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Exploring the line between the preventive and punitive character of measures in the frame of a just culture

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ABSTRACT
This paper presents the results of a survey which aimed at exploring the perceptions of the employees of a large aviation organization regarding the punitive or preventive character of possible measures that management could take in cases of errors and violations. The analysis of the quantitative and qualitative data collected showed that the viewpoints of the staff were sufficiently aligned only for half of the measures and that all measures inflicting a short- or long-term dissociation of the end-users from their current working place and function were highly unfavourable and linked to castigation. Also, statistically significant differences were observed across groups of specialties and years of service regarding the appropriateness of specific measures especially in the case of errors. The findings of this study in combination with literature references, suggest that the establishment of a just culture structure with agreed lines between the punitive and preventive character of measures and its endorsement by the employees is achievable, but it requires a bottom-up approach and periodical revision. Similar exploratory research, complemented possibly by explanatory studies, is recommended to be carried out by organizations prior or during the development of their just culture policy and related measures.

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KEYWORDS
Just culture; prevention; retribution; safety management

Introduction
The concept of safety culture within organizations has been for long debated in terms of definition and measurement (Halea, Guldenmund, van Loenhout, & Oh, 2010), although in practice and according to industry standards is recognized as an indispensable component of safety management (ICAO, 2013; EASA, 2015; Piers, Montijn, & Balk, 2009). Especially just culture has been seen as the upmost and first pre-requisite in the path of achieving the desired level of a safety culture (Karanikas, Soltani, de Boer, & Roelen, 2016), followed by the rest of the safety sub-cultures suggested by Reason (1998), namely, the flexible, reporting, informative and learning cultures. Mathis (2012) acknowledged that the introduction of the safety culture concept in organizations has placed terms such as empowerment, strengthening and involvement in the daily vocabulary, but the role of retribution should not be eliminated, but to be used under clearly defined guidelines. It is important to determine whether a person’s behaviour was an exceptional case or a reflection of the broader organizational culture.

Just culture has been traditionally linked with the responses of an organization towards individuals or groups who were involved in a safety event. Byrne (2012) stated that a just culture policy is mainly
activated in the case of an accident with serious consequences or potential for such and aims at investigating whether the staff that contributed to the unsafe situation demonstrated delinquent behaviour or intentional violation of rules. However, the actual outcome of an incident is not representative of the end-user’s honest attempts to reverse or, at least, control the situation (Karanikas, 2015). As Dekker (2016) observed, the higher the negative consequences of the event, the more justness is jeopardized and the higher the chances become for retribution due to a biased approach towards human error. The aforementioned author has discussed various factors influencing perceptions around human error, the latter to be viewed as a symptom of conditions before and during an event, and not as a cause of a (serious) incident or accident (Dekker, 2006), the former perspective providing the opportunity for increased depth and quality of inquiries and fairness.

Salas and Maurino (2010) argued that just culture reflects an environment where, on one hand, unintentional errors and mistakes are accepted by management but on the other hand, deliberate breaches of rules might incur punitive actions. Byrne (2012) pointed out that all employees have been in a situation where they had to hide their mistakes as they believed that if they had reported them they would be punished. Hence, both a confidence in the fairness of managers and honesty of employees must be in place to build an environment where staff feel safe and speak. Moreover, Ingalls (2002) noted that the harsher the punishment the lower the trust levels fall; blaming is the most convenient solution but it suppresses the will to report everyday incidents. Ingalls (2002) also recognized that although discipline can be used as a tool to preserve high production, progressive discipline as a countermeasure has only short-term effects. Managers shall direct their staff towards acceptable performance, investigate causes of negative eventualities while simultaneously building up trust, and penalize employees only when risky specific behaviour is repeated.

Aligned with the aforesaid positions, Sanderford-O’Connor (2003) expressed the view that aspects of everyday workplace should be properly managed and improved prior to introducing an environment where punishment can be used as a tool to foster a respect for safety; staff must also understand that individual errors may have an impact beyond the local working environment or specific organization. According to Mathis (2012) and Dekker (2016), on one hand, misperceptions about hazards, ignorance of safety practices due to insufficient training and education, or small accepted deviations from standards which over time have become norms are few examples of individual or team-related factors that influence behaviours. On the other hand, organizational influences that can lead to unsafe behaviours include a counterproductive workplace, poor workflow design, unavailability of proper tools and poor condition of equipment. Such an environment cannot be directly controlled by employees and, therefore, punishment for actions or decisions that were forced by the aforesaid system flaws could be characterized as inappropriate and ineffective.

