June 21, 2011 (Tuesday) 55th EOQ Congress

CONCURRENT SESSIONS **Tuesday 13:30 – 17:30**
KEMPINSKI HOTEL CORVINUS **Erzsébet tér 7-8, Budapest V.**

SALON CORVINUS **Tuesday 13:30 – 15:00**

13.1. MANAGEMENT SYSTEM CERTIFICATION AND THE AUDITS

Session Chair: ***Olav F. Finsnes****, Norwegian Society for Quality and Risk Management, Norway*

13.50 A Quality Management Model for High Performance Organization: Finnish Air Force
Henry Ilpo Antero Sivusuo, Finnish Air Force, Finland

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A quality management model for a high performance organisation: Finnish Air Force

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Introduction

The Finnish Air Force has a long and honourable history. It was established in 1918 and is one of the world's oldest independent air forces. In the Second World War, the Finnish Air Force had more fighter aces, 94 in all, than any other air service in relation to population. Apparently, even then, we could do things right although quality management was an unknown concept.

The Finnish Air Force's expeditionary unit was the first flying unit of a non-NATO member state to participate in the NATO's Tactical Evaluation Operational Capabilities Concept, Evaluation and Feedback programme, level 2. The unit passed the evaluation with good results in 2009, proving its interoperability and capability of conducting air defence missions in a combined operational environment.

The Finnish Air Force participates annually in several international air defence exercises with leading European and non-European air services such as the Royal Netherlands Air Force, Royal Air Force, French Air Force, Swedish Air Force, and the United States Air Force.

The Air Force, like the entire Finnish Defence Forces and air services all over Europe, is under the pressure of diminishing resources and needs to streamline its activities. I have often expressed a slogan that will be more than appropriate in the future: "Diminishing resources will yield better results." This might appear confusing in an organisation dependent on resources, but we have to proceed gradually. A wide range of proper quality management functions and a sound philosophy such as TQM will help us reach this goal.

The Finnish Air Force is a typical expertise centred organisation where experts and professionals are trusted widely and where responsibilities are transferred to them to a considerable extent. Knowledge in the Air Force is organisationally specific and associated to the service's core competences.

The Finnish Air Force, although a military organisation, is "flat" in the sense that every service member can establish a direct contact with the commander. This is partly due to the number of employees which, at 3,100 individuals, is relatively small. The Air Force has a unique organisational culture where people at different levels trust each other. A typical feature is also the open reporting of flight and maintenance related occurrences. The service has one of world's best reporting systems that, thanks to a low reporting threshold, generates about 5500 pilot filed occurrence reports every year. These reports form a base for knowledge and enable the drawing of conclusions to further improve flight safety. It has been said that a key characteristic of knowledge intensive organisations is their capacity to solve complex problems through creative and innovative solutions.

In the early 2000s, the Finnish Air Force launched a research project with the objective of developing the quality concept of its organisation further and support traditional quality assurance. As a result, we first found that the most significant factor in quality management is the organisational culture: the way we think and act. In addition, issues like the Air Force's concept, mission, vision and strategies came up, and so did the question of a suitable measurement system. Second, we used benchmarking research to familiarise ourselves with the operations of other air forces and as a result obtained valuable information about principles and tools these reference air services use for quality management.

By 2008, we had sufficient insight into the matter and were in a position to formulate a holistic TQM model for the Finnish Air Force. The components of this model include the use of quality prize models - that is, participating in competitions and self-assessments -, process thinking, innovations support, adaptation to a high performance organisation, an Air Force organisational culture model, and the concept of personal quality. The concept covers factors such as cognitive thinking, commitment, values, attitudes, skills and statistical thinking.

Our TQM model has helped us to reach better results and, at least, the better understanding of typical phenomena in our organisation.

The concept of high performance organisation (HPO)

As a concept, high performance organisation, or HPO, started to appear frequently in scientific publications during the second half of the 20th century. For this presentation, I have used two sets of source material: HPO criteria launched by the Finnish consulting company Innotiimi (www.innotiimi.com), and criteria established by Dutch professor Andre A. de Waal. We should also remember that a number of quality prize models that closely resemble HPO such as EFQM, Malcom Baldrige and CAF, have been in existence since the 1980s.

Figure 1. HPO framework by Innotiimi.

The Innotiimi model is based on human image and emphasises a holistic way of thinking.

