

The Role of Air Power in UN Peacekeeping

By Lisa Sharland, Jarrod Pendlebury and Phillip Champion

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About the Authors

Lisa Sharland is a Senior Fellow and Director of the Protecting Civilians and Human Security Program at the Stimson Center.

Jarrold Pendlebury is an air domain specialist and former air mobility pilot (C-130H, C-17A and C-27J). He has a PhD in military sociology.

Phillip Champion is an air strategist and military strategic planner.

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Cover photo: A United Nations helicopter drops off election day materials and personnel for polling centres in Sibuni and Atudara, remote areas in Timor-Leste, in advance of the second round of presidential elections. UN Photo/Martine Perret.

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Abbreviations

CASEVAC.....	Casualty Evacuation
C2.....	Command and Control
CONOPS.....	Concept of Operations
DMS.....	Director of Mission Support
DOS.....	Department of Operational Support (UN)
DPO.....	Department of Peace Operations (UN)
ICAO.....	International Civil Aviation Organization
IED.....	Improvised Explosive Device
MSS.....	Multinational Security Support Mission to Haiti
ISR.....	Intelligence, Surveillance and Reconnaissance
MEDEVAC.....	Medical Evacuation
MINUSMA.....	United Nations Multidimensional Integrated Stabilization Mission in Mali
MONUSCO.....	United Nations Organization Stabilization Mission in the Democratic Republic of the Congo
PCRS.....	Peacekeeping Capability Readiness System
PKISR.....	Peacekeeping-Intelligence, Surveillance and Reconnaissance
POC.....	Protection of Civilians
ROEs.....	Rules of Engagement
UAS.....	Uncrewed Aircraft System
UAV.....	Uncrewed Aerial Vehicle
UNFICYP.....	United Nations Peacekeeping Force in Cyprus
UNIFIL.....	United Nations Interim Force in Lebanon
UNISFA.....	United Nations Interim Security Force for Abyei
UNMISS.....	United Nations Mission in South Sudan



A helicopter flies over the village of Ogossagou in central Mali. UN Photo/Harandane Dicko.

Executive Summary

The air domain is an integral part of UN peacekeeping. Air assets — such as fixed-wing aircraft, attack and utility helicopters, and uncrewed aerial systems (UAS) — enable peacekeepers to move personnel and materiel, obtain situational awareness and peacekeeping-intelligence, and deter and respond to attacks. Characteristics such as speed, elevation, agility, and reach make air assets critical enablers in peacekeeping missions. Air power has a fundamental role in supporting the safety and security of peacekeepers and positioning them to accomplish their mission mandates.

Failures in mission settings to effectively utilize the air domain due to host-state restrictions have had deadly consequences for peacekeepers. Air assets and the use of the air domain are critical to mandate implementation by protecting civilians (e.g., in current contexts such as the Central African Republic (CAR) and South Sudan); supporting efforts to observe, monitor, and report on cease-fires or buffer zones (e.g., in Cyprus and Western Sahara) and arms embargoes (e.g., in Lebanon); enabling peacekeepers to undertake peacebuilding tasks and extend state authority through support to the security sector (e.g., in the Democratic Republic of the Congo (DRC)), and providing logistical support to regional peace operations or parallel operations (e.g., Somalia).

Despite the criticality of the air domain to peacekeeping operations, the UN has struggled to generate, sustain, use, and operate a range of air assets and capabilities across missions. Strategic and operational obstacles have included denial of freedom of movement by host authorities, complex command-and-control (C2) processes, restrictions and caveats applied by troop-contributing countries, pressures to drive down costs and increase efficiencies, limited expertise and diversity to support situational awareness and new technology platforms, and a lack of a gender-responsive approach to the air domain. Many of these problems are linked to issues pertaining to force generation, both in terms of military air assets and civilian contractors. Such obstacles are not necessarily limited to the air domain and are applicable across a range of member state-generated capabilities. The UN has historically relied upon a handful of air-contributing countries and commercial providers, but the war in Ukraine has highlighted the risks of this approach. Shortcomings pertaining to safety and security have contributed to a lack of political will among member states — particularly those with high-end capabilities — to commit personnel or air assets to peacekeeping missions.

