

(English Translation)

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For immediate release:

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Concerning Submission of Improvement Measures in Response to a Business Improvement Order in IHI's Civil Aero Engine Maintenance Business

As announced in “Concerning Administrative Sanctions from Ministry of Land, Infrastructure, Transport and Tourism for Inadequate Practices Occurring in IHI's Civil Aero Engine Maintenance Business” on April 9, 2019, IHI received a business improvement order from the Ministry of Land, Infrastructure, Transport and Tourism (“MLIT”) on the same date in response to multiple inadequate practices regarding IHI's Civil Aero Engine Maintenance Business that had come to light at the Mizuho Aero-Engine Works. The Company was instructed to submit improvement measures by May 10.

Today, IHI announced that improvement measures have been submitted to MLIT and its overview is as follows.

IHI requested Mr. Mitsuhiro Umezu, Chairman of the board of directors of the JAPAN SOCIETY OF BUSINESS ETHICS STUDY (Associate Professor at the Keio University, Faculty of Business and Commerce) and Nishimura & Asahi to undertake an analysis of the causes and propose countermeasures, and we have now received their report. An overview of their report is provided as a separate attachment.

The measures for preventing recurrence relate directly to the inadequate practices identified at the Mizuho Aero-Engine Works; however, we will take steps based on these measures to ensure appropriate operations in IHI's Civil Aero Engine Maintenance Business on a company-wide basis, including other plants.

In this regard, IHI once again offers its sincere apologies for the trouble and concern caused to all related parties, including the airline companies, related organizations, and our stakeholders.

In response to this series of incidents, IHI is united in its commitment to regaining trust. We will rigorously ensure compliance, while referring to the analysis of causes and ensuring that measures to prevent recurrence are in place and that they are effective.

1. Recall of Shipped Items

Shipped items found to be affected by these practices case were tested and confirmed that there is no immediate impact on the airworthiness of assembled engines. Nevertheless, to ensure safety in long-term continuous usage, IHI has voluntarily recalled two engines and 58 parts. Of these, 56 parts have already been processed, with remaining 2 parts and 2 engines scheduled to be processed by the end of May.

2. Analysis of Causes and Background

(1) 2019 Investigation

- (i) No plan to train and increase the number of inspectors in line with business expansion and workload increase, with priority placed on meeting deadlines
- (ii) Ineffective safety and compliance awareness on site
- (iii) Inadequate management of inspection stamps
- (iv) Complexity of inspection record entry procedures in the computer system
- (v) Vagueness of wording on the operation records
- (vi) Vagueness of rules regarding guidelines for on-the-job training at the inspection site, leading to varying interpretations
- (vii) Lack of independence between certified inspectors and workers

(2) Previous opportunities for improvement were not adequately implemented

- (i) Lack of information shared with senior management; as a result, necessary causal analysis and recurrence prevention measures were not undertaken
- (ii) Lack of adequate action in response to warnings and recommendations on improving operations
- (iii) Lack of communication between the inspectors at the site and middle management
- (iv) Unawareness of senior and middle management of work site operations, with excessive expectations of its capabilities

3. Measures to Prevent Recurrence

(1) Re-emphasize safety awareness and compliance education

- (i) Implement compliance training for all personnel at designated sites (including senior management and middle management) as an immediate countermeasure
- (ii) Strengthen compliance training content for new employees at designated sites as an ongoing countermeasure
- (iii) Establish recurrent training for all personnel at designated sites (including senior management and middle management) as an ongoing countermeasure

(2) Significant revisions to the safety management system

- (i) Hold regular dialogue meetings with chief executives
- (ii) Hold regular group discussions among inspectors, workers, and middle management
- (iii) Appoint a new Safety Manager to oversee all safety management operations and establish a “Safety Management System Department”
- (iv) Assign floor engineers to every inspection process, such as production engineers and experienced inspectors (belonging to the Safety Management System Department)
- (v) Establish a workplace consultation desk (workplace hotline or opinion box) and have the Safety Manager handle responses for designated worksites

(3) Revisions to the Work Implementation System

- (i) Change the chief executive to the Vice President of the Business Area (in charge of the civil aero engine maintenance business) as the current chief executive, the Deputy Division Director for the Civil Aero Engine Division, is not in a position to execute wide-ranging management decisions
- (ii) Abolish the rule of creating inspection records with the inspection stamp and inspection record computer system, and instead have inspectors sign and date inspection records by hand
- (iii) Create monthly input plans aligned with processing capacity so as not to exceed the processing capacity of the worksite
- (iv) Unify the qualifications of the MLIT Japan Civil Aviation Bureau (JCAB) and of the United States Federal Aviation Administration for the inspectors’ qualifications at designated work sites, and manage them centrally
- (v) Distinguish inspectors and trainee inspectors receiving on-the-job instruction by different caps etc., to ensure that trainees do not conduct actual inspections
- (vi) Quality assurance division to conduct regular comparison of inspection records and working hour data, and inspect the list of procedure changes
- (vii) Strictly deal with compliance violations
- (viii) Transfer inspectors in the manufacturing division to the quality control division to prioritize compliance over meeting deadlines

(4) Measures in Response to Recommendations from External Experts

To provide a detailed causal analysis and evaluate measures to prevent recurrence, external experts were commissioned to undertake evaluation operations. The recommended measures to prevent recurrence (underlined) have been received, and details of IHI’s response are as follows.