Within a just culture policy, Mathis (2012) argued that there are no one-size-fits-all solutions because all situations are different, especially the cases of deliberate, brutal and/or persistent unacceptable behaviours. As Mathis (2012) added, punishment shall not be used as a tool to start developing attitudes but to stop unwanted behaviours. Byrne (2012) and Dekker (2016) proposed that the final decision for attributing unacceptable behaviour to employees must be made by a representative group of managers and peers. Nevertheless, just culture, and safety culture in general, is principally demonstrated by and stems from management (Barr, 2010; Williams, 2008). Each case of violation of safety procedures should be examined in detail and thoroughly before taking any measures. Additionally, one should consider the alternative perspective Safety II offers; an end-user should be seen as a whole without neglecting his/her positive performance in order to make a judgment (Hollnagel, Wears, & Braithwaite, 2015). Moreover, seemingly fair penalties can negatively influence relationships and communication between management and employees. A lack of consistency might send the message that management is ineffective and with insufficient contact with the workplace (Mathis, 2012).

Humphreys (2014) also underlined some ‘philosophical and ethical aspects of establishing a ‘just culture’ in Aviation Safety Occurrence Reporting Systems’ (p. 2). According to international and regional standards (ICAO, 2013; EASA, 2017), aviation professionals are expected to report safety hazards and
occurrences through mandatory and voluntary confidential reporting systems. The latter offer confidentiality under the clause that no internal or external/legal punitive action will be initiated against the involved personnel or organization. Humphreys (2014) stated that the fear of being penalized or ridiculed brings a difficulty in persuading aviation professionals to report. The main cause of such hesitation, according to Humphreys (2014), is the probable use of information gathered for safety purposes in civil or criminal judicial processes; if ‘just culture’ is proved defective in the frame of an accident investigation, it is expected as such in the reporting of occurrences of lower severity.

Subsequently, in addition to the negative effects of an unjust environment on the morale of employees, the lack of a transparent and commonly agreed space of acceptable and unacceptable behaviours and an emphasis on retributive justice, instead of an organizational environment that supports restorative measures (Dekker, 2016), can adversely influence the success of safety management activities. Employees will probably become reluctant to report their errors due to the fear of unjust retribution and lack of reporting will deprive an organization from proactively managing safety; safety investigations will be less effective and will not unveil their full potential since staff will not testify their errors honestly and sincerely in order to support management in fixing poor working environment conditions (Dekker, 2016; EASA, 2015; Michaelides-Mateou & Mateou, 2010; Null, Dean, Feldman, Rasio & Smith, 2004; Quinn, 2007; UKCAA, 2014). Furthermore, the unintentional creation of Second Victims according to Dekker (2013) might not be that far in time after a safety occurrence. A second victim is a practitioner who was involved in an event that resulted in severe implications for which he/she feels personally responsible (Dekker, 2013). Visible management support and transparent implementation of well balanced just culture policy must be always in place and supported by a questioning attitude towards the legitimacy of rules (i.e. substantive justice), clear procedures of who and how will apply just culture (i.e. procedural justice) and restorative care for employees involved in accidents (i.e. restorative justice) (Dekker & Breakey, 2016).

Regardless the directions given and perspectives articulated by the literature referenced above, the challenges workforce diversity might pose while establishing a just culture within an organization has not been adequately addressed. Organizational culture, the safety culture included, has been connected with management of diversity in the working environment (De Jesus-Rivas, Conlon, & Burns, 2016; EU-OSHA, 2013; HR-Council, 2017; Williams 1999). Diversity of perspectives within an organization is expected, accepted, and valued since they contribute to enabling all members of an organization, regardless their status and traits, to uphold their maximum potential (Kreitner & Kinicki, 2001). Managing this diversity of perspectives is part of each organization’s decision-making process (Dike, 2013) as well as a foundational aspect of human resources management (Henry & Evans, 2007). As Dike (2013) noted, although an organization seeking for diversity within the working environment is expected to experience high level of productivity, effective team work, increased chances for personal growth, effective communication and beneficial diverse experience, such diversity may inflict higher production costs, delays in the resolution of communication issues, and an emergence of elite or outcast groups. Nonetheless, when it comes to the establishment of policies which might determinately affect organizational culture and performance, diversity management is of paramount in order to achieve reconciliation of different views at the maximum possible level importance (Kreitner & Kinicki, 2001).