In addition to supporting a military objective, air power in a peacekeeping context is also primarily deployed in support of a political objective. Unlike the use of air power in support of national objectives — where the political realm of decision is often far removed both geographically and organizationally from the tactical activities of military forces — air power in a peacekeeping sense is more closely entwined with the politics of UN intervention. It relies on extensive civil-military coordination, where civilians tend to lead on the management of logistics, while host-country authorities provide access to, or in some instances, obstruct, the air space. These considerations, where relevant, manifest themselves in vastly different ways than they do in conventional national military operations.

The notion of air power and the use of the air domain in the context of UN peacekeeping missions is quite distinct from its use in other contexts. Therefore it requires greater clarity and understanding among peacekeeping stakeholders to understand the roles, strengths, and limitations of air power in implementing peacekeeping mandates and achieving mission effectiveness. To support a more comprehensive approach to air power — one that links roles to the delivery of mission mandates — the UN Secretariat should work with member states to bring more clarity and coherence to the use of air power in the context of UN peacekeeping. This paper proposes an **air power concept for UN peace operations** that is guided by three core roles: providing *mobility*, enabling *situational awareness*, and mobilizing a *response* to attacks. Combined, these roles support military and civilian components within the mission and provide a deterrent effect, allowing peacekeepers to more effectively achieve their mandates.

The conceptualization of air power in UN peacekeeping missions differs significantly from the doctrinal approach in many national militaries due to a range of limitations. To start with, use of the term *air power* prompts concerns about the use of excessive force beyond the principles of peacekeeping, given the connotation of air strikes. This paper recognizes that peacekeeping missions must operate in compliance with the principles of peacekeeping, which notably differs from the traditional air power strategy and debates that occur at national command and staff colleges. Another key difference in the context of UN peacekeeping is the mandate and budget set by the Security Council and Fifth Committee respectively. Thus there is a disconnect between *ways* and *means* to achieve an end state or support the objectives of the mission. Decisions regarding which forms of air assets might be deployed are based on templated approaches (like other approaches to force generation), with limited consideration given to the effects that are being sought or the threat environment in which the assets might operate. The UN relies upon member states and civilian contractors to provide platforms, capabilities, and expertise; it does not have an independent capability to plan for and generate these capabilities for the organization. This situation tends to stifle innovation and the use of new technologies, which are imperative to adapt to the evolving threat environment in the air domain, as well as threats to the domain from other actors.

The threat environment in the air domain is rapidly evolving, presenting additional challenges to peacekeeping missions. The war in Ukraine has demonstrated the susceptibility of aircraft and air bases to attacks by cheap commercial drones that have been weaponized. Air power is no longer the exclusive domain of advanced militaries. Peacekeeping missions have already witnessed the use of UAS by non-state armed actors and spoilers to surveil mission operating bases, prompting questions about the need for counter-UAS measures and new doctrinal approaches in missions to prepare for and respond to these threats. This requires adaptation to employ the cyber and space domains more effectively as tools to gather situational awareness, safeguard communications systems, and protect aircraft and personnel from attacks. Peacekeeping must also keep pace with the adaptations taking place in other conflict settings within the air domain. For example, mission leaders need to reconsider how they plan for air infrastructure and the use of air bases, as well as the use of satellites and the electromagnetic spectrum in their operations.

Peacekeeping missions also continue to operate in an environment characterized by geopolitical tensions with difficult relationships with host authorities in some mission contexts, as well divisions

in the Security Council over the strategic direction of peacekeeping. The authorization of the Multinational Security Support mission to Haiti in October 2023, as well as the recent deployment of subregional forces led by the East African Community and Southern African Development Community in eastern DRC has highlighted the need for greater clarity in terms of coordination, command and control, and de-confliction in the air domain. The adoption of Security Council resolution 2719 on the application of UN-assessed funding to African Union-led peace support operations is prompting further consideration of different models of peace support operations and partnerships. These developments have implications for the role of air power and should prompt debate about the role and comparative strengths required to enable UN peacekeeping missions to fulfill their mandates, as well as tools and reforms required within the UN Secretariat to modernize and implement an air power concept. Greater clarity will also enable a more holistic approach to air power as part of UN peace operations and support the maintenance of peace and security in an increasingly complex global security environment.