Rational touch and emotional issues are included in all that we face. Dialogue and communality are emphasised between human beings in an organisation. We have to ensure that tacit knowledge is shared or externalised. Externalisation involves the articulation of tacit knowledge into explicit knowledge, which occurs through dialogue. In addition, performance is connected not only to economics but also to other functions. An organisation has to produce performance that is desired by the customer and other interest groups. In the free market, a high performance organisation is profitable and enjoys sustainable growth, while in the public sector, the primary consideration is an organisation's positive impact on society and the efficient use of resources.

Innotiimi specifies high performance organization as follows:

The high performance organization is an inspired, lively community where people are truly involved in the process of leading the organization towards high performance - and therefore sustainable growth and profitability.

An HPO's characteristics in the Innotiimi model are:

1. Visionary leadership
How to define excellence, share high expectations and create our strategy to achieve outstanding results?

2. Unique competences and capabilities
How to identify and develop competences and understand the unique capabilities of people?

3. Inspiring empowerment
How to achieve commitment and high performance with people through personal inspiration, dialogue and support?

4. Value-creating collaboration
How to design a collaborative space and networks and build partnerships that promote trust and overcome barriers?

5. Efficient and effective systems
How to identify, understand and design processes and use of information to make a strategy work?

6. Agile innovation, learning and improvement
How to innovate, learn and improve in order to meet the changing needs of customers and other stakeholders?

Andre de Waal has undertaken an in-depth research - using no less than 290 written sources - on HPO in different organisations. He specifies an HPO as follows:

A high performance organisation is an organisation that achieves results - both financial and non-financial - which are better than those of its peer group over a longer period of time, by being able to adapt well to changes and react to these quickly, by managing for the long term, by setting up an integrated and aligned management structure, by continuously improving its core capabilities, and by truly treating the employees as its main assets.

HPO characteristics in **Andre de Waal**'s model include the following:

1. High quality of management
Management creates trust with people, treats everyone fairly, is a role model support, coaches and facilitates, focuses on the achievement of results, and makes strategy known for all in an organisation.

2. Openness coupled with action orientation
Openness, management that appreciates everyone's opinion, learning from mistakes, permitting risk-taking, and knowledge exchange in interactions.

3. Long-term commitment
All stakeholders - employees, suppliers, clients, and society - see the importance of long-term commitment, guidance in the form of customers' long-term expectations, networking, the obtaining of results in co-operation with partners, a safe and secure workplace.

4. Focus on continuous improvement and renewal
Continuous examination and development in processes, measuring development, communicating measured results to everyone who needs them, creating new innovations, the further development of core competencies and outsourcing of other competencies to partners.

5. High quality of workforce
Continuous training, learning from others by entering into partnerships with suppliers, encouraging everyone to develop his or her skills.

De Waal maintains that HPO characteristics have an influence on each other; in other words, the improvement of one characteristic also improves the others. Private sector organisations have to improve all five factors concurrently, but in the public sector, we need to concentrate on long-term commitment and the quality of management.

The essential content of the Quality Prize Model is operations, results, assessment and improvement. Operations are evaluated by descriptions of leadership, strategies, customers, employees, partners, measurements and processes. Results are assessed in the areas of customer satisfaction, personnel, society and performance.

The Finnish Defence Forces and Air Force are public organisations. What distinguishes them from the other public organisations is the fact that the concept of a customer has not been defined. The Air Force's activities are largely governed by legislation and politicians have a key role in allocating the service financial resources. It is difficult to measure the impact of the added value of the activities of the Defence Forces and Air Force on the society.

FINNSTAR holistic model: Essential elements in Finnish Air Force quality management and continuous development

By the end of the 1990s, quality thinking had been adopted throughout the Finnish Air Force's organisation, and we wanted to use quality tools extensively, for not only quality assurance, and redarded Quality Prize Models as promising tools to promote quality thinking even further. The Air Force participated in the 2003 and 2004 National Quality Prize Competition, and the 2006 competition saw the participation of one of our Air Commands. One unit, the Air Force Academy,

was the winner in its category in the 1999 internal quality competition of the Defence Forces. The EFQM criteria were applied in both of these competitions.

Research on background elements in Air Force quality management soon revealed that an organisational culture is a key factor in determining what quality philosophy and tools should be used for continuous development (Sivusuo, 2006). I found that the existing culture either supports development or is not conducive to it. In the formulation of the Finnish Air Force culture, I used the following source books: (Deal&Kennedy, 2000) (Kotter&Hesket, 1992) (Schein, 1992) (Trompenaars&Homme, 2004).

