHK's other operational costs have increased in 2013 by SEK 4,949,000 when compared with 2012. This is largely due to an increase in salary costs as a result of new recruitments in late 2012 and in 2013.

The distribution of these other operational costs is also event-driven as they have been distributed by actual time spent per area of investigation. In the area of civil aviation, these costs have increased by SEK 2,347,000 compared with the previous year, which may be partially explained by the fact that many investigators in the aviation area were involved in the investigation of the accident at Kebnekaise in 2012. For the same reason, the costs in the military area have decreased in 2013.

The cost increase of SEK 2,103,000 in the area of maritime operations is explained by the recruitment of replacements and recruitment to new positions over the year.

In the area of rail traffic, other operational costs have increased by SEK 1,099,000 compared with 2012. This increase in costs is also largely explained by the fact that more investigators have been recruited.

Total costs per area of investigation

Table 3. Total costs (SEK thousands)

Year	Civil aviation	Civil maritime	Rail traffic	Military events	Other events	**Total**
2011	14,689	5,619	5,677	3,008	6,240	35,233
2012	11,183	6,142	7,468	18,845	3,721	47,359
2013	**13,644**	**8,221**	**8,190**	**7,936**	**3,776**	**41,767**

I hereby certify that the annual report provides a true and accurate picture of operational performance and of costs, revenues and the authority's financial position.

Stockholm, 19 February 2014

Hans Ytterberg
Director-General