

The Implementation of ICAO and Civil Aviation Regulation in Vocational Higher Education

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Abstract

The study focuses on the implementation of ICAO and Civil Aviation Regulations in vocational higher education classrooms by using observation and interviews. This study makes an important contribution to the understanding of the importance of compliance with ICAO and civil aviation regulations in vocational higher education. The results of this study identified the stages of implementing ICAO and civil aviation regulations. Additionally, the study also reveals best practices that can be adopted by educational institutions to ensure full compliance with ICAO and civil aviation regulations. This study serves as a basis for educational institutions to improve curricula, teaching methods and practical training to ensure that their graduates understand and comply with aviation security and safety standards set by ICAO and civil aviation regulations.

Keywords: ICAO, Civil Aviation Regulation, Vocational Higher Education.

INTRODUCTION

The aviation industry plays a crucial role in global connectivity and economic development. Ensuring the safety and security of civil aviation is a paramount concern for international organizations, governments, and educational institutions. The International Civil Aviation Organization (ICAO) serves as the global standard-setter for aviation safety, security, efficiency, and environmental protection. It establishes regulations and guidelines that govern various aspects of civil aviation including pilot training, aircraft maintenance, air traffic management, and airport operation.

To meet the requirements and comply with the international regulations in the field of civil aviation, Indonesia through the Ministry of Transportation Cq Directorate General of Civil Aviation (DGCA) always continues to strive to prepare competent and certified human resources, which in its implementation is carried out by the Human Resources Development Agency (BPSDM) of Transportation through Vocational Higher Education. Therefore, it is necessary to provide a learning model that suits the needs and boundaries that are clear and measurable.

ICAO

An organization called the International Civil Aviation Organization (ICAO) was established by convention. It consists of an Assembly, a Council, and other bodies that may be needed. The formation of this organization was one of the results of the decision of the Chicago conference in 1944 [1] [2] [3] [4].

Indonesia has been an ICAO (International Civil Aviation Organization) member since April 27, 1950 and became an ICAO Council Category III member in 1962. The office has an important role in linking Indonesia's urgency in civil aviation (c.q. Directorate General of Civil Aviation, Ministry of Transportation) with ICAO, especially in the latest developments in international aviation safety and security. In addition, the existence of the office also plays a role in providing data and information to ICAO and other ICAO members regarding the Government of Indonesia's policies in Indonesian civil aviation [1] [2].

Strengthening the structure and capacity of the Government of Indonesia handling civil aviation, in this case, the Directorate General of Civil Aviation is an important element in accordance with ICAO policy contained in ICAO's USOAP program to strengthen aviation safety and also to encourage improvement of the structure and capacity of institutions that handle it [3]. Realization of institutional structure and capacity strengthening through MSA Annex 4 program signed by

the Director General of Civil Aviation and ICAO Secretary General on January 27, 2010 and February 12, 2010.

CIVIL AVIATION REGULATION

International Regulation

Implementation of international air law, technically specific to the Annex of the Chicago Convention 1944, some of which are divided into sections and volumes, namely Annex 1 deals with Personal Licensing; Annex 2 deals with the Rules of the Air; Annex 3 discusses Meteorological Services for International Air Navigation; Annex 4 discusses Aeronautical Charts; Annex 5 discusses Units of Measurement Used in Air; Annex 6 discusses Operation of Aircraft (three parts); Annex 7 deals with Aircraft Nationality and Registration Marks; Annex 8 deals with Airworthiness of Aircraft; Annex 9 deals with Facilitation; Annex 10 deals with Aeronautical Telecommunications (five parts); Annex 11 deals with Air Traffic Services; Annex 12 deals with Search and rescue; Annex 13 discusses Aircraft accident and incident investigation; Annex 14 deals with Aerodromes (four parts); Annex 15 discusses Aeronautical Information Services; Annex 16 discusses Environmental Protection (two parts); Annex 17 discusses Security & Safeguarding; Annex 18 deals with Transport of Dangerous Goods; and Annex 19 discusses Safety Management [1], [4].

National Regulation

In consideration of the development of the national and international strategic environment, it demands the implementation of aviation in accordance with the development of science and technology, private participation and business competition, consumer protection, international provisions tailored to national interests, accountability of state administration, and regional autonomy.