Factors that influence development work in the Air Force are presented using a FINNSTAR model as shown in figure 2:

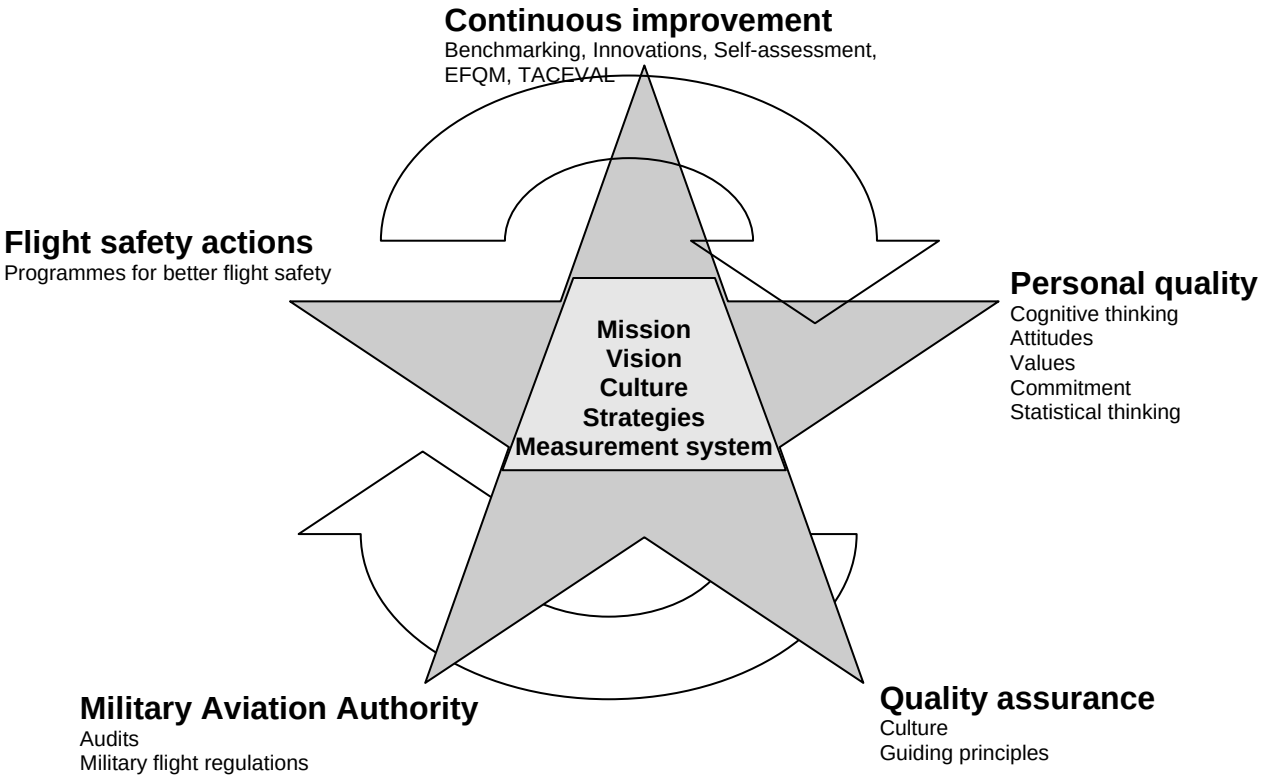


Figure 2. FINNSTAR model for continuous development in Finnish Air Force. Arrows behind the star represent strong interactions with different elements.

In the centre of the star, there are the essential elements of an organisation: mission - which is the purpose of the organisation's existence -, vision, the organisation's culture, its strategies, and a measuring system. Next, I apply these to our organisation.

Air Force mission

We meet the security related expectations of Finnish people by:

- monitoring and safeguarding our airspace and preventing its violations,
- maintaining capabilities required for effective air operations that provide deterrent and are co-operation-capable,

- supporting other authorities in their efforts to guarantee the essential functions in the society, and
- participating in international crisis management in accordance with Government decisions.

Air Force vision 2020

The Air Force has a directing role in air defence and possesses an ability to support and execute both national and international co-operation.

The Air Force has a credible air defence capability commensurate with theatre threat scenarios. This capability is based on know-how, advanced technology, and co-operation on both the national and international level.

The Air Force has an internationally networked educational system to produce motivated and skilled workforce for air defence.

The Air Force enjoys a good reputation and is a desired partner.

The Air Force uses its allocated recourses effectively, economically and safely.