To address some of these challenges and seize opportunities to support future UN peacekeeping operations, this paper recommends that the UN Secretariat work with member states to:

- ▶ **Articulate and communicate how air power supports mission effectiveness and mandate implementation** through the development of a concept of air power for peacekeeping; systematically capturing data on when and how air assets contribute to the implementation of mission mandates; developing guidance on the integration of gender-responsiveness in the air domain; and incorporating concepts of air power into relevant pre-deployment and in-mission training programs.
- ▶ **Ensure mission planning, procurement and force generation processes are focused on delivery of strategic effects in the air domain** by developing a force generation framework that identifies the expected effect that will be required from a potential air contribution; diversifying contributions and supply chains for air assets; establishing a coordination mechanism or focal point for air capabilities across the UN secretariat; adopting an integrated systems approach to the use of air assets; ensuring aviation procurement mechanisms in the UN system are cost efficient and regularly reviewed; and capturing gender disaggregated data on personnel serving in aviation units.
- ▶ **Identify capabilities to counter the future threat environment to and from the air domain** by developing a policy on UAS in peacekeeping missions; developing a defensive counter-air policy; and convening discussions with air-contributing countries and civilian contractors, among others, to consider lessons from other conflict-settings and the application of emerging technologies to enhance force protection and mandates needs in peacekeeping missions.
- ▶ **Better prepare for the role of air power in different future models of peace operations operating alongside multinational, regional or sub-regional missions** by considering the role of regional support models and inter-mission cooperation to deliver greater strategic effect; and to convene further discussions on the role of air power in different peace support operation settings.



After staying at the United Nations Mission in South Sudan protection of civilians site in Juba for several years, thirteen internally displaced people voluntarily returned to waiting relatives in their hometown Malakal on 25 February. UN Photo/Isaac Billy.

1. Introduction

During the last 75 years, UN peacekeeping has demonstrated itself to be a resilient and adaptive tool to maintain international peace and security. For almost seven of those decades, missions have projected their reach into the air domain to fulfill their mandates. They have drawn on a range of capabilities and platforms provided by member states and civilian contractors to move people and supplies, surveil the mission terrain, and deter and respond to attacks on personnel and civilians. Effective use of the air domain is a core component of modern peacekeeping, particularly during times of crisis or the escalation of conflicts. Nonetheless, limited consideration has been given to the strategic application of air power as a core dimension of UN peacekeeping.¹ Owing to the rapid evolution of threats in the air domain during conflict, as well as debates about the future of UN peacekeeping, the UN Secretariat and member states can no longer afford to overlook the strategic significance of the air domain to UN peacekeeping missions.

Discussions about the role of the air domain in UN peacekeeping operations have tended to focus on assets and capabilities rather than conceptual considerations pertaining to strategic effects consistent with the evolution of threats in the air domain. This is in part due to a lack of expertise in a predominantly land-focused operating environment. In such environments, the leaders of many peacekeeping operations have a strong preference and financial incentive for deploying troops and face the costly requirement for significant investments in air infrastructure. In addition, misunderstandings and sensitivities revolve around the potential misuse of air power as a tool for peacekeeping, where the use of armed air assets is viewed as “escalatory.” Consequently, decision-makers within the UN system and member states have been reluctant to “exploit the air domain to its full potential.”² Such challenges have been compounded by bureaucratic stovepipes between military planning processes in the UN’s Department of Peace Operations (DPO) and civilian-led contracting in its Department of Operational Support (DOS); such stovepiping also extends within individual mission mandating and budgeting processes, which devolve to mission C2 processes and restrict the use of various assets across missions.

