Confront the Brutal Facts:

Development of Responsibility in a High Reliability Organization

Master Thesis in Organizational Learning

Erling Jøssang

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Abstract

In 2004, Trondheim and Bodø Air Traffic Control Centres merged, as part of a strategic change program following the logic inherent in New Public Management. After a while, personnel conflicts led to a shortage of staff that cost Avinor in many different ways.

Due to emotional outbursts in different forms when talking about the events on both sides even in 2010, I suspected that Avinor had not taken the opportunity to learn from the event. Thus, I found it important to find out what was causing this organizational infection.

By gathering different individual stories through unstructured interviews, it became clear that the opinions regarding the source of the conflict level were so different that these differences became the main focus of analysis. As detailed information was available only from one side, it seemed impossible to find out what the truth was, so I stopped looking for it. Instead, I focused on the individual perceptions, and put them together in a "collective, subjective story" from both sides.

I invited quite a few people to comment on the stories, and a fuller picture emerged. I put the information together, and created images of different situations from the interviews, the stories, and the additional information. What had happened became unreal to me, until the work of Stanley Milgram snapped into my head after reading a comment from an informant for the hundredth time.

Looking at the events both in light of the human tendency to obey authorities and the human tendency to explore and excel in what we do provided insight enough to understand that this could be explained by theory on adult development – or constructivist-developmental theory. In light of this, the different perspectives and events became possible to understand.

What emerged was the insight that the process has probably become what Richard Sennett calls salutary failure for one side of the merger. For the other side, the process seems to have become an abscess, one that is not to be touched. A part of the conclusion is that this should be done for their own sake, the other part is that Avinor has still much to learn from this.

The implications from this project is that Avinor should work on the organization's shared understanding of safety, include a broad image of the ATCO as a craftsman in training, facilitate leadership development, and consider how to make the organization more resilient to the wrong people holding positions.

Acknowledgements

I feel … tense, when I write these words.

What I have done might turn out to be a project only I have learned from. If so, it has all been for nothing. In vain.

I hope things will turn out different. Like it did for me.

It all started when I participated in a course at NTNU, an interesting course about different ways to act and talk, but without real learning for me. I was taught that my weaknesses was probably the excess of my strengths, and of course I understood it. But for the rest… I talked to one of the instructors, Jonathan Reams, and asked if there wasn't one of these "languages" that was to be preferred. I don't know if you remember it, Jonathan, but you smiled and said something like "that is exactly what a course I'm planning for this Spring is about!" I had enough courses to start writing my thesis, but figured I'd give it a shot. Dennis, in Hanssen (2009), is me. Turned out I hadn't understood my weaknesses at all, didn't it…

I will never forget that pain…Thank you! Also for your continued help to comprehend it afterwards.

Of course, your help during this project has also been invaluable, your subtle and not-so-subtle hints and kindness made this project something I can live with in the future. Again: Thank you.

To my informants, and all of you who helped me fill in the gaps: I have decided not to disclose who anyone was, even the ones who said there was no need for secrecy. The project turned out different than I thought, due to your help. You know who you are, and for your help, I am grateful. I really hope the project could do something to release the tension between you.

Torunn, without your presence while reading this, everything would be unclear. Be present, always.

Jan, you have been a model chief in facilitating this, and in other respects. Thank you, too!

While writing the last chapters, the Chairman of the Avinor Board got a verdict from Oslo Tingrett, for lack of actions in another situation. I conclude by quoting the following premise for the verdict, and assume the former TR staff nods in recognition: *… he kept himself in close to conscious unconsciousness of …* (his responsibilities regarding the actions)
I hope Avinor does not continue to do the same.

Brekstad, 2/2 2011
Erling Jøssang

Contents

1 Introduction

What follows might be seen as delivery of an incident report[1]. I describe a specific situation, what appears for me to have created it, and what I mean can be done to avoid it for the future.

I do this because I believe it to be necessary. I am well aware of a problem in this; if anybody were to investigate everything I have done, even in my short time in Avinor, they would easily find that I do not always live up to my own standards. I also know that one who lives in a glass house should not throw stones. From my childhood, I remember a story about a man who had never committed a sin, calming an angry crowd ready to kill, by saying "let he who is without sin cast the first stone."

As this story unfolds, I hope my own glass house remains intact. If it doesn't, I hope it can be fixed.

1.1 Disturbance

After a year spent mainly in Grand Forks, North Dakota, I returned to Norway in August 2003 to start my on-the-job training as an air traffic controller (ATCO). Just before we left, we were told that Avinor had cancelled the contract for the last three (out of eight) classes at the University of North Dakota (UND), at a very short notice. The students who were ready to start their training were offered the opportunity to retain their student places, but knowing that the start-up would be delayed until spring 2005, at the earliest.

Hearing this was disturbing. When I was tested for admission, April 2001, I was told that Avinor[2] lacked quite a few ATCOs, but that they hoped the contract with UND would bring this to an end. So we didn't understand the reasoning, and we didn't understand how it was possible to treat people like that – in addition to the short notice, the timing made it impossible to apply for any other school the next year. Thus, coming home to Norway, I was excited to hear what had really happened.

What happened was Take Off-05, a strategic change programme intended to cut Avinor's annual costs with 400 MNOK from 2005. We returned during the design phase of the programme, and what we heard at my unit was that it probably wouldn't change much for us. The largest change would probably be at the ATCC side, where four ATCC's would be reduced to two. We also knew that the one close to us, Trondheim ATCC (TR), would be one of them. We knew, because the newly built control tower had all the necessary space, met all requirements, and training for the new radar equipment was almost finished. This equipment would replace equipment outdated years ago, a point I will return to later.

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[1]   And not an incident investigation report.

[2]   Or Luftfartsverket (LV) at the time.

My unit also trained for this, and half of us were finished when we were told to stop training: The partial project "DP-07 En route" recommended Bodø ATCC (BD) as the location for the new "ATCC North", merging TR and BD. The final decision was delayed, but the work continued, and less than a year later the final transition was finished. TR was history. An expensive-to-be decision had been effected[3].

1.2 The project

Take Off-05 covered many different areas of the organization. The different labour unions were critical to many of the conclusions in the partial projects, but the objections seemed in general to be ignored. In this project I will focus on the process of merging TR and BD, and try to expand the findings from that process to Avinor, in particular the Flight Safety Division (FSD), today. In this work I will also describe the process of becoming an ATCO and indicate areas Avinor refrain from including in that process. This will be used to indicate how good is the enemy of great[4] in Avinor, and how our managers continue to disregard what might well be their most important task as leaders, today and in the future. Since I am not neutral in this, I will present myself and in what way I am not neutral.

Originally, my interest in leadership as such was sparked by the noise in Avinor created by the Take Off -05 strategic change program. During my education and training I spoke with enough ATCOs to understand that the need for changes was indeed acknowledged in the organization. Also, the initial rumours regarding the coming organizational structure followed recommendations from the ATCO union, Norsk Flygelederforening (NFF). It was early on stated that no ATCO would lose their jobs – and still NFF were so critical to the change proposals that the next few years would be followed by a noisy war[5] between the top management and the employees[6]. To me, it became important to understand how a change initiative starting from so much common ground could end up with creating so many problems for the organization.

After the merger of TR and BD, I have been working with former TR people. The frustration they all have expressed with the process has become very important to me. On the other hand, when I have tried to inquire in the BD side of the process, it has been apparent that it has also been a painful process for many people there. I will return to this, suffice it for now to mention that the

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3   On May 27, 2007, Avinor's CEO states that it had cost "several tens of millions" (flere titalls millioner). (http://www.vg.no/nyheter/innenriks/artikkel.php?artid=185121)

4   Jim Collins (2001), chapter 1: Good is the enemy of great.

5   I call it a war, even if there were no physical damage.

6   Although NFF were the ones represented in the media, the other trade unions were as engaged in trying to stop the changes they perceived as wrong. June, 2004, a letter from 7 union leaders in Avinor was sent to the Department of Transport, expressing distrust in the CEO's ability to lead the strategic change process.

pain is not restricted to one side.

My research project is, thus:

1. To find out how FSD's managers contributed to the negative outcomes of the Take off -05 process,

2. To find out what FSD's organization have learned from the process, and how this is taken into consideration in the daily work of the manager,

in light of theory on leadership. From these two, I will try to deduce structural or cultural factors that contribute to these two research questions.

Since this is a work I hope Avinor and our owner, the Ministry of Transport, might benefit from, some of the theory will be described more thoroughly than I believe to be required in a purely scientific paper. Lofquist (2008) had already done research on the process, and I was allowed insight in some of his files in agreement with his informants. But Lofquist didn't focus on the managerial role specifically, giving the following recommendation for further research (p188): ..."Another theoretical implication that was not pursued in this study was role of middle managers during deliberate organizational change in high-risk industries where conflicting goals stretch middle manager allegiances, especially during periods of conflict."

My project can, at least, be considered a starting point for such research. I figured it would be an ordinary case study, but as it evolved and I got more into details, the details felt less and less relevant. The worst example is a specific safety analysis that was done before the merger, which I will return to in the findings. Other individual events also seem to be parts of a hidden agenda, and I believe an informant in Lofquist's work says it all (p99): *"We were trying to push through a large change, and taking back power (from the union) was a part of this."*

Thus, I leave most of the details alone, and concentrate on stories the involved parties tell of their own experience. What made me come to this conclusion was the fact that the employees in Bodø did not want to talk about specific events, or they did not remember them very well. If there were different versions of what happened, I might have looked for the truth. But the lack of outspoken alternative versions has lead me to believe that there is none. Some people with power wanted to demonstrate power by forcing this change at all cost, some people saw this as an opportunity to get their own way, and other people did the necessary work that made it possible. It became more pressing to find out why the necessary people did the necessary work, than to dig into details of what was done. And this "why" must be found, if anywhere, in the individual stories.

1.3 Approach

When I started the work, I had already concluded, the management in BD was bad, the management in TR was good. I was conscious of these prejudices, so in order to become a so-called neutral observer I felt I had to understand BD's point of view better even before I started.

I also needed to find out what I was looking for, and this was the most difficult step. I ended up with the simple "I want to find out what both sides did, and try to analyze this in light of theory on good leadership", just to get started. My conscious believes were that TR had managed to create a working environment where people were very professionally committed, while BD knew how to fight and win. I believed both to be important managerial skills.

From this, I realized I needed to interview an involved manager from both TR and BD, and a representative for the employees there. Meanwhile, there was another "merger" going on, where the personnel from TR started to return to Trondheim, this time as ATCOs at Værnes TWR/APP (VA), included a new Chief ATCO with background from TR. I decided I wanted to include this process in the project, and requested an interview with a person from the new management, and with an ATCO who had been at VA during the whole process. The reason for this was to check how the experiences from the process were applied in this process of strategic change.

As it emerged, the stories of BD and TR are still so different that I analyze them using a narrative methodology, and chose to disclose a common version of each in Appendix B. Data from the informants from VA will be treated like the data from persons who have commented on the stories in Appendix B, that is, data from "a source".

1.4 Structure

The main theme of this text is to give an image of who we should be, who we shouldn't be, and how to avoid it, in light of Avinor's own goals and visions today. To do this, I use images of a Craftsman, and of groups and individuals in a situational context.

I will start by giving an introduction to the theory I have used to interpret the events.

I continue by explaining the methodological approach and how I have tried to mix this with my ethical considerations.

As I ended up with using a narrative method, I will then discuss the stories from TR and BD. Though the individual experiences are important in themselves, what I will explore is mainly the differences. Not in order to find out who is right and who is wrong, but how the different perceptions are formed. Some of my own experience will also be included, to replenish the picture.

In the conclusions, I come up with some implications that might be interesting to Avinor and Avinor's stakeholders in general, and to FSD in particular.

Influenced by Hanssen (2009), I will use the term "she" throughout this paper as a gender-less word, as I concur with her notion that the use of he/she breaks up the language[7].

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[7] Hanssen, for the record, chose "he"

2 Theory

2.1 The Craftsman

I believe ATC is a craft. ATC is far from an academic trade, even though our main tool is the same; our brains. In this chapter I will describe the concept of the Craftsman in ATC. The following is an excerpt of Richard Sennett's work, The Craftsman (2008), but interpreted into an ATC frame. As it is the book title, I will use Craftsman as a gender-less concept, in addition to "she".

ATM is designed to provide a safe, orderly and efficient flow of air traffic, and ATC is about ensuring that an aircraft does not hit another aircraft, vehicle or other obstacles, and at the same time avoid unnecessary delays. The ATCO should do whatever possible to achieve this.

1.   Motivation

Sennett describes the process of becoming a Craftsman as the human condition of being and staying engaged. First, one takes pride in acquiring skills, then in one's own work. This pride will lead to seeking perfection in every detail, or to use the practical approach of making things work. In both cases one is likely with ending up with repeating the work enough times to become close to perfect in a reasonable amount of time – the more you practice, the more impossible your standards.

2.   Authority

The transference of a craft happens in a workshop. In ATC, we call this On-the-Job Training (OJT). An oral contract is made before the trainee is allowed into position; to obey without question if the instructor (OJTI) gives a direct order. Breaching that contract once might bring severe problems for the trainee, another will discontinue training for sure. A group of instructors evaluate performance, and if the requirements are met, a licensing test is scheduled. Their evaluation is not official until sanctioned in the line, but like in traditional craft, interference rarely occurs, and is hardly tolerated.

3.   Machines and talent

Warning us that aid from computers might take away the understanding of problems and create unexpected errors, Sennett also gives praise to the modern machines' positive impact on our lives in general. In craft after craft, machines replace the craftsman, doing the job perfect every time. To have a machine replace the craftsman, however, requires complete comprehension and ditto description of the craft.

An inherent risk in trying to become a master, is failure. Failure happens, and how this failure is

addressed is important. It might be salutary, as we may learn more about ourselves through a – painful, probably – lesson in humility. The strong point made is that through the creativity forced from failure, we might – or must – find other ways to excel.

4.   Material Consciousness

The material ATC work with is human, and consists of, at least, pilots and vehicle drivers. Pilots may fly anything from ultra light aircraft and helicopters, to Airbus 380's. Vehicle drivers also vary, from the drilled snow-clearing crew to the hired specialist on her first unaccompanied assignment.

According to Sennett, our thoughts revolve around three key issues when considering material to be used in a new situation:

- Metamorphosis: When somebody applies something from another domain into her own craft. This metamorphosis, or domain shift, is further addressed in the chapter on tools.
- Presence: Not only is insight in material necessary to avoid failure. To take into consideration all the factors affecting a job is just as important. While considering the material available for a specific job, a slightly absent-minded craftsman might well arrange for disaster.

Presence is not only about being mentally present, but also pre-sensing, knowing enough to make probable assumptions – what will happen if I (don't)...

In ATC, deep insight in how different actors perform is necessary. For the inexperienced craftsman, it is advisable to impose restrictions with larger margins, until all factors may be taken into consideration. Experience teach us to apply conditions that allow for smoother operations for all.

- Anthropomorphosis: The human habit of seeing human qualities in material substances – a craftsman must be conscious of signals to avoid misinterpretation of the intended message.

5.   The Hand

Sennett describes how instrumental the sensitivity of the human hand is in acquiring a perfect technique in traditional craft, required for mastery. In ATC, this sensitivity is mainly on the nuances in communication, pre-sensing when misunderstandings may occur.

In order to develop a specific technique, it is necessary to first understand what is done in the wrong way, and how. To do this, one must dwell with the mistakes, maybe even repeat the mistakes in a simulator setting, until the reason is understood and can be addressed.

To apply correct pressure, and to let go also of this initial pressure, is essential for the result. For the skill in ATC, the application of speed restrictions may be an example of this; the principle of minimum force.

Sennett goes on to explain that when teaching specific techniques, an instructor should know when to use tools for learning, and when tools will make further development of technique suffer. The instructor must also be conscious to the fact that training complex skills one by one may lead to misunderstandings and later need to unlearn the skill and start anew.

6. Expressive Instructions

This chapter advices the Craftsman as a teacher of practical work to use the following techniques:

- Write what you know, as a remedy for "Dead Detonation[8]", includes explaining the concepts that has become unconscious for the Craftsman. An example; if the final 5 Nm (Nautical miles) of flying on average takes two minutes, we must make sure that the average distance between aircraft arriving at the approach sector is at least 2 minutes, otherwise more aircraft will enter than we will be able to land[9].