Air Force culture

Edgar Schein (Schein, 1992) has formulated the concept of culture as follows: *A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.*

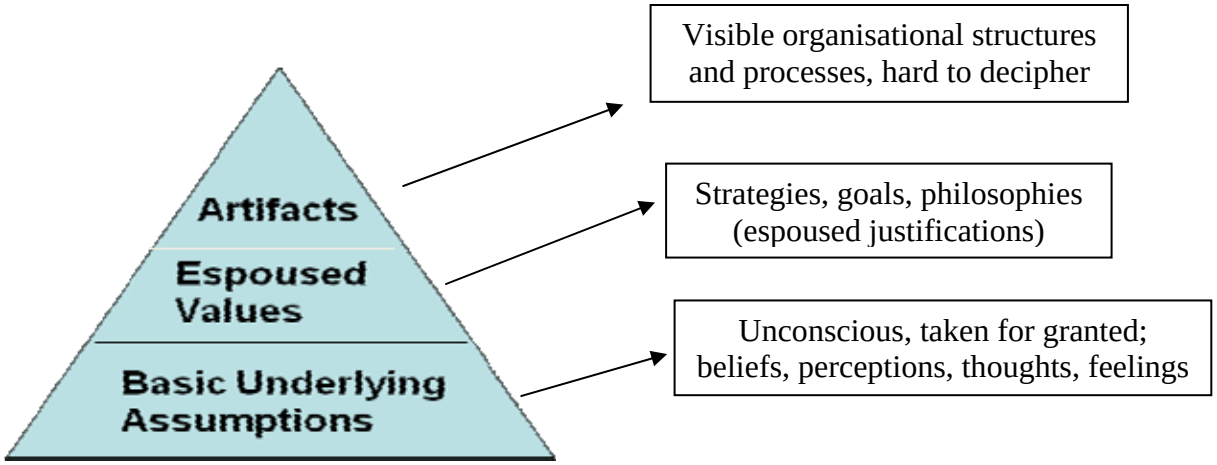


Figure 3. Levels of culture. (Schein, 1992)

The Finnish Air Force's culture model contains the following components:

Air Force artefacts

Noisy fighters, installations and flying units; uniforms and especially pilot uniforms that represent strong symbolism and team spirit, Air Force -like military behaviour, rank insignia, emblems, respect of traditions; lack of a common identity among service members in technical career fields and among non-uniformed personnel; respect of veterans, casualties and fighter aces; heritage days, anniversaries, heroic tales - albeit to a lesser extent than in earlier years; “full speed ahead” attitude.

Air Force’s espoused values

Experts are appreciated and they can influence decision making; controlled risk management in military aviation; flat management culture, informal behaviour; mission, vision and strategies, Air Force concept, rules of procedures; management by results; military orders; flight training; low occurrence reporting threshold, non-punitive approach towards incidents; emphasis on performance, internally motivated workforce that needs resources and opportunities, awarding of individuals instead of groups - although an award to an individual is considered an award to the entire group; avoidance of ranking between Air Force units.

Air Force’s basic underlying assumptions

Trust in others, appreciation of others; mechanistic paradigm behind doing things, appreciation of an analytical approach and organising abilities, continuous development of processes in all branches; perception of flight safety in all that is done; patriotism; openness for benchmarking to foreign organisations such as other air forces and aviation industry; self-direction as a reflection of the Finnish national culture, fear of hierarchy, independent initiatives; performance based assessment, widespread acceptance of the service motto “qualitas potentia nostra” - “in quality is our strength” - as a common value.

Air Force strategies

Strategies are public documents that guide the Air Force towards its vision. Strategies have owners in Air Force Command Deputy Chiefs of Staff who take into account the contents of each relevant strategy in their plans. The realisation of strategies is accompanied by a measuring system to produce data of strategies for the high echelons of command. The term “strategy” in conjunction with a military organisation has occasionally created confusion, and therefore a better term such as “critical success factors” could be used. The names of the strategies I am going to list next is only a list of names, and the respective contents are available for all Air Force members in the service’s intranet.