When the literature cited above is combined, it becomes apparent that just culture policy in a mature organization should not be merely imposed by senior management, but, ideally, shaped through a bottom-up path. Although in the literature the necessity and the benefits of a well-defined just culture policy have been discussed, to date there has been no published research about the feasibility of establishing a just culture policy where (1) the diversity of workforce perspectives is considered and (2) the potential measures to be imposed after the commission of unsafe acts are commonly agreed and defined. Through a survey, this study aimed at exploring the perceptions of the employees of a large aviation organization regarding the punitive or preventive character of possible measures that management could take in cases of errors (i.e. slips, lapses and mistakes) and violations, according to the classification of Reason (1990). The ultimate objective of this research was to evaluate the degree to which a commonly accepted just culture policy could be introduced to the specific organization under its current administrative measures.
Methodology

Research design and sample

The research was performed at a military aviation organization (MAVO) operating in Europe and supporting its flights with ground handling services, first and second maintenance level capabilities, logistics and administration services; the MAVO provides also air traffic services. Safety investigations are explicitly separated from administrative ones and the MAVO has embraced the concept of a just culture, but it does not have in place a clearly defined structure for the implementation of the respective policy. Managers of all functional levels are authorized to take measures against personnel in cases of errors and violations following an administrative investigation according to which the staff that contributed to a safety event with adverse outcomes has the right to express their account. However, criteria for the suitability of possible measures are not included in any formal document. Therefore, the decision for potentially taking measures against employees by considering surrounding parameters relies on the discretion and perception of managers.

Taking into account the context described above, the current research explored the perceptions of the MAVO staff towards measures that can be imposed after a safety event. An online, voluntary and anonymous questionnaire was used to collect respective data and was administered to the MAVO staff via its internal communication network. The questionnaire included two main parts and an introductory text explaining the aim of the study and the protection of the participants’ identity. The first part regarded demographic data, namely the specialty (e.g. pilot, technician), total working experience in the particular organization and time served in MAVO management positions (e.g. head of department/office/workshop, chief pilot or engineer); years were used as units for time variables. The scope of collecting the aforementioned data was to explore whether there would be differences in the answers across staff with various job profiles and (management) experience since such parameters reflect vocational factors affecting organizational culture (ICAO, 2013; Stolzer, Halford, & Goglia, 2008). The workforce of the specific organization is homogeneous in terms of nationality and language with a 3–5% annual staff turnover; therefore, it was assumed that the cultural variability of the workforce due to the effects of the political, economic, geographic, physical and social environments (ICAO, 2004) was not significant.

In the second part of the questionnaire, the MAVO employees were given a generic statement along with possible measures and were asked to: (1) choose whether each of the measures is preventive (i.e. aiming at avoiding future safety events without a strong focus on individual behaviour) or punitive (i.e. aiming at changing individual attitudes and performance) in the cases of error or violation separately, (2) add any comment for each of the measures listed in the questionnaire and (3) suggest any other measure that could be appropriate for the case given. The second part of the questionnaire can be found in the Appendix, properly reformatted for the scope of this paper. It is clarified that:

- The definitions of errors and violations are provided in the respective MAVO safety investigations directive, and they were copied in the introductory text of the original questionnaire. According to this directive, the distinction between errors and violations lies on the unintentional or intentional characters of the action(s) respectively, this to be determined during the investigation. The difference between exceptional and routine violations according to the work of Reason (1990) is also described in the directive and embedded in safety and human factors training.
- A generic statement was used in order to avoid referring to a detailed scenario that the various participants could understand differently based on their specialty.
- The requirement that the respondents should not consider the contribution of other factors into the event aimed at collecting comparable data for the analysis. There are numerous latent conditions and combinations of those that can affect an event; therefore, on one hand, the consideration of all possible such factors was unrealistic, and on the other hand, the selection of indicative latent conditions would...
have led to increasingly biased responses due to different perceptions of significance of each contributing factor.

- The list of measures was derived from the Administration Directive of the organization. No reference to measures was included in the safety related documentation of the specific organization.