Some of the arrangements listed in Law Number 1 of 2009 concerning Aviation, including Chapter I concerning General Provisions; Chapter II on Principles and Purposes; Chapter III on the Scope of the Enactment of the Law; Chapter IV on the Sovereignty of Ayas Airspace; Chapter V on Coaching; Chapter VI on Aircraft Design and Production; CHAPTER VII on Aircraft Registration and Nationality; Chapter VIII on the Airworthiness and Operation of Aircraft; Chapter IX on International Interest in Aircraft Objects; Chapter X on Air Freight; Chapter XI on Airports; Chapter XII on Aviation Safety; Chapter XIII on Flight Navigation; Chapter XIV on Aviation Security; Chapter XV on Search and Rescue for Aircraft Accidents; Chapter XVI on Investigation of Advanced Investigation of Aircraft

Accidents; Chapter XVII on Industrial Empowerment and Development of Aviation Technology; Chapter XVIII on Flight Information Systems; Chapter XIX on Human Resources; Chapter XX on Community Participation; Chapter XXI on Investigation; Chapter XXII on Criminal Provisions; Chapter XXIV on Concluding Provisions.

VOCATIONAL HIGHER EDUCATION

Vocational education is higher education that supports the mastery of certain applied skills. Studying at this level with a Diploma equips cadets with applied skills or technical skills needed in the field of civil aviation. An example of vocational education at the high school level is SMK. While in universities within the Ministry of Transportation are Makassar Aviation Polytechnic, Surabaya, Medan, Palembang, Medan, Banyuwangi and Curug Indonesian Aviation Polytechnic. Likewise, it can also be found in several universities, such as the University of Indonesia, or other universities, vocational schools house Diploma majors as well as a faculty with its majors [5].

Vocational education is oriented towards distinctive skills and expertise and the ability to be ready for work. Thus, cadets who graduate from vocational education are able to compete globally because they focus on developing skills and applicable technology. Vocational college is a university that is oriented towards distinctive skills and ready to work.

Vocational graduates focus on developing skills and applicative technology so that they can compete globally. Politeknik Penerbangan Makassar is a Vocational College under the Center for Human Resources Development of Civil Aviation which is tasked with carrying out technical guidance and human resource development in the field of air [6].

Based on the description above, Aviation Polytechnic is one of the vocational education at the Diploma 3 (D3) level. There are two admission models, namely the Pola Pembibitan (POLBIT) where graduates are directly appointed as Government Employees, while the graduate independent program is projected to fill industry needs. So, this study aims to identify the implementation of ICAO learning and international civil aviation regulations at vocational universities of the Ministry of Transportation. This research is expected to be able to identify cadets' understanding, learning materials, teaching methods, and teacher qualifications as well as the needs of the aviation industry in Indonesia.

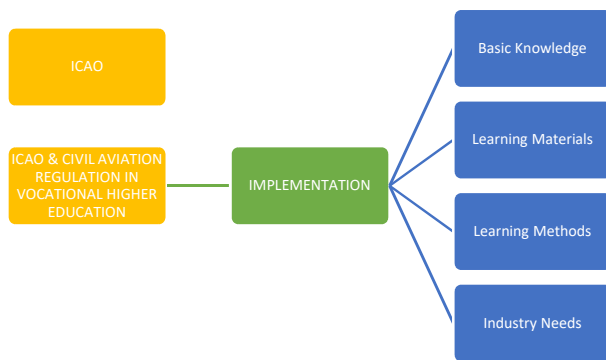


Figure 1. Conceptual Framework

METHOD

This research uses qualitative research methods with a case study design. This research is categorized as a case study, which has important characteristics, which is limited, contextualized, and relies on multiple data sources [7] claims this case study aims to find out the actual organizational changes that mark routine processes. This study is a case study, conducted at the Vocational College of the Ministry of Transportation. This research involved cadets, lecturers, stakeholders and users within the Politeknik Penerbangan Makassar.