- Strategy of personnel and development of know-how
- Strategy of social responsibility and good reputation
- Strategy of co-operation and partnership
- Strategy of work community development
- Strategy of state-of-the-art technology
- Strategy of air defence intensive training
- Strategy of management and overall development

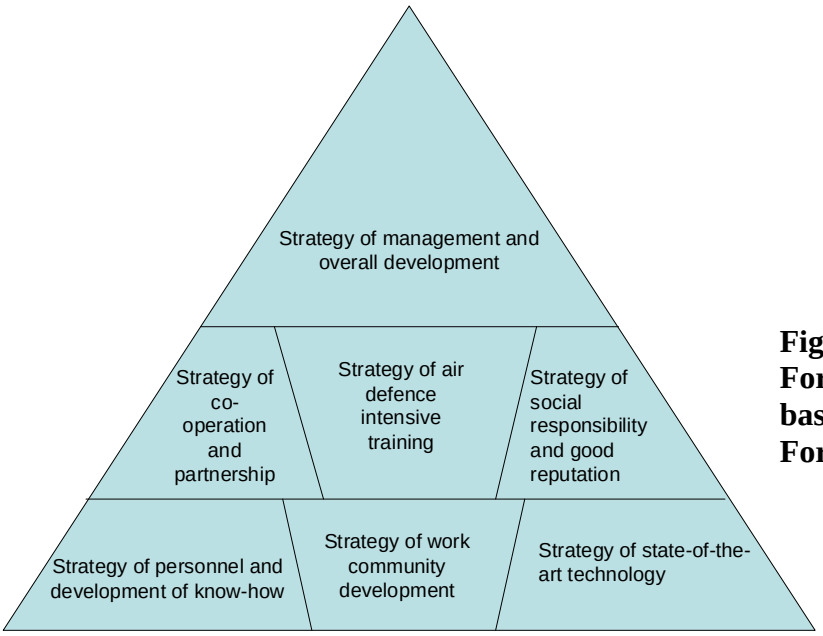


Figure 4. Triangle model of Air Force strategies that form a solid basis for all activities in the Air Force.

Other dimensions of FINNSTAR model

The other dimensions, or the “points of the star”, in the FINNSTAR model are continuous improvement, flight safety actions, personal quality, the Military Aviation Authority and quality assurance. These ”points” have specific functions in any development process and they are inseparably interlinked. In the centre of the star, there is an organisation culture that defines the ways of doing things, while the other dimensions, or the “points”, represent tools and procedures.

One of the dimensions is *quality assurance*. It is important for the management of materials. Quality in the Air Force’s maintenance organisations is ensured by complying with the requirements of the Military Aviation Authority, which also subjects maintenance organisations to regular audits. Suppliers are also audited, and they have to meet ISO 9000 and AQAP requirements. In quality assurance of foreign military suppliers, we use Government Quality Assurance agreements.

The continuous improvement of *flight safety* is a key to Air Force success because it has a bearing on the society’s conception of the Air Force. Also, media is always keenly interested in flight safety matters. Linchpin to the improvement of flight safety is a low reporting threshold. Pilots and technicians make approximately 5,500 reports every year of occurrences they encounter during flight operations and aircraft maintenance. Occurrences are encoded and analysed for further processing. The large number of reports per hours flown shows that the Finnish Air Force has the best reporting system in military aviation worldwide. Reports are particularly important for development work since covering mistakes and errors does not develop anything.

The Air Force’s flight safety organisation maintains an annually updated TOP 10 list of concerns. The items included in this list are implemented in every flying unit’s flight safety programme. The flight safety organisation is networked with other air forces so they all can learn from each other in annual meetings and can change statistics regularly.

The mission of flight safety work is to stabilise military flying to prevent mishaps. The flight safety organisation uses the reporting system to identify any human or technical factors -related warning signals in order to pinpoint potential risks before they become hazardous.

An essential paradigm that appears throughout the Air Force is the service's strive to *continuously develop* its activities. Development work undertaken in the functional areas of flight operations, aircraft and weapon systems and personnel administration stabilises processes in new situations such as during the service introduction of a new fighter fleet. The increase of knowledge and capabilities also improves the efficiency of processes due to the better utilisation of resources. As an example, a larger number of qualified student pilots can be trained for the same amount of flight hours.

Development work in the Air Force also includes also benchmarking to foreign organisations. The yields of benchmarking are then used to create innovations within the service. Using written materials and visits, we have done benchmarking in quality philosophies with the following quality programmes and organisations:

- Quality Air Force (USAF)
- TQL (Total Quality Leadership, US Navy)
- IAF (Israeli Air Force, Quality Standard 2002)
- FMQ modellen (Swedish Defence Forces)

Other benchmarking examples are:

- international flight exercises and related lessons learned procedures
- assigning an Air Force pilot to a 3-year tour with NFTC - Nato Flight Training in Canada - first as student and then as instructor
- sending one or two students every year to attend the US Navy's Aviation Safety Officer courses
- sending staff of the Air Force's Flight Test Centre to the following test flight schools: EPNER (École du Personnel Navigant d'Essais et de Réception) in France, USNTPS (United States Naval Test Pilot School) and ETPS (Empire Test Pilots' School). The duration of training is typically one year.
- Sending the Air Force's Chief Flight Surgeon to a US Navy aeromedical course on a 6-month tour.