In total 163 questionnaires were returned; the authors cannot estimate the response rate because they had no information about the MAVO staff who accessed the respective webpage with the link to questionnaire and/or read the invitation emails sent. The data were entered into the SPSS 22 software (IBM, 2013) which was used for the statistical tests. A frequency analysis of the demographic variables showed that eight respondents had not entered their specialty, in ten cases the total working experience was not declared, and 93 respondents had experience in management positions. Table 1 reports the sample size subject to analysis along with the grouping of demographic data.

### Process of data

The researchers excluded from the analysis the responses where both options (i.e. preventive and punitive) were chosen in the case of either error or violation, as well as the null responses. Then, a frequency analysis per measure (i.e. M1 to M12) was performed. According to the literature cited in the Introduction section, while diversity of perspectives is expected and wanted in every working environment as a means to inform decision making and increase organizational performance, concurrence on a just culture policy is of paramount importance, and a high level of agreement amongst staff about the nature and scope of administrative measures after unwanted events is needed. However, the relevant literature does not uniformly suggest quantified measures and optimum levels of diversity. Therefore, in order to interpret the results of this study, the authors adapted the paradigm of inter-rater reliability which assigns an 80% level of agreement as almost perfect (Landis & Koch, 1977), excellent (Fleiss, 1981) or very good (Altman, 1991). Under this approach, frequencies equal to or higher than 80% were seen as sufficient to claim an accepted level of common views across the survey participants.

A frequency analysis of the responses was performed followed by Chi-square or Fisher’s exact tests of independency, the selection of the type of the test depending on the sample size per case. The Monte-Carlo Exact Test function was selected in order to strengthen the confidence on the results (Number of Samples: 10,000, Confidence Level: 99%). The responses ‘preventive’ or ‘punitive’ per case of ‘error(s)’ and ‘violation(s)’ were the dependent variables; demographic data were used as independent variables and the measures ‘Mx’ functioned as layer variables. In addition to the tests with the aforesaid variables, an analysis was conducted for the answers where the subjects characterized a measure as preventive or punitive in both the cases of error and violation. This analysis was used as a means to reveal the extent to which any measures were perceived as purely preventive or punitive regardless the type of the unsafe action, and the association of such perceptions with the independent variables. The significance level for all statistical

### Table 1. Research sample.

<table>
<thead>
<tr>
<th>Group of independent variables</th>
<th>Values</th>
<th>Sample size (N)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty</td>
<td>Pilot</td>
<td>33</td>
<td>21.3</td>
</tr>
<tr>
<td></td>
<td>Technician/Engineer</td>
<td>73</td>
<td>47.1</td>
</tr>
<tr>
<td></td>
<td>Air Traffic Controller (ATC)</td>
<td>12</td>
<td>7.7</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>37</td>
<td>23.9</td>
</tr>
<tr>
<td>Total Years of Service in MAVO</td>
<td>0–10</td>
<td>31</td>
<td>20.3</td>
</tr>
<tr>
<td></td>
<td>11–20</td>
<td>56</td>
<td>36.6</td>
</tr>
<tr>
<td></td>
<td>21–30</td>
<td>53</td>
<td>34.6</td>
</tr>
<tr>
<td></td>
<td>&gt;30</td>
<td>13</td>
<td>8.5</td>
</tr>
<tr>
<td>Total Years of Service in MAVO Management Positions</td>
<td>0–5</td>
<td>60</td>
<td>63.8</td>
</tr>
<tr>
<td></td>
<td>6–10</td>
<td>26</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>&gt;10</td>
<td>8</td>
<td>8.5</td>
</tr>
</tbody>
</table>
tests was set to 0.05. In the results session, the cases that the Chi-square test results were considered, are signalled by the reporting of the $\chi^2$ value; all cases where only the $p$ value is presented correspond to results from the Fisher’s Exact tests.

In regard to the comments stated by the respondents, each researcher performed individually a template analysis as a means to identify and assign key themes. The individual analyses were compared and the researchers decided on a common coding, which was afterwards tested with the participation of a third person. The coding was applied to 30 randomly chosen remarks and the results showed an 87% agreement in average across the 3 pairs of the analysts, which was deemed as satisfactory. The inter-rater agreement was calculated with the use of Intra-Class Correlations function of the SPSS software (IBM, 2013). Finally, the researchers recorded the additional comments and/or measures stated at the lowest section of the answer sheets; the small numbers of those did not allow the conduction of statistical tests, therefore the respective results are qualitatively discussed at the corresponding section of this paper.

