Flight Attendant Kedirgantaraan
Jurnal STTKD

Vol 7, No. 2, Desember 2025
p-ISSN 2460-1594, e-ISSN 2962-6625
https://jurnal.sttkd.ac.id/
DOI: https://doi.org/10.56521/attendant-dirgantara.v7i2.1572

Analysis of Flight Operation Officer's Understanding of Navblue Flight Plan in Operations at PT Wings Abadi Airlines

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Article history:
Received August 7, 2025
Accepted August 20, 2025

Abstract

Wings Air, as a regional carrier, faces operational challenges such as short runways, high-altitude airports, and limited navigation facilities. Under these conditions, Flight Operation Officers (FOO) are responsible for preparing flight plans using the Navblue Flight Plan system, which has been implemented since 2023. However, several Operational Flight Plans were found to be inconsistent with standard operating procedures (SOP). The errors include incorrect fuel calculations, misinterpretation of weather data, suboptimal route selection, and inaccurate aircraft performance data input. These issues may result in flight delays, fuel inefficiency, and potential safety risks. This study aims to analyze the level of FOO understanding of the system. It also examines the operational impact of system misuse. A mixed-method approach combining quantitative and qualitative methods was employed. Data were collected through questionnaires distributed to 15 FOOs, in-depth interviews with three key informants, observations, and documentation. The results indicate that the FOO understanding level reached 88%, categorized as very good. FOOs are generally able to perform procedures in accordance with SOP. Nevertheless, challenges remain in database integration and human error during data entry. Overall, FOOs demonstrate comprehensive understanding, but improvements in system integration and operational accuracy are still required.

Keywords: *flight operation officer, Navblue Flight Plan, Wings Air, flight operations, flight planning*

Introduction

PT Wings Abadi Airlines – also known as Wings Air – is a subsidiary of the Lion Group that serves pioneering routes throughout Indonesia using ATR 72-500/600 aircraft. This type of aircraft faces various operational limitations such as short runways, high-altitude airports, and non-standard navigation obstacles. The Flight Operations Officer (FOO) plays a crucial role in flight planning. According to CASR 121 of 2017, no flight can commence without specific authorization from the FOO [1]. To support the FOO's duties in analyzing weather, routes, fuel, and load factors, Wings Air implemented the Navblue Flight Plan system in early 2023 after a transition period from the previous system in November-December 2022.

Although the Navblue Flight Plan system is designed to optimize operations in terms of safety, security, and On-Time Performance (OTP), field observations have found non-compliance with SOPs, such as fuel calculation errors, incorrect weather interpretations, suboptimal route selection, and errors in aircraft performance data input, resulting in schedule delays, fuel waste, and safety risks. Therefore, this article will focus on the FOO's current perceptions and experiences regarding the Navblue Flight Plan in Wings Air operations, with Wings Air FOO officers assigned to the Lion Operations Center in Tangerang.

This article aims to determine the FOO's limited understanding of digital systems, specifically the Navblue Flight Plan. Therefore, an analysis is needed to determine the extent of Wings Air FOO's understanding of the Navblue Flight Plan system and the impact of system errors on optimizing flight operations. Therefore, this research is expected to provide an empirical contribution to understanding the implementation of digital flight planning technology in the Indonesian aviation industry.

Literature Review

Analysis. Sugiyono defines analysis as the process of systematically searching for and collecting data obtained from interviews, field notes, and other materials. This is done by organizing the data, breaking it down into units, synthesizing it, arranging it into patterns, selecting what is important and what will be studied, and drawing conclusions so that the findings are easily understood and can be communicated to others [2].

Understanding. Understanding is a person's ability to interpret, translate, or express something in their own way based on previously acquired knowledge. Understanding is the process or ability of a person to understand, interpret, differentiate, and express something from the information received in their own way. Understanding also includes a person's ability to remember, differentiate, infer, explain, expand, and summarize.