A novel innovation in the Finnish Air Force after benchmark is an integrated training system for advanced jet training in the service's Training Air Wing, Other innovations that are not results of benchmarking include data fusion for multi sensor tracking and extensive research on airframe fatigue in cooperation with partners such as universities, industry and research institutes. This cooperation has resulted in a full membership in the International Committee on Aeronautical Fatigue, ICAF.

The objective of the *Military Aviation Authority* is to assure safe operations by stabilising processes so that given minimum requirements are met.

I elaborate the dimension of *personal quality* in some depth here because this dimension is usually ignored in conjunction with quality management. Personal quality gives understanding and holistic view to Total Quality Management. An individual understands background phenomena and the meaning of culture. He or she also realises the difference between human beings and knows how to use this to an organisation's benefit.

The need to include personal quality in TQM became apparent 15 years ago when we tried to define what is behind achieving quality. Both organisation culture and personal quality belong to the so-called "soft side" of quality. One particular phrase has stuck in my head: "Good quality can be

made with different methods and systems as long as desire and will exist." A good source for anyone who wishes to study the topic is Claus Möller's book *Personal Quality* (Möller, 1988).

Essential factors in personal quality, or PQ in short, are cognitive thinking - which I will elaborate here -, temperament and emotional intelligence.

We can look into the concept of PQ by examining the cognitive thinking of two personnel groups: officer pilots and engineers. These are the most important enablers in the Air Force. Officers in the advanced stages of their career occupy leadership positions in the service, while engineering officers hold respective positions in the Materiel Command and work as experts in other service units.

We are interested in different personality types here. The Myers-Briggs Type Indicator is a well-known tool for putting personalities in 16 different categories with different cognitive styles. A cognitive style in turn influences an individual's thinking and decision-making.

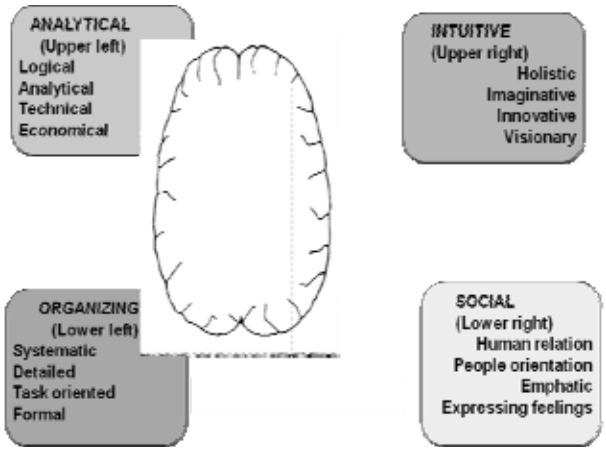
The Finnish Air Force has used a method developed by Professor Jukka Alava from the University of Jyväskylä, (Alava, 1996, 2011) to find out different individual cognitive styles and the cognitive map of reference personnel groups. Each cognitive style has 4 dimensions as shown in Figure 5. A cognitive style is a general way to process information, but is also a learning style and decision-making style.

The dimensions of cognitive styles are:

- analytical style (Ana)
- inclination to organise (Org)
- intensity of social life and human relations (Soc)
- intuitive and innovative mind (Int)

Managers choose information that is compatible with their own style to process information. Decision style was a significant factor when managers made decisions based on exactly identical information. It is also a key factor in interpreting strategic choices and risks involved**.**

Connection with the brain dominance theory: left brain lobe (Ana+Org) and right brain lobe (Soc+Int).



ANALYTICAL: "Critical analysis", "Key point", "Relevance"
ORGANISER: "By the book", "Law and order"
SOCIAL: "Personal growth", "Human relations", "Participation"
INTUITIVE: "Innovation", "Big picture", "Leading edge"

Figure 5. Cognitive styles. (Alava, 1996, 2011)