Results

Results from quantitative analysis

The overall results suggest that the distributions of perceptions about the scope of the measures were statistically different for both the cases of error [$X^2 (11, N=1843) = 829.888, p = .000$] and violation [$X^2 (11, N=1862) = 652.811, p = .000$]. Figures 1 and 2 present the distributions of data where 7 out of the 12 measures (i.e. M2, M3 and M8 to M12) were considered as more or purely punitive (i.e. $>50\%$) regardless the case of error or violation compared to the rest of the measures. Measures M4, M5 and M6 were constantly seen as less punitive/more preventive in the case of error or violation, whereas M1 and M7 were viewed more punitive when considering an error and more preventive in case of violations.

![Figure 1](image1.png)  
**Figure 1.** Distribution between preventive and punitive character of measures for the case of error.

![Figure 2](image2.png)  
**Figure 2.** Distribution between preventive and punitive character of measures for the case of violation.
When considering the 80\% threshold of common attribution of measures by the participants (see Methodology section above), a sufficient agreement across the subjects was not observed for the measures M3, M6, M7 and M12 in the case of error, and measures M1, M2, M6 and M7 in the case of violation. Nevertheless, 9 out of the 12 measures where seen as more preventive in the case of violation than in the case of error.

Tests of independency in cases of violation did not show significant differences across the independent variables across the whole sample. For the case of error, the tests revealed significant differences across the following variables (Table 2):

- Specialties \([X^2 (3, N=1752) = 9.601, p = .022]\). There were significant variations in the frequency distributions for the measures M7 \((p = .009)\), M8 \((p = .034)\), and M9 \((p = .030)\). Pilots perceived as M7 more preventive and M8 exclusively as punitive in comparison with the rest of specialties. M9 was seen by technicians and pilots as more punitive compared to ATC and Other specialties.

- Total years of service \([X^2 (3, N=1728) = 10.280, p = .016]\). The differences were significant for the measures M2 \((p = .033)\), M3 \((p = .044)\) and M4 \((p = .026)\). It was observed that for the first three groups of this variable (i.e. 0–10, 11–20 and 21–30 years of experience), the more the years of service the more measure M3 was seen as punitive, whereas the lowest frequency for the punitive character of the aforementioned measure was found in respondents with more than 30 years’ service. Participants with up to 10 years of service and 21–30 years at MAVO stated M2 as less punitive and M4 as more preventive compared to the other two groups.

The analysis for the answers where the subjects characterized a measure as preventive or punitive in both the cases of error and violation revealed that the majority of the participants judged the measures similarly as preventive or punitive regardless of the type of the unsafe action but with different frequencies across measures \([X^2 (11, N=1814) = 129.424, p = .00]\). The frequencies suggest that a common attribution was lower for M1 and M2 (Figure 3).

<table>
<thead>
<tr>
<th>Group of independent variables</th>
<th>Values</th>
<th>Preventive (%)</th>
<th>Punitive (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty Pilot</td>
<td>M7</td>
<td>84.4</td>
<td>15.6</td>
</tr>
<tr>
<td></td>
<td>M8</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>M9</td>
<td>6.5</td>
<td>93.5</td>
</tr>
<tr>
<td>Technician</td>
<td>M7</td>
<td>50.7</td>
<td>49.3</td>
</tr>
<tr>
<td></td>
<td>M8</td>
<td>12.5</td>
<td>87.5</td>
</tr>
<tr>
<td></td>
<td>M9</td>
<td>2.8</td>
<td>97.2</td>
</tr>
<tr>
<td>Air traffic controller (ATC)</td>
<td>M7</td>
<td>66.7</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>M8</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>M9</td>
<td>11.1</td>
<td>88.9</td>
</tr>
<tr>
<td>Other</td>
<td>M7</td>
<td>55.6</td>
<td>44.4</td>
</tr>
<tr>
<td></td>
<td>M8</td>
<td>9.4</td>
<td>90.6</td>
</tr>
<tr>
<td></td>
<td>M9</td>
<td>18.2</td>
<td>81.8</td>
</tr>
<tr>
<td>Total years of service in MAVO</td>
<td>0–10</td>
<td>M2 48.4</td>
<td>51.6</td>
</tr>
<tr>
<td></td>
<td>M3</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>M4</td>
<td>82.8</td>
<td>17.2</td>
</tr>
<tr>
<td></td>
<td>11–20</td>
<td>M2 18.9</td>
<td>81.1</td>
</tr>
<tr>
<td></td>
<td>M3</td>
<td>9.4</td>
<td>90.6</td>
</tr>
<tr>
<td></td>
<td>M4</td>
<td>78.8</td>
<td>21.2</td>
</tr>
<tr>
<td></td>
<td>21–30</td>
<td>M2 36.5</td>
<td>63.5</td>
</tr>
<tr>
<td></td>
<td>M3</td>
<td>4.3</td>
<td>95.7</td>
</tr>
<tr>
<td></td>
<td>M4</td>
<td>94.2</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td>&gt;30</td>
<td>M2 27.3</td>
<td>72.7</td>
</tr>
<tr>
<td></td>
<td>M3</td>
<td>27.3</td>
<td>72.7</td>
</tr>
<tr>
<td></td>
<td>M4</td>
<td>63.6</td>
<td>36.4</td>
</tr>
</tbody>
</table>
Results from qualitative analysis