> - Use images, and dwell with the most difficult parts of the procedures. For the ATC trainee, this dwelling must normally be done in a simulator. Here, we can pause at critical moments, describe the present situation and reflect on what problems may arise from it, and even provide the opportunity to "rewind" and try another solution.
> - Show what you know, including to revert to the technique of a novice if possible. The movements and speed of an expert is a certain way to hide details for the student. If the reflection above does not lead to the intended result, an instructor entering position and show exactly how she would have done it herself can be an effective solution.
> - Illustrate what you know, by creating a scene narrative around it. At times, it can be necessary to get the student out of the present situation, by telling a story, and allow the student to reflect on it. In the simulator example, sharing the story of how the instructor came to choose this way of doing things might not only improve the chance of the student of using the technique, it also provides a reason for the approach if another instructor has a different opinion, forcing that instructor to reflect.
> - Use metaphors, if the student is able to understand them. When you know that the skills required are known, it is possible to teach the objectives better by metaphorically explaining the objectives. I use a simple metaphor later, to explain the risk assessment concept (ch 5.3).

Taking the student's point of view, instructing based on her previous knowledge, is the essence of the art of teaching. To give good instructions we must take the tacit knowledge apart, remember what we did before the craft became a habit, and preferably even disclose our own initial mistakes.

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[8] Explaining by using concepts void of meaning for the listener.

[9] Provided 5 Nm is the required final spacing, the most common in Norway.

7.   Arousing Tools

Sennett calls the imagination necessary to develop tools intuitive leaps, explaining that they often stem from repairing what is broken. He limits intuitive leaps to four concepts, and I include all, even if I only apply two of them to ATC:

- Reformatting: To see a tool with a child's eye – look at the tool as a concept void of meaning, and imagine if the tool can be used elsewhere. In aviation, radar was first used to detect enemy aircraft, and the use in ATC came much later. Reformatting the problem is also possible, and the insight might lead to importing a tool from another domain.

- Adjacency: To find ways to connect different worlds to improve both, or all. A tool of communication is the mobile phone. In inventing this, it was necessary to imagine what two means of communications could share, the radio and the telephone, and develop the technology required.

- Surprise: To discover that something has the capability of doing something completely unexpected, and then finding out how to use this discovery.

- Gravity: A force we cannot defy by leaping. In including this, Sennett directs our attention to the fact that unresolved matters inherent in the tool will remain. Thus, unless we know what the new tool does not fix, and take this into account, the new tool might create problems she is not prepared to handle. For the ATCO, the use of radar does not fix the problem of separating aircraft. As a radar instructor in simulator training, I have witnessed instructions that could lead to a dangerous situation, being defended with the argument that "we have radar, and can change the instruction if what you fear comes true." But our means of communication are not perfect, we have to make sure things are safe even if the equipment we depend on should break down temporarily.

8.   Resistance and Ambiguity

Resistance can be found or made, the made ones caused by the Craftsman's own actions. One way of meeting resistance is to reflexively search for the path of least resistance. I will leave out examples of this in ATC for the time being. Sennett gives three different ways of reflection:

- Recasting: To imagine a different scenario to frame the present. This is a skill that can be trained, especially if we understand the concept of recasting with a different protagonist. If a trainee has problems with understanding the need of adjusting aircraft speed early enough, using a braking train might get the point home. The train has friction to the ground to brake with, yet to stop it in time to avoid an obstacle is rarely possible. Aircraft do not have that luxury.

- Patience: Sooner or later, we have to recognize it, if our present approach is inferior, and leave

the problem unsolved for the necessary time.

   - Identification: To identify with the problem, using ourselves as protagonists, to understand the underlying reasons for the resistance. If a trainee does not seem willing to learn from me, it might not always be possible to understand the reason. Remembering some authority figure from the past that I had problems with could then be a reasonable starting point for working on the problem.

Sennett also stresses the importance of sometimes choosing not to follow the path of least resistance, showing that this might create structural problems in the same manner as use of tools in teaching. Three examples of how we treat incidents might serve as examples of this in ATC:

   - If we believe nobody noticed, we don't tell anybody.

   - If the incident included avoidance instructions but not loss of separation, we promise the involved that it won't happen again, we have learned from it! Then we agree that there is no need to report.

   - We report the incident by using the "message" form in mesys (Avinor's reporting system), putting the responsibility on our manager to upgrade it to an incident if necessary.

These three examples can also serve as examples of perceptions of borders and boundaries:

Boundaries are created to separate distinct worlds, while borders take care of the interactions between neighbouring worlds. Sennett argues that the craftsman never improve skills in boundaries, but by exploring the borders between the worlds involved. In ATC, to report an incident is never comfortable, even if we perceive ourselves as innocent in the present case. To say on the radio "I'll report this" and nothing else is to create a boundary, but to invite the other to discuss the incident, to see what both can learn from it, and then explain that we have to report this so that others can also learn from it is to work with the border.

Improvisation is an act that is not planned. But if the Craftsman does know the rules and the surroundings, and/or make an agreement with the other actors, the probability of a successful improvisation is very small.

So far, Sennett wants us to understand that progression is not linear, but comes in leaps to new understanding. Each leap requires understanding of what we do wrong, an insight that might be painful, but also each leap brings a strong reward for the craftsman; the feeling of competence.

The desire for this reward is strong, and inspires her to search for new competence. But this desire can also bring trouble, explored in the rest of the book.

9. Quality-Driven Work

The Craftsman can be obsessed with quality. To be a successful craftsman, it is necessary to learn how to address obsessive energy. Becoming too obsessed, the result may be fixation and rigidity.

There are also other dangers inherent in obsession, and Sennett makes the distinction between the sociable and the antisocial Expert, arguing that a well crafted organization will favour the former.

At this point, I will leave The Craftsman for the time being, but return to this last point later, when discussing *Animal Laborans* and *Homo Faber*.

2.2 Obedience and Group Think

I believe a key to good leadership lies in knowing and accepting the points proven in these two similar experiments. The Milgram Experiment[10] had people "from a broad spectrum of socio-economic and educational levels" (Gleitman, 1995) isolated in a scientific labouratory with a figure of authority – a professor – who, by use of his authority position, convinced about 65% to give potentially lethal electrical shocks to an unknown person. *Jeu de la Mort[11]* is a French documentary version from 2009. Here, the participants were isolated in a familiar setting, but unknown to them as participants; a TV show. Milgram's scientific looking panel was replaced with a rotating board, with levers clearly marked with the dangers of each voltage setting. The authority figure was represented by a well known TV host. In this setting, about 80% pulled the last lever, marked XXX.

I choose to include *Jeu de la Mort* in the theory section because it makes the Milgram Experiment more comprehensible. It shows the inner struggle of the participants, how many try to cease participation, out of compassion with the electroshocked, and still continue – until they are potential murderers. In the Norwegian translation, the commentator attributes the other part of the struggle to the difficulty of disobedience. These struggles are said to show that these people are not psychopaths, and I think in the interviews afterwards they appear to be ordinary people also intellectually. The same effect is reported in the Milgram Experiment. I do not have the methodological background for the *Jeu de la Mort*, and I do not know if the documentary is methodologically correct. Thus, I will leave the documentary for the reader to watch, and base my considerations on the discussions stemming from the original experiment. Remember, however, the stress the commentators put on explaining what happened with natural obedience. The Norwegian narrator explains that 1/3 never made a visible attempt to resist authority.

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[10] I choose to use the term *Experiment*, referring to the initial experiment. But Milgram performed many experiments to test the validity and variation in different settings. In one of those settings, more than 90% went all the way – when another person did the actual shocking.

[11] Game of Death. I have seen the Norwegian version as translated by NRK. At the time of writing it can be found here: http://www.nrk.no/nett-tv/klipp/682856/

Still according to Gleitman, obedience in general depends on a recognition of authority from the object; if the orders given overstep the perceived borders of authority, they will probably not be carried out. In these cases the personal responsibility of using one's own personal judgment is intact. Thus, it is important for the development of responsibility detachment that the personal barriers are removed gradually. The Milgram Experiment does, however, shows that it might not require lots of time, given the right circumstances.

Zimbardo (2007) showed this degradation of personal responsibility in full in his Stanford Prison Experiment (SPE). As described in *The Lucifer Effect*, students playing prison guards developed sadistic tendencies in mere hours. Since I have no reason to believe this happened in the present case, I chose to leave it out of the theory section after some thought. I will, however, return to this work in the discussions on obedience, group think and importance of role models.

A word on obedience: In childhood, to not follow orders from our parents have consequences – and instructions given within a framework we can understand is what make us safe as children. In war, to follow orders might be essential – a soldier is trained to sacrifice himself for a common good. We are bred in fight for survival, and this instinct to follow order is strong, since obedience has historically kept us alive. Psychotherapy can be said to be about making our instincts[12] conscious, to understand how they developed in ourselves, and how this affect our behaviour. To realize how strong obedience as a force is, and understand when it is not a good quality, is essential in order to develop the managerial skill equivalent to the craftsman's use of minimum force.

2.3 Constructivist-Developmental Theory on Adult Development

While it is important to acknowledge that human nature makes us follow orders, even if they are of a nature we would not believe ourselves capable of, it would be difficult to learn much from the experiments if none of the participants refused to carry out the orders. But some did, and finding out what made them do so has been subject of research.

According to, among others, psychcentral.com[13], Lawrence Kohlberg interviewed some of the participants in Milgram's Experiment. Kohlberg built on Jean Piaget's theory of cognitive development, in which the cognitive development of children goes through 4 stages (Hetherington and Parke, 1994) up to early adulthood. Central in Piaget's theory are the concepts of assimilation and accommodation; a child who see something new will assimilate this with previous concepts and understanding. But if a new thing is incomprehensible with earlier experience, the previous understanding is accommodated to fit the new information. Although Piaget has been criticised, the

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[12]   Instinct as in what we do without reflecting on it – as such, it might well be learned.

[13]   http://psychcentral.com/blog/archives/2010/06/03/the-ghost-of-stanley-milgram-and-the-game-of-death/

critique has not been on his main achievement: To establish the construction of mental capacity as a sequence of transformations to new levels of understanding. Piaget himself acknowledged that his stages were not synchronic[14], neither by age – all children do not develop as his age schemas indicate – nor personally – a child at one overall developmental stage would not operate at that stage in all territories of experience[15]. It is, however, impossible to skip stages, as every stage is built on the mastery of the previous ones.

Expanding Piaget's theories into adulthood, Kohlberg introduced a scale with stages of moral reasoning. He divided an individual's development in pre-conventional, conventional and post-conventional levels of moral reasoning, each again divided in two stages (Crain, 1985). When he applied his scale on participants from Milgram's Experiment, he found that about 75% of the participants with a post-conventional moral reasoning disobeyed the orders and ceased the electroshocking, as opposed to 13% in the conventional group.

Kohlberg's work has been criticised, among others by his co-researcher Carol Gilligan, who claimed it was based on male reasoning, pre-occupied with rules and fairness as opposed to female caring (Gilligan, 1982). I have no intention of going into details of the critique, as I would then have to go into details on others' counter-critique. The conclusions, from Gilligan, from her adversaries, and others[16], are that the post-conventional mental level Kohlberg introduced is confirmed, but not at all restricted to the moral confinement of his research. Different researchers have, however, identified different stages. I will give a short introduction to the stages, as identified by Joiner & Josephs (2007). This introduction is too brief to give a full understanding, and should not be used by the reader to assess others. In this short description, I will not try to explain what generally keeps a person at a certain stage, as this is beyond the scope of this project.

That the stages were not synchronic in the children is taken into consideration both by Torbert (2004), and Joiner & Josephs. Torbert divide our development into four territories of experience – context, frames, actions, and results – and describe how an individual[17] develops in each of them through the stages. Joiner & Josephs focus on leadership development, and describe four areas of leadership competencies: Context-setting agility, stakeholder agility, creative agility and self-leadership agility. I will not go into much detail on these different territories or agilities, but it is important to understand that a person can be operating at one cognitive level, while the performance[18] is at a different level. The following description is not restricted to a leadership

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[14] See Lourenço, Orlando and Machado, Armando(1996), criticisms 1 and 6.

[15] The term "Territories of experience" comes from Torbert and Associates(2004).

[16] Including, but not limited to, Bill Joiner and Steven Josephs, Robert Kegan, William Torbert, Ken Wilber, Jane Loevinger, and Susanne Cook-Greuter.

[17] as opposed to Joiner & Josephs focus on leaders

[18] What others see!

context.

2.4 Stages in Adult Development

Joiner and Josephs (2007) are among the researchers who confirm Kohlbergs finding of post-conventional stages. I will use Joiner and Josephs' names for the different stages throughout this paper, as they are intended to describe levels of leadership reasoning (or *agilities*, in their own words). They name three pre-conventional stages; Explorer, Enthusiast, and Operator, three conventional stages; Conformer, Expert, and Achiever, and three post-conventional stages; Catalyst, Co-Creator and Synergist.

Two important points to note before I give an explanation of the concept: The levels and stages do not necessarily have to do with knowledge or skills within a field of expertise – except maybe the studies of human factors. Joiner and Josephs stress the fact that they have nothing to do with personality (p 12), and Kegan & Lahey(2009) state that IQ has only a modest correlation to the levels they describe. According to Joiner & Josephs, a leader with a high IQ could be an Expert, a Synergist, or somewhere in between[19]. I will return to the question of excellence within a field, compared to these stages, in the discussion of *Animal Laborans* and *Homo Faber*. According to Eigel and Kuhnert (2005), *ego development* or *constructive developmental* theory is research on the capacity of people to respond effectively to complex circumstances.

I will give a brief explanation of the different stages. Unless otherwise stated, the following is from Torbert (2004)[20]. Note that his own terms for the Operator and Conformer are Opportunist and Diplomat[21], respectively. The numbers cited are from Torbert's study of 497 managers[22] across industries and organizational levels.

1.   The Operator

3% were Operators, always looking for opportunities, and view the world as a one-against-all jungle fight. It may well be that the intelligent Operator is a skilful manipulator, and timely action has been effected when she can say "I won". But large long-term costs for the short-term wins often occur. In these cases, she will not accept responsibility, but externalize the blame. As a manager, information is not shared for free, and "might makes right". Cook-Greuter (2005) also emphasize the energy the

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[19]   Which include all of their leadership agilities. My interpretation is that a high IQ may be found also at earlier stages.

[20]   and Associates. I refer to his name only, as at least one of them, Susanne Cook-Greuter, uses other names in her own work; Conformist, Self-Conscious and Conscientious for the three conventional stages.

[21]   Joiner & Josephs (2007, p249) compare their identified "leadership agility" stages with other researcher's identified developmental stages. As I said above, I'll use their names here, also when quoting others.

[22]   ...and according to Torbert (2004). The percentages are slightly different when referred to by others, including Kegan and Lahey (2009), Cook-Greuter(2005) and Joiner & Josephs(2007)

Operator employs when chasing something she wants, and adds that her inherent anger against the world makes her perceive others as angry all the time. Also note the fact that the Operator does not choose to act opportunistic, as this is the only way she knows. This, of course, indicates that she believes that everybody else reasons in the same way as she does.

2. The Conformer

10% in Torbert's study were Conformers, the last Piagetian stage. This is the first conventional stage, and I dare to call this the stage of adolescence. To conform with significant others' values, opinions and behaviour is important, and her perception of their expectations control her actions. In order to look good, she may falsify information, and avoid losing face in front of her significant others is the only significant goal. The Conformer is unable to criticize others and question group norms, and is also unable to accept criticism. Criticism would imply that others see her differently than she sees herself, but this does not occur to her. Note, again, that this is not a conscious choice.

3. The Expert

45% in the study were Experts, the stage most common among managers in the study referred to[23]. Growing from Conformer to Expert means that it becomes important to stand out from the group earlier conformed with, and the mastery of a skill the Expert recognize as relevant is what gives authority and respect. At this stage, a person becomes aware of other's perception of her. An Expert will deliver, in the sense that the job taken on will be carried out to perfection, and the reward for it may not be more than the satisfaction of the feeling of mastery. Due to this perfectionism, the Expert will often give advice to others, whether or not requested, expecting the same degree of perfectionism from them. Regarding feedback from others, it is welcomed from recognized masters in the area of importance. In other areas, feedback is not interesting, and from peers not recognized as masters, the feedback will normally be ignored. The Expert has the ability to see a problem from different angles and find multiple solutions, but she will normally not be able to see how multiple problems are connected. Cook-Greuter(2005) adds to this that the Expert will always "stay on top" in listening to others by adding one's own opinion to what is said, and that ridicule is a common sport among Experts. According to Joiner & Josephs, the Expert as a manager is normally aware of the larger organizational environment, but with a tendency to limit the focus on the department's internal operations. The meetings she holds will normally be to share information on company level and get individual updates from her staff – and in case any of them report challenges, she will give advice on how to solve it instead of making it a subject for the group to discuss.

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[23] And others, Cook-Greuter(2005) places 36% of 4510 "USA mixed adult population" in this group. Interestingly, this sample is shifted significantly toward higher levels than the study referred to in the text (Torbert, 1987).