Focusing on air assets and capabilities as part of strategic force-generation processes and biennial peacekeeping ministerial conferences has been useful to address short-term capability gaps in missions. However, such approaches will only partly prepare peacekeepers for future challenges. The war in Ukraine has starkly highlighted many of the limitations of the UN’s approach to the air domain, most obviously that the UN Secretariat was heavily reliant on a small handful of suppliers to provide helicopters and other air assets. The lack of a diverse range of contributors, coupled with years of relying on a handful of civilian contractors due to budgetary restrictions, resulted in immediate gaps in the supply of air assets to peacekeeping missions at a time when many missions’ resources were already under strain.

Limitations on the supply of air assets have also occurred at a time when the threat environment in peacekeeping missions has been rapidly evolving. Missions in the DRC, CAR, and South Sudan are overstretched geographically. The reliance on air assets is increasing as the threat environment on

the ground becomes more challenging owing to direct attacks on peacekeepers (such as the use of improvised explosive devices (IEDs) seen in the recently withdrawn mission in Mali), as well as difficulties with ground movement owing to climate-induced events. Such challenges are likely to increase in the future. This situation is compounded by restrictions that host authorities are placing on some peacekeeping missions around the use of airspace and the employment of UAS platforms, limiting the ability of peacekeepers to respond to protect civilians during crises and hampering missions in achieving situational awareness of developments on the ground. These restrictions have had dire implications for some peacekeepers: some have lost their lives due to delayed casualty evacuation by air.³

The risks presented by these internal challenges are also likely to be intensified by a range of external threats within and to the air domain. Some missions are already grappling with the threats posed by surface-to-air missiles in their operating theatres, as well as the use of drones to gather intelligence or attack infrastructure.⁴ The proliferation of cheap and easily accessible drones by non-state actors is reshaping the way that air campaigns are fought, presenting risks to higher-end platforms and traditional basing models that involve large, static airfields from which to project air power. Such developments are likely to have profound consequences for the threat environment where UN peacekeeping and regional peace support operations deploy in the future. Conceptualizing how the air domain can be used to the greatest strategic effect in peacekeeping operations is essential to ensure that the air domain will remain a tool fit for its purpose.⁵ In other words, there is an urgent need to address question “how does air power allow us to achieve maximum effectiveness in peacekeeping?”⁶

This report examines how the air domain can be utilized to support the effectiveness of UN peacekeeping operations. It briefly examines how the air domain has been conceptualized in the context of UN peacekeeping and proposes some principles pertaining to the use of air power in UN peacekeeping missions, including how such principles can strengthen mission effectiveness. It then explores some of the different strategic and operational obstacles to the effective application of air power, assesses how air power can support the implementation of mission mandates, considers some scenarios where different applications of air power may warrant further consideration by the UN and its member states, and offers recommendations to develop a more coherent approach to the use of the air domain in UN peacekeeping. The report is intended for officials in the UN Secretariat, military and diplomatic representatives of member states, and peacekeeping mission personnel, who together have an ability to shape the way air power is conceptualized in the context of UN peacekeeping.

This report focuses on air power in the context of UN peacekeeping. It does not explore the application of air power more broadly in a range of other UN settings, including the use of UN assets for humanitarian purposes (e.g., the World Food Program and UN Humanitarian Air Service), special political missions, and logistics support-office type missions operating in parallel with regional peace support operations. Nonetheless, the authors of this paper understand that there is increasing recognition of a need for more “nimble, adaptable and effective mission models” due to the evolving nature of conflict⁷ as well as interest in regional responses to conflict, particularly on

the African continent following the adoption of UN Security Council resolution 2719.⁸ Many of the analyses and wider principles explored in this paper are applicable to the spectrum of various peace operations models led by the UN, or in partnership with regional and subregional organizations, as anticipated in UN Secretary-General António Guterres' *New Agenda for Peace*.

The report is based on research conducted by the Stimson Center in January-November 2023. It draws on extensive desktop research supplemented by interviews with a range of interlocutors including UN officials at headquarters, military advisors from troop-contributing countries, and peacekeeping mission personnel. The research was further informed by a workshop hosted in New York with UN officials, representatives from troop- and police-contributing countries, and peacekeeping experts in May 2023.