Table 3 presents the codes and their overall frequencies derived from the qualitative analysis of the 100 comments stated by the respondents. The distribution of the codes per measure is shown in Table 4. C1 (Past Performance) was the most common comment across the measures, followed by the consideration of the severity of the event’s outcomes (code C2).

In the section of the questionnaire where participants could state any generic comments (i.e. not referring to specific measures), the subjects suggested additionally the following measures: suspension of employment for a period up to 6 months (n = 3); additional safety training (n = 3); suspension of license for the specialty hold (n = 1); criminal prosecution (n = 1); temporary suspension of the right to apply for high-profile positions within the organization (n = 1). In the same section, the general remarks below were recorded:

a. Evaluation of Knowledge Level (n = 2): those who contributed actively to an unsafe situation should be subject to knowledge tests in order to check the quality and effectiveness of the training they had received. Through this procedure, potential latent factors associated with training may be identified and afterwards, managed as a means to avoid similar errors/violations in the future.

b. Safety Coaching/Mentoring (n = 1): training should not focus only on the development of technical skills. Trainees should be subject to surveillance by a mentor or undergo a coaching period in order

![Figure 3. Attribution of measures as preventive or punitive in cases of error and violation.](image-url)
to get familiarized with the prevalent organizational culture and safety practices and acquire the skills required to assess/manage risks effectively.

c. Avoid/Mitigate re-positioning of staff \((n = 1)\): transferring or moving personnel should not be included in the measures against employees who contributed into a safety event.

**Discussion**

The results from the overall sample suggest that MAVO’s personnel judged similarly enough 6 out of the 12 measures in the cases of error or violation (i.e. M4, M5, M8, M9, M10 and M11). Therefore, it is claimed that the organization could ‘safely’ maintain the specific measures as part of its just culture policy without expecting a high employee’ dissatisfaction. Interestingly, measures M6 and M7 collected highly diverse perspectives in both cases of error and violation. When considering the comments of the participants, the difference regarding measure M6 could be explained by the fact that this was seen as insufficient if not accompanied by psychological support from a qualified person; measure M7 was viewed as highly castigating. Consequently, the aforementioned measures should be accordingly revisited by the MAVO.

Notably, measures M1, M2, M3 and M12, which were approached by the participants differently, refer to a permanent dissociation of the end-user from his/her working environment when committing an unsafe action with severe consequences; this indicates that such a dissociation is not considered in the same manner by the MAVO personnel. Most of the comments those measures received referred to the need to contemplate past performance of staff before deciding accordingly; this criterion is discussed later in this section of the paper. Hence, the organization was advised to consider connecting those with performance records of employees, both positive and negative. Although the participants did not state significantly different views on the character of the measures in relation to the commission of error or violation, 9 out of the 12 measures were perceived as more preventive when violations were committed in comparison with occurrences that resulted from errors. This indicated that the assignment of a measure as punitive or preventive was influenced by the (un)intentional nature of the unsafe action; this finding is aligned with the literature suggesting that this parameter is reflected in the decisions to impose or not measures after an adverse event (Byrne, 2012; Dekker, 2016).