4.   The Achiever

Less than half in the different studies referred to have moved on from the Expert stage, and in Torbert's study of managers, 35% were Achievers. To explain the Achiever I will lean initially on the explanation of Cook-Greuter (2005). At this stage, a person has enough perspective on herself to become truly introspective. She will make her choices based on what she deems to be the best for all, and normally acknowledge that to reach her goals, she will need other people's help. Others are respected for having their own opinions, as long as they don't interfere with hers. A serious concern is if she lives up to what she believes in. Torbert also makes a distinction here, in that these ideals and values are consciously examined and chosen, but not created by herself.

Cook-Greuter further explains that the Achiever is sure that there is one best way, one Truth, and that perfection in methods is achieved by constant improvement. For the Achiever, time is money, and the medium to accomplish things. Thus, time is a scarce resource and must be used well, and the drive to have success, achieve something, may lead to over-extension.

As a leader, according to Joiner & Josephs, this is the stage Collins (2001) describes as *Level 5 management*, and that may well be true. The Achiever uses verifiable data, and has the ability to see how individual problems are related. Torbert (2004) place Collins' Level 5 at the Co-Creator stage (Torbert's *Strategist*), but adds that Collins has not explained the Level 5 leader in theoretical terms. From reading some of Collins' book again, however, I support Joiner and Josephs' position, an Achiever can actually be found at Collins' Level 5. I will return to this in the discussion chapter.

5.   Post-Conventional Level

7% of the managers Torbert studied, and 12% of adult population with at least a college education in a study by Robert Kegan[24] were found to be at these stages. I will not go into detail on these stages, but this should not be understood as an indication that the post-conventional stages is not important. Quite the contrary, an implication from this project is that Avinor should empower as many of these as possible. The results found in different studies[25] strongly indicate that the managers' – particularly the CEO's – level, is essential for the success rate and sustainability of organizational change efforts. But I leave out a description of these stages for now, returning to them briefly in a later discussion of *Animal Laborans* and *Homo Faber*.

Torbert uses the term "action logic" for the reasoning that controls behaviour on each stage, and I will use the term "logic" instead of stage when talking about specific people. "Stage" does not feel comfortable, it feels like labelling, missing the point. Joiner & Josephs has identified leadership

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[24]   according to Joiner & Josephs (2007), referring to *In Over Our Heads* (1994).

[25]   In addition to the ones mentioned in the theory section, see Rooke and Torbert (1998) and Eigel and Kuhnert (2005)

"agilities" at the Expert logic and later – the ones who are able to take a different perspective.

2.5 Griefwork

Owen (2000) sees organizational transformation as grief at work. I will give a brief outline of the process he outlines, which follows Elisabeth Kübler-Ross' work *On Death and Dying (1969):*

1.   Shock and Anger

The first reaction, shock, is described as a period when one stops breathing and cannot comprehend what has happened. To start breathing is essential, and this is done by acknowledging the angry emotions that arise. To encourage expression of these feelings might be essential in order to avoid later outbursts at inappropriate moments – when others won't understand them.

2.   Denial

In spite of all the evidence to the contrary, human beings do not accept that something loved is gone. This is a necessary function in healing, when pain is too severe to be dealt with. If much effort is spent on forcing people to accept reality, reversion to shock and anger might well happen. Thus, the opposite is necessary; to facilitate peace in order to allow for initial closure of wounds.

3.   Memories

When the loss is acknowledged, memories will come – and to others, this is tedious and maybe even annoying, as people seem to talk about the same over and over again. But this is when history is rewritten to be just that. Placing events in the past is a necessary step to be able to move on. Owen refers to the traditional funeral feast as serving this function, and that holding a party like this might well serve the same organizational purpose.

4.   Despair

This phase, the first in Owen's "Open Space" resembles the Buddhist' "Emptiness." All of the structures, procedures, and relationships that used to give life meaning are gone. In this phase, pain is intense. This is the phase of letting go, and the pain involved often leads to avoidance. Paradoxically, what is necessary to move on is not to avoid the pain, but to acknowledge it in full – "embrace" it. If the pain is avoided, people might lose the sense of purpose and something to look forward to. In Owen's words; punching the time clock is all that matters.

5.   Silence

The second of Owen's "Open Space" is when visioning begins. When the gravity of the situation is fully taken in, the question "what do we want to do with the rest of our lives?" might be asked. The important suggestion is that there *is* one. Another important question is "what did we love about the life we lived?"

"Love" indicates that we have to acknowledge what wasn't perfect, but still try to be as good as we can – love both as challenge and as acceptance; we know what our standards are, but also that we are human beings and sometimes do not live up to these standards. If we don't appreciate this, standards may make us move from "better, better, better" to "guilt, guilt, guilt!" Also, "love" indicates that there is no command involved; to move on requires choosing a path from here.

6.   Wonder and Imagination

The choice may be to try to keep things as they were, to the extent possible. For a person, this might involve leave the organization to find another occupation and otherwise live life as it was.

For others, the choice is to start exploring the new and different, asking questions starting with "I wonder if…" and try to imagine what the different outcomes of attempts might be.

7.   Vision

Vision is born from this imagination, and not necessarily from a clear picture, but often a vision as *passion* to live by the new insights. Organizations' Vision Statements often seem to *contain* a vision to be imposed, not to inspire imagination and purpose. True vision is born from chaos, and requires the individual to figure out how to implement it.

3 Methodology and Ethical Considerations

I will first explain how I ended up using a narrative methodology. Then, before presenting some theory on the methodology itself, I will explain my own role as a researcher. That I use the English language is mainly due to the nationality of my advisor, Jonathan Reams.

3.1 *Choice of Method and Informants*

I ruled out a quantitative method early. I don't believe it to be possible to create a survey that could be useful in finding out what people in different roles experienced during the merger. In addition, I could not imagine a survey that would yield satisfactory answers to me, without talking to the respondent to allow for elaboration on each answer.

During and after the Take Off-05 process I heard of specific events and rumours on others. Having thought of lots of questions I found interesting to explore, I asked Jonathan Reams (my advisor) to look at them. His response was simply "too many questions", and without discussing them, he asked what I wanted to find out. Puzzled, I explained that I wanted to find out both[26] versions of what happened, what they did and why, how they felt about it at the time, and what they feel about it today. "Then why don't you just ask them that"? These two questions helped me clarify my purpose, and moved me from the structured to the unstructured end of the "interview scale".

Zhang and Wildemuth (in Wildemuth, 2009) explain[27] that even if unstructured interviews don't use predefined questions, questions are not random and non-directive. The researcher must have detailed knowledge and prepare well to keep the interview related to the area of interest. Being an ATCO myself with a Bachelor degree in anthropology, the role Burgess is quoted to recommend for presentation of the researcher was no role for me; I perceived – and still perceive – myself as "a learner, a friend, and a member of the interviewee's group, who has sympathetic interest in the interviewee's life and willing to understand it."

To understand what had happened, I needed to interview people who had been involved in the process. I knew who the involved people from TR were, but I didn't know anybody involved from BD. But via a friend, I got a name to contact and scheduled a meeting with him. As it turned out, he had brought in a few of the other involved persons, I got to talk to them informally and got a picture of who they were. As the project is on leadership in Avinor, I wanted to interview a person from the management at the time who is preferably still in Avinor, and an involved employee. Union representatives were the natural first choices. During my work, a former ATCO from Trondheim

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[26] I knew, and know, that there is necessarily more than two versions, but bear with me.

[27] Quoting Patton, 2002, Fife, 2005 and Burgess, 1982

took position as Chief ATCO at VA, and this process also resembled a strategic change. I realized that this could be a chance to find out more on what Avinor had learned during the process. Two persons in similar roles at VA accepted my request.

3.2 On the Author

In addition to the education in anthropology, I had various vocations before I took on my ATCO training in 2002.

I disclosed earlier that I do not feel neutral in this project. I'd like to add some details around this, to allow the reader to judge if I manage to balance my biased standpoint. I feel quite confident on this myself, as the emotions I had when interviewing my informants from BD convinced me that the balance was there; I felt I was welcome, and that there was nothing wrong with their personalities – they were decent people[28].

My bias stems from two factors: The first one is very simple, but also emotionally strong: If it wasn't for the shut-down of TR, I would not be commuting today. During my training, I established my residence close to TR/VA, knowing that in a few years I'd be working there.

The second factor affecting me is more difficult to address, as it is not obvious to me how much it affects me: The people most influential to my professional attitude as an ATCO are from TR. Two former TR ATCOs have been my colleagues since then, and their professional attitude is only comparable to the frustration when they told me about the events leading to the shut-down, and how they felt back-stabbed by their colleagues in BD.

3.3 Becoming a Neutral Researcher, If Possible

Like I said earlier, I was sure the management in BD was bad, and in TR it was good. During the merger, I was active at NFF's internal forum, trying to discuss things there, but not even once did anyone from BD answer questions or accusations. This had convinced me that people from BD had something to hide – and that they were in it together. Knowing how what you hear about strangers affect your attitude, I could well be more affected by the stories from TR than I was aware of. Zimbardo (2007) refers to work done by Albert Bandura to demonstrate this, a work I will return to in the discussions.

So, in order to be able to do this work as neutrally as possible, I needed to find something about BD that I could respect. It didn't take me long to come up with a few things. First of all, they knew how to win a war. Leaving out everything else, it was obvious that they had assessed the situation

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[28] If I felt the opposite was the case, I would have to explore the reasons. Feeling positive, I might have been fooled by my own work to feel positive about them, or by their public face, but I see no need to spend energy on that.

accurately, and reacted in a way that left one ATCC in Bodø. Secondly, there was a pragmatism in the working methods that I liked. Most of my career as an ATCO has been with BD ATCC, I worked with TR ATCC fully operational for only a few months, so my impression of TR was mainly from the persons I had worked with myself. I believe, however, that this is as valid as anything to base reflections on. In addition to the persons I worked with daily, I was an instructor for the radar system being implemented for Avinor in Norway north of 62°N in 2008, and during this process I got in contact with more TR and BD ATS workers. Based on this, I found that if I should point at one cultural difference between TR and BD, it would be that in any situation TR ATCOs first asked the question "is this described somewhere, in rules and regulations?" while at BD they first asked "does this work?"[29]

A second bias I identified in myself is that I have always tended to see everything from the worker's perspective. From 2006 to 2009, I was member of the professional part[30] of NFF. I noticed that during this time, I saw things increasingly from the management's point of view, and how the things we said as a union would appear to the management. Noticing this, I also noticed that the workers are not the only ones opposed to change; managers often dismiss well meant input from the employees without even trying to consider the long-term implications. I became sure that managers miss opportunities because they do not take a worker's perspective. Senge (1990) calls Stewardship critical for the learning organization, an attitude of a leader who acknowledges workers' need for purpose, and encourage the commitment stemming from this. Ekman (2004) devotes a book to the importance of participation in small talk for leader. Thus, I wanted to keep my bias conscious, but to maintain it, believing it is an important managerial asset. To include the concept of the Craftsman follows directly from this reflexive process.

3.4 Data Collection

1.   Contracts with the informants

When I had decided who I wanted to interview (described in section 3.1), I sent them an e-mail asking them to participate, and attached a statement of confidentiality (Appendix A – not translated) where I also sketched the purpose of the project and what I was interested in; the merger of TR and BD ATCCs, divided in four periods: The project phase – before the decision was made, implementation phase I – leading up to TR ATCOs arrivals, implementation phase II – while the TR

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[29]   Not to imply that the other question was not asked at the other unit. I believe both questions are important. But, this was my reflections during my preparations for this project, to get something positive and explicit to work from.

[30]   The NFF board is responsible for the member's professional, social and economical interests. The professional part include safety rules and regulations, follow-up on accident investigations, and keeping an eye out for new ideas to explore and recommend for implementation. Due to sensitive information the board receive, and expenses, only the leader of the professional part is always member of the board, although there might be more overlap.

ATCOs worked at BD, and the time after – when the former TR ATCOs who wanted to had found other places to work. In addition, during the interviews, I promised to separate the personal data from the interviews, a promise I didn't keep[31]. The informants from TR and BD were interviewed first, but the procedure was the same later, when VA was included in the project.

2. Gathering Data and Triangulation

I met the informants at their workplaces, as none of them took on the offer of meeting somewhere else. I brought an audio recorder, asking the informants if I could record the interview and explaining that the recorder could be paused at any time of the interview.

The initial four interviews were held in May, 2010, and some of them contained information that I had to verify before I could publish it. Referring to Yin (2003), Patton (1990) and Stake (1995), Hanssen (2009) calls using multiple sources triangulation, and I triangulated sources by checking details with involved persons and written material, and invite several others to look at the emerging stories. Also, being employed during this process – although at another unit – makes me kind of a participant observer, triangulating methods in accordance with Ringdal's definition (2007). Some of the information also confirmed what I had been told before. But even though I did get most of it verified, I decided not to pursue the details. To check the information, however, was necessary to address a major ethical issue in this project: As described above, I felt subject to what Smythe and Murray (2000) call conflicting interests, by working closely with people I respected, who expressed strong emotions when talking about the period in question. I mentioned earlier that the emotions were also strong in the former BD ATCOs, and I was a bit worried whether I would be able to understand these. As it turned out, it was not difficult.

The structure of the interviews was already narrative – I asked my informants to tell me about events and emotions during the process, divided in four distinct periods. And following the transcriptions, I wrote the subjective stories of the TR informants and BD informants and sent the two different stories to my informants and other actors involved in the events for comments, to take away what was subjective opinions from individuals. This lead to interesting new data, that will be used in the presentation, although at large not included in the stories of Appendix B.

3. Changing Methodology

During the transcriptions, I found that I didn't have much information on how Avinor used this event as something to learn from. As described above, the strategic change going on at VA appeared to be an opportunity to explore this further. Adding these interviews, I tried to divide the findings

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[31] Instead, I deleted the audio files, and didn't transcribe the personal data.

into general categories applicable to all, and special categories for each group, if possible.

But I noticed two main difference between the groups; the willingness to talk about the events, and the amount of details included by the informants. This became my main focus to explore.

I hope to be able to convey this later in this text, but when trying to make meaning of the stories, I couldn't understand how the events could be possible until Milgram's Experiment came to my mind. Knowing how fast people can be manipulated into consciously[32] perform potentially lethal actions, what happened in this situation became understandable. However, this made me change the approach to the project fundamentally, as it became important for me to allow for the stories to be told, and analysing them using a different methodology than I had imagined.

The reason for this is the same as when I report an incident according to BSL A 1-3[33]: To make a mistake is human, but it can not be accepted to avoid learning from it. In the present case, it appears that bad blood from the events has made it difficult to talk about it openly. But for the organization as a whole, for the regulators, and for the owners, there is too much to be learned from it to leave it behind and move on, as several informants said they tried to do.

3.5 Narrative Methodology

The first step of methodology was a rather blind step for me, as explained above. But a blind man can also hit the mark: Thinking on Jonathans advice, I ended up being more what Kvale (1996)[34] describes as a Traveller than a Miner. Giovannoli (2001) explains that the difference: The Miner is seeking to unearth some knowledge buried within the subject of interview, while the Traveller is gathering stories to retell when returning home.

Home, in this case, is my own organization, and very early, way before the interview sessions, Jonathan gave me a hint: Remember that this is not a journalistic project. The meaning I made from his advice was this: No matter how much I want to explore the events and what happened, I do not have a mandate from anybody to do that. If my informants take this as an opportunity to talk about everything, that is fine, but trying to go mining will probably lead nowhere. What I want to contribute is possible new insights to the organization, not to start a blame game over again. The different stories of the individuals should ideally fit in the story that Owen (2000) calls the organizational myth, but if such a myth exists today, it is just that: A myth. The differences in the stories stand out as evidence of a fragmented organization without a shared purpose. I have disclosed a version of the stories of the original ATCCs in Appendix B, but not what Ryle

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[32]   but mindlessly

[33]   When actors in aviation experience something that we perceive as a danger to aviation, we are required to report it

[34]   According to Giovannoli (2001), citing Kvale, S(1996): *Interviews.* Thousand Oaks, CA: Sage Publications.

(interpreted by Geertz', 1973) would call a thick description of the events. The stories in the appendix are disclosed to show the difference in perceptions of the same events, 6 years later.

Hardy, Gregory and Ramjeet (2009) argue that striving for truth through research is a meaningless exercise. Their point is that to use statistics as evidence in specific cases leads to frustration without a valid interpretive framework. They further stress the fact that this validity not only depends on the theory used, but also on the researcher's standpoint, and that Connelly and Clandinin have explained that the researcher must have a high level of reflexivity. This reflexivity consists of identifying and recognizing external and internal influences affecting the researcher's understanding of the phenomenon, and may even unravel additional insight in the process.

A point to be aware of on my part is the closeness to the informants. In being included, allowed to hear the story, I feel privileged, trusted. I believe that this trust is best safeguarded by trying to put the stories to good use, and that this is accepted as an honest attempt to do just that, in order to have something to discuss!

