

## Optimization Of The Role Of Soewondo Air Force Base In Indonesia's Air Defense

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### Abstract

*Soewondo Air Force Base (AFB) has an important role in maintaining the surrounding airspace's security, including securing the Soewondo Air Force assignment area from various threats that could potentially occur and threaten national sovereignty. Increasing the ability of air defense. needs to be done through an analysis of optimizing the role of the Soewondo air force base for Indonesia's air defense. The research was conducted using a qualitative method with sources of information obtained from the Commander of Soewondo air force base and a literature study. Soewondo air force base plays a role in Indonesia's defense as an airbase that has a strategic role in maintaining the security of the North Sumatra region and its surroundings. The limited capabilities and available weapon systems still hinder airspace surveillance. Cooperation and coordination between Soewondo air force base and relevant agencies are needed to maintain air security in North Sumatra and its surroundings and strengthen the weapon systems for optimal operation in air defense and safeguarding national sovereignty, particularly in securing vital national objects. Relocating Soewondo air force base to type A classification equipped with modern weapon systems, such as the Oerlikon Skyshield missile, and utilizing technologies like the QW-3 manpads missile, UAV for intelligence and surveillance missions, are crucial steps in achieving optimal air defense for Indonesia.*

**Keywords:** Air Force Base, Security, Technology

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## INTRODUCTION

Indonesia is known as a country with a very large sea area and abundant marine wealth. Judging from the geographical location of Indonesia, which is the largest archipelagic country in the world with a large maritime area, Indonesia's marine waters cover about 5.8 million km<sup>2</sup> which is equivalent to 75% of the total area of the country. The Indonesian sea area is divided into three parts, namely 0.3 million km<sup>2</sup> for territorial sea waters, 2.8 million km<sup>2</sup> for marine waters of the archipelago, and 2.7 million km<sup>2</sup> for ZEEI at sea (Yunitasari, 2020). Indonesia is located in a very strategic crossroads position, making it one of the countries that have a strategic geographical location. This makes Indonesia have very strategic waters, especially the Malacca and Sunda Straits, the main transportation route for ships connecting the Asian region with the Middle East and Europe. However, this existence also brings challenges and threats that Indonesia must face. The presence of these major trade routes increases security risks, including threats such as piracy, illegal trade, and acts of terrorism. Therefore, Indonesia must remain prepared to face various threats that could disturb the stability and security of the country.

In dealing with various threats in strategic waters, the Indonesian Air Force has an important role in conducting air surveillance, patrols, and operations to maintain national sovereignty and security. According to data from global firepower (GFP) 2023, Indonesia's strength ranking is ranked 8th in the Asian region. This data is taken from 60+ factors into consideration but tends to focus more on the quantity of military-owned by a country. Indonesia has air power with a fleet of 466 assets owned by the Air Force. One of the important facilities in air military operations and supporting the activities of the Indonesian Air Force is the Air Force Bases. In Indonesia, there are several air bases scattered in various regions with various types.

One of the Indonesian Air Force bases under Koopsau I and included in the type B air base is Soewondo Air Base. Soewondo air base is located in Medan, North Sumatra, which is one of the strategic areas in Indonesia, so the position and role of Soewondo air base in national air defense also are vital (Bachtiyar, 2018). Soewondo Air Base plays a role in maintaining the and the security of the airspace around it, including securing the waters of the Malacca Strait, which is the main transportation route in Indonesia. Thus, the air defense strategy implemented at Soewondo Air Base can contribute to maintaining national security. Defending the sovereignty of the Unitary State of the Republic of Indonesia and protecting the safety of all people from the military and armed threats to the integrity of the nation and state are the main objectives of national defense. In this case, national defense has a very important role in achieving one of the national goals (Sudirin *et al.*, 2022)

In today's age with the rapid development of technology that is advancing, it can expand the range and complexity of threats faced by a country. Threats that occur at this time are increasingly varied and complex which can threaten the security and sovereignty of the state. Increasing threats to Indonesia's national security, particularly in the field of air defense, have forced the Indonesian government to continue to create air defense capability. Increasing air defense capability is not only carried out through the procurement of defense equipment but also through increasing the readiness of air bases which are the basis for combat operations in air defense. Soewondo Lanud as one of the bases Indonesian Air Force has a role to be able to prevent these threats by using defense strategies that can be implemented. This it is necessary to analyze the optimization of air defense in the task area of the Soewondo Air Base so that it can support Indonesia's security and sovereignty.