A United Nations MI-26 heavy lift helicopter landing at Monrovia airport. UN Photo.

2. Evolution of the Use of the Air Domain in UN Peacekeeping

The air domain has been an important part of UN peacekeeping missions since the establishment of some of the earliest missions by the UN Security Council.⁹ Helicopters and light aircraft were employed in the UN Observation Group in Lebanon in 1958, with the core task of supporting the mission's military observation function through surveillance, namely, to "ensure that there is no illegal infiltration of personnel or supply of arms or other materiel across the Lebanese borders."¹⁰ Long-standing missions in Lebanon and Cyprus continue to rely on air assets to fulfil their observation functions to this day. Yet the air domain has also been exploited to support peacekeepers' efforts to deter attacks and act in self-defense, consistent with the mission's mandate. In such mission contexts the risks of flying were often significant owing to the terrain and attacks on UN forces by hostile groups, as occurred in the Congo and Angola.¹¹ In the 1960s, in the country then known simply as "Congo," fighter jets and bomber aircraft were used to deter and respond to attacks in support of the mission's mandate to prevent the outbreak of civil war.¹² The use of such capabilities in UN service has generally been viewed as an outlier, yet member states have authorized their use at times, particularly when the threat environment from within and to the air domain has warranted a strong response.

Some important historical studies have been done on the application of the air domain in the context of UN peacekeeping.¹³ Such analyses provide a valuable foundation for assessing some of the risks, limitations, and strategic challenges that warrant further analysis and consideration in the current context of UN peacekeeping. Important lessons can also be drawn from the doctrine and approaches of UN member states to air power or in their respective national military institutions. How best to harness the air domain for strategic effect has occupied the minds of scholars and practitioners over the last century.¹⁴ A perennial problem in these analyses is a fixation on the assets that have traditionally delivered air effect. In essence, this has resulted in a strong emphasis on analyzing *what* to use to exploit the air domain, at the expense of broader considerations of *why* and *how* an overall strategic aim can be achieved.

Peacekeeping has traditionally considered air capabilities as an enabling function, with limited consideration given to how air power might be employed to achieve effects that directly support fulfillment of the mission mandate. Such bifurcation of air capabilities into *front-line* and *enabling* roles creates difficulty in appreciating how so-called *support* capabilities can independently deliver strategic effect and serves to limit the ability to harness the air domain in novel and creative ways. At best, this reduces operational flexibility and effectiveness. At worst, it can lead to the establishment

of C2 arrangements that significantly constrain the key strengths of operating in the air domain, namely reach, flexibility, and speed. The conceptualization of aviation as a mission support function is evident in the UN peacekeeping environment, particularly in the complex command-and-control framework that governs who can authorize the use of assets assigned to a particular mission. The concept of *front-line* and *support* capabilities is reflected in the relative distribution of responsibilities between a mission's force commander and director of mission support.

Furthermore, peacekeeping has traditionally been dominated by the land domain. Earlier missions were focused on securing territory or observing buffer zones on the ground, and most personnel were from land forces or national armies. Some missions have also required riverine (e.g., the United Nations Stabilization Mission in the Democratic Republic of the Congo (MONUSCO)) or maritime components (e.g., the United Nations Interim Force in Lebanon (UNIFIL)). But these have not dominated force commanders' thinking regarding mission planning or concepts of operations (CONOPS). Although aviation assets have been deployed to peacekeeping missions for decades, there has been limited analysis or consideration given to more *vertical* aspects of peacekeeping and the role of air power, despite the visibility and potential controversies that have emerged around the use of certain assets. The first use of UAS in MONUSCO in 2013, for example, faced opposition from some member states, in part due to concerns about the use and exploitation of information (as well as unfounded concerns that the systems would be armed).¹⁵ Therefore, the UN has often been deliberate in using the terminology *unarmed UAS* (or uncrewed aerial vehicles, (UAVs)), rather than *drones*.¹⁶ Owing to concerns about surveillance, in some cases (e.g., UNMISS) peacekeepers have not been allowed to employ UAS because the host government has not authorized their use.¹⁷

