A Study on Current Features of Discipline Systems in Aircraft Maintenance Organizations in Turkey And Possible Effects of These Features on Just Culture

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Extensive Summary

1. Introduction

There has been a radical change in aviation safety management. The new safety management approach sets out not only to detect root causes of errors and violations in the organization as well as organizational flaws but also to develop measures in order not to experience such errors, violations and flaws in the future. To achieve this, there is a need for qualified data on safety. Employees need motivation to report voluntarily so that organizations gather reliable data on safety.

The literature refers to the following problem with regard to the functioning of a discipline system: On the one hand, employees are expected to report any hazards and actions that potentially compromise safety in the organization. Organizations need to motivate and encourage employees to report, and abstain from punishing those involved in such hazardous incidents and actions. However, on the other hand, there is a need to resort to punishment in order to prevent any losses deriving from intentional or unintentional violations (Barach and Small, 2000: 759-760; Amalberti et al., 2006: i66-i68; Beyea, 2004: 413-414; Boysen, 2013:400). The research question in this study is based the above-explained problem regarding the use of discipline systems: In aircraft maintenance organizations, how should organization management respond to unsafe actions that emerge during their operations, using the the discipline system, so that safety is not compromised? How should they respond to ensure that values, beliefs and attitudes that foster safety continue to develop? What underlies this discussion is the area that covers management's authority and power of punishment arising from laws. The management response to violations and errors of technicians charged with maintenance operations are determined in this area. The relationship between discipline and safety culture is also defined in this area. The literature suggests that such relationship corresponds to the concept of "just culture". This concept introduced by Reason (1997: 195-220) is defined as a component of "safety culture".

2. Methodology

The aim of this study is to identify possible effects of current features of discipline systems on just culture – a significant component of safety culture – in aircraft maintenance organizations in Turkey. To achieve this aim, the study first goes through the characteristics of existing discipline systems in maintenance organizations, how this system is launched, how the system functions, how the actions that are covered by the system are determined, which disciplinary procedures are followed when an unsafe action is detected, how disciplinary procedures and their outcomes are evaluated, how the discipline system is taught to employees, and how the functioning of discipline system is questioned. The study then discusses the effects of these factors on just culture.

Qualitative methods were used for data collection and analysis in this study. The qualitative data were collected through semi-structured interviews. The participants were selected through purposive sampling from amongst candidates that have thorough knowledge and expertise of discipline systems and safety management. For this purpose, the participants were selected from the departments of human resources and safety management system. Interviews were conducted with participants employed in seven large aircraft maintenance organizations. The participants were first asked to express their general ideas on discipline systems. The participants were then required to answer the questions developed and tested in a pilot study by the researchers to examine "the present situation of the discipline system". Content analysis and inductive thematic analysis were conducted to analyze the transcribed interview records.

3. Findings

The findings based on inductive analysis of qualitative data collected from semi-structured interviews reveal the current situation of discipline systems in aircraft maintenance organizations in Turkey. The data are discussed below with regard to their effect on "just culture".

All managers in aircraft maintenance organizations tend to define and consider the concept of discipline together with safety. When replying to the question what discipline is, they associate discipline with safety management. Three themes were extracted from the codes obtained as a result of the analysis of replies to this question. The codes brought together under the first category due to their common characteristics are administrative accountability, quality and human resources. The common aspect of these codes is that they define discipline as an administrative accountability. These codes direct the researchers to the first theme, i.e. the first function of a discipline system: "supporting major management activities". The participants associate the administrative accountability in discipline systems with regulations related to complex operations in aircraft maintenance, quality standards, rules that must be followed strictly, detailed procedures regarding maintenance operations, awareness raising for the fulfillment of technical requirements, and compliance.

The second group of codes, forging a link between organizational behaviors and safety management, is located – as expected – at the core of disciplinary system function: occupational standards, regulations, prevention of errors, and sustainability of operations. The codes that fall under the second category are related with the theme that a discipline system has the function of "supporting safety management".