Markedly, the attribution of measures as punitive or preventive in the case of violation was not associated with any of the three independent variables; no differences were recorded across specialties, total years in service at the MAVO and years of management experience within the organization. This denotes that the differences and similarities in the views about the character of the measures in the case of violation, as discussed above, were not affected by the vocational factors included in this study; thus, they could be attributed mainly to individual perceptions. In the case of error, management experience was not also statistically associated with the characterization of measures, whereas specialty and total years of

<table>
<thead>
<tr>
<th>Codes</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
<th>M6</th>
<th>M7</th>
<th>M8</th>
<th>M9</th>
<th>M10</th>
<th>M11</th>
<th>M12</th>
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<td>*</td>
<td>*</td>
<td>33.4</td>
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</table>

Table 4. Frequencies of codes of remarks per measure.
service in the MAVO were associated with highly different perceptions across specific measures. The different views across specialties in the case of error confirm literature discussing the effects of different professional cultures within an organization (Dike, 2013; Henry & Evans, 2007; Kreitner & Kinicki, 2001). The differences observed across the years of service might reflect the variety of experiences related to the implementation of measures in the past and the effects of those on individual and team performance (Dike, 2013). Nevertheless, further research is necessary to explain the differences observed so the particular organization can act accordingly and achieve the maximum degree of harmonization across the various professional groups in terms of specialty and overall experience.

Concerning the results from the analysis of the comments, the participants strongly recommended the contemplation of poor or positive past performance as a criterion for applying a measure after an error or violation. This implies a combination of both the views of Safety I, suggesting a focus on negatives, and Safety II that proposes the consideration of successful performance too since safety events are usually exceptional (Hollnagel, Wears, & Braithwaite, 2015). The second most frequent comment was related to the actual severity of the event as a decision-making parameter for the type and magnitude of the measure. This finding agrees with the arguments of Dekker (2016) and Byrne (2012) who suggest that, under a deterministic viewpoint, the higher the severity of negative effects, the stricter the judgement. This comment also neglects the extent to which the end-user was in position to control the unfolding situation and attempted to recover the system, even after an initially mistaken decision or action (Karanikas, 2015).

The evidence of wilful misconduct as criterion to impose measures was the third most frequent remark, which agrees with the position of Salas & Maurino (2010) who recognize that deliberate misconducts might bear punitive actions by management. Regarding the rest of the comments per measure and the general remarks, they were stated by very few respondents. However, comments C4, C7 and C9 and general remark (b) are in the spirit of supporting the second victims (Dekker, 2013). Considering also comment C6, general remark (a) and additional training as a suggested measure, it seems that respondents appreciated the role of level of skills and knowledge in the commission of an unsafe act and prevention of future safety events.

**Conclusion**

This research presented the views of employees of a large aviation organization towards a list of 12 measures that, according to the internal directive of the organization, might be imposed to the employees who commit unsafe acts resulting in safety events with severe consequences. The views of the staff regarding the preventive or punitive character of those measures were sufficiently aligned only for half of the measures, indicating a need for the organization to revisit the others. All measures inflicting a short- or long-term dissociation of the end-users from their current working place and function were highly unfavourable and linked to castigation.

The specific study was performed in an organization whose employees hold the same nationality; however, statistically significant differences were observed across groups of specialties and years of service regarding the appropriateness of specific measures especially in the case of errors. Those variances reflected, on one hand, the effects of vocational factors on the perception of justness and, on the other hand, the challenges to establish a commonly agreed just culture policy. Moreover, a blend of perspectives the literature suggests were recorded. The staff was highly concerned about the possible stigmatization of the persons involved into safety occurrences and they frequently recognized the necessity to consider the context and intention of actions and decisions when applying justness. In addition, the employees suggested the examination of poor or successful past performance as criterion for the type and intensity of the measure, the latter also linked with the severity of the safety occurrence and the evidence of wilful misconduct. They also pointed out that errors must be judged in a less strict manner than violations and management should visibly support the reintegration of persons involved in safety occurrences.

The overall findings of this research suggest that the implementation of a just culture policy within an organization and the support of a respective structure by the workforce might not be directly feasible and
achievable merely via a top-down approach. A predefined catalogue of measures for managers to choose without the periodical engagement of staff in the development and revision of the measures along with the contexts they apply is not expected to be seen by the employees as a ‘just culture’. Certainly, the reconciliation of the diverse views of different groups can be challenging; even more, when taking into account the possibly multinational character of large organizations and the different political, economic, geographic, physical and social contexts the subgroups of international organizations are exposed, such challenges are expected to be higher and more difficult to address.