## **RESEARCH METHODS**

In this study the method used is to use a qualitative approach. This research is included in the category of literature studies, in which research is carried out using written works as a basis. In a study, the study of literature has an important role as a basis and reinforcement of the ideas of researchers who have been recognized. However, the literature used in the literature review must come from original sources. Literature study which consists of a collection of concepts, definitions, and propositions that are interrelated with research is something that cannot be separated (Ridwan *et al.*, 2021). Even though it is included in this type of research, research with literature studies does not require field visits and interactions with respondents. In qualitative research, data can be collected through an interview process to obtain information about an object or phenomenon (Habsy, 2017). The research locus is located in North Sumatra Province with the resource person Commander Soewondo Air Force Base. Information obtained from Danlanud is used as a source of research and literature review or literature study as an additional source. This literature study requires perseverance and thoroughness to analyze data in order to obtain conclusions and objectives as expected.

## **RESULT AND DISCUSSION**

Soewondo Lanud is an air base located in Medan City, North Sumatra, Indonesia. Soewondo Lanud has the task of carrying out air operations to support the interests of national defense and security. As part of the Indonesian Air Force, Soewondo Air Force Base is tasked with carrying out territorial guidance or regional development, training for its units, and support for flight operations. As one of the important military air bases, Soewondo Air Base has a

strategic role in maintaining the security of the North Sumatra region and its surroundings. This air base is also part of the national air defense system and is responsible for protecting Indonesian airspace from outside threats. In the context of Indonesia's national security, the role of the Soewondo air force base in maintaining air security in its assigned area is very important and strategic. Therefore, cooperation and coordination are needed between Soewondo Air Force Base and related agencies to maintain air security in North Sumatra and its surroundings.

In today's modern era, technology continues to develop rapidly so that it does not make a country free from threats. According to the defense whitepaper, threats are an aspect of designing a defense system, both actual and potential. Thus, current and future threats can be categorized into three types of threats, namely military threats, non-military threats, and hybrid threats. Threats related to the military include the modernization of a country's military forces, issues of borders between countries, intra-state conflicts, inter-state conflicts, weapons of mass destruction, and espionage, while non-military threats include climate change, natural disasters, epidemics, drug abuse, and others. Threats can come from within or outside the country with actors who can be state actors or non-state (Alfajri *et al.*, 2019). Potential threats to security and defense in the task area of Soewondo Air Force Base, both potential threats from a military perspective, such as open conflict or conventional war where the two armed forces of a country face each other and the modernization of a country's military forces and for actual threats from a non-military perspective in the form of smuggling narcotics, terrorism, and radicalism. If seen in the assignment area of Soewondo Air Force Base, it has neighboring countries including Malaysia, India, Thailand, Myanmar, and Singapore, although it has a small possibility that this will happen to Indonesia. However, as a country with enormous potential, it is important to remain alert to potential threats, considering the dynamic nature of these threats.

Air violations can be a threat to national security. Such as the detection of a Gulfstream IV civil aircraft departing from Singapore to Australia, which passed through Indonesian airspace without permission. The attitude of the foreign aircraft shows their lack of respect for the sovereignty of Indonesian airspace (Sudirin *et al.*, 2022). Violations like this often occur, and the Indonesian Air Force has taken action to chase foreign aircraft that enter Indonesian airspace without the necessary documents and permits. In 2022, there was an incident where an unidentified foreign plane entered Indonesian territory. Initially, the plane was detected by the Indonesian Air Force's radar at Soewondo Air Base and then chased from the Pekanbaru Air Force Base to North Sumatra, and finally managed to stop and land at Soewondo Air Force Base. During the landing, TNI Air Force personnel and related officers immediately took action to check flight and passenger documents, as well as provide an escort (Sinaga *et al.*, 2022). This incident is a violation of the law that must be followed up in accordance with applicable procedures. If an aircraft enters a prohibited or restricted airspace, including the ADIZ area (*Air Defence Identification Zone*), this can be considered a violation of state jurisdiction (Savitri *et al.*, 2020). Foreign military and civilian aircraft wishing to cross Indonesian airspace must obtain permits in accordance with applicable regulations. If a foreign aircraft violates the sovereignty of the Indonesian state and does not have a valid permit, it will be forced to expel or disembark at the designated airport in the territory of the Unitary State of the Republic of Indonesia (Ghufron & Herdiansyah, 2018).