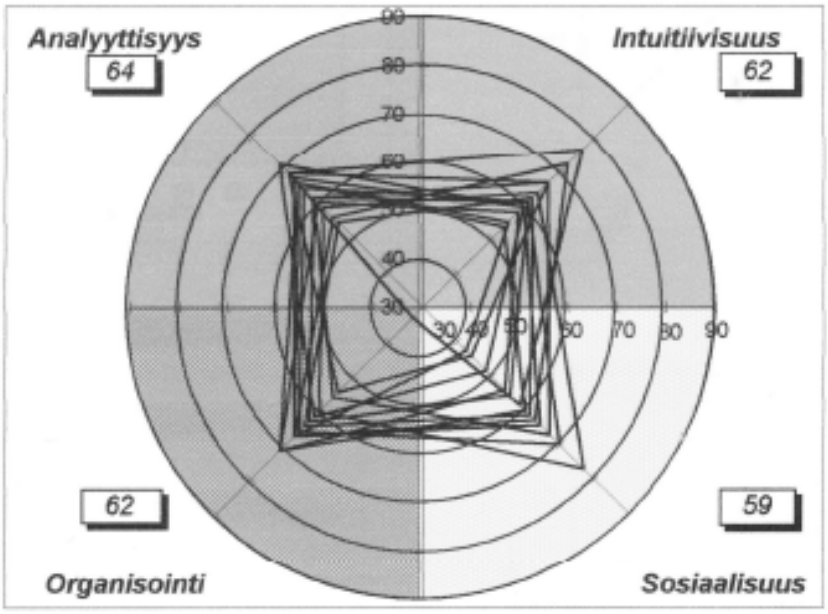


Figure 6. Cognitive map of one management team in one Finnish Air Force Air Command

A survey among the Air Force's key personnel found that the cognitive styles of officer pilots and engineers were directed to the left side of the brain, which is the analytical and organising side. This is not surprising. We have to remember that the Air Force has achieved much success stemming from these two cognitive styles. However, in a changing situation, we need innovations so the right upper lobe will become important. To lead an organisation during a period of change requires intuitiveness and creativity. The intensity of social life and human relations, which are governed by the lower right lobe, is important when commitment is desired. As a special case, it came up that the social dimension of officer pilots showed a wide dispersion indicating the presence of some very social individuals. This dispersion was clearly wider than that observed among engineers. Otherwise, engineers are grouped on the left side lobe.

Management teams should consist of people with different cognitive styles in order to arrive at optimum solutions through dialogue. Upper management should show a balanced cognitive chart regarding the four dimensions and should have a sufficiently ample social dimension. That is because they have to relate to other people.

Jukka Alava lists (Alava, 2011) the following findings related to team dynamics:

- strong inclination to innovation, that is, right brain dominance, is the only effective way to deal with a change
- heterogeneous groups are effective and produce more creative and innovative solutions than homogeneous groups
- when an organisation matures, left brain thinking becomes dominant if no leadership action is taken to cultivate right brain thinking.

Personal quality also involves *statistical thinking*. The purpose statistical thinking is to understand the meanings of mean values and deviations when calculating mathematical performances. In our strive for the stabilisation of processes we also have to remove from outcomes variations that occur due to special causes. A process produces performance, and the outcome of a process always includes deviations. The goal of a process is always a stabilised condition, and performance needs

to be defined by determining the relationship of a natural deviation to given requirements. A key issue here is customer requirements, the so-called customer's voice, against which the outcome of a process is compared. As noted earlier, customer requirements are a complicated matter in the Air Force and they create difficulties in the definition of performance.

Finnish Air Force activities in relation to HPO criteria

Innotiimi and de Vaal's HPO criteria have lots in common. The same subjects can be found in them, expressed only with a little bit different wordings. I consider Innotiimi's criteria slightly wider, but on the other hand, its scientific base is weaker, and no reference is made to sources or research work. De Waal has utilised reference material and own research extensively in formulating his HPO criteria. He brings up the case of public organisations and states that they show worse HPO criteria than excellent private organisations. The average HPO score for public organisations worldwide is 6.0. Excellent organisations achieve on average HPO scores of 8.5 or higher on a 0 to 10 scale, which is an average value for de Vaal's five criteria (De Waal, 2010). De Waal maintains that public organisations should concentrate on area Quality of Management. In quality prize competitions, the best private organisations scores 750 to 800 while the scores of public organisations range between 550 and 600. This confirms the existence of a gap between these two types of organisations.

We stated earlier that the Finnish Air Force is not a typical public organisation, mainly due to customer relations related matters. The following table shows the service's strong areas and areas where development work is needed in relation to combined Innotiimi and de Vaal's HPO criteria. An Air Force response can be found in the FINNSTAR model and in the Finnish Air Force's organisation culture.