Smythe and Murray (2000) describe the importance of debriefing, and at the time of writing, it becomes clear that I will need to return to the informants and present the findings. This is also in accordance with how we are supposed to treat our incident reports; the responsible manager holds a debrief with the person who have reported, to discuss findings and recommendations from the investigation. Local organizational learning happens when this event is debriefed in a staff meeting.

3.6 Ethical Considerations

I made the following considerations, choosing to present them in this chapter.

Being trusted with information, both from Eric Lofquist and from different other sources, feels like a major responsibility. To take care of some privacy issues if the files should fall into the wrong hands, the audio files from my own interviews were deleted after transcription, and in the transcription I removed the informants' names and positions. Lofquist had already done this with the files I was trusted with.

When my work is in print, I do not want anybody to feel they have been fooled into saying things they do not mean. Hence, the quotations and narratives are sent to the informants for approval. I believe this to be in accordance with the principle of free and informed consent, and – in concert with the debrief described above – to take care of the possibility of deception as explained by Smythe and Murray (2000).

The findings are of a different kind than what I believe my informants expect. I have not, however, offered that data provided by the individual informants can be withdrawn. The informants got

several chances to check their own quotations and stories for correction.

In the data and discussion sections, I choose to make it possible to identify people when I think the point is more important than anonymity. When a seems to have staged what is perceived to be a fraud, and later is bragging about it to outsiders, I consider it an important part of the story. When a person seems to have facilitated this possibility, I consider it an important part of the story. It will therefore be possible to identify a few leaders for insiders. Names will, of course, be left out. I don't feel bad for that, but I *do* feel bad for the "labelling" that might be perceived both to be wrong and unfair. I do, however, believe it might be the truth, and necessary in order to understand the events and move on.

A short note on another kind of identification. During the interviews, I tried to notice my own emotional attitude towards the informant. And without going into too much detail, I can disclose that it was not difficult to imagine myself doing what they said they had done. I also noticed that I felt that all of them were decent people with good intentions, who had tried to do a good job in the situation they faced. When discussing the acts later, I almost feel I portray the people as mindless. To a degree, I am, but I do not intend to make anybody lose their countenance. Quite the contrary, my intention is to show how important it is to acknowledge how common blind obedience, blind craft, and group think, is. The outcomes this time were not fatal[35], but it cost Avinor money, passengers time, and the airliners both. Avinor also lost quite a few people, and others' affection.

The last of my ethical considerations is regarding Air Traffic Controller Assistants (ATCAs). While no ATCO were fired, lots of ATCAs were. From what I've heard in different settings, that process was far more painful – their place in the aviation system was not acknowledged as valuable at all. In this project, I have also neglected them, by not even inviting them to tell their stories. I can only offer my apologies for that. The managers in the FSD line are exclusively ATCOs, apart from one former pilot, and it was natural for me to interview representatives of the ATCO trade union. I got enough data for this project from these interviews, but I also believe their stories should be known and learned from.

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[35]   But Lofquist (2008) concludes that it could have been.

4 Data

The data will be presented in a narrative way, and in a close to chronological order. I try to provide an image of the situation at each unit at different times. How the situation evolved will be relevant in the discussions. I have done a tiny bit of induction; from a few interviews and a few people's comments on the stories in Appendix B, I have presented the situation as if it was the perception of all instead of quotes. I hope this makes it more readable, and thus more comprehensible. Due to identification issues, quotes would be from "an informant", anyway.

As I have been employed in Avinor during and after the whole process, I will use personal experiences as data when necessary. When I do this it will, of course, be disclosed. I will go into thick descriptions (see Geertz, 1973) of events that I consider relevant, but I will not go into details on personal encounters.

Like I said earlier, some of the data used are from comments on the stories in Appendix B.

One detail, first, that I have heard from several sources: When it became clear that Avinor had to go through organizational changes in order to save money, managers had to sign new contracts, stating their loyalty to the process. I have not seen one of these myself.

4.1 Prerequisites

The facilities in general, equipment in particular, is a central part of the conflict.

1.   Facilities

TR was ready to move into up-to-date facilities in the new control tower. This would be done with the new radar system, Natcon. The control room would provide space for both ATCCs.

BD had facilities that did not meet the requirements of new control rooms. In particular they lacked EMP warfare protection – and still do.

2.   The Equipment

Radar: Both units used NARDS, a system overdue by years. Different instabilities were already common. TR was ready to implement Natcon, but a merger would be delayed until BD had gone through transition training and physical implementation of Natcon – estimated to finish in 2005/2006. Merging in BD using Natcon would lead to the same delay.

Radio and telecommunication systems: The new system planned for TR ATCC could be expanded for both ATCCs after the merger – and were actually moved after a while. In BD, the system was

not intended for more channels than already used.

3.   Cultures

As Zimbardo (2007) stresses the importance of taking the situation into consideration, I will try to provide a cultural image of the two original ATCCs. Be advised that since I have worked closely with people from former TR in different situationss, the TR image is more complete to myself.

A former TR worker denoted the unit as an "NFF nest", and I have come to believe that the description might be more accurate than any label I could come up with. The facilities seems to be built in accordance with standards the professional part of NFF could only hope for. Also, the managers tried to provide for the ATCOs to be able to perform the ATS tasks as undisturbed as possible. Operational decisions were regulated, also what supervisor should take care of. The idea of ATC as a craft is not new, I got it originally from the former TR Deputy chief.

Incidents should always be reported, and if relevant they were incorporated in the rules and regulations as soon as possible. Also, personal experiences of failure were included in the training process of new personnel. The draft for the design of ATCC North in Trondheim was based on the planning documents, and took the DNV report (2003) into consideration. When fighting against the decision afterwards, the focus was first on the professional flaws, second on the economical flaws.

That life wasn't a bed of roses in TR either is readily admitted. One informant tells me about the constant small conflicts between the ACC and APP, e.g. conflicts where the ACC were perceived to try to gain control of the APP, with professional arguments. For the ordinary ATCO to change decisions made was difficult, but persistence and good arguments always did the trick.

Regarding Bodø, the pragmatic approach I believed to have noticed seems to be confirmed. If it works, don't fix it, and if it doesn't work, fix it. Also, it seems that it was considered important to contribute to a pleasant atmosphere. The Chief ATCO was regarded as a kind man, who did what he could to implement change decisions.

In spite of the focus on a pleasant atmosphere, there are indications that there was a split between the experienced who resided in Bodø and the ones who were expected to move on soon; the newest were not included in the decision processes. In addition, the supervisor group consisted of people who were trying to do a good job as supervisors, and a few who were the first to leave for personal business whenever possible.

4. The Planning and Design Phase

Based on the planning documents, the different units were to deliver design documents showing how they imagined the merger could be implemented at their unit. My TR informants say that all the planning documents were based on Natcon as the radar system used. I have not seen these documents, but the claim is supported by a DNV report assessing the DP07 plans (DNV, 2003). This report solely addresses the solutions based on Natcon – NARDS is not mentioned.

When the implementation documents come, they recommend merging the two ATCCs in Bodø, using NARDS, and before establishing TR on a Natcon platform. This idea had never been subject to open discussion – the design was based on a long weekend's work by a few people in Bodø.

4.2 Impact of the Recommendation and Decision

1. Trondheim ATCC

That the recommendation was to continue to use NARDS, the old radar system, was not understood in TR. Even Natcon was already considered outdated, but the aged NARDS had severe stability issues at the three different ATCCs still using it, showing in different ways. Natcon was considered a stable system, and also had other assets compared to NARDS. This possibility had never been discussed with ATS managers from what was the Mid-Norway Region in the organization at the time. In addition to the feeling of being deceived, they considered continued operations on NARDS to be unsafe.

2. Bodø ATCC

When the recommendation came, almost everybody was struck by surprise. Most had reflected on the future, and some had done initial research on where to live in Trøndelag. Although not understanding how they could choose Bodø, when everybody knew Trondheim was the obvious choice, people were generally relieved and happy!

Although some people aired their thoughts that this wouldn't work, people participated in doing the necessary work. The department manager participated in some staff meetings, and dismissed tendencies to differing views, stating that he didn't want to hear anybody say this wouldn't work. Everybody should do what they could to make it work, otherwise they might well lose their jobs, or at best move to Trondheim.

4.3 Safety Analysis on Equipment

I include this, since it is not mentioned in any of the previous research documents on the Take Off-05 process – not Lofquist (2009), and not the AIBN[36] report (SL RAP 35/2005) on the restructuring of Norwegian aviation at the time. This is the only event known to me that could actually have a measurable impact on safety.

Following the release of the DP07 design documents, a safety analysis was necessary. A thorough risk assessment session was held, concluding that the plans would lead to higher risk in many areas. But after the session, precautions were formulated for each area and the assessment changed to "no change in risk" in the document sent to the Flight Safety Director, again without involving personnel from the Mid-Norway Region. I will focus solely on two of the assessed areas; NARDS and the communications system[37].

NARDS was known to be strained already. In the documents describing the task, it was therefore specified that the safety of using NARDS should not be assessed, only whether the merger would change the risk involved in using it, and how! The problems in Bodø differed from the other ATCCs', but according to the background documents for the session, 2-3 times a months a random radar screen broke down and had to be restarted for unknown reasons. Merging with Trondheim would increase the number of radars connected, the number of aircraft simultaneously processed, larger maps, and the number of operational positions. I am not going into details of the precautions, and I have not tried to find out if the allegations that they were not carried out are true.

Regarding the communications system, it was not designed for all the channels necessary for provision of ATS in the new sector Central. In case of failure, TR was operational backup until the new system was installed, the one originally intended for Trondheim.

4.4 Waiting for the Decision

1.   Trondheim

Because of the running project to implement Natcon, six ATCOs were superfluous after the training was brought to a halt with the DP07 design document. This redundancy made it possible to dissect the design document in light of the planning documentation, and many questions were found – I will not go into details, but they also tried to prove that the economical considerations were wrong. Nobody in the line answered the questions, they were dismissed as typical resistance to change.

Getting no good answers from those responsible, some tried to get media attention, and a few

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[36] The present Norwegian name is SHT – Statens Havarikommisjon for Transport

[37] Radio and (coordination) telephone system

articles and letters to editors were published. This was followed by a decree from the CEO that union representatives only were allowed to speak to the media. Following this, TR sent letters directly to the board at the time, but this was also ignored.

The CEO at the time held a meeting with the employees, and the questions were brought up there, both by union representatives and a manager. This manager was informed afterwards that a manager in Avinor was not supposed to ask difficult questions to the CEO in public.

2.   Bodø ATCC

Following the DP07 design document, a fighting spirit emerged. The decision was not taken in December, as planned, but they were instructed to continue work with the preparations, including simulation of the new Central sector, merging one sector from each ATCC. Trondheim's letters in the newspapers were not held in high regard, and a letter was sent to the editor of Adresseavisen, in order to correct the picture. Requested information in order to improve the simulation exercises for the new sector were not received.

4.5 Implementation Phase

The final decision was official in February; to merge using NARDS in Bodø, starting with the new Central sector in April, 2004.

1.   Trondheim

In Trondheim, anger dominated. The feeling of being deceived was strong, in addition to the frustration of not being able to use the control facilities so carefully planned. People reacted differently, some worked almost day and night in order to show that this was not going to break them down, most had days when they couldn't work, in accordance with INS-18 (see Ch 7 Abbreviations), and some got sick. They were still six abundant ATCOs, but at times restrictions were necessary, especially the last week before the transfer of the Central sector, Easter 2004. The situation became so grave that the Chief ATCO hired a psychologist to talk about the reactions, and offered economical support for personal consultations.

The Personnel Director at the time gave "personal guarantees" that nobody would have to move against their will – but in April, he left Avinor for a position in the Health Care System. Very late in this project, I was told that some of the youngest ATCOs were never told anything to the contrary, and were not at all prepared to move. With only a few weeks left, one of them signed a contract to buy a house.

The recently appointed Chief for ATCCs, the former ATS department manager in the Northern

Region, asked to enter the operations room. The ATCOs on duty said they were not sure if they could control their actions if he did, as they held him personally responsible for what they perceived to be a fraud. He stayed out.

The new Personnel Director said that the three youngest ATCOs would not be offered work in the new organization. But three other ATCOs were offered to run simulator exercises for BD in the simulator at VA for a limited time. If they did, they would not have to move to Bodø later. This made it possible for the three youngest to stay ATCOs, provided that they moved to Bodø. Different offers like this made sure there was also internal conflicts.

Some talked constantly about the fraud, and everything was about work for them, also at home. To move was not an attractive option for the ones whose life partner wasn't a nurse, and the feeling of deception did nothing to prepare for a good working relationship.

The plan was to merge by moving six ATCOs and no ATCAs. In the end, the total number was around 17, whereof six were ATCAs.

2.   Bodø ATCC

Implementation of the Central sector went according to the plan, even though they still didn't receive any help from TR. The Chief for ATCCs let the staff know that it was still possible that the merger would be reverted if there were problems. When the communications system *did* break down – but the backup systems worked – this was not communicated to TR.

People working the new sector were also extra alert, well aware that simulations do not cover all the situations that may arise. Thus, my informants still consider this period safe, although the breakdown of the communications system was serious.

People worked a lot this period, but for most people the events did not yet have a personal impact.

4.6 The First ATCOs Arrive From Trondheim

1.   Trondheim ATCC

One informant commenting on the story tells me that the youngest actually were happy with moving, as a few weeks before they expected to loose their jobs. But when they arrived at work, with no administrative experience, they had nothing to lean on – and were expected to be in full production already the first night in Bodø.

2.   Bodø ATCC

Commenting on the story, an informant from BD told me that the way some supervisors handled different situations the first few days did anything but make their new colleagues feel welcome.

Also, BD soon discovered that the new staff was not prepared to start working in Bodø, that no help were provided to establish in Bodø, and that the promised economical support had been withdrawn.

4.7 One Unit, Two Worlds

I refer to Appendix B and Appendix C for a fuller picture of the different perspectives.

1.   Trondheim ATCC

The insecurity and frustration as the safety net provided by the TR managers and the regulations had disappeared took its toll early. A notable difference in culture was that when an incident occurred, the ATCO in question was encouraged to refrain from reporting it, a stark contrast to the attitude of TR, where reporting was considered one of the most important parts of the job[38].

Even though most of the new colleagues didn't treat them badly, nobody stood up when the supervisors handled their requests with a supercilious attitude. In addition, the more experienced ATCOs held all of the original BD staff responsible, since nobody was willing to take the responsibility for the perceived fraud.

Most of the BD staff's insight in the background, and lack of interest in discussing the matter, made sure the staff from TR had to talk about it within the group if they were to talk about the process. All this made most of them feel lonesome at work, and quite a few quit, to find other jobs.

2.   Bodø ATCC

The general perception seems to be that the former TR ATCOs looked for things that didn't work, in order to confirm their own view that the decision was wrong. Also, the informants from BD say that TR had some good points and much they could learn from, but this drowned in the flow of trivialities communicated with the same passion as their important points. A surprising thing was that the youngest ATCOs were at least as passionate as the more experienced.

The perceived lack of interest in making things work also showed when presenting findings from the consultants and the CRM sessions at staff meetings; most didn't show up!

None of the informants remember any of the measures the consultants recommended, the only

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[38]   Later, BSL A 1-3 has been effected, regulating what to report. To not report an incident is illegal. The current reporting system in Avinor can also be used for other messages, including suggestions for changes in ATM systems.

specific action was to choose new NFF representatives, hoping that this would build a more trustful relationship between the different groups. But even though a few settled down in Bodø, the anger seemed to prevail for the others until they left.

4.8 Afterthought

This section contains the informants' thoughts on the process today, and some additional data.

1.   Trondheim ATCC

Most of the ATCOs are content with how they handled the situation while in Bodø. To agree on the regulations they knew were safe after an initial phase when some worked according to the expressed expectations, from the supervisors on duty and the managers, feels like a good decision today. The afterthought revolves more around whether they should have refrained from working according to the restrictions in INS-18, as it has become more apparent how much they were affected by the situation.

There is a general feeling that their arguments when trying to stop the merger are proven to be right.

2.   Bodø ATCC

The informants still assess that the technical part of the merger was safe, and that what was done wrong was on the personnel side, and it was done before the TR staff arrived in Bodø.

The organization has learned that when people are involved, a good process is necessary – especially when you depend on the people in question. If people perceive that they are treated inconveniently, whether or not that is true is not relevant – it is in their interest to find problems.

The process is not talked about today, the unit has worked hard to leave it behind and look ahead. But the pain is not totally gone, it still hurts when someone asks questions.

