

**Summary:**

# **Aviation safety in Norway**

## **Results from a survey among employees in Norwegian aviation**

There have been major changes in Norwegian aviation during the last five years. The Norwegian Aviation Administration has been reorganised as a state-owned limited company under the name of Avinor. The Civil Aviation Authority, which was formerly a division within the Aviation Administration, divested into an independent body. The Norwegian Parliament has recently decided to relocate the Civil Aviation Authority to Bodø in Northern Norway.

Avinor is currently reorganising its activities and is thus closing down two air traffic control centrals (in Trondheim and Oslo). Avinor has also launched an ambitious cost cutting scheme through the program "Take Off 05". Scandinavian Airlines (SAS) has acquired the Norwegian airline Braathens and the two airlines have now been merged into one company - SASBraathens. The competition in Norwegian aviation has been enhanced through the entry of the low-cost airline Norwegian Air Shuttle ("Norwegian" for short). In addition, major activities within the air carriers have been outsourced and organised as independent companies.

These major changes have resulted in pronounced turbulence and dissatisfaction among employees in Norwegian aviation. The Ministry of Transport and Communications has thus asked the Norwegian Accident Investigation Board to examine the possible impacts of these changes on Norwegian aviation safety. As part of this investigation, the Institute of Transport Economics has conducted a survey among groups of employees and managers in Norwegian aviation.

Approximately 9500 persons received a questionnaire by mail, of which about 4000 responded. The respondents could choose between a hard copy and an Internet version of the questionnaire. Approximately 1/4 of the respondents chose the Internet version.

The questionnaire was sent out in eight different versions, one version for each of the different groups in the sample; managers, pilots, cabin crew, air traffic controllers, technicians, planners and engineers, employees in ground services and employees in the Civil Aviation Authority. The questionnaires contained a wide range of questions. In our report the focus is on questions that were asked to all groups and in particular on those questions that relate to the changes in Norwegian aviation since 2000.

The first part of the questionnaire includes, however, a battery of questions that are supposed to assess the safety culture in different groups. The answers suggest that the safety culture can be characterised as "good" among planners, pilots, cabin crews and managers, and as "moderate" in the other groups. The results in

the groups with a “moderate” safety culture according to these measures, are, however, fairly close to the threshold between “moderate” and “good”.

All groups have received a number of questions on safety focus and incident reporting practice. Apparently, incidents are reported more often than before, in particular among air traffic controllers. Most respondents also state that rules are obeyed to a larger degree than before, and that the safety focus among colleagues has been improved. Safety focus among top managers has, however, declined markedly according to all groups, but the managers.

On the questions of cooperation and work environment, which may indirectly influence safety, all groups of employees state that the conditions have worsened over the last five years. All groups of employees also feel that the work relations between employees and managers have deteriorated. The managers themselves are, however, of another opinion.

When asked about work conditions, employees state that in particular the social working environment has deteriorated. Pilots and cabin crew are, however, also of the opinion that the physical working conditions is less good than before.

All groups agree that new technical instruments and devices have increased aviation safety. This goes for technical improvements of airports, control towers and airplanes. The organisational changes are, however, viewed as detrimental to safety.

On the question on how the reorganisation of the aviation administration into Avinor affects safety, a clear majority states that it has been negative or very negative to safety. Among air traffic controllers this majority is especially strong. When asked what the changes in Avinor has meant for aviation safety, almost all air traffic controllers state that they have had a negative effect for safety, and six out of ten see the effect as *very* negative. Even in the other groups people share the view that the changes have been detrimental to safety; among employees in the Civil Aviation Authority nine out of ten think so.

When it comes to the changes in the Civil Aviation Authority itself, opinions are more divided. Most respondent agree that the relocation to Bodø is bad for safety but the majority thinks that the divestiture of the Civil Aviation Authority into an independent body has been beneficial.

The changes within the airline companies are in general viewed as detrimental to aviation safety. The groups that are currently most affected by the changes in the companies, pilots, cabin crews and technicians, are the most critical. But also a large majority of people in the Civil Aviation Authority state that the changes in the airline companies have been bad for safety.

Enhanced competition, increased use of tendering out maintenance and ground services, changes in the use of labour, outsourcing of some activities to independent companies, and merging of airline companies are viewed by the majority as detrimental to safety. Almost everyone think that the turbulence and dissatisfaction connected with these changes have been detrimental to safety.

The results show clearly that people employed in Norwegian aviation are quite sceptical to the changes that have occurred. A large majority feels that working

conditions and cooperation have worsened dramatically, and they feel that this is harmful to aviation safety.

The results are not surprising given the enhanced competition and increased cost awareness in Norwegian aviation. Accordingly, the working environment for many groups have become tougher. One important question is whether the answers given by the employees imply that safety has indeed been jeopardized, or if they merely express increased frustration due to harder working conditions.

In order to check this, the respondents were asked to what extent they felt that colleagues or employees within other groups were using safety as an argument in order to gain or maintain particular advantages for their own group. They were also asked to estimate the possible changes in safety from changes in the working conditions and tasks of other groups; pilots were for instance asked to consider whether the quality of air traffic control had changed.

The response to these questions suggests in our opinion that tactical answers and crisis maximization are not particularly widespread. On the question of whether people use safety as a surrogate argument, most people state that this is not the case within their own professional group, and not even in the other groups. Also, there is widespread agreement between different groups when changes in particular tasks and activities of one group is considered.

Another indication of honest answers is that the opinions on the safety effects of different types of changes go in different directions. Air traffic controllers have been very critical to the developments in Avinor, still they say that the reporting of incidents has improved dramatically.

All respondents have been asked whether aviation safety in Norway has deteriorated over the last five years. The opinions vary and in some groups opinions are divided more or less equally between either side. In other groups (technicians, air traffic controllers and pilots) a majority think that safety has been reduced over the last five years. The managers however, think that safety has improved.

In general, two different processes seem to be developing in Norwegian aviation, with fundamentally different consequences for safety. On the one hand, the organisational changes and worsened working conditions are, according to the opinions of those working in Norwegian aviation, jeopardizing safety. On the other hand, and in parallel to these changes, there are steady, systematic improvements in technical systems, procedures, reporting of incidents etc. taking place, which improve aviation safety.

The reason why there is not a vast majority stating that safety is reduced, given the widespread dissatisfaction, is probably that these two developments work in opposite directions, and that the net effect is conceived as close to zero. There is, however, reason to believe that continued turbulence and dissatisfaction may jeopardize aviation safety in the future.