Flight Operations Officer. CASR 63 A Flight Operations Officer is a person at least 21 years of age who possesses comprehensive knowledge in the field of aviation, including air law, general aircraft knowledge, flight performance calculations, planning and loading, meteorology, and navigation [3]. Based on these competencies, the FOO plays a critical role in flight operations through five primary functions: conducting accurate weather analysis from Tafor, Metar, Wind and Temperature charts, and Sigmet reports; issuing NOTAMs for destinations, alternatives, and waypoints; determining optimal flight paths and generating flight plans, both manually and computerized; providing operational oversight and relevant information affecting the flight; and performing weight and balance calculations while identifying and addressing threats and errors that could impact flight safety.

Navblue Flight Plan. The operational system used by Wings Air's FOO to create flight documents, namely Flight Plans. According to CASR 121, flight planning data includes two primary components: the Flight Plan, which contains specific data and instructions for pre-flight and in-flight planning, including speed schedules and power settings; and the Fuel Calculation, which includes fuel calculation methods for various flight stages [1]. All flight planning data is processed by the Flight Operations Officer through the Navblue Flight Plan system, which serves as an integrated digital platform to generate accurate flight plans in accordance with applicable aviation regulatory standards.

Wings Air Operations. Wings Air Operations involves coordination between the FOO, pilots, and ground personnel to achieve a 20-minute ground time and On-Time Performance (OTP). Obstacles such as internet outages, document delays, or input errors can cause operational delays. The FOO's role is to address these obstacles while prioritizing safety. According to CASR 121, safety requirements are operational procedures and program systems whose reliability, availability, performance, and accuracy are critical to achieving safety performance indicators [1].

Safety. Law No. 1 of 2009 defines aviation safety as fulfilling safety requirements in the use of airspace, aircraft, airports, and supporting facilities [4]. ICAO document 9859 defines safety as a condition in which the risks of aviation activities are reduced and controlled to an acceptable level [5].

Research Methodology

Research Design. This study uses a mixed-methods approach, combining qualitative and quantitative research methods. The goal is to solve emerging problems through analysis of interview results, documentation, and questionnaires.

Research Location and Subjects. The research location is the Lion Operations Center, Tangerang. The research subjects are the FOOs of Wings Air. Subject selection was carried out using saturated sampling, where all members of the population are used as samples.

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Data Collection Techniques. *Questionnaire* – The questionnaire was administered to the FOO of Wings Air, who is responsible for creating flight plans. The measurement instrument for the variables in this study was a rating scale with a rating range of one to four. Sugiyono stated that the rating scale is used to interpret each number given for each answer alternative on each item of the instrument [2]. The questionnaire was distributed online by the researcher, allowing respondents to select one answer from those provided.

Observation – This study used non-participant observation because the researcher did not interact directly with the FOOs of Wings Air but only observed and recorded observed behavior.

Unstructured Interviews – Sugiyono stated that unstructured interviews are free-form interviews in which researchers do not use systematic and comprehensive interview guidelines for data collection [2]. In this study, researchers conducted direct interviews with informants consisting of one FOO as Head of FOO Wings Air, one FOO as Senior FOO Wings Air, and one FOO as Junior FOO Wings Air.

Documentation – Documentation is a stable and accurate source that reflects the actual situation or condition and can be analyzed repeatedly without change. The document used in this study is the Wings Air Flight Operations Officer Manual as a reference for the FOO in creating the Navblue Flight Plan.

Results and Discussion

The previously developed questionnaire underwent validity and reliability testing. This study involved 15 respondents, who were Flight Operations Officers at Batik Air, Super Air Jet, and Lion Air. All respondents were selected based on the following criteria: work experience as a FOO and experience using the Navblue Flight Plan system in flight operations. The results of the validity test conducted in this study are shown in Table 1.