Air assets and aviation units support a range of mission functions. Each of these is articulated in terms of unit type and function in the *UN Military Aviation Manual*. These missions include armed reconnaissance, passenger transportation, cargo transportation, transportation of dangerous goods, specialized operations (e.g., air assault and quick reaction), close support missions (to ground or maritime forces), aerial patrol, casualty evacuation (CASEVAC), medical evacuation (MEDEVAC), search-and-rescue operations, combat search-and-rescue operations, combat immediate extraction operations, neutralization/interdiction to protect civilians and friendly forces, helicopter landing site reconnaissance operations, and joint/multilateral operations.¹⁸ These types of functions are further broken down into the different activities that might be undertaken by fixed-wing, rotary-wing, and UAS platforms. Consequently, the manual is intended for those serving at the operational level rather than the strategic level, articulating the requirements of different units and platforms rather than their strategic effect to support implementation of the overall mission mandate.

Developing a more coherent and strategic approach to the role of the air domain in UN peacekeeping is essential in preparing for the future challenges that peacekeepers are likely to face. In the words of one interviewee, the UN does not consider air power, but only thinks of air assets.¹⁹ A more air-minded culture is necessary as peacekeeping forces face more threats from the air domain. This is imperative to raise awareness among all stakeholders about the challenges facing UN peacekeeping missions in the air domain and to prepare and adapt to future conflict needs and threats. Different countries have developed their own air power policies to guide their national approaches to the air

domain. As modern conflict evolves, the UN should do the same in order to understand the strategic effects it wants to achieve in different types of mission settings and the assets and capabilities that might be required to achieve such effects, even more so because military and aviation procurement processes can take decades, requiring planning and investment. The UN also differs in how it employs military assets, with certain political and legal limitations framing their use. If UN peacekeeping is to be fit for purpose to operate in future threat environments and work with partners and contributors, it must overcome some of the strategic and operational obstacles that prevent it from maximizing the role of the air domain.



Ugandan police officers on their way to board an aircraft at Aden Abdulle International Airport in Mogadishu, Somalia. UN Photo/Stuart Price.

3. Concept of Air Power in UN Peacekeeping

This report seeks to build understanding about the contribution of the air domain to the implementation of peacekeeping mandates (the *ends* or objectives), articulate the different roles that can be used in the air domain (the *ways*) by enhancing understanding of the different effects that air power can provide to peacekeeping in delivery of the mandate, and identify the instruments for delivering on these effects through various resources, policies, processes, and enablers (the *means*).²⁰ The different ways and means are explored in more detail in this chapter through examination of the core and enabling roles of air power.

3.1 Fundamentals of Air Power

The conceptualization of air power and strategy is articulated differently in different national military doctrines and policy statements; nonetheless, it is generally underpinned by core roles that support air strategy in the context of national defense. These traditional air power roles include mobility; intelligence, surveillance and reconnaissance; counter air; and strike or attack.²¹

Many of the traditional concepts of air power are applicable to peacekeeping mission settings, although they are differentiated by certain limitations (e.g., the principles of peacekeeping), guided by carefully negotiated mandates, and adapted to an integrated civil-military environment. Some traditional concepts of air power (e.g., control of the air) might have less relevance in peacekeeping settings, given that they are based on the consent of the host authorities, who generally have control of air space.²² However, this control of the air is not guaranteed. Non-state actors may have access to weapons that can threaten mission air assets, or have the capacity and potential intent to use weaponized commercial UAV platforms in the air domain, threatening not only assets, but mission infrastructure, personnel, and civilians. Furthermore, the host-nation authorities can impose various operational and tactical obstructions (e.g., flight safety assurances) on the mission to prevent effective use of the air domain, despite the agreement with host governments for missions to have freedom of movement as part of status of forces agreements.²³ Thus peacekeeping missions have been unable to rely on the assumption that they will be operating in permissive air space. Such situations are further complicated in contexts where peacekeeping missions are operating in parallel with bilateral security partners that are using military air assets or resources for their own national purposes.

