

항공사고, 문화, 레질리언스

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01

Safety Culture

- Safety Culture from Industrial Safety to Aviation Safety
- Safety Culture focused on Organizational System

01. Safety Culture and Resilience

1. Safety Culture from Industrial Safety to Aviation Safety

Safety Culture

Since the 1970s, “**industrial safety**” has evolved beyond just compliance or technical supplementation to “**systems thinking**” in which the root cause of accidents is found in systems and organizational defects.

The term “**safety culture**” was first used internationally in a 1986 Chernobyl nuclear accident investigation report, indicating that “**deficient safety culture**” was one of the contributing factors to the accident, and has since spread to high-risk industries such as nuclear power, petrochemical, and transportation.

Safety Culture in Aviation Safety

Since the 1970s, the focus on “**aviation safety**” has shifted to the **behavior and culture of system operators, with human error and decision-making** being blamed as the main cause of aircraft accidents rather than technical defects in aircraft.

Since the 1990s, aviation accident investigation reports have frequently stated “**safety culture**” as a key root cause, making it a core value for organizations beyond mere compliance.

01. Safety Culture and Resilience

2. Safety Culture focused on Organizational System

Just Culture

The concept of “**Just Culture**” is considered a sub-element of “**safety culture**”, with a particular focus on creating an environment that allows **organizations to learn** without hiding **safety information**.

It is essential to gain the **trust** of organization’s member (or employee) by promising corrective action **instead of discipline or sanction** if the reported information involves simple errors and not willful/reckless conduct.

Reporting Culture

The concept of “**Reporting Culture**” means an **organizational climate** where member (or employee) of organization **voluntarily disclose any information** that affects or could affect safety without fear of discipline or sanction.

This is the first step in ensuring a transparent flow of **safety information**. Information acquisition becomes the channel to identify system weaknesses and actual occurrences hidden within the system.

01. Safety Culture and Resilience

2. Safety Culture focused on Organizational System

Learning Culture

The concept of "**Learning Culture**" signifies the organization's capability and willingness to **systematically** analyze all reported information (including things that go wrong and things that go rights) and translate it into **organizational knowledge and behavioral change**.

Identifies and eliminates systemic flaws underlying reported events, continuously enhancing the organization's level of safety knowledge.

Flexible Culture and Resilience

The concept of "**Flexible Culture**" refers to the value of trusting and supporting frontline professionals to adjust their actions **appropriately** within the bounds of rules and **adjust actions** according to the on-site situation when the system faces unforeseen circumstances or when standard procedures are inadequate, all in pursuit of maintaining the safety goal.

Flexible Culture uses this learned knowledge and frontline expertise to enable **effective adaptation (Resilience)** during a crisis.

02

Reporting Culture

- Mandatory Reporting and Voluntary Reporting
- Reporting Duty and Privilege following a Report
- Reporting Culture focused on Organizational System

02. Reporting Culture

1. Mandatory Reporting and Voluntary Reporting

Mandatory Reporting

Under the aviation law in Korea, a **relevant person**, such as aviation personnel, who have **caused** any aircraft accident, serious incident, or incident or **who have become aware of the occurrence** of any aircraft accident, serious incident, or incident **shall report** the fact to the ***MOLIT**.

****MOLIT** (Minister of Land, Infrastructure and Transport) is the Civil Aviation Authority in Korea.*

Voluntary Reporting

Under the aviation law in Korea, **any person** **causes or becomes aware of** any *incident other than an incident subject to mandatory reporting or becomes aware or suspects that any aviation safety hazard (hazard) is caused, **may report** the fact to the **MOLIT** or its influence.

****Some incident** which is prescribed by Ordinance of the MOLIT is subject to mandatory reporting. All **other incident** is subject to voluntary reporting.*

02. Reporting Culture

2. Reporting Duty and Privilege following a Report

Reporting Duty (Mandatory)

When a **person caused** to an aircraft accident, serious incident, or incident and also **reported** by mandatory reporting to MOLIT, may not take **administrative sanctions**. Provided, That the same shall not apply where an investigation finds that is caused due to **intent or gross negligence**.

A person who **fails to report** or files a **false report** an aircraft accident, serious incident, or incident subject to mandatory reporting shall be subject to **administrative sanctions**.

Reporting Privilege (Voluntary)

When a **person caused** to any incident subject to voluntary reporting or hazard and also reported by voluntary reporting to MOLIT within 10 days, shall not take an administrative sanction, unless such person causes due to **intent or gross negligence**.

No person shall give any disadvantage to him or her in relation to his or her status or treatment on the grounds of the voluntary reporting.

02. Reporting Culture

3. Reporting Culture focused on Organizational System

Reporting Culture in SMS

Within **general industry** (excluding aviation), the Safety Management System (**SMS**) is established in accordance with the International standard **ISO-45001** or Korea standard **KOSHA-MS**.

These standards emphasize the establishment of a **Reporting System** and the creation of a **Reporting Culture** as essential operational elements for their respective Occupational Health and Safety Management Systems (OHSMS).