HPO characteristics (Innotiimi and de Waal combined)	Occurrences in Air Force; strengths and weakness
Human image, organisation, performance	Self-directive, organisation learns continuously without being aware of it; performance oriented but performance not specified on all strategy areas; regarded as efficient organisation by society due to abundance of resources; holistic view missing; on the positive side, cause-and-effect thinking dominates; has positive impact on society and uses resources effectively and efficiently.
1. Visionary leadership and quality of management	Excellence is unfamiliar concept although despite use of EFQM criteria that has continued for some time, branches strive for excellence without using this phrase; low hierarchy helps reach management, confidence to other workers on every level of organisation; visionary leadership missing, well known strategies do not exist and management is starting to use them, fear that strategies do not get response in Defence Forces; good physical condition valued.

HPO characteristics (Innotiimi and de Waal combined)	Occurrences in Air Force; strengths and weakness
2. Inspiring empowerment, openness	Privilege to self-direction, individuals awarded instead of teams; best reporting system looking for weak signals, non-punitive approach, safety orientation creates communal spirit, flight safety is common concern.
3. Unique competences and capabilities	Outstanding core competences (flight training, defensive counter air, airspace surveillance); successful recruiting, continuous training; tacit knowledge change in knowledge holder groups, no exact method to transfer tacit knowledge from experts to successors.
4. Long-term commitment and collaboration	Close networks with interest groups in society, good media relations with commander's annual press conference; long-term agreements with strategic partners; safe and secure workplace with no lay-offs.
5. Innovation, learning, continuous improvement	Workers motivated to lifelong studying; excellent results from benchmarking to foreign organisations, constant training for performance improvement, internal will to develop activities everywhere in organisation; strong occupational groups (officer pilots and engineers) do not accept ideas from outside their peer groups ("not invented here" principle); successful anticipation of interest groups' needs based on innovations (in flight training, Hawk purchase Hawk from Switzerland, international exercises, passing of TACEVAL, multi sensor tracking), innovations and development are very dependent on suitable and willing individuals (organisation is not innovating or developing, but individuals are).
6. Efficient and effective systems	Products and services (aircraft utilisation, flight hours per number of aircraft, total amount of personnel) produced efficiently; difficulty in measuring value for customer; functional organisation structures hamper process thinking, advantages of process thinking not realised.

Conclusion and discussion

In the foregoing I compared the Finnish Air Force and activities it undertakes against two HPO models found in literature and research papers. All HPO characteristics can be found in the Air Force's activities. The FINNSTAR model and the Air Force's organisation culture model describe quality management in the Air Force on a general level. In 2004, the service participated in a Finnish national quality prize competition; the service scored approximately 500 and was recognised for excellence. Leadership, personnel and partnership were identified as particularly strong areas, while weaknesses were discovered in matters related to strategies and the measurement of strategies and customer results. Since then our strategies have been reformulated

and we have also created a measurement system. Despite these efforts, measuring customer results remains a problem.

Although measuring excellence is difficult we can find elements of excellence in Air Force activities. These elements are very similar to HPO criteria and include, among others, willingness within all branches to achieve continuous development, communal spirit stemming from flight safety oriented attitudes, a flat organisation, extensive benchmarking to foreign partners, own innovations, low reporting threshold combined with non-punitive approach towards human errors, motivation to life-long studying, and good and wide relations with the society and media.

We can also point out weaknesses, however. Visionary and holistic views are missing, development depends too much on the finding of right persons to appropriate positions, inadequate consideration given to individuals' cognitive thinking compared to their jobs, and the tendency of a strong expert-driven organisation to find in-house solutions, that is, the "not invented here" dilemma.

Figures 7a and 7b give some evidence about the excellence of the performance of the Finnish Air Force.

Figure 7a. EFQM awards and front page of TACEVAL report.

Figure 7b. Air Tattoo awards for Finnish Air Force pilots and Lloyd's certificate for jet training.

It is significant that the recognitions shown are for two different levels of the Air Force's organisation: EFQM excellence in 2004 is for the entire service, whereas the respective 2006 excellence is for one Air Command, The TACEVAL report was based on the performance of the Air Force's expeditionary unit. Finnish Air Force pilots have thrice been awarded for their skilful display flying in the Royal International Air Tattoo. The Lloyd's certificate was awarded to a training unit. All certificates were given by outside assessors.

These documents manifest the Finnish Air Force's impact on the society and Finnish people - who finance the service.

We could mull over the question whether the Finnish Air Force could further improve its excellence using the FINNSTAR model. However, this model provides us with tool for stabilising processes during a period of change. The advent of new equipment and the continuous learning process of personnel will almost automatically result in better performance.

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