Recognizing the unique limitations, principles, and settings where UN peacekeeping missions operate, this report builds on traditional concepts of air power and proposes the development of a coherent air power concept, uniquely for UN peacekeeping to form the basis of subsequent policies and guidance to harmonize the approach to employment of the air domain in UN peacekeeping. The concept should include three core roles: mobility, situational awareness, and response.

MOBILITY

Peacekeeping missions are frequently deployed in geographical locations that have limited infrastructure (including a lack of air transport and poor roads), and that may be vulnerable to climate events such as flooding during certain seasons. The mobility from air assets such as fixed-wing aircraft and utility helicopters enables peacekeepers to maneuver across geographical terrain, conduct theatre-level airlift across more than one UN mission, undertake aeromedical evacuations of UN and in some cases, non-UN personnel, and act as a deterrent force (e.g., through airborne (via parachute) insertion of troops and equipment). Most important, air assets can also provide enhanced security to move people and goods when there is a significant threat of attack by road.

Some core functions include:

- ▶ Access to remote areas of mission environments that are inaccessible by road due to geography, a lack of infrastructure, climate events or security concerns.²⁴
- ▶ MEDEVAC and CASEVAC when peacekeepers and mandated uniformed partners come under attack and need to be moved for medical treatment.²⁵
- ▶ Heavy and tactical lift to *move* troops, people, equipment, and goods into and across mission settings.

SITUATIONAL AWARENESS

Peacekeeping missions are increasingly relying on the air domain to inform their understanding of the threat environment. Aircraft can support the gathering of information that informs peacekeeping-intelligence, surveillance and reconnaissance (PKISR). This can be enabled through crewed PKISR airborne units (military rotary-wing and military fixed-wing units) and UAS platforms.²⁶ If there are effective communications links, these operations can provide real-time data. Moreover, there is no need for crewed aircraft for observation if this can be done by a UAS.²⁷

Some core functions include:

- ▶ *Gathering* real-time aerial photographic or video imagery to support peacekeeping-intelligence, which may enable reporting on violation of human rights, arms embargoes, or cease-fires.

- ▶ Ongoing *systematic observation* of an area of territory to understand the evolving threat environment (e.g., movement of armed groups or geographic changes that may indicate IEDs) to support force protection of personnel and protect civilians.
- ▶ *Overwatch* of a road convoy (e.g., through small tactical UAS).

RESPONSE

Traditional concepts of air power include roles for strike or attack. This can include responding to attacks on peacekeepers and civilians by employing the use of weapons and force in exceptional circumstances. Mandates and rules of engagement (ROEs) anticipate the need for peacekeeping missions to use force to stop or deter spoilers in order to fulfill the mission mandate.²⁸ The role of *response* generally applies to armed helicopters or fixed-wing aircraft that are equipped with offensive capabilities and designed to carry weapons.²⁹ Aircraft may engage hostile groups as part of armed reconnaissance activities, close support missions (accompanying ground forces that may come into direct contact with armed groups), and combat search-and-rescue operations. Most important, this role does not currently apply to the use of UAS in peacekeeping missions. Other aspects of response could include information operations undertaken from the air (e.g., dropping of leaflets, or radio/television broadcast from airborne assets), or the psychological impact of operations (e.g., the sight or sound of air assets). Enemies can be deterred simply by the sight or sound of air assets, which can create doubt when they may be considering new operations.³⁰

Some core functions include:³¹

- ▶ Providing *fire support* to deployed ground forces.
- ▶ *Deterring* hostile groups or reducing their capabilities through attacks on weaponry or facilities for the purposes of self-defense or to protect civilians.³²
- ▶ Providing armed escorts to ground forces.

3.2 Enablers to and Investments in Air Power

To use air power effectively, air assets and units are also supported by a range of enablers, which are long-term investments necessary to yield the strategic effects delivered by core air power roles. In the case of peacekeeping missions, this includes the establishment of bases, sustainment, C2, communications