3.   Natcon Implementation, 2007-2008

November 2007, I became part of the Natcon instructor group who should plan and train people for the implementation of Natcon one year later. Paradoxically, one might say, as I was very critical to the implementation at our unit – Natcon involve increased work load, with no benefits for a unit serving mainly military traffic. But our objections were not taken into consideration, it was too pressing to replace NARDS, as the system was not reliable enough.

4.   Later Statements by a Former Department Manager

In an unofficial atmosphere a few years after the merger, according to a source I believe to be neutral, the former ATS department manager in the Northern Region talked about the process leading up to the decision that Bodø was preferred to Trondheim, saying that "nobody can nail anything to us." Exactly what could be nailed to them was not clear. In another setting he is quoted[39] to have said "when they didn't understand that this was all about delivering the cheapest tender, they brought it upon themselves." I have heard the exact same statement also from another person. One of my informants disclose that today, this former manager feels that his role has been misunderstood, and that he was backstabbed by his superiors; feeling that he had to take the fights with TR (and Oslo/Stavanger) alone.

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[39]   This time by a source I do not consider neutral.

5 Discussion

I will make an attempt to connect the different theories, before I try to provide an explanation of the data in light of it. But first, a few words on who Avinor and FSD wants to be. Our owner demands from Avinor to facilitate a safe, orderly and efficient aviation, and FSD takes care of the part of this that involves aircraft in motion. The following is from different documents valid as of January 2011.

Avinor's vision is "Together, for the Aviation Industry of the Future." The vision at the time in question was to be "*Leading in Safety and Punctuality in European Civil Aviation*", but I have not asked for the documents from that time. If anything, the old vision was perceived by us (the employees) as a stark contrast to our perception of what the top management were actually doing. The interviews are made after several years with the new vision, so I choose to use today's vision and documents in this attempt to connect the events of the past to who the organization wants to be today. The values connected to the vision are to be "open, responsible and vigorous." In addition, employees must have the ability to generate trust and cooperation in colleagues and internal and external partners.

For FSD and ATM, the specified tasks[40] outlined for ATCOs are to perform ATS in their jurisdiction, including reporting accidents and incidents, and to train ATCO trainees. In addition, ATCOs are to suggest desirable or necessary changes, on safety or to the organization. The Chief ATCO is to implement change decisions, provide for a good safety culture and lead and motivate subordinate leaders. These formal tasks also include budget and staffing responsibilities, contact with internal and external partners, and to ensure the unit lives up to the policies and demands, in communication and in training.

5.1 *Animal Laborans and Homo Faber*

According to Sennett (2008), Hannah Arendt discussed the distinction between *Animal Laborans* (the working animal) and *Homo Faber* (the making human), arguing that the Craftsman lost in her work does not know the consequences of it, and that the use of the Craftsman's work is not relevant to her until after it is done. Arendt used the horror of war to explain it; Oppenheimer's amazing work with the people on his project believed the atomic bomb to be a tool for the light of the world, and the German engineers' obsession with making the extinction camp of Jews as effective as possible. She called this the banality of evil: To get the job done as well as possible.

Sennett argues that this distinction not only takes away dignity from the Craftsman, but that there is indeed much to be learned from the Craftsman's way of thinking. The slow mode when considering

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[40] The tasks for both ATCOs and Chief ATCOs come from Avinor's contract templates in January, 2011.

improvements, the way a successful Craftsman is able to take into consideration all aspects of a job well done. But Sennett also acknowledges Arendt's fear of the mindless Craftsman as part of reality; developing skills should not be seen as a value in itself – the purpose must be questioned.

Asking these questions is what post-conventional logics – or post-Heroic leadership agilities – is about. Finding out why people do what they do, with an increasing ability to make them change undesired actions. The Heroic leader assumes sole responsibility for the organizations' objectives, coordinate the activities and manage their performance. The post-Heroic leader has an increasing ability to see people as they are, and make them realize when what they do actually keeps them from achieving their own goals, in a way that also benefits the organization as a whole.

Joiner and Josephs (2007) call this increasing personal ability to lead *agility*, a term resembling the concept Hollnagel, Woods and Leveson (2006) calls *resilient* organization. The description of a resilient organization seems like a post-HRO (High Reliability Organization), in that the people in the organization do more than the formal requirements, based on distributed cognition, goal understanding and reactions to sudden demands for resources (Cook and Nemeth, ibid, p226).

Research has shown that we tend to have a self-serving bias. According to Zimbardo (2007), 90% of US managers believed they did a better job then their average peer." This appears to be a stark contrast to Collins' description of the sincere modesty of the Level 5 leaders he identified, who is consistently pointing to the excellence of the people they lead, also compared to themselves!

The Craftsman will probably be able to teach any leader quite a lot, and deserves respect for that. This respect is what the post-conventional cognition has, and stems from insights developed through noticing others' abilities. This noticing is something that can be trained, and one way of training it is focused on noticing one's own emotions towards others' actions (a shallow interpretation of Torbert, 2004). If respect is in place, the basis is formed for appreciation of what is, by which I mean that nothing is taken for granted, but built by people who try to do a good job.

A resilient organization needs people who try to do a good job, and to ensure this, leaders who do not discourage them from this might be essential. Owen (2000) talks about this discouragement as "Soul Pollution", and Senge (1990) points to the importance of the leader as a Steward for the followers, in order to enhance performance. But even though it would be preferable, leaders cannot make everything right for all the employees. How people are treated when brutal truths surface is essential for the outcome, and this is what allowing for the grief process is about.

I believe that the present case is, among other things, an example of lack of facilitation of this process, and what this lack might lead to. I chose not to bring in extra theory on this, although I believe it to be relevant; for example I believe that both personal and organizational neurosis might

occur from sticking in denial. For the purpose of this project, that constructivist-developmental theory opens for the possibility that an individual can be very underdeveloped in specific areas compared to the dominating stage, and on rare occasions even revert to earlier stages, is sufficient.

By presenting the ATCO as a Craftsman, I hoped to wipe out some of the perceived differences between a manual craft and a mental craft[41], and show that the motivational work of the leaders might not at all be difficult. That around 90% assess their performance as better than average can be ridiculed and used as an affirmation of the stupidity of humans[42]. On the other hand, it might also be true – if the people asked were also allowed to explain the standards they use in the assessment. These standards should provide a good indication of what motivates the person in question. A leader who can make a worker adjust these standards in a way that makes the organization benefit might be what Collins call a Level 5 Leader. A leader who make the worker adjust these standards to also benefit society as a whole, has crafted *homo faber*. I believe this is what distinguish post-Heroic leadership from earlier leadership agilities.

5.2 On Involved Managers and Actors

As Collins (2001) has identified the choice of managers to be the very first necessary step in building a successful organization, it would be negligence to not discuss the managers involved. The following assessment is not checked with any expert on assessment of leadership agility, but is based on my interpretation of theory. Keep in mind that the leadership agilities may well differ from the dominating logic of a person.

In Trondheim, the Deputy chief had to step into the role of the Chief ATCO for lengthy periods during the implementation phase, but I have no indication that this affected the operations significantly. Everything seems to have been in order, and roles and tasks were well defined. Input, like reports, was used by the management to adjust the performance of the craft. The point of view that the managers were so responsible for fixing and defining everything indicate a Heroic Agility, possibly using the Expert logic, but the acknowledgement of others' craft and the planning for their needs when building the new control facilities indicate the presence of a later logic.

In Bodø, there was a significant difference in how the supervisors performed their tasks. For instance, there are strong accusations from different sources that one supervisor used the regulations effectively in salary negotiations one day, the next day working around the same regulations in order to maximize overtime work and thus the pay check of the employees. Also, it was not common to work full shifts. The inability to address problems indicate pre-Heroic leadership, and

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[41]   … which I perceive to be Sennett's purpose, too.

[42]   other humans' stupidity, of course

paired with what seems to be the consent on both sides, that the Chief ATCO tried to be nice to every person when alone with them, strongly implies that he was reasoning with Conformer logic.

I have very little data on the role of the ATS department manager in the Mid-Norway Region, but all his subordinates seem to hold him in high regard as a leader. He left Avinor during Take Off-05.

Of the other ATS department manager, in the Northern Region, I know more. He worked at my unit a long time ago, and his role is also mentioned by most informants. Already early in his career he got angry at pilots, drivers and colleagues who didn't do what he wanted. In Bodø, he was known to threaten to beat people at parties. In this process, he seemed more informed than his adversary[43] in Trondheim – and I interpret the fact that he feels backstabbed by his superiors today as evidence to support that suspicion. When he communicated decisions, he aggressively rejected any objections even before presenting them. A combination of threatening behaviour and ability to ingratiate himself with people in power, points to the Operator at work.

Of the Flight Safety Director at the time I know too little to assess, but she seemed not to accept opposition as anything than resistance to necessary changes. A few heartless comments to ATCAs who had to leave Avinor is not enough to assess her Agility level, but the two indications are enough to know that she had not developed a post-conventional level of reasoning.

I will also share my thoughts on the two main public actors, Randi Flesland and Rolf Skrede. Although they were not directly involved in the merger, they shaped the mode of thinking.

Lindeman (2007) has assessed Rolf Skrede as a Level 5 leader, and reading the thesis, I concur to the assessment. The ability to allow Experts to shine, to use the available people to achieve the perceived goals for the organization, to be consistent with the values communicated all fit well with my impression. That these values were concern for ATCOs, including maximizing profit, and a strong adherence to the laws of the society and short stories from some encounters with non-ATCOs in the organization indicate Achiever logic.

Regarding Randi Flesland, I have spoken with a few people who worked close to her, and they were at large impressed by her as a leader. But when she had decided, nobody could make her swerve from her decisions. This might well explain how her perception of safety was not at all similar to ours – and that she, some time later, still stuck to the belief that she only had a problem with a few union representatives, even though the nominal facts she used to explain the necessity of the savings had changed so much that the flaws in the plans had become obvious to everybody else. On the other hand, most of the restructuring she was responsible for seems to be implemented today, with many of the same arguments. The agility demonstrated is certainly Heroic, possibly using the

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[43] The process seemed designed to create adversaries.

Expert logic, but if so, her education has provided her with the opportunity to utilize some Achiever Agility. But more likely, the agility comes from the Achiever logic, with adopted values that exclude trade unions from being an asset in change processes.

5.3 The Gravity of the Safety Analysis

As one manager has later said; it is easy to do a safety analysis when you know what the outcome is going to be. The question is, still, was the situation safe?

Hollnagel, Woods and Leveson (2006) argue that failure is normal. A component will fail, and if it is a vital component, the whole system fails. If the component is not vital, the system will continue to work, but be less resilient. How often a component fails, and how vital that component is, are the two main questions in a safety analysis, and how to build systems that do not allow for hazardous concurrence of failure is the concept behind resilience engineering.

The informants from BD still consider the situation at the time to be safe, and the people who have looked at the story in Appendix B have not communicated any disagreement on that assessment.

"Safe?" NARDS was already a strained system, so strained that people had long ago quit reporting when the individual screens broke down. The backup system was considered stable, but it was the last resort, and it is not difficult to imagine a situation where both went down in a single position. The communications system was also a system that was already known to be old, and all the channels it was designed for was already in use. I am sure that the increased risk could be assessed in nominal values, but I consider that irrelevant.

I'd like to offer my image of the concept: When driving a vehicle in the dark, by design the vehicle has at least four sufficient light sources; full beam and low beam on each side. If one source go down, the current in the other increases slightly in most vehicles. At this critical moment, what is done? Most likely, to drive on to a gas station in the near future and change the component, reflecting no more of the event. But was the driver prepared for further failure? An organization's ability to recognize these situations is part of the *Resilience Engineering* Hollnagel, Woods and Leveson (2006) argue for.

Busby (2006) writes, on degradation leading to two railway accidents, that "erosion of protective forms of slack, and the gradual incorporation into organizational practice of short-cuts and "patches" that render their operation hard to understand" is part of sliding into unsafe operations. In one of the accidents, "the organization tended to suffer a particular degradation of its systems shortly ahead of large-scale investments", and "there were lengthy periods in which known deficiencies went uncorrected and simply accumulated." I believe the same could well be written on

BD at the time, and the choice to allow for this was conscious.

5.4 Shock, Anger and… Denial? In Trondheim ATCC

The shock and anger reactions are easy to track, but also the intense energy it released. To them, it was obvious that the decision was wrong, and that to overturn it should be possible. One of the employees had some education in economics, and showed that the calculations were wrong, in an attempt to discuss things using the language of the relevant leaders. But this was also ignored.

When the decision came, people seem to have realized that it was actually going to happen at different times. But problems were addressed, and the management facilitated external expertise when they encountered issues they did not feel competent to handle. In the process, some also discovered that the solidarity among peers was not at all something to count on, and this experience was a heavy blow.

The process in Trondheim ATCC seems to be dealt with in a way that facilitated the grief process. Most, if not all, had passed the denial phase and started the talking of the "memory stage" well before the merger. One of the youngest says they didn't know that they were going to move until a few weeks before the shut-down, could this be a sign of denial? Or didn't everybody need this mourning? They had always known they would probably have to leave after the implementation of Natcon. Given that, I believe it when I am told that since a few weeks earlier they didn't know if they were going to keep their jobs, they left without too bad feelings when it turned out that they kept their jobs. Also because a place that is shutting down is, in a way, a sick place. To reach the end also provides a starting point. That they didn't know may be because they weren't informed.

The whole period leading to the shutdown, from the release of the design documents to the shutdown itself, there was a strong focus on everything that was wrong with the decision, and to communicate this to others. This focus might be important for understanding the later events. Bandura has demonstrated the power of labelling people (see Zimbardo, 2007), and how this affects your actions when you have the power to give them what they deserve.

I will now try to provide insight in the process from the perspective of BD. Specifically, I will try to provide an image from a personal point of view. The image is an attempt to explain what may have happened, not what has happened.

5.5 When to Say "No"?

Imagine yourself as a Chief Air Traffic Controller. You love your workplace, and take pride in the fact that people seem generally happy. When people come to talk to you, you try to do what you can

to take care of them. But all this is going to end, you know it, and you think it's sad. Another unit has everything arranged for the takeover already, only minor adjustments are needed there. But it isn't fair, your unit is twice as big as the other, and this affects many of your friends – although you can probably stay when the merger is finished. You wish you could come up with something that could turn the situation around!

Then one day, your superior manager tells you that he need papers to document that we can do this cheaper than TR, the merger will happen here, instead of the other place. Can you arrange that?

Of course you can, so you gather a few people you know are good with numbers and documents, and allow them to work it out. The group comes up with a document that looks like it may be possible to do it, and you deliver it to your superior. Some time later, the design documents are released, and they went with the plan! People don't quite believe it, but they start to hope.

You start planning for the takeover according to the design. Again, the people who work for you are consulted, and they start working. Your superior makes it very clear that tempo is essential, any delay will play the ball back in the hands of the others. And your superior attends in staff meetings, so if anybody comes with opposing views, he takes care of it. Maybe you silently don't like his aggression, but… he gets people to work for the plan, and it will work, then! He also takes care of the contact with the other unit, so things are the way they should be, taken care of in the line.

The safety analysis that is necessary to move on is taken care of by an expert. When the assessment session is held, a whole lot of "higher risk" areas are assessed. But after talking to your people, it doesn't feel so bad – as long as things don't get worse than today, we can live with it. We have lived with it for some time already, and at least we know what to prepare for!

There are some letters in the newspapers that don't quite fit with your view of your workplace. Do they claim that your unit is not an example of a good flight safety culture? That you play with aviation safety? Hmm. They would do well to mind their own business, your people are doing a good job. Well, we'll show them!

When the decision is announced, everybody's happy and ready to work to implement the plans! But when you request help from the others, they don't provide any. At all. But by using radar data your people have created simulator exercises, and that must be good enough, then. We'll use what we have – and look how hard people work, this is important to them!

The opening of the Central sector works out according to the plans, and now people can really see that it worked, we won! But the next step can be a challenge, the TR people are still nagging about the numbers. Why can't they just accept the loss? But the Directors for Personnel and for the ACCs take care of things down there. It is shortly time to plan the shift lists where the TR staff are

included, you'll have to make sure your people have started planning for that.

This is one possible trace of the reasoning, seen from my interpretation of the Conformer logic. One of my informants specifies that nobody tried to do anything against TR, but that they fought for their own unit. I don't know the origin of the need to clarify that, but according to Cook-Greuter (2005), timely action has occurred when the Conformer can say "we win."

One detail; I have no idea whose the idea of continuing operations on NARDS was. But that he later felt he lacked the expected support from the superiors makes it clear that Flight Safety Director at the time had, at least, bought in on it.