Table 1. Validity Test Results

Respondent	R Table	R calculated	Sig <0,5	Validity
P1	0.514	0.827	0.000	Valid
P2	0.514	0.678	0.005	Valid
P3	0.514	0.709	0.003	Valid
P4	0.514	0.815	0.000	Valid
P5	0.514	0.870	0.000	Valid
P6	0.514	0.525	0.045	Valid
P7	0.514	0.878	0.000	Valid
P8	0.514	0.878	0.000	Valid
P9	0.514	0.604	0.017	Valid
P10	0.514	0.699	0.004	Valid

Source: Data processed in 2025

The calculated R value is greater than the R table of 0.514 with a significance level of <0.05. The calculated R values ranged from 0.525 to 0.878, indicating that all questionnaire items adequately measured FOOs' understanding of the Navblue Flight Plan.

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Reliability Statistics

Cronbach's Alpha	N of Items
.905	10

Figure 1. Reliability Test Results

The reliability test results showed a Cronbach's Alpha value of 0.905 for 10 items. This value is greater than 0.7, the minimum limit for a reliable instrument.

After the questionnaire was tested for validity and reliability, the data obtained from the questionnaire responses given to respondents was analyzed. Based on the results of a questionnaire administered to 15 Wings Air FOO respondents, researchers obtained the following criterion scores (if each item received the highest score): 4 x 10 x 15 = 600. The highest score for each item was 4, the number of items = 10, and the number of respondents = 15. The total score from data collection for all respondents was 530.

Therefore, the FOO's understanding of the Navblue Flight Plan, according to the perceptions of the 15 respondents, was 530 x 600 = 88% of the established criteria. A score of 530 falls within the range of "Quite Understanding" and "Very Understanding," but closer to "Very Understanding." This result indicates that the majority of Wings Air FOOs have a very good understanding of the Navblue Flight Plan system.

FOO's Understanding of the Navblue Flight Plan in Wings Air Operations. The process of creating a Navblue Flight Plan is carried out by the FOO before a flight by collecting data on aircraft rotations, aircraft status, weather, NOTAMs, and other supporting information. The data is then entered into the system and adjusted for operational conditions, resulting in a flight plan document in PDF format.

Table 2. Aircraft Limitations

Aircraft Limitation	ATR 72 500	ATR 72 600
Maximum Zero Fuel Weight	20800 Kg	21000 Kg
Maximum Take Off Weight	22800 Kg	23000 Kg
Maximum Landing Weight	22350 Kg	22350 Kg
Maximum Fuel	5000 Kg	5000 Kg
Maximum Optimum Altitude	17000 Ft	17000 Ft

Source: Data processed in 2025

The Navblue Flight Plan system is integrated with the limitations of the ATR 72-500/600 aircraft operated by Wings Air. This system will reject data input that does not comply with aircraft limitations such as maximum unfueled weight, maximum takeoff weight, and maximum fuel capacity. This helps reduce operational errors, although it does not completely eliminate potential problems. Although the Navblue system has good reliability, there are still challenges such as databases that are not integrated between aircraft status and payload, manual data input errors, and changes in actual field conditions that differ from initial preparations such as sudden weather changes or volcano status updates. The impact of system errors can affect flight safety in the form of fuel shortages, inappropriate routes, or the selection of closed alternative airports, as well as economic impacts in the form of schedule delays that result in operational delays, so accuracy and verification are critical layers in flight planning.

Conclusion

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1. The results of the study indicate that Flight Operations Officers (FOOs) have a very good understanding of the Navblue Flight Plan, meeting the established criteria of 88%. This criterion indicates that the FOOs' understanding of the Navblue Flight Plan is very good, with the FOOs being able to implement procedures in accordance with SOPs. The Wings Air FOOs have a comprehensive understanding of the Navblue Flight Plan and the ability to implement systematic operational procedures. However, technical challenges remain in system integration, requiring further development.
2. Impact of errors in the use of the Navblue Flight Plan system. Impact on flight safety and efficiency. Resulting in safety impacts such as fuel shortages, route errors, and inappropriate selection of alternative airports. Furthermore, there are economic impacts in the form of flight delays due to changes in flight plans that affect flight schedule accuracy.

Recommendations. FOOs need to develop critical analysis skills to double-check system output, particularly in verifying fuel calculations, interpreting real-time weather data, and validating flight route selection to anticipate unexpected changes in operational conditions.

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