Surveillance of Indonesian airspace is not yet optimal because the Indonesian Air Force currently has limitations in capabilities and equipment that are not comparable to the vast airspace that must be monitored. In the minimum basic force development document issued by the Ministry of Defense, it is stated that to deal with various threats with limited resources, the Indonesian Air Force needs the support of 32 radar units and 11 combat squadrons in 2024 in order to be able to face the existing challenges (Sudirin *et al.*, 2022). The Indonesian Air Force has taken steps to guard and manage the sovereignty of Indonesia's national airspace, including

by taking action shadowing (shadowing), intervention (repulsion), interception, force down, and destruction as well as giving fines to the violators (Hakim & Abu, 2019). Soewondo air force base rarely takes action, however, these steps have been carried out by Soewondo Air Force Base through joint training with the Ministry of Politics, Law, and Human Rights in November 2022. During the training, Soewondo air force base directly took action against foreign aircraft that violated the airspace of North Sumatra. This activity was witnessed by various parties, such as the Coordinating Ministry for Political, Legal, and Security Affairs, the Ministry of Finance, Immigration, Customs and Excise, Angkasa Pura, and the Ministry of Maritime Affairs and Fisheries.

Nonetheless, the violations continued. Violation of Indonesian airspace by foreign aircraft confirms that this problem has been going on for a long time and there are probably many other violations that have gone undetected. The Indonesian Air Force currently has 24 military radars to cover parts of the airspace and a number of combat squadrons of 8 spread out in various regions in Indonesia (Roza, 2014). Limited facilities for the Indonesian Air Force's radar and defense equipment resulted in several Indonesian airspaces being prone to violations (Sudirin *et al.*, 2022). Alutsista refers to everything related to weapon systems, vehicles, and other military equipment that play a role in maintaining the security of the national jurisdiction area (Savitri *et al.*, 2020). For now, the Soewondo Air Base is mostly carrying out flight operations. Then the Soewondo Air Base also guarded assets in the Soewondo airspace.

Soewondo Air Base is a type B air base, to increase the interoperability of the Indonesian Air Force will be upgraded to type A Air Force Base. First Marshal Danlanud is responsible for the air wing as well as a squadron of tactical fighter aircraft, maritime patrol aircraft, and unmanned aerial vehicle (UAV). The role of Soewondo air force base in Indonesia's air defense by making efforts, among others other:

1. The inter-military unit drills consist of joint drills on securing foreign aircraft after the action force *down* at Soewondo air force base, joint training *balance, arrow iron joint combined training*, and base defense patrols.
2. Personnel development in the form of work unit level training, namely base defense patrol, riot control action, and shooting.
3. Carry out the development of aerospace potential in the North Sumatra region.
4. Assist POLRI in carrying out security and public order duties.
5. Security of strategic national vital objects.
6. Maintenance of defense equipment and supporting infrastructure