The third group of codes are concerned with concepts that are associated with organizational culture. These are honesty, responsibility of employees, pressure on

employees, loving one's work, professional ethics, professional (individual) accountability, open communication, and disclosure of unsafe actions. The codes in the third category lead to the third team, namely the fact that a discipline system has the function of "ensuring transformation in the organizational culture". Thus, the participants believe that a discipline system affects organizational transformation to launch a positive safety culture.

Two themes were obtained as a result of the thematic analysis of the participants' replies to the question how the discipline system enhances safety in their organization.

The first group of codes indicate that the discipline system contributes to the enhancement of safety by ensuring compliance with technical requirements. When defining discipline in their organizations, the participants tend to emphasize "technical standards". The participants' remarks show that they regard compliance with standards as the implementation of rules regarding both profession and safety. All participants except one believe that technicians fulfill their responsibility, maintenance operations are carried out properly and thus safety is ensured, when technicians comply with professional standards.

The participants further contend that safety management and human resources managers must work in cooperation to support the enhancement of safety. In order to ensure proper functioning of discipline systems, compliance with rules must be one of the major factors considered in personnel recruitment for aircraft maintenance purposes. The participants pointed to the need for HRM support particularly in trainings regarding disciplinary rules and compliance with rules.

3.1. Relationship between the Discipline System and Employees' Perception of Just Culture

The participants' replies and comments regarding the causes and organizational function of disciplinary rules indicate that there is a relationship between the discipline system and just culture in an organization.

The participants made comments about how the existence of a discipline system affects employees' perception of justice. They contend that the purpose of a discipline system is basically to secure the justice. The participants see disciplinary procedures as an instrument for ensuring justice and equality and building trust in management. The participants further argue that disciplinary rules support the conduct of maintenance operations in accordance with pre-specified rules and standards. This effect of disciplinary procedures on the profession undoubtedly contributes to the improvement of quality in maintenance operations. If it had not been for disciplinary rules, operations would not function properly. The participants also believe that the existence of a discipline system serves as a sort of guarantee of employee rights.

3.2. Why Do Disciplinary Rules Exist?

In the interviews, the participants were asked why disciplinary rules existed and whether it was possible to establish discipline without rules. The replies provide insight into why disciplinary rules to exist. All participants agree that there is a need for disciplinary rules and punishment. They argue that it is not possible to prevent unsafe actions deriving from human errors and violations without disciplinary rules. Three participants, additionally, underline that the national culture in Turkey necessitates disciplinary procedures.

Employees are required to work according to their job description and to fulfill their responsibilities completely and appropriately pursuant to the terms of reference. The participants see the discipline system as an instrument to achieve these goals. Moreover, they argue that employees' expectations must be aligned with organizational expectations, and that employees must perform their job believing in the necessity of duties they fulfill. These are required to ensure that employee performance satisfies organizational expectations.

Some participants further hold that the discipline system is an instrument for enhancing safety in conducting operations, and that disciplinary procedures ensure compliance with safety rules and are likely to prevent human errors and violations. In this respect, they argue that, depending on how it is used, the discipline system may play an effective role in increasing reporting (in a way to ensure the investigation of root causes of errors) and launching the just culture. These findings indicate that one of the reasons for the existence of disciplinary rules is "enhancing safety".

The participants believe that another reason for the implementation of discipline systems is "ensuring justice". Depending on how it is used, a discipline system may ensure justice and equality in managerial procedures and foster a just culture on the one hand, but may lead to arbitrary treatment and pressure on employees on the other hand. As shown by findings, seen as an instrument for ensuring justice, a discipline system is also likely to compromise justice.

In sum, there are four factors that explain the existence of disciplinary rules with regard to safety. Thus, the relationship between "just culture" and "discipline system" is based on these four factors, i.e. ensuring that employee performance fulfills organizational expectations, enhancing safety, protecting employee rights, and its effects on just culture.