Reporting Culture in Aviation SMS

In the aviation sector, the reporting system refer to a **report to the aviation authority** (MOLIT) or **under its authority**, whether mandatory, **voluntary** or anonymous.

However, in the context of the reporting culture, a report generally means a **report to the organization**.

Unless it is a mandatory report, aviation personnel may **report to the aviation operator's SMS**.

03

Just Culture

- Aviation Safety Risk and Administrative Sanction
- Administrative Sanction focused on Human Error
- Corrective Action focused on System for Prevention

03. Just Culture

1. Aviation Safety Risk and Administrative Sanction

Aircraft Accident

Under the Aviation Law in Korea, the term "**aircraft accident**" (accident) means any of death, serious injury, damage to the aircraft, etc. occurrences in relation to the operation of an aircraft.

Administrative Sanctions are imposed to "**aviation personnel**" and "**aviation operator**" who caused "**accident**" due to intent or gross negligence.

Serious incident

Under the Aviation Law in Korea, the term "**serious incident**" means an occurrence which may have led to accidents because they have jeopardized aviation safety.

Administrative Sanctions are imposed to "**aviation personnel**" and "**aviation operator**" who caused "**serious incident**" due to intent or gross negligence.

03. Just Culture

1. Aviation Safety Risk and Administrative Sanction

Incident

Under the Aviation Law in Korea, the term "**incident**" means an occurrence which affect, or are likely to affect, aviation safety in relation to the operation, etc. of an aircraft in addition to aircraft accidents and serious incidents.

Administrative Sanctions are imposed to "**aviation personnel**" and who caused "**incident**" due to intent or gross negligence. But, it is not relevant for "**aviation operator**".

Aviation Safety Hazard

Under the Aviation Law in Korea, the term "**aviation safety hazard**" (hazard) means circumstances, conditions, physical or human factors, etc. that may cause, or contribute to a greater possibility of causing, aircraft accidents, serious incidents, or safety occurrences.

Administrative Sanctions are imposed to "**aviation personnel**" and who caused "**hazard**" due to intent or gross negligence. But, it is also not relevant for "**aviation operator**".

03. Just Culture

2. Administrative Sanction focused on Human Error

Sanctions for Human Error

Administrative sanctions against an “**aviation operator**” can also address systemic issues, as aviation operators function organically within the system.

However, administrative sanctions against “**aviation personnel**” focus solely on the individual “**human error**”. While individual human errors, such as violations of FOM, POM, etc. are easy to identify, systemic issues are more difficult to address.

Gross Negligence

“**Gross negligence**” means that negligence is more serious than ordinary negligence. Furthermore, it implies that the outcome could have been prevented with a “**little care**” in order to impose more serious responsibility than ordinary negligence.

Therefore, it can be easily classified as gross negligence if “**aviation personnel**” knew the regulations or methods to prevent aviation accidents or risks based on his/her status, license, qualifications, experience or expertise.

03. Just Culture

3. Corrective Action focused on System for Prevention

Sanction for Past Violation

In the event of an “**accident**”, “**serious incident**”, “**incident**”, or “**hazard**” during a specific aviation operation, the MOLIT imposes administrative sanctions on the “**aviation personnel**” who caused it due to **gross negligence**.

However, compared to “**aircraft accident**”, “**serious incident**”, there may be less need to hold aviation personnel accountable in the case of “**incident**” and “**hazard**”.

Corrective Action for Prevention

For “**incident**” and “**hazard**”, fostering **learning culture** and **corrective action** for future prevention may be more effective than sanctions for past violation.

Greater incentives or benefits are needed for voluntary reporter to promote future prevention and learning culture. The method and procedure of voluntary reporting should be flexibly and broadly applied.

Even in cases of gross negligence, responsibility should be **waived or reduced** if the resulting action effectively mitigated a more serious accident or incident, or if **correction and learning** are prioritized over sanction.

04

Resilience Driving under Safety Culture

04. Resilience Driving under Safety Culture

- Conclusion and Implication

Specific Circumstances in Aviation

In general, reporting culture means **voluntary reporting**.

However, aviation also requires **mandatory reporting**.

In general, just culture focus on **disciplinary action**.

However, aviation includes **administrative sanction**.

Even in the case of **voluntary reporting**, administrative sanction is imposed because it is difficult to disregard **gross negligence** of aviation personnel.

Corrective action is **not taken into account** in discretion regarding administrative sanction.

Resilience and its Risk in Korea

It was intended to **prevent or mitigate a potential accident**, but it occurred an **actual accident**.

It was intended to **prevent or mitigate a potential accident**, but it occurred an **actual serious incident**.

It was intended to **prevent or mitigate a potential accident**, but it occurred an **actual incident**.

It was intended to **prevent or mitigate a potential accident**, but it occurred a **FOM/POM's violation**.

The **Resilience** focus that it has been **appropriately** dealt with **potential accident**, but the **Regulators** focus on the **actual occurrences** and impose **administrative sanctions**.

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Thank you!