Although the Soewondo Air Base has carried out its function as an air base, it has not run optimally in dealing with threats and air defense, because it is still hampered by minimal weaponry limitations. This raises concerns that air security will become increasingly complex in the future, and will require efforts to increase air defense readiness and capabilities more adequately. In an effort to optimize its air defense, the Soewondo air base must be able to meet the weapons systems requirements. Soewondo Air Base is a type B base so the weapons owned by Soewondo Air Force are light weapons that are personal in nature with maintenance and repair of weapons carried out internally in accordance with SOPs and carried out routinely. One of the efforts of Air Force Soewondo in air defense is securing national vital objects. The Soewondo Air Force Base task area has a strategic role in energy security for the Medan area and its surroundings. Identified through national vital objects in Figure 1, based on the Decree of the Minister of Energy and mineral resources of the Republic of Indonesia number 202 of 2021, around the Soewondo Air Base area there are national vital objects (obvitnas) in the field of energy and mineral resources, including the DPPU (Aircraft Filling Depot) Pertamina Kualanamu, DPPU Polonia, GITET (Extra High Voltage Substation) Binjai, GITET Galang, *Fuel Terminal* Medan Group, and others.

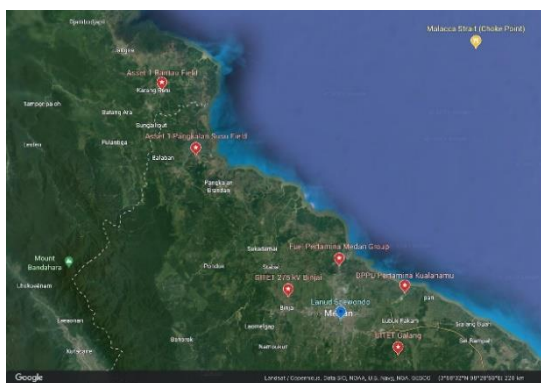


Figure 1. Map of the Identification of National Vital Objects in the Assignment Area of Soewondo AFB.  
Source: Google Earth project, created: March 28, 2023.

Figure 1 shows that the Soewondo Air Base is surrounded by a supply of energy sources that must be maintained. National vital objects are state assets that are very important for national stability in the form of protected facilities and infrastructure because damage to national vital objects will have an impact on national security, economy, and stability. Efforts in supervision and development of both regional and personnel that have been carried out by Soewondo Air Force Base will be more optimal in defense if equipped with a weapons system. There are many threats that can occur in the security of national vital objects, one of which is air attacks, which can be in the form of attacks by fighter planes, unmanned aerial vehicle, and others. Regarding the development of weapons systems in neighboring countries, Soewondo Air Force Base as the executor has provided studies during discussions and continues to monitor by intelligence and planning parties at the Air Force Headquarters. One of the neighboring countries that has strengthened its air defenses is Singapore. Singapore as a country adjacent to Indonesia has strengthened its air defense by improving its air defense system through the application of the technology missile Aster 30 *next-gen*. This is done to strengthen Singapore's air defense network. Indonesia must be aware of the development of weapons systems in neighboring countries, therefore Indonesia must prepare a strong weapon system to prevent threats that have the potential to disrupt national security.

Prevention that can be done against this threat is to make efforts in supervision, monitoring, and security, including by using modern technology that can be used for types of threats that have the potential to occur, including weapons that are base defense both vertical and horizontal. Vertical base defenses are weapons mounted on observation or firing towers that can observe the surroundings, usually in the form of cannons or missiles to deal with threats from the air. Meanwhile, horizontal defense is armaments mounted on the ground aimed at threats from enemy tanks or troops, usually in the form of anti-tank cannons, and various personal weapons.

With the presence of unmanned aerial vehicle (UAV) at the Soewondo-Medan air base, it can increase effectiveness and efficiency in monitoring the border areas in the Malacca Strait between Indonesia and Malaysia. UAV is designed to carry out missions such as intelligence, surveillance, and reconnaissance (Alfarasyi & Andreas, 2019). Therefore, this is considered a priority because the UAV cruising capability and air resistance can make a direct contribution if it is connected to the Indonesian Navy's patrol boats (Sutopo, 2022). In supporting its duties, the Soewondo Air Base must have advanced technology, one of the air weapon systems owned by the TNI, such as missile ground-air. Criteria Missile used must meet the requirements that have the ability to destroy the opponent's air attack before it reaches the national territory. During the journey towards the target, the missile must be able to approach the target with the aim of

discharging weapons or carrying out its duties. To meet these requirements, the missile must have capability criteria which include adequate range, rapid reaction, the accuracy of impact, effective destructive power, resistance to electronic *warfare*, good integration, and high mobility (Priyono, 2011).