The subordinates, including the Deputy chief ATCO, could of course have stopped the process, if they teamed up. I don't know if that ever occurred to any of them, but one of my informants involved say that "*it never occurred to me to try to stop the process. Maybe it would, if I was responsible for the personnel, but I don't know.*" Milgram's Experiment shows how difficult it is to resist authority, even when nothing is at stake. In this case, much was at stake. In addition, instead of hearing the pain of the other part as in the experiment, what was heard from the other part in this process was different letters attacking their professional identity.

Zimbardo (2007) shows how important the situational setting is, and I think it is reasonable to believe that the fighting spirit that arose from seeing that this could work paired with attacks on the professional pride did well to prepare the grounds for what was to come. I think it must be fair to assume that some people were close to obsessed with making things work – *animal laborans* had been crafted.

5.6 Crafting the Anti-Social Expert

I said earlier that "everything" in TR was regulated, the supervisors took care of many operational decisions – and that the staff were encouraged to find and report errors. When the first ones arrived in Bodø, regulations weren't in place, and the supervisor function in BD did not include the tasks the ATCOs were used to. Thus, from day one, there was a potential conflict between the new ATCOs and the established system.

In addition, the writings and attitude of TR was well known by the staff. Experienced workers may accept constructive criticism if it is meant well and founded in reality, but to communicate criticism via the newspaper can easily stir other emotions. Given that the research Zimbardo (2007) referred to –that more than 85% perceive their performance to be above average – was valid in Bodø, experienced staff in Bodø could be expected to be annoyed from this, maybe believe that everybody in TR shared the same attitude, and see all ATCOs from TR through these lenses. If so, the labelling

effect Bandura demonstrated may well have been in operation.

If this was not addressed before the first ones arrived, the behaviour of some supervisors is understandable. The arriving staff may well have been seen as still interested in stopping the process, and when they started to work, the way they were used to work fit well into that picture; they told the supervisors what was wrong and what had to be fixed. That this was the expected behaviour in Trondheim was not communicated, and may well have been interpreted to be problems with attitude! The aforementioned DNV report (2003) states that *"It is DNV's impression that Avinor does not emphasize actual performance when considering safety, but seems to focus on the formal part of rules and regulations. DNV has an impression that Avinor's employees not always fully comprehend the extent of tasks inherent in the formulation of regulations"* (my translation). DNV goes on to provide examples of this impression.

I don't have any data supporting whether or not these concerns were relevant for BD. In TR, however, concerns like these seem to have been taken into account, with honest attempts to raise the awareness of the ATCOs – not only to what the regulations were, but also what they meant in the everyday work. Given that the distribution of the developmental stages were in accordance with the different studies, and taken into account that the more developed stages are naturally less common among the youngest adults, it feels reasonable to assume that many of the arriving ATCOs reasoned with the Expert logic. Remember that at with this logic, perfection is expected from oneself and from others, and small deviances from the perceived standards are often communicated with the same passion as deviations of larger importance.

The Stanford Prison Experiment (Zimbardo, 2007) demonstrated how we act according to how we perceive our roles. From BDs point of view, the critique was perceived to be attempts to demonstrate that the merger was wrong, and not genuine attempts to improve a situation the TR staff experienced to be unsafe. But from what an ATCO who was originally superfluous told me, this impression does not account for all the TR staff, maybe even none. On the other hand, as the impression did not diminish, some of the TR staff seem to have drifted into a condition where they also acted in accordance with the impression. The insecurity upon arrival, and the lack of help to get over this insecurity made the ATCOs consult the managers they trusted, and built a safe nest from the role models that had helped to shape their professional identity.

Becoming confident that this was safe, and a right way of doing things, demonstrating that the others' way of doing things was wrong could well be the Expert's behaviour, particularly when being patronized and ridiculed. For a person who arrived with a Conformer logic and who did not identify strongly with the former group, the process above is an example of realizations that transform the mind into an Expert logic. The pain in realizing that one is not able to conform both

with one's values and with the surrounding people may explain why the youngest seemed at least as frustrated as the more experienced, and were the ones who left.

That the ones who tried to reach out were not interested in – or able to – discuss professional matters on their terms may well be perceived as further evidence of incompetence.

5.7 Shock and Anger for the Original Bodø ACC Staff

I have tried to outline a possible path where the involved, participating staff might well have been participating in making things work, without even considering whether this could be wrong or not. No distinct leadership seems to have been exerted, and I suspect that the DNV notion on role comprehension offers a good description of the situation.

In addition, there is considerable irritation because of the willingness of the TR staff to tell the media what is wrong at their work place. Of course, most understand the frustration as everybody knew the decision would be to establish ATCC North in the new control building at VA, but does that entitle them to discuss the safety culture in BD in public?

When the TR staff arrives, and the 25-or-so years old ATCOs tell them right from wrong, the impression gets confirmed, they are still angry – and who do they think they are? A BD informant told me that he suspected what happened was that "*the TR ATCOs were educated at a unit where strong personalities told them the world is like this – and then they believed the world should be like this.*" When asked if same could be the case in Bodø, the answer was simple: *"No."*

The management was surprised that nobody had done anything to prepare the newcomers for moving – but they had done nothing to prepare themselves, their staff *or* the newcomers for the nature of the probable conflict – neither a Conformer nor an Operator has the ability to reflect consciously on their perspectives of the worlds. So, when a CRM session comes with clear recommendations of what should be done, and consultants have clear recommendations of what should be done, a manager using a pre-Heroic logic will not be able to comprehend the meaning. Seen from a Heroic perspective this might well be evidence to lack of will, or inability, to do things properly. In this way the boundaries between the Experts and the others are strengthened. Appendix C is included in order to give a picture of how both sides behaved in the situation.

That the differences in performance of the craft of ATC is not easy to comprehend is necessary to address; Even though the TR people seem to genuinely think of NARDS as an unsafe system, they used it, like everybody else. For some, this fact might be understood to be evidence that the situation was safe, and confirmation that the TR staff were only angry and trying to prove that they were right all the time. I will not say that this is not a part of the truth, but indicate that obedience

could be a stronger factor. To disobey would not only lead to loss of a well paid job that had become part of the personal identity, it could also lead to problems with the authorities of the society as a whole[44]. According to an informant, Rolf Skrede was very clear on the personal responsibility not to take to illegal actions[45].

The stories of TR and the stories in BD as disclosed in Appendix B should give a full picture of how the anger prevailed during the whole process, and I will not go into specific details. Suffice it to say that I believe that Experts from TR continued to compare things in Bodø with what was perceived to be perfect for the Craftsman of ATC. This perfection could, for some, be TR, but the Expert will normally also look for improvements to the craft on her own. The need to stand out from the crowd is not contained in a memory.

But the knowledge the TR staff had acquired could not be digested by BD people in such a setting. Note Zimbardo's (2007) prescription of how to change a majority perception: Affirm a consistent position, appear confident, avoid seeming rigid and dogmatic, and use socially influential skills.

5.8 The End of All Things?

I leave out comments on that, instead pointing to Owen's note on denial: "Were it possible to crack through the denial and force the folks to acknowledge reality, it is quite likely the process not only would be retarded, but actually reversed. The folks would return to shock and anger."

For some, I believe this might have happened. A long time before I started this project, I tried to talk to people in Bodø about this. The reaction was to avoid talking about it. I was stubborn enough to try to find out why, and the reaction was different forms of rejection. One was very direct, saying "don't you understand that this hurts, and that we try to forget this? That we try to leave it behind?"

My interpretation was that pain was the reason why others also tried to avoid talking about it – but from a few others the reaction was different: They were not interested in helping to shed light on the events. When I finally got to Bodø for the interviews, I was told that quite a few had asked why I tried to open these wounds again. In addition, things are not talked about, today "*and we probably won't, if a ghost doesn't surface.*"

One of the informants commented on the TR staff in hindsight: "*They didn't understand that it wasn't Avinor who lost. It wasn't the airliners, or passengers. It was themselves.*" My impression is that this is a good description of the situation in BD today, not TR. It seems that the grief process for the TR staff has been completed, that they have found new purpose. How about the BD staff?

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[44]   and Avinor was close to bring at least two cases to the court – one example is provided in Appendix C.

[45]   One informant also stresses the personal impact it had on him to know that if he didn't work, this lead to severe problems for the passengers.

I want to turn the attention to Owen's words on the despair phase: In this phase, pain is intense. This is the phase of letting go, and the pain involved often leads to avoidance. Paradoxically, what is necessary to move on is not to avoid the pain, but to acknowledge it in full – "embrace" it. If the pain is avoided, people might lose the sense of purpose and something to look forward to.

Due to commercial demands imposed by Eurocontrol[46], Norway is supposed to reduce the number of ATCCs to one. It appears that this time, nobody fights for the continued operations in BD. The conclusion is given, Bodø will be shut down. To me, that indicates that the BD staff might be stuck in "collective misery" following the events. If that is the case, it might stem from the lack of "love" during what should have been the Silence Phase of grief; the informants do acknowledge that they had forgotten things that they should have remembered, but everybody in BD was also constantly reminded that they didn't live up to other's – and maybe also their own – perceived standards of their craft. Added to the fact that everybody knew that TR was the victim in this process, the lack of time and insight to appreciate the causes for this might well have moved "better, better, better" to "guilt, guilt, guilt".

A justifiable anger lay the grounds for a healthy grief process for the TR staff. But I am not so sure whether the anger has been let out on the other side – hearing that you are a violator might move the unconsciousness into that direction, even if your actions aren't objectively wrong. If anyone have felt guilt from participation in the process, remember that the TR staff, who were concerned with the aviation safety, did not refrain from working on the equipment they believed was dangerous.

There might also have been more than one Operator at work, and I'd like to quote Torbert (2004) on the Opportunist (his term) when disciplinary action is needed: "… the Opportunist often adopts a "take no hostages" attitude about conflict, trying to face the disciplinarian down by quickly recruiting bystanders to his or her banner on the basis of a carefully designed version of events."

If this is the case in BD, knowing that could also well add to the feeling of guilt – and if the indications that at least one more Operator participated are correct, still working in BD, or if people in power are not interested in working on it, attempts to work on through a necessary process will take a lot of energy. First of all, to air an opinion that differs from the majority is difficult even when their error should be obvious and no authority is present, as Asch has demonstrated in a powerful experiment – see, for instance Zimbardo (2007)[47]. When the truth is not clear and the people acknowledged as authorities asserts a position, it feels natural to assume that this is far more difficult. Yet, if my perception is correct, the pain should be sought, understood and embraced in order to find back to the once so strong fighting spirit at the unit.

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[46]   A European Organization consisting of 39 member states working for harmonization of Air Navigation Services.

[47]   Originally in Guetzkow, H (1951, editor): *Groups, Leadersip, and men.*

Like I said, I don't know why one ATCC is to be preferred, except from "positioning for the future." If this future never emerges, the move will appear stupid later. In aviation, we are used to learn from our failures, and I believe to merge in BD using NARDS has proved to be a failure. That does not prove that shutting down Bodø would have been correct – the operational building for the approach and tower would still be necessary. Does any research exist that proves the sense in such a move?

In "Resilience Engineering" (Hollnagel, Woods and Leveson, editors 2006), Hale and Heijer argues that today's roads with ordinary vehicles is a far more resilient system than aviation, in spite of all the attempts to control the aviation risks. They indicate that if every pilot had enough information and knew what to do in different encounters, it would be much safer to fly, especially between the departure and arrival phase. Is this an indication of the emerging future[48]?

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[48]   See Reams, Jonathan (2007): *Illuminating the Blind Spot: An Overview and Response to Theory U.* INTEGRAL REVIEW (2007), Vol. 3, No. 5 – a review on *Theory U. Leading from the Future as it Emerges*, by Otto Scharmer.

6 Conclusion and Implications

Like I said in the beginning, this can be seen as delivery of an incident report, a starting point for exploration, not a final report. I have tried to find out how a strategic change programme, which seemed originally to have good conditions, could end up being so expensive – and even leave the labour unions which the CEO seemed to fight with more power than ever.

Specifically, I have focused on the roles of the managers involved in one part of the en route project, DP-07, in order to find out how they contributed to the undesired outcome. I have found an explanation that makes sense to me.

In addition, I tried to find out what Avinor had learned from it. What I found surprised me.

6.1 Conclusion

What I found indicated that managers indeed contributed to the outcome, but not in the way I suspected. My initial impression, years before this project started, from working with TR staff, was that BD had staged a fraud. But as I got to know a few people in BD, I understood that if that was true, it was only a part of the truth - and it was really difficult to talk about what happened.

Gathering data from sources outside BD indicated that a large part of the problem could be traced to the work of one person. Constructivist-developmental theory offered an explanation: This could well be the work of an Operator. But an Operator without surroundings cannot do much.

The interview data, and data from comments on the stories indicates that the reasoning of the Chief ATCO followed a Conformer's logic. If this is the case, the adherence to rules imposed by others might well be found, but adherence to craft norms will be other's responsibility. In a situation like this, the perceived correct way to act is to fight for the group.

This constellation, having an Operator and a Conformer in key positions, seems to be what prepared the grounds for a decision that nobody could understand at the time. But if it wasn't for the fact that the conflict actually seemed to continue to get worse for quite some time, my interest would probably have faded. What kept the fire alive?

I believe constructivist-developmental theory offers an explanation on that, too. The Conformer will not regret that the team won a fight; that the losers are angry afterwards is natural, so there is no need to explore the nature of the anger. This may well explain why no concrete steps can be remembered – what they were meant to accomplish could not be comprehended by use of this logic. In addition to this, to be forced to take control in a difficult situation could create or confirm a belief in one's own abilities that can replace the need to belong with a need to stand out – the mark of an

Expert.

Today, when most of the TR people have left, a new situation has arisen. Again, there is a threat to shut down BD. But even if the people working there do not understand the decision, and even disagree, this time it seems that nobody is willing to fight. Was the lesson learned that it was wrong to fight?

As long as the leaders do not arrange open discussions based on facts I am sure they know, in order to understand *why* things were done, and also acknowledge that based on who people were at the time, it seemed like a logical thing to do for them, nothing will happen.

Except that Bodø ACC will be shut down, nobody else will care and nobody has learned from it. For the ones who care for the unit, it seems necessary to "embrace the pain" to move on.

When I ask what Avinor has learned from the process, the answers are vague, except for one specific answer: Good people should not stand alone and defend decisions, the way it happened this time. Is the interpretation of Avinor's vision that they will stand together and defend bad decisions?

Why not try to learn how to take good decisions in the first place?

6.2 Implications

1. Understanding of Safety

The data indicates that the understanding of safety as a concept might not be comprehended by Avinor's organization.

For two different, each vital, "components" in the ATM system, it is still considered as safe operations to choose to increase strain when instability is already an issue. The backup plans for each of the components depended on one, again vital, component. The perceived stability of the backup component in a situation, where failure of the main component had become normal, made people at three different organizational levels assess the situation at the time to be safe enough.

In "Resilience Engineering"[49], Hale and Heijer stress the importance of a shared risk picture between different parts of an organization, this case indicates that we don't even hold one internally in FSD. This indicates that Avinor has not communicated well enough how we should assess risk. One way to communicate it in a comprehensible way could be to facilitate a risk analysis session, including the further process until the document is produced, as part of the central PFO (the annual programme to "update" staff after the completion of training). This would also provide the participating staff with insights that make them able to see if there are flaws in the model Avinor

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[49]   Hollnagel, Woods and Leveson (2006), pp125-154.

presently uses to ensure safe operations.

2. Implications for Training

Data indicates that training the craft to the extent possible provides a better safety culture. Sennett also (2008) provides an indication of how vast this craft can be. To make these areas conscious to instructors and trainees should be complementary to the set objectives for the training.

It is often said that it is easier to train a 20-year-old than a 30-year-old, and quite a few have experienced that their training has been terminated due to "attitude issues". I believe constructivist-developmental theory might well explain this too, if the people with bad attitude are reasoning with an Expert logic. If that is the case, the ones responsible for training must learn how to deal with this logic, and be able to facilitate for the masters of the craft to live with it – and vice versa. A risk in *not* doing this is not only that Avinor loses the ones who already have developed an ability to air differing views, and keeps the ones who want to belong at all cost. The ones who are left also see that it is unwise to air opposing views. Is this part of a good safety culture?

I have tried to indicate what Avinor may lose when a "difficult" person does not meet the standards set. I hope I am not interpreted to hold an opinion that these people should not meet these standards. What I tried to indicate was that they will not be able to acquire the necessary skills if their language is not understood.

Milgram's experiments showed that the degree of obedience depended largely on the acknowledgement of the authority's right to rule (see, for instance, Northouse, 2007, and Ekman, 2004 for further elaboration). A work stock consisting mainly of people reasoning with an Expert logic, might well fail to acknowledge a leader who has not gained their respect in performance of the Craft. Knowing how to deal with this problem might be essential for a manager, and this is a skill that can be learned[50]. But before the skill to meet a problem can be trained, the problem must be understood. And to understand the problem, the nature of it, the language must be learned.