3.3. Specifying Disciplinary Rules

Among the organizations studied in this research, only one organization has written disciplinary regulations and another one has a Code of Professional Ethics. The others do not have written rules or regulations regarding discipline. In the only organization that has written regulations, the disciplinary rules and procedures were specified by the executive board under the supervision of HRM department, based on the safety legislation. In half of the organizations that do not have written disciplinary regulations, the Maintenance Error Decision Aid (MEDA) is used to correct deficiencies. In this case as well, safety rules are taken into consideration given that MEDA is a tool that distinguishes between errors and violations and provides guidelines for finding root causes, helping users to draw lessons from errors and violations that lead to unsafe events and to manage errors and violations. Supporting the literature, the findings of this study suggest that written disciplinary rules and procedures have not been used extensively, and that a discipline system that fosters safety culture is needed in aircraft maintenance organizations.

3.4. Detecting Violation of Rules

All participants mention that obligatory and voluntary reporting has been encouraged in their organization. Furthermore, the organizations make an administrative commitment to not imposing punishment when an employee reports voluntarily. Despite this commitment, there are some factors that hinder voluntary reporting of error violations. The participants argue that one of these factors is employees' personal traits. Another factor is the lack of practices that provide evidence to the support of senior

management. The findings show that voluntary reporting is weak in organizations because of "the lack of practices that make senior management's support visible". It is observed that managers prefer blaming and punishing employees rather than taking responsibility to solve communication and trust issues in the organization.

3.5. Punishing Unsafe Actions

The researchers asked the interviewees how disciplinary action is taken in their organization, with a view to finding out which points are considered in imposing punishment and the motives behind a punishment. The researchers sought to define how disciplinary procedures are followed before a punishment decision is made and who takes part in the decision-making process.

The findings show that all organizations enable employees to use their right to written and oral defense before making a decision on punishment. There are three tools that help with deciding on the punishment when a rule is violated. One of these tools is the MEDA system, which distinguishes between and categorizes violations and errors as well as advise the management on the action to be taken in case of any error or violation. The second one is a customized software integrated into the management information system, which is developed to discover root causes of errors. The third one is a manual system based on the reporting of technicians and their managers. These tools are used to determine the punishment for an unsafe action. The first two tools are designed to classify actions. Five organizations report that they exacerbate the punishment when the action is repeated.

The findings suggest that the following punishments are imposed in the organizations (there is a clear reference to the name of punishment in most of the organizations): warning, assigning to a lower position, disqualifying (depriving of the authority to audit or endorse), financial punishment (cutting off compensation pay or imposing a fine), and dismissal. Although different processes are followed in each organization before a punishment decision is made, the main purpose of disciplinary procedures is to investigate the organizational cause of an action or event.

In the organizations, the disciplinary board gathers when the damage during maintenance is severe or a serious incident that derives from maintenance and jeopardizes flight safety occurs. The disciplinary board investigates the incident to make a decision about punishment. Generally, the conditions that require the gathering of disciplinary board are not clearly defined. The board members come together depending on the nature of an accident or incident or on the severity of its consequences. A disciplinary board is made up of senior and mid-level managers. Different organizations adopt different approaches to the composition of disciplinary board. It was observed that the disciplinary board is generally composed of managers from the departments of maintenance, quality, engineering, training and planning.

Based on the analysis of what the participants told about the disciplinary process, the researchers came to conclusions regarding the points that managers consider when making a punishment decision. The following motives incite managers to impose punishment: preventing the violation of rules, developing measures that need to be taken in the organization, and ensuring fair decision making about punishments.

3.6. Informing Employees about the Discipline System

The researchers also focused on how organizations informed employees about the discipline system. The participants were asked to provide information about training

programs for employees and to evaluate to which extent information-providing process is successful. The findings show that, in five organizations, orientation programs aim to "inform employees about the functioning of disciplinary procedures". One organization delivers specific training on human factors and safety management systems under which disciplinary procedures are also explained. In various organizations, disciplinary procedures are covered under technical training, on-the-job training, training on occupational health and safety, training on legislation, and ethics training. Additionally, refresher training also addresses to disciplinary procedures in five organizations.

4. Discussion And Interpretation: The Current Discipline Systems

In this study, conclusions about three areas are derived from the analysis of the participants' viewpoints related to discipline systems used in aircraft maintenance organizations. First, there are conclusions regarding the relationship between the functions of discipline systems and safety. Second, the study leads to conclusions about the relationship between the concepts of discipline and justice. Third, the study provides a closer look at the types and approaches to discipline systems. All in all, the results suggest that discipline systems exist for the safe conduct of aircraft maintenance operations. The relationship between discipline and safety focuses on ensuring organizational learning in order to enhance safety. The participants tend to define this relationship on the basis of justice, trust, open communication, employee rights and standards, and to see the discipline system as an instrument for the prevention of human-driven unsafe acts.

