

## **Recent developments and experiences – Sweden (SHK)**

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Some experienced investigators are about to retire, which might affect the authority. Even if we try to compensate by recruiting new investigators in time, it is not evident that they can be trained and get the opportunity to work side by side with more experienced investigators before they need to be on “active duty”.

There has been no substantial change in the budget of the authority.

We started with electronic archiving in January 2017. We believe it will ease the burden of our administrative staff.

There is active cooperation between the Nordic countries. Since several years we have established procedures for cooperation and sharing best practices in aviation and rail modes. Since last year we have developed the cooperation in the maritime mode, which is extended to the Nordic and the Baltic countries. It has turned out to be a good way to share lessons learned and to be prepared to work together in joint investigations. Between the Nordic countries there is also a memorandum of understanding concerning the possibilities to assist each other in case of a major accident.

For several years there have been different investigation manuals in the different modes. A disadvantage of this has been that different working methods and practices have developed between the different modes. The investigation manuals have been revised and there is now a joint manual for three of the modes: aviation, maritime and rail. In order to acknowledge the relevant differences between the modes and to be specific enough when it comes to e.g. fact finding on an accident site, some parts of the manual are “mode-specific”.

Aviation and maritime accidents and incidents continue to dominate our work. At the moment the workload is relatively easy compared to previous years. As an average our investigators in charge handles 1.1 investigations each. In total we employ 16 investigators who participate in 20 on-going investigations. It would be interesting to know the ratio when it comes to on-going investigations per investigator in charge in your organizations.

During 2016 we investigated the first fatal accident with a large aircraft in commercial operation which has occurred in Sweden in 40 years. The final report was published 11 months after the occurrence. The accident concerned a cargo aircraft with a crew of two pilots. They lost control in flight and crashed after descending

from 33 000 feet to ground in 80 seconds. Even if we are satisfied with the investigation it was demanding and it did affect other investigations especially when it comes to prioritizing the use of our staff. There was also a number of lessons learned when it comes to managing larger investigations.

Although this is a forum for transportation accidents, and for the majority civil transportation, there could be mentioned that we have been facing challenges also in other modes.

During 2016 we investigated a collapsed wind turbine. The tower, which was 129 meters tall, was constructed by sections which were connected with bolts, which were not torqued enough to reach the tension needed. Internationally, the wind turbine industry is large and growing fast, which resulted in the report getting quite some attention around the globe.

As you probably know, we also investigate military accidents. The military activities around the Baltic Sea have increased and so has international military exercises in Swedish airspace. At the moment we are investigating a near midair collision between Swedish and French fighter jets during such an exercise. The investigation is complicated since it involves military personnel from Sweden, Norway, Finland, France and the US. In general we work along the same principles as in civil aviation, which is Annex 13 of the Chicago convention. Even if that is not formally binding outside the field of civil aviation, we seem to get acceptance for our work amongst the different armed forces concerned.