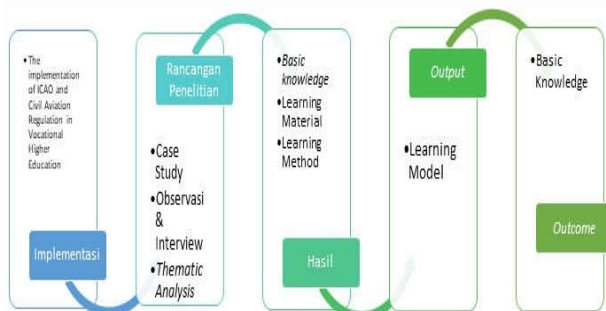


Figure 2. Research Flow

The variables in this study are ICAO and Civil Aviation Regulations and learning at the Ministry of Transportation's Vocational Higher Education. The subjects in this study are cadets who have studied ICAO and Civil Aviation Regulations, lecturers who discuss ICAO and Civil Aviation Regulations, Stakeholders and Users at the Politeknik Penerbangan Makassar, Ministry of Transportation of Indonesia while the instruments in this study was interviews and observations during the learning process in ICAO and Civil Aviation Regulations classroom.

RESULT & DISCUSSION

Based on the interviews and observations during the learning period, below are the stages of implementation of ICAO and Civil Aviation Regulations:

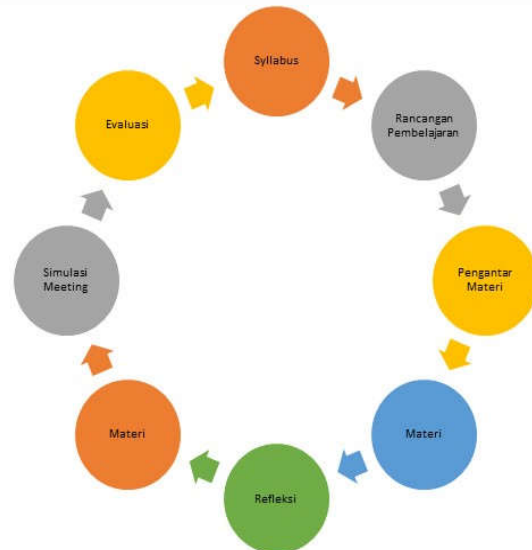


Figure 3. The Stages of Implementation ICAO and Civil Aviation Regulation in the Classroom

For simulated meetings, it is divided into three, namely bilateral meetings, multilateral meetings, and international seminars:

- A. Bilateral meeting is a meeting between two parties or two countries to discuss certain issues or problems. these bilateral meetings may involve leaders or high-ranking representatives of both parties, such as the president, prime minister, minister, or other officials.
- B. Multilateral meeting is a meeting involving more than two parties or countries. in the context of international diplomacy, multilateral meetings are forums where several different countries or parties gather to discuss relevant issues or jointly address global problems. unlike bilateral meetings that involve only two parties, multilateral meetings can involve a large number of countries or international organizations.
- c. International seminar is an event or meeting held at the international level, usually with the aim of discussing certain topics that have global relevance. this activity involves participation from various countries, international organizations, experts, academics, practitioners, and other important stakeholders. the main purpose of this activity is to explore ideas, share knowledge, and promote cross-border discussion and collaboration.

This meeting simulation is held three times in one semester. The cadets alternately serve as representatives

of the state. As for based on document data, several things were found as follows: The names of courses related to ICAO and Civil Aviation Regulations are different for each Study Program at the Aviation Polytechnic; Teaching staff come from the internal Aviation Polytechnic and the local Airport Authority; Teaching staff have not received training related to ICAO and Civil Aviation Regulations; There are seven Aviation Vocational Colleges that provide learning related to ICAO and civil aviation regulations, but only one teaching instructor has an Air Law education background.

In the implementation of classroom learning, several times international meeting simulations were held. However, there is only one teaching staff who has an educational background in the field of Air Law so that basic knowledge has not been obtained so that it is necessary to equalize perceptions with teaching staff related to learning plans. The difference in syllabus to course names also causes differences in the material obtained by each study program so that uniformity of material is needed in order to meet basic knowledge standards.

Training for instructor is a must for universities so that the learning process is measurable, the basic knowledge obtained does not differ between study programs. The addition of case studies or simulations during learning as an overview of ICAO and civil aviation regulations plays a role in overcoming certain situations or challenges in aviation. This can provide concrete examples of understanding and applying regulation in real-world scenarios. ICAO and Civil Aviation Regulation lessons have the potential to have a positive impact on aviation safety and quality in the future [1].