This study has shown that there are two types of approaches to discipline systems in maintenance organizations. "Preventive" discipline has been adopted in all organizations studied in this research. Thus, the participants establish a close link between safety and discipline. They referred to safety when replying to almost all questions about the functioning of disciplinary system. These replies suggest that managers seek solutions regarding the implementation of disciplinary rules to prevent errors and accidents. Another rationale for the close link between disciplinary rules and safety is tools such as MEDA. In addition to "preventive" discipline, the organizations tend to implement "punitive" discipline. Different types of punishment have been used as a tool in different organizations as a result of the "punitive" approach to discipline.

The results indicate that a discipline system is used to prevent both errors and violations that lead to unsafe acts, and that organizations tend to resort to punishment when unsafe acts cannot be prevented. Furthermore, it is seen that punishment is used as a deterrence and pressure tool despite the fact that senior and mid-level managers receive training on human factor and safety management system, and are informed that errors are unavoidable. The civil aviation authority uses punishment directly for some violations of rule. Although the participants associate discipline with safety when defining or making comments about the discipline system, it is observed that discipline practices are not aligned with fundamental requirements of safety management.

Discipline systems do not support positive safety culture as much as it is suggested in the literature. It is harder for organizations themselves to evaluate and prevent employee actions and behaviors that compromise safety, given that the aviation authority's punishments are directed to employees and that organizational mechanism is disregarded in this process. To promote positive just culture, the distinction between errors and violations must depend on a comprehensive evaluation of real-life conditions in a given organization. More favorable results may be obtained if organizational

mechanisms are held responsible for discovering organizational flaws that lead to violations and if the authority directs its attention to organizations rather than employees. For, aircraft maintenance organizations have developed various mechanisms and strive vigorously to prevent violations and errors.

Furthermore, it is observed that "assured blame-free reporting", considered a must in the literature for the fostering of positive just culture and also stipulated in SHT-OLAY (Directive on Reporting Safety Incidents in Civil Aviation), seems to remain on paper. In such a case, it does not seem possible to build trust within an organization and to contribute to the fostering of positive safety culture and just culture – a component of safety culture – through reporting.

It is found out that organizations try to be fair in making decisions regarding punishment and to develop preventive measures for individuals and the organization. However, in order to call these attempts as "a well-functioning preventive discipline system", there is a need to make disciplinary procedures available in written form and align them with procedures developed to promote the safety culture.

The last and the most important point regarding the development of positive just culture is that "organization management needs to be more willing to take responsibility for consequences of events". As emphasized by Dekker (2009), there is a need to put organizational learning by drawing lessons from incidents on one scale of the balance and investigating the causes of incidents and sharing the accountability on the other scale. The participants agree that such a mechanism functions only when disciplinary procedures are available in written form and adopted by employees.

5. Conclusion

In the light of research findings, it is possible to conclude that there is a need to develop a discipline system that supports a positive safety culture and – one of its components – a just culture under current conditions. In order to meet this need, we must first assess comprehensively positive and negative consequences of current disciplinary procedures in consideration of the just culture, and then make recommendations.

This study conducted with maintenance, human resources, quality and safety managers has revealed that *the discipline system plays a vital role in ensuring safety and hence the sustainability of aircraft maintenance organizations. A just culture must be built in organizations* to support disciplinary procedures. In order to ensure justice in the disciplinary system, which is a guarantee of employee rights, there is a need to distinguish unavoidable human errors from intentional and illegal acts that compromise safety. This is possible through balancing between shared accountability in the organization and communication that renders organizational learning possible. The current understanding of positive just culture requires employees and organizations to confront their errors honestly and fearlessly and to promote forward-looking continuous learning. To achieve this, there is a need to put an end to fear of punishment. The only way of doing this is to launch a discipline system that promotes the positive safety culture and – one of its components – the just culture.