- (i) When establishing new rules or changing existing ones, rather than informing the personnel through a typical notification of rules, provide a thorough explanation referring back to the reasoning behind them and their intended purpose
 - In the sections on quality assurance rules and aviation law regulations in our recurrent training for inspectors and workers, we will provide explanations of new rules and existing rule changes that refer back to the reasoning behind them and their intended purpose.

- (ii) Set an evaluation standard for the inspection division that is independent from productivity and efficiency to ensure the inspection division's independence
 - To ensure the independence of the inspection division, we eliminated the type of environment in which each inspection site was assigned work exceeding its processing capacity. At the same time, we transferred inspectors previously assigned to manufacturing division to the Quality Control Division, thereby emphasizing and prioritizing compliance over deadline pressure. Furthermore, we established a new operating regulation banning unjust pressure on inspectors.
- (iii) Improvement of the workplace culture of the Mizuho Aero-Engine Works by having the heads of each division and organization involve middle management
 - As an initiative to improve the workplace culture, under the leadership of the General Superintendent, regular group discussions are planned between the site inspectors and workers and the manufacturing division management. The General Superintendent confirms the plan and its execution status for the purpose.
- (iv) Ensure full and proper communication in negotiations with external organizations
 - In the recurrent training given to inspectors and workers, we will explain the significance of the rules, listen to feedback from the inspectors and workers, and repeatedly explain if necessary.
- (v) Redefine the proper sense of responsibility to be embraced by IHI engineers
 - Every employee has been made aware of the preamble of the Basic Code of Practice for Quality formulated on March 28, 2019 in the Aero-Engine, Space & Defense Business Area states in which “‘Quality’ goes beyond the absence of technical mistakes by including performing work in accordance with the rules decided for each process.”

Result of Investigation by Outside Experts

1. Purpose of the Investigation

In response to the recent case of inappropriate practices, to provide a deep causal analysis including organizations and workplace culture, we commissioned the following external experts (hereinafter, the “Independent Evaluation Committee”) to undertake a causal analysis and evaluate the recurrence prevention measures for the types of conduct deemed to be inappropriate in IHI’s report.

Mitsuhiro Umezu

Associate Professor at the Keio University, Faculty of Business and Commerce

Chairman of the JAPAN SOCIETY FOR BUSINESS ETHICS STUDY

Kaku Hirao

Kenta Ogata

Yusuke Suzuki

Mitsuki Kono

Ryo Akiyoshi

Keiko Matsumoto

Lawyers at Nishimura & Asahi

2. Investigation Method and Results

(1) Investigation method

The Independent Evaluation Committee independently conducts the following investigations.

- (i) Detailed investigation of related materials
- (ii) Detailed investigation of the feedback questionnaire regarding compliance training conducted by Mr. Mitsuhiro Umezu (Seminar participants: 112)
- (iii) Interviews with 55 employees in the Aero-Engine, Space & Defense Business Area

(2) Investigation result and recommended measures to prevent recurrence

The Independent Evaluation Committee has submitted the “Investigation Report (Causal Analysis and Recommended Measures to Prevent Recurrence Regarding the Case of Inadequate Practices in Civil Aero Engine Maintenance Work),” (hereinafter the “Report,”) in which the committee relates the results of its investigation and its analysis.

The report identifies six causal factors giving rise to the case of inadequate practices, and recommends five measures to prevent recurrence.

Causes

- (i) The people involved justified their actions if they “prioritized customers and supply chain” and if there were “no issues in terms of engineering and safety”
- (ii) Strong pressure to fall into line with others made it difficult to point out that things were wrong and to state that something could not be accomplished
- (iii) In conducting rule changes, failure to ensure that employees understood the purpose of rules produced a widespread impression that the rules were “imposed”
- (iv) Lack of attention to the site and separation from the site among the middle management, who were supposed to serve as a connection between the management division and the site, was not identified as a significant risk
- (v) Inadequate awareness regarding risks to the site and a tendency of trivializing information received
- (vi) Lack of correct understanding of basic principles for professionals working in the aircraft business, such as ensuring traceability

Measures to Prevent a Recurrence

- (i) Provide a thorough explanation for new or changing rules, referring back to the reasoning behind them and their intended purpose, rather than merely informing the personnel through a typical notification of rules
- (ii) Set an evaluation standard for the inspection division that is independent from productivity and efficiency to ensure the inspection division’s independence
- (iii) Improve the workplace culture of the Mizuho Aero-Engine Works by having the heads of each division and organization involve middle management
- (iv) Ensure full and proper communication in negotiations with external organizations
- (v) Redefine the proper sense of responsibility to be embraced by IHI engineers