One route to development of the ability to understand this language is by facilitating leadership development.

3. Facilitation of Leadership Development

Data indicates that the shut-down of TR has become a salutary failure for at least a few individuals, which might become salutary for the whole organization. The earlier safety net crafted by leaders with a clear idea of the performance of the craft made them able to create secure grounds when they

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[50] In *The Neurotic Organization (1984),* Manfred F.R Kets de Vries and Danny Miller gives a description of how a manager slowly gained an important computer engineer's respect. In short, the manager publicly acknowledged his importance, and refrained from getting provoked by the engineer's attempts to ridicule him.

found themselves in a situation they were not prepared to handle. Thus, they moved from trying to belong to the group to trying to belong to the craft – developing the logic of an Expert.

By presenting *The Craftsman,* I hope that it's possible to see that others might have had a different path to mastery of a craft than one self, and also that this might lead to strong opinions of how the craft should be performed. Expression of these opinions is the language of the craftsman, the Expert. Learning to understand this language, the language of people who have thought a lot on the technique of the craft, is part of development of leadership agilities. This language is a language every leader should be able to understand and deal with; it can be a very challenging language. But understanding it will make the leader able not to mistake important arguments for resistance to change, and to know how to avoid that the antisocial Expert dominates the work place.

The starting point of high learning is a moment of personal challenge, and Avinor should learn how to create those moments for their leaders in a safe situation. In *Immunity to Change: A Report from the Field[51]*, Jonathan Reams describes one way to create these moments, and although a competent facilitator is necessary, training people to be able to be facilitators should be possible, provided the necessary logic.

Susanne Cook-Greuter has developed a tool for measuring the level of cognitive reasoning[52]. To make sure leaders at a senior level, at least the Division Directors and the CEO, have a logic that allow them to use post-Heroic agilities seems like a good idea in light of the theory on how this affects organizations. But I am not sure if measuring is desirable – or necessary, as I suspect a trained facilitator would be able to find that out quickly enough.

The reason why I will warn against a systematic measurement is the comparison measurement often leads to. Competition can be good, but belongs in the spheres of game play and fight for scarce resources. Giving people a label they don't feel fit might evoke anger, and make them lose interest in the whole idea of developing from where they are.

In the course mentioned above, Reams used The Leadership Circle 360 feedback instrument, which is developed to compare the followers' assessment of a leader compared to her own – and also how the results compare to the most successful leaders. This should provide powerful insights, but only if that is what it is used for – to provide powerful insights the individual can build from. For something like this to work, I believe it is important that those tested have full control over the results.

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[51] See *INTEGRAL REVIEW (2009),* Vol. 5, No. 1

[52] http://www.cook-greuter.com

4. Crafting a Resilient Organization

In addition to communication of a safety mentality, and development of a language that welcomes opposing views, the case indicates that the organization is not resilient. Although the structure has changed slightly after the events, it isn't much different. Still, the Chief ATCO seems to be the main – maybe only – source of information the superiors have, although there is an employee survey every second year. Vice versa; the information from the organization to the employees has a second way, the intranet channel, but the Chief ATCO is the main information channel for those who do not actively seek it. The case shows how vulnerable the organization was to one single component; the person in the role of Chief ATCO. I believe the situation has improved, but that there are still things to work with. In the following, I will concentrate on the safety part of the organization.

But this will not be possible unless Avinor shows that this is an important job. Today, training is one of the things the Chief ATCO must "allow for", as one of many expenses. Also, there is no real central insight in what the different local training organizations deem important. One ideas is to empower the training organization with monetary muscles, maybe even discuss if the personnel responsibility for the local head of training should be organized in a different way. By finding a solution that gives the heads of training real responsibility also regarding shift lists, borders replace what could be boundaries between the training organization and the "daily operations" organization today.

Reporting is one issue. If a report or a message is sent via mesys, it goes through the line. This not only means that the Chief ATCO reads the message when I send it, but also that she will know who has sent it. The first factor might affect how the report or message is written, according to the logic of the sender. The second factor might affect how seriously the Chief ATCO looks into the problem, according to her logic. And only the manager with a post-conventional mind-set will be sure to take this seriously, if it doesn't fit with her perceptions and values! The case presented indicates a culture where reporting was not valued[53].

With most of the messages, it will only be necessary to redirect it to the Chief ATCO, maybe with a comment. I suspect that a solution where the safety staff is initially involved in all communication of the reporting system might prove to reduce the total work load *and* improve the quality, as everybody is invited to think *and* knowledge accumulates naturally in the safety staff. Remember that the Chief ATCO often does not have the luxury of seeing other units' work in practices, and the presence necessary to evaluate the material might lack invaluable information. This way of operating might provide Avinor with a cost-effective way to transfer experience.

Also, the organization gathers more reliable information of how a unit really works with safety, and

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[53]   I need to clarify that; reporting in BD is everyday business today.

this can be used to develop plans for improvement where improvement is needed.

By this, I do not mean to imply that most Chief ATCOs are not reliable and competent. Quite the contrary, I believe the opposite to be the fact, most Chief ATCOs seem both reliable and competent.

But the resilient organization cannot be dependant of one vital component. The present backup in this sense is the Deputy ATCO, but she is in the same line. Rather, I believe it is necessary for the organization to create multiple channels of information, and preferably more than one line of responsibility. This is to not follow the path of least resistance, trying to identify sources of conflicts and be forced to work with them. No single person can think of everything.

6.3 Ending my project – implications for further research

I'd like to mention a few things before I end my contribution to a project I hope will continue, but I hope others see more interesting areas to explore after this.

1. How Constant Evaluation Affects Interest in Learning

As Air Traffic Controllers, we first have to pass a test, and if my understanding of it is correct, it is designed to test if we have the ability to acquire the skills necessary to become an ATCO. In the next two years or so, we are constantly evaluated, until we finally get our licenses. Working with this project, I have come to wonder how this affects our willingness to learn more.

As evaluation of performance by set objectives becomes more and more widespread, it could be interesting to find out how this affects the attitude towards learning in general. To find this out, research could be done on people who are under constant evaluation pressure, and then relieved of this pressure. When the pressure ends, how does that affect interest in further learning?

2. When a Good Move is Found, Always Look For Another

As ATCOs we are trained to take in enough information to take a decision that is good enough and move on. As a chess player, I have learned that when I have found a good move, I should never move without exploring at least one other alternative, to be sure the move made is better than the option.

To be a leader, however, should be far more advanced than both chess and ATC. Avinor's leaders seem to spend enough time to make a good decision, but rarely enough time to make sure the alternatives are not better. This, I believe, makes "good an enemy of great."

Does the confidence gained from passing all tests, and evaluation of our ability to process information and act quickly, affect the ATCO's cognitive development as later leaders?

3. The View on Labour Unions

Rolf Skrede once jokingly said that the goal for NFF was to make the union unnecessary. The case indicates two things in this regard; that the image of a labour union as enemies of the organization might actually be part of what fuels a union with power, *and* that close cooperation with the professional part of labour unions might provide the organization with the information makes it possible to lead from the future as it emerges.

Zimbardo (2007) indicates that we fall into behaviour that fits not only with how we interpret the role, but also that it adjusts according to others' expectations of us. This might well have happened in this case, on all organizational levels. It could be interesting to do research on the following:

How do managers' attitude towards labour unions affect the professional behaviour of the union representatives? In the extent of this; how does a manager's attitude towards labour unions affect leadership effectiveness?

4. The Role of the Regulator

Luftfartstilsynet moved to Bodø in this period, and there are indications in the different stories that this affected the result. I believe that separating regulator from provider was necessary and healthy. I am not sure, however, whether the further development in accordance with NPM (New Public Management – see Lofquist, 2009 for an explanation) was necessary or healthy. There seems to be no interest, neither politically nor internally, in reconsidering whether an air navigation service provider should actually be a commercial actor, but it would be interesting to find out how the necessary focus on other actors that comes from competition benefits society as a whole.

In the present case, competing to win did not benefit society as a whole, which is the main reason for me to indicate that Avinor should make sure the top leaders have a reasoning ability that also take this into consideration (the *Co-Creator* logic or later – see Rooke and Torbert, 1998 – their term is Strategist). That this would probably also benefit the organization is, for me, a bonus only.

There are indications in the data that moving Luftfartstilsynet to Bodø might have prevented the execution of the authority responsibilities in a way that could have facilitated a better outcome. Today, around 500 ATCOs work in Avinor, but Luftfartstilsynet seems to be dependant of staff already established in Bodø, which reduces the number of people to recruit from significantly, also compared to the earlier location.

With around 500 people to recruit from, this should still be addressed, but with around 50 (the ones who intend to stay in Bodø), how can the Ministry of Transport make sure that the relationship of the regulator and the ANS provider is a healthy relationship?

7 Abbreviations

The following gives a short overview, and is not intended to provide a full understanding.

ACC – Area Control Centre – providing the en route control part of ATS, preventing collisions between aircraft in high altitudes or far from controlled aerodromes.

AFIS – Aerodrome Flight information service – providing the information service part of ATS from the tower at airports without TWR Control. In Norway, AFIS accounts for more than half of the aerodromes with commercial flights north of Bergen/Flesland and Oslo/Gardermoen.

ANS – Air Navigation Service – All of the following: ATM, communication , navigation and surveillance (CNS), meteorological services for air navigation (MET), search and rescue (SAR) and aeronautical information services (AIS).

AoR – Area of Responsibility – the lateral and vertical airspace where a unit is responsible for ATS.

APP – Approach Control – providing the approach and departure control part of ATS; sequencing aircraft for landing, and preventing collisions between aircraft in departure climb, descent for approach, and close proximity to a controlled aerodrome.

ATC – Air Traffic Control service, ATCOs are responsible for keeping aircraft separated. Provided in controlled airspace or at controlled aerodromes. Most of the commercial flights are under ATC responsibility during their whole flights.

ATCA – Air Traffic Controller Assistant – ATS personnel performing different tasks related to ATC/ ATM that do not require ATCO licensing.

ATCC – Air Traffic Control Centre: Indicating an ATC site with ACC and APP services

ATCO – Air Traffic Controller – including TWR, APP or ACC ratings. Providing everything included in ATS.

ATM – Air Traffic Management – ATS, also including all of the management around it – facilities, regulations, division of airspace etc.

ATS – Air Traffic Services – including ATC, FIS and alerting service

BD – Bodø ATCC

BSL – Bestemmelser for Sivil Luftfart – the law. Letters A-G, JAR and Sec.

CEO – Central Executive Officer (Administrerende Direktør)

CAA – Civil Aviation Authorities. The CAA makes rules, certifies and oversees among others airlines, technical organisations, aviation training schools, aircrafts, licence holders and airports.

CFMU – Central Flow Management Unit – regulating traffic entering a certain airspace or aerodromes by issuing departure "slots" of 15 minutes within which aircraft have to take off. Some common factors affecting this; weather, reduced staffing and volcano eruptions. These flow restrictions are applied upon request from the sector working the airspace or aerodrome.

CRM – Crew Resource Management – A part of HRM that is specifically addressing the risk of making errors in a crew setting – especially where there are differences in authority.

DNV – Det Norske Veritas – a foundation specialized in risk management, with the purpose of "safeguarding life, property and the environment." Inherent in this is that risk is not avoidable, but important to identify to the largest extent possible in order to take care of it in an acceptable way.

DP07 – Delprosjekt 07 – The partial project of Take Off-05 addressing the ATCCs.

OJT – On-the-Job Training – trainees or ATCOs training for a future endorsement under an OJT

instructor's responsibility.

OJTI – On-the-Job Training Instructor.

FIS – Flight Information Service – giving advice and information useful for the safe and efficient conduct of flights. Provided in controlled and uncontrolled airspace

FSD – Flight Safety Division in Avinor.

INS-18 – Regulations in RFL II, clarifying BSL C 3-1 §7c, imposing the ATCO to refrain from work under conditions that might affect the ability to concentrate, when health conditions are not affected in a way involving sick leave.

LT – Luftfartstilsynet – the Norwegian CAA

mesys – The reporting system in Avinor, not exclusively used to report aviation incidents, other problems are reported as a "message." Aviation incidents are defined in BSL A 1-3, in short every event that could have direct influence on air safety. Reports go automatically to LT.

NATCON – Norwegian Air Traffic CONtrol system. In 2008, BD implemented this system as the last Norwegian ATCC.

Nm – Nautical miles, 1852 meters.

NPM – New Public Management – changing the executing part of the former public responsibilities into business organizations, separated from the regulatory and supervisory responsibilities.

RFL – The Norwegian ATM regulations, still provided by Avinor. RFL II elabourates on different parts of our regulations, including RFL I and BSL. RFL I will be replaced by BSL G 8-1 in 2011.

SHT – Statens Havarikommisjon for Transport – Accident Investigation Board, Norway

TR – TR ATCC

TWR – TWR Control – providing the aerodrome control part of ATS, preventing collisions on ground and in close proximity to the aerodrome.

VA – Værnes TWR/APP

For searches in ICAO documents: http://sissy.skybrary.aero/

For Norwegian regulations: http://www.luftfartstilsynet.no/regelverk/

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[54]   (Susanne Cook-Greuter, Dalmar Fisher, Erica Foldy, Alain Gauthier, Jackie Keeley, David Rooke, Sara Ross, Catherine Royce, Jenny Rudolph, Steve Taylor, and Mariana Tran)

9 Appendixes

9.1 Appendix A: Information and Confidentiality Contract

Til deg som intervjues

On Emotional Responsibility During Strategic Change in a High Reliability Organization

Jeg ønsker å skrive noen ord om intervjuet og hensikten med min master-oppgave i organisasjon og ledelse.

Bakgrunnen for at jeg begynte var Randi Flesland og Anne Grettes oppgjør med ansatte, særlig flygeledere, i media 2003-2005. Jeg ønsket å finne ut hvorfor konfliktnivået ble så høyt, og også hvordan eventuelle nødvendige endringer burde bli gjennomført.

Etter hvert har dette blitt noe utvidet til også å finne ut hva organisasjonen som helhet har lært eller kan lære av den perioden.

Jeg har valgt å fokusere på én spesifikk endringsprosess, nedleggelsen av Trondheim Kontrollsentral.

Jeg velger å dele prosessen inn i 4 trinn:

1. Perioden før vedtaket om at BD skulle bli KS N
2. Perioden mellom vedtaket og til de ansatte fra TR var kommet til BD
3. Perioden mens de ansatte fra TR arbeidet ved BD KS, og
4. Perioden etter at alle TR-ansatte som ønsket seg bort fra BD hadde fått annet tjenestested.

Jeg ser for meg at de fleste samtaler om perioden har vært diskusjoner med kolleger, venner eller familie. Men det jeg ønsker er å høre dine tanker og følelser fra den perioden, i tillegg til faktiske hendelser som kan være relevante – rett og slett din opplevelse av hele prosessen.

Intervjuet vil bli tatt opp med lydopptaker og transkribert av meg. Ingen andre vil få tilgang til lydopptaket uten ditt samtykke.

Fra min side kan jeg love konfidensialitet og anonymitet. Personlige data som kan bidra til identifisering skal ikke inkluderes i oppgaven. Dine nærmeste kan, dersom de vet at du er intervjuet, sannsynligvis si at dette er det du som har sagt. Men dersom de ikke vet at du er intervjuet vil det være tilnærmet umulig å fastslå hvem som er sitert, av den enkle grunn at du garantert ikke er alene om å tenke eller føle det samme.

Du vil få lese gjennom de delene av oppgaven som inkluderer sitater fra deg, og få mulighet til å oppklare misforståelser eller uklarheter.

Erling Jøssang

9.2 Appendix B – Collective Subjective Experiences

In presenting the stories I will use a third-person plural perspective, because it is the story of more than one, and my informants have not limited their stories to their own personal roles. However, the reader should remember that the ones who were most involved from BD were not interested in sharing their version. In addition to the informants, I have allowed other persons involved to comment on the stories, to take away purely individual perceptions.

I still choose to keep the general terms TR and BD, but keep in mind that other individual stories from the units may differ. I will present the story seen from the TR perspective first, then from BD's. This choice has to do with the period of time when the most important events for the unit found place – for the TR personnel the events before the final merger were as important as after, whereas the interviewed from BD were more engaged after the merger, and a few years forth.

9.2.1 Trondheim ATCC

When talking about DP07 below, I address the merger of BD and TR ATCCs. The other part, the merger of Oslo and Stavanger, was cancelled in it's original form.