Furthermore, this research showed that all perspectives the literature mentions about just culture were less or more frequently expressed by the workforce. Both kinds of views, the ones that support the need for exemplary measures in cases of exceptional violations, misconduct, or severe implications of the occurrence, and the views that incline towards an overall ‘humanistic’ approach, were expressed by employees. This confirms that justness is not a binary concept, no view is absolutely right or wrong, and prevalent viewpoints within an organization might dynamically change depending on the composition of its workforce. Therefore, a just culture policy agreed and established today might not be ‘just’ forever, especially under a continuous turnover of personnel with various backgrounds, experiences and perceptions.

However, an ever alternating just culture structure with continuously moving lines between the retributive or preventive measures is neither feasible nor advised since frequent changes of policies might confuse staff and lead to even larger detachments amongst groups of employees. Consequently, a dilemma for management is generated in regard to the extent and frequency of embracing workforce diversity but, in parallel, the need to ensure stability and consistency in the organization. The authors contemplate that this dilemma could be faced with a strategy that includes: (1) the communication to job applicants of the current just culture policy and structure of the organization, those elements being a crucial part of the ‘terms and conditions’ of employment, and (2) the revision of the just culture policy and accompanying measures into predefined intervals through a bottom-up approach, as followed in this study.

Based on the findings of this study, the researchers claim that the establishment of a just culture structure with agreed lines between punitive and preventive character of measures and its endorsement by the employees is achievable, but it requires more than management commitment, effective communication and documentation of policies, as literature suggests. Taking into account that the study was performed at a military aviation organization, the authors do not claim generalization of the findings to the aviation and defence domains or the industry as a whole in respect to the perceptions recorded and measures to be included or excluded in a just culture structure.

Similar exploratory research is recommended to be carried out by organizations prior or during the development of their just culture policy and related measures. On this scope, anonymous questionnaire surveys could be designed based on the one used in this study and further enriched with questions regarding expectations of employees about differences across various staff groups (e.g. job types, hierarchical levels, nationalities or other demographic characteristics depending on the composition of the workforce) along with respective explanations. In addition, such surveys could capture suggestions about the management of diverse perspectives on how a just culture policy could be agreed and operationalized with the organization. Such information was not collected during this pilot study since no respective research was available to provide some kind of guidance. Nonetheless, since just culture plays a crucial role in safety management and is a principal prerequisite for engaging employees in respective initiatives, achievement of a maximum possible harmonization across the workforce during the initial establishment and/or future revisions of a just culture policy is of paramount importance.

References


Appendix

Questionnaire Part 2 (Main Body)

Assume that a safety event with severe consequences or potential for such occurs in your close working environment, that event resulting from errors or violations of a MAVO employee. Which of the following measures do you think is preventive or punitive in the case of errors or violations separately, regardless the contribution of other factors into the event (e.g. influence of the physical environment, inadequate training, poor supervision)? It is reminded, that according to the MAVO policy, any measure aims at building a culture that will help in avoiding similar events in the future and ensuring the safety of staff, material assets and the environment.

Apart from your choice, you may also:
(a) state comments/remarks for each of the listed measures by using the dedicated space – last column of the Table;
(b) add at the end of the list any other measure(s) that must be taken;
(c) formulate any further remarks in relation to the scope of this study.

<table>
<thead>
<tr>
<th>No</th>
<th>Measure description</th>
<th>In case of error(s)</th>
<th>Preventive</th>
<th>Punitive</th>
<th>In case of violation(s)</th>
<th>Preventive</th>
<th>Punitive</th>
<th>Comment/Remark</th>
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<tbody>
<tr>
<td>M1</td>
<td>Movement to another work position within the department.</td>
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<tr>
<td>M2</td>
<td>Movement to another work position outside the department but within the unit/directorate.</td>
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<td>M3</td>
<td>Relocation to another unit/directorate.</td>
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<td>M4</td>
<td>Re-evaluation of working skills</td>
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<td>M5</td>
<td>Retraining</td>
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<tr>
<td>M6</td>
<td>Mandatory holidays for relief from psychological/emotional load</td>
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<tr>
<td>M7</td>
<td>Delivery of a presentation to the unit/directorate staff about the conditions/reasons led to the omission of error(s)/violations(s).</td>
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<td>Monetary penalty</td>
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<tr>
<td>M11</td>
<td>Deprivation of promotion</td>
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<td>M12</td>
<td>Dismissal from the MAVO (Other suggested measure)</td>
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Further remarks.

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