The transportation vocational college study program requires syllabus adjustments so that graduates from the study program in question have capabilities and added value, especially air law briefing and knowledge related to international civil aviation organizations. This is needed along with technological developments, dense investment, high risks that will be faced and the complexity of business competition in the aviation sector. For the aviation industry, ICAO and Civil Aviation Regulation lessons help raise awareness of safety standards that all stakeholders in the aviation industry. Through this learning, cadets and aviation professionals in various countries will understand and apply uniform standards throughout the world so as to form consistency in operational and safety practices throughout the aviation industry. The airline industry that prioritizes and complies with regulations will have a better reputation and quality. With a strong understanding of aviation regulations, airlines can more effectively identify areas where innovation can occur without violating existing safety standards and regulations.

CONCLUSION

The implementation of ICAO and International Civil Aviation regulation have not become the compulsory courses. There is no specific textbook covering this materials and the instructors using different sources. So, the learning materials need to be adjusted to the needs of the aviation industry so the students can immediately adapt.

ICAO learning materials and civil aviation regulations can be used as Compulsory Courses and taught in semester 3 or semester 4 of the current year, with consideration so that cadets can get a complete picture of the role of ICAO and civil aviation regulations in the development of air transportation both nationally and internationally; It is necessary to standardize the names of courses and syllabi that teach ICAO material and civil aviation regulations at the Vocational College of the Ministry of Transportation, so that all graduates gain the same knowledge and understanding of ICAO and regulations in the field of civil aviation.

It is necessary to conduct special training for lecturers who teach courses related to ICAO material and civil aviation regulations, so that lecturers can adjust, select and sort out the material to be taught in accordance with educational programs and majors. This needs to be done with consideration so that lecturers can identify industry needs in accordance with the chosen study program and prepare cadets to attend international meetings.

AUTHORS' CONTRIBUTIONS

SW, HS and DD carried out the drafted of the manuscript. SW also participated in drafted the interview and observation checklist. MM participated in the design of the research result. All authors read and approved the final manuscript.

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REFERENCES

1. Batalov AA. Global Aviation Safety Oversight System: Challenges and Opportunities for ICAO and Its Member States. *Air Sp Law*. 2021;46(1).
2. Agustini E, Kareng Y, Victoria OA. The Role of ICAO (International Civil Aviation Organization) in Implementing International Flight Safety Standards. *Kne Soc Sci*. 2021;100–14.

3. Weber L. *International Civil Aviation Organization (ICAO)*. Kluwer Law International BV; 2021.
4. Citaristi I. *International Civil Aviation Organization—ICAO*. In: *The Europa Directory of International Organizations 2022*. Routledge; 2022. p. 336–40.
5. Susanto PC, Keke Y. Implementasi Regulasi International Civil Aviation Organization (ICAO) pada Penerbangan Indonesia. *Aviasi J Ilm Kedirgant*. 2019;16(1):53–65.
6. Arsetyo YIC. Pengelolaan Kedaulatan Wilayah Udara Indonesia di Natuna berdasarkan Konvensi Chicago 1944 dalam Perspektif Hukum Internasional. *DEFENDONESIA*. 2021;5(1):46–55.
7. Park SU, Lee JD. Analyzing Factors that Influence the Efficiency of Airport Passenger Terminal by Using AHP (Analytic Hierarchy Process) Method (Case Study of Juanda Airport—Surabaya, Indonesia). *KSCE J Civ Eng*. 2020;24(12):3856–65.
8. Astuti ED. Kompetensi Lulusan Perguruan Tinggi Vokasi dalam Strategi Mewujudkan Sumber Daya yang Berwawasan Entrepreneur. *Abiwarra J Vokasi Adm Bisnis*. 2019;1(1):1–7.
9. Pambudiyatno N, Susila IW, Sutiadiningsih A. Peran Reading Interest dalam Peningkatan Reading Comprehension pada Perguruan Tinggi Vokasi Penerbangan Kementerian Perhubungan. *J Pembang Pendidik Fondasi dan Apl*. 2021;9(1):58–65.
10. Yin RK. *Case Study Research and Applications*. Sage; 2018.