The technology already used by the Air Force's Oerlikon *skyshield* Can be applied to protect as well as make it a system countermeasure against the threat of disabling national vital objects by the enemy. According to the Commander of the Air Defense Detachment or DanDenong 473 Paskhas Major Pas Anang Baskoro in Syah (2023), weapons oerlikon *skyshield* MK-2 is a very lethal modern weapon and was produced by Switzerland in 2014. *Oerlikon skyshield* is considered one of the most advanced combat weapons available today. This air shield weapon has a very effective work system that is capable of shooting targets up to a distance of 4 km and can detect objects in the air. After a certain target is locked, the cannon will immediately fire bullets at the target that has been locked. Besides Over *the counter*, the air defense system at the Soewondo air base must also be supported by portable air defense systems manpads, this defense system can anticipate threats to low-flying aircraft, such as anti-aircraft missiles, namely missile Qian Wei-3 (QW-3). The operation of the QW-3 is fairly simple and has high mobility because it has a mass that is not too heavy, so it can be operated individually or applied to combat vehicles. QW-3 has a range of up to 8 km and is equipped with anti-jamming, where this technology can improve missile accuracy and ensure that missiles hit the target accurately.

This weapon system certainly requires an increase in the type of Soewondo air base, to increase the interoperability of the Indonesian Air Force then the Soewondo air base will be upgraded to a type A air base. The Deputy Minister of Defense representing Defense Minister Prabowo Herindra (2023) said that the Ministry of Defense provided support for the relocation of the Soewondo Air Base to a more strategic location and met the safety requirements of flight operations. The decision to relocate the Soewondo Air Base became a necessity because the area around the Air Force's flight operations no longer met optimal requirements and had turned into a residential area contradicted the requirements for the flight operation area, namely that it had to have an Aviation Operations Safety Area far from residential areas. In addition, another factor that must be considered is the decision of the Regional Government of Medan City which designates the area around the Soewondo Lanud in Polonia District as a Special Area. *Central Business District* (CBD).

Relocating the Soewondo Air Base far from downtown Medan can improve security and defense strategies, especially given the potential for increasingly complex and diverse threats in the future. The government has promised to provide adequate weaponry to improve the defense system of Soewondo Air Base. The new Soewondo air base at Hamparan Perak will be equipped with reconnaissance, combat, helicopter, and other squadrons. air force military units for combat missions like fighter planes, bombers, reconnaissance planes, and air refueling planes. It is intended to carry out air patrols, attacks, and reconnaissance aimed at supporting military operations. The improvement of this weapon system will provide positive benefits for Soewondo Air Force Base. The area of the Soewondo Air Base in Hamparan, which will become the new location for the Soewondo Air Base, is around  $\pm 1,200$  Ha. It will be the largest air base in the area. The location is northwest of the current position and can be reached in 45 minutes or as far as 5 miles. With the relocation and improvement of the type of air base itself, it is hoped that the role of the Soewondo air base can be more optimal against air defense.

## CONCLUSION

Violation of Indonesian airspace has the potential to become a threat to national security and airspace sovereignty. Oversight of Indonesia's airspace is still constrained by the lack of available weapons systems and capabilities. Cooperation and coordination between Soewondo Air Force Base and related agencies are needed to maintain air security in North Sumatra and its surroundings and to strengthen weapons systems so that they can operate optimally in air defense and maintain national sovereignty, especially in securing national vital objects. In order to achieve optimal Indonesian air defense efforts, it is necessary to increase air defense in the Soewondo Air Force assignment area. One of the efforts that can be made is by increasing the classification of the Soewondo air base type to type A, which is equipped with a more modern weapon system, such as a missile that works as a technology countermeasure, like Oerlikon *Skyshield*. In addition, MANPADS technology such as the QW-3 missile and UAV can be used as a technology for mission intelligence and surveillance.

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