1.   DP07 – Planning Phase

We don't remember many of the events during the planning phase. We were confident that we would be chosen as the preferred location for ATCC North, since everything was already in place. The old control tower was getting replaced by a new one.
On the ground floor we built an ATCC meeting all the technical requirements, including a hot issue at the time: EMP[55] warfare protection. All new air traffic control sites should have this protection – a decision still valid. The training for the new radar system to be implemented was almost finished, so all the expenses were already paid for.
But there were puzzling events. The first warning was that all managers had to sign contracts stating their loyalty to the process, the already signed employment contracts weren't enough. And in the planning phase, they didn't include anybody from the ATCCs. At one time, we understood that Randi Flesland was looking for the cheapest option. We then discussed whether we should say that we could do anything, and later address the problems arising. Some of us were very clear, saying that our bid should be based on honesty, and we soon agreed on that. Nobody should come later and accuse us of cheating.
Even though we suspected it, it came as a shock that they recommended that ATCC north would be established in Bodø, and by continue to use the old radar system; that had never been an option! We were ordered to stop the training for the new radar system, pending the final decision. Because of this training we were too many people to fill the shift lists, and since we couldn't understand it, the ones who weren't working studied the planning documents thoroughly, and it was horrendous reading.
The most obvious error was the extra staff needed, they must have known that was wrong already then. Even worse: all the identified hazards we were trying to take care of in upgrading the ATCC would be temporarily continued – they were even adding new hazards by increasing the strain on the systems by adding positions. In the safety analysis afterwards, this was pointed out, and the conclusions were initially that the risk would be increased. But this conclusion was changed, without participation from the people identifying risks, to "no change in risk".
Also, the economical considerations were short term only. By postponing the new radar system they intended to save lots of money – but the long term costs would be considerably higher, as all the money already spent would have to be spent again at a later stage if we didn't finish the project.
Anne Grette – the manager responsible for Take Off-05 and later the Flight Safety Director – then

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[55]   Electromagnetic Pulse

disclosed that they were mainly looking for short term costs to cut, money spent was not relevant. In January, Randi Flesland held a meeting, and people from all parts of Avinor at Værnes aired their frustration. In this meeting, one of the local managers discussed issues regarding the decisions in public, and was informed afterwards that asking difficult questions to the CEO in public was not the role of a manager in Avinor. But what could we do? The official channels were not working, and to talk to the media had resulted in a decree from the management that people who weren't union representatives talking to the media would lose their jobs.

The decision was official in February, and our objections were not taken into consideration. But the Director of Personnel told us that nobody would have to move against their will, and we believed it. Even after he had left Avinor, some of us continued to believe it.

2.   DP07 – Implementation Phase

While we had to stop our radar training, work proceeded in Bodø, and when the decision was taken, they started simulator training. They expected us to help in the process, but we were angry. To ensure their own survival, they compromised aviation safety, and our combined work from the latest years would be for nothing. Of course, we also hoped that they wouldn't be able to go through with their plans if we didn't help out, but what they gathered traffic data and started simulations. We sent a few people there to meet them in an NFF setting, explaining why we meant it was important to not continue with these plans, including also how it felt to have worked to take away the hazards and then losing the bid for ATCC north to something that was obviously lies!

We didn't get anywhere, and today we see that our arguments in the meeting were perceived as attempts to turn the decision in our favour; if it had happened the way we sketched, TR would have been preferred later. But also, time has proven us right, our arguments were valid, and the top management has confirmed it publicly later: The establishment of ATCC North in BD cost Avinor tens of millions[56] NOK.

Following the decision, the central managers met the local management and union representatives. They also wanted to enter the operations room, but the ATCOs working warned that if they entered, they didn't know what would happen – for sure it would be impossible to concentrate on the work. This aggressive attitude stemmed from their personal responsibility in the process, and the attitude we were met with – we were even told that number of endorsements would trump seniority in the employment process.

For many, everything was about work this period. We tried to take care of each other, and we agreed to keep talk about the fraud outside the operational rooms, but it was impossible, of course. Also at home, it was difficult to concentrate on and talk about other things, it was all about how it was going to be to work far from home. To move to Bodø with the families wasn't an attractive option – to find a job for the better half wasn't easy if it wasn't a nurse, and also to work with people we felt were cheating us wasn't attractive at all. But we kept working, some of us had sick leaves, but we managed to keep going in a way, mostly since we had six extra ATCOs due to the implementation of the new radar system. There were quite a few instances when ATCOs reported unsuitable for work as imposed by INS-18. In retrospect we probably should refrained more often from working, but just how much we were affected didn't become apparent to us until after we were out of the situation.

The last months, after the opening of sector Central, we tried to explain the necessity of more ATCOs working sector South after the merger, but we were met by ridicule or ignored, even though our arguments were partly heard by moving 17 people instead of the 6 they initially claimed would be needed. And this actually made the ones moving first happy, as they had told us that all of us wouldn't even have a job after the merger. But it also made it possible to actually do what our own managers said – until the final few weeks – would not be possible: To merge according to the plan.

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[56]   http://www.vg.no/nyheter/innenriks/artikkel.php?artid=185121

3. DP07 – Stabilization Phase

When the first ones arrived in Bodø, nothing was in place. The managers we trusted, and depended on, were no longer there. The rules and regulations were not in place, and we were met with arrogance and ridicule regarding our existing regulations. But they didn't present alternative regulations we could accept. To give an example of how this worked, in our regulations from TR, traffic was reduced in CFMU according to the manning of the sectors. When arriving in Bodø, this wasn't defined, so we stuck to the old numbers we knew were based on experience, and demanded a proper safety analysis to change it. In the beginning, we weren't united on this, so some of us accepted more traffic. But a proper safety analysis was never done, hence more and more of us followed the old restrictions. This was not at all popular, our colleagues at the different aerodromes didn't show much understanding of why, and we even had to take some of these discussions on the coordination phone while working traffic.

We were angry with our colleagues, and held them responsible for our loss. We wanted to discuss what had happened with them, but none of them accepted the responsibility, nobody said "I did this, and this is why!" Some said "you have yourselves to thank, if you didn't understand that this was about submitting the low-cost tender." Our colleagues in Bodø weren't happy either, being held accountable for what they didn't feel responsible for. But they weren't interested in why we were angry. We were told how hopeless we were and that we shouldn't be so angry – for our own good. But when we tried to make them understand by referring to facts, for instance the DNV report (2003), they hadn't read it and couldn't discuss that. But we were the idiots. We discussed things internally, checking if we had lost sense of reality, if this really was that bad. And most of us confirmed that it was, although some of us withdrew from the group after a while, establishing in Bodø. The rest of us felt isolated. Alone. And physically, our sector was in a corner.

Consultants were hired, and they found out that in our corner, there was a fire. Nothing came out of it. So they did it again. And found out that in our corner, there was a fire. But nothing came out of it. Of course.. nobody regretted anything. And nobody were responsible for anything. We were stabbed in the back, and were expected to forgive that without even getting an excuse. Stabbed, by putting selfish interests, rather than air safety, first. And cheating and lying to get their will. No regrets.

Some of us quit, most to be ATCOs in other countries, but also to find other, less paid occupations, to get out of the situation. And the ones who quit weren't the most experienced, quite the contrary, the ones without bonds in Trøndelag were the ones who left Avinor. But some stayed, and slowly other ATCOs were authorized, and we could leave.

4. DP07 – Learning Phase

We became fewer and fewer, and today none of the former TR ATCOs work in Bodø against their will. To again get a job after application, and to get away, felt good. The motivation to participate for Avinor is different from what it was, but we also feel obliged to get the good things from Trondheim out in the organization. We shared something unique. To give a concrete example, an instructor who had been involved in a major incident used that incident as part of the education – nothing leaves a stronger impression than that. And that is what we shared – a belief in sharing, learning from each other's mistakes, increasing the awareness of the vulnerability of our business, how a small mistake can become fatal.

If Avinor has learned from it is difficult to say. Most of us don't communicate what happened today, unless asked. Thus, if a new person in Avinor hears about this at all, it might be that they hear about some hopeless people from Trondheim who were difficult in all aspects, but elsewhere they might get a more realistic version. But we don't talk much about it, it's part of our past. If anybody ask, we answer, and we think we handled the situation well, overall.

And looking at the positions the former TR ATCOs have today, it is obvious that we must have done something right. Maybe the influence will show more in the future – the persons holding positions today have learned. The 2nd line and above managers in position today are mostly people who have demonstrated integrity, which in itself is a reassuring thought.

9.2.2 Bodø ATCC

1.   DP07 – Planning Phase

We weren't much involved in the planning, we knew TR could – and probably would – be preferred for ATCC North. The existing building was large enough to move in, and it was also EMP protected, a major theme at the time. So we prepared for that, even considering where in Trøndelag to live.

The paper showing how much we could save fast by establishing in Bodø was produced by a few people in a few days. The decision must have been taken before, and it is possible to defend it from an economist's point of view; the task from the Government was to save 400MNOK annually already in 2005, and moving TR into BD on the existing radar system cost less, compared to establish the new system in TR and then move. So when the DP07 document came, it initiated the fighting spirit. Some of us worked day and night to prove that it was possible to make it. But most of us couldn't believe it, we didn't understand their reasoning. We were happy for not having to move, but also sorry that it had come to this. The decision was postponed, but we were instructed to continue working with the preparations, and held a safety analysis meeting for the equipment tolerance. When the risks were identified, we found out how to deal with it, and assessed that flight safety would not be compromised by factors related to equipment.

At personnel meetings at the time, some of us doubted the speed of the plans, but one of the managers was particularly pushy, saying that he didn't want to hear anything about the possibility that we couldn't make it. It wasn't an option, what we could offer was a speedy takeover, and it was our chance to win the bid. In addition, it was probable that if TR won the bid, the people in the room would be the first to lose their jobs – Avinor had not decided on which principle to use after the merger.

So some of us worked with the parts we were assigned, others weren't involved, but when the decision came, we were ready to start simulator training at the new sector Central.

2.   DP07 – Implementation Phase

Almost everybody wase happy with the decision, and this triggered a working spirit that made it possible to open the new sector Central according to the plan. During this, we were told that if we didn't stick to the plan, the decision could well be reversed.

There was no help from TR in the period, it was obvious that they hoped to reverse the decision by not cooperating. They had claims in the newspapers that we didn't want to comment on, but at a time we wrote an answer since the accusations were severe. Also, to get information was very difficult – when the decision was taken, the goal should be to do things as well as possible, as safe as possible. Maybe that resistance made us even more determined to prove that we could!

When the new sector opened, it was well that we had a working backup plan for the radio system, as the old communication central broke down – it couldn't handle all the new channels. But as it were, everybody was so alert and familiar with the backup system that we didn't perceive it as dangerous – and still don't. When we agree with Lofquist's assessment of decreased margins due to ATC in BD, it is mainly because of the strain on the ATCOs after the merger.

It is difficult to remember details of this phase, it was much work, but things didn't really have a personal impact until after the people from TR arrived.

3.   DP07 – Stabilization Phase

When they arrived, we were surprised how little they were prepared for moving. We thought they had economical support for commuting, and some help in the process of establishing at the new unit. But nothing was done to help them, even though they were promised help. They held it against us, but that wasn't a process we had been involved in at all!

But they were angry in general – everything was wrong and everybody was guilty. The people who reached out and tried to discuss things, make an effort to make things better, to get them to accept

the situation, were met with aggression. The strain on the original staff was soon showing in increased amount of sick leaves and refusal to work overtime. One thing we've always been proud of in BD is that it's good to be here, lots of young people come and have a good time before they move on to new places. Some stay, establishing here, but it's always been a dynamic environment, young and positive people who enjoy work and the company of their colleagues. But when the TR ATCOs came, this changed. In addition to still being too few altogether, there was the constant struggle with the negativity emitting from sector South. Everybody felt accused of fraud, held responsible for injustice done to them as individual persons. But nobody ever talked about "beating" TR when we prepared our bid, to do anything against them.

They had some good points, some things we could learn from, but it was difficult to see them, because there was so much wrong – and the small errors they found were communicated as if they were just as serious as the big issues, with the same affection. What surprised us even more was the aggression of the youngest, who were only temporarily employed in Trondheim. They were just as reluctant as the others to change rules and regulations. It must be an excellent example of how the young enter the work force, and strong personalities tell them how the world is – then they believe the world is, and should be, like that! When it wasn't, many quit, making the problems even worse.

We hired some consultants to help us find out what to do. They suggested how to handle things, but exactly what the suggestions were isn't easy to remember. Personnel meetings were held, where we presented the things they suggested, and we wanted to discuss them, but only a few of the TR ATCOs showed up – and then we got this feeling of doing our best, but that they didn't want to participate! One thing we did was to select new union representatives, and one from TR became vice-representative. We hoped that this would make them more participating, feeling more included in the processes. It was a good contribution to the processes, as it was a skilful ATCO, but it didn't improve the conflict situation much, although maybe it helped a little in the communication between us.

We thought the anger would diminish with time, but it didn't – when one of them asked if things were really that bad, the others were good at telling the details on why things were so bad. Each of them as individuals were fine, but they were stuck in their collective misery. So things didn't get much better until we had people ready to replace them and they got jobs elsewhere, most of them were gone by the end of 2006.

4.   DP07 – Learning Phase

What we have learned is that a good process is needed when moving people. The technical considerations might be defended, but the way things were done with the involved people, it had to end in chaos. At least when the people had so much power in that they were the only ones who could work with the airspace in question.

Also, when people perceive themselves to be treated badly, it isn't important whether or not they are treated well – when you look for problems, you will find problems.

But we don't talk about it today, we have worked hard to put it behind us, to look ahead. When someone, like you, ask questions, it's like old wounds, some still hurt when pushed, otherwise, it's not something we keep alive. The biggest mistakes weren't made by the local unit, they were made before they arrived, before the decision. To take care of things like this shouldn't be left to local competence anyway. We could have done things differently, but we were also surprised that they were so angry, that they really felt cheated and treated badly. After they left, it's good to be back to normal, we are starting to get normal manning, and the situation is getting much like before; Bodø is a place to come to after the education, finish training, stay a few years and have a good time.

9.3 Appendix C: Personnel Treatment – an Example

In the following, I have left out most of the details, and the frustration of the ATCO might not be apparent. This event, however, was instrumental in the decision to find another occupation.

Before the merger, TR had two ATCOs on duty at night. The two ATCOs worked two sectors when traffic permitted, but from one radar position. After the Überlingen accident, the necessity of this had not been questioned. Arriving in Bodø, sector South was manned with one ATCO on the night shift, and the former TR ATCOs were the only ones with authorization on the sector. Thus, the ATCO could not leave position for 9 successive hours.

The first formal contact regarding this was a letter from NFF sent in July – two months before the transition. In the letter, NFF points at the need for a safety analysis for such changes. This was first ignored, and later dismissed by the management[57] due to the traffic density at night.

After the transition, LT demanded a safety analysis for the introduced changes. The management disregarded this, and changed the regulations for the shift lists to fit the lists, before the safety analysis was done. A temporary solution was negotiated with LT and communicated to the ATCOs.

Arriving at a night shift, an ATCO finds that the manning is not according to what was previously communicated from the management. The frustration peaked, and to refrain from working according to the regulations in RFL II, INS-18 was considered, but the ATCO knew that to find a replacement would be difficult. Instead, implementing Rate 0[58] for the whole shift was the chosen solution, reckoning that it would be possible to concentrate in case of an emergency.

A safety analysis was then submitted to LT, without involving the ATCOs working the sector.

Arriving at a Sunday night shift, the same ATCO found that the manning was, again, not according to the requirements. This time the frustration didn't reach the same level, but rate 0 was implemented between 6 and 7 Monday morning.

It had now been 6 weeks since the arrival, and there had regularly been rates according to the established procedures. Knowing that their actions created delay and problems for the passengers and airliners, they still stuck to the procedures they knew were safe based on experience. To change them in a situation due to emotional blackmailing was not what they were trained to accept. That they didn't yield to this pressure is a point communicated – if asked – with confidence today, and appears to be a part of the professional pride of the involved ATCOs, not at all something to be ashamed of.

What the ATCO in question did was to be even more restrictive, based on an operational assessment of the current ability to concentrate on the job. A few days later, a letter arrived. Avinor called for a meeting to discuss the ATCO's further employment, based on the actions taken these nights. In addition to representatives from the management and NFF, both parties also brought a lawyer.

Details from this meeting is best left in silence, but it resulted in a later written warning from Avinor: If the ATCO ever refrained from using INS-18 again and remained in position when feeling so frustrated, his professional relationship with Avinor would end.

Thus, a 6 week fight for what the former TR ATCOs meant was a fight for continued flight safety, against the pressure from the management to lift all the "unnecessary" restrictions, culminated with a written warning to this ATCO for not being restrictive enough to close the airspace completely.

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[57] Due to identification issues, "the management" in this Appendix can mean anybody from the level of Deputy chief in BD to the CEO.

[58] "Rate" denotes the number of hourly departures, arrivals or transit flights allowed into the sector. The number does not apply for aircraft in distress, military missions, ambulance or search-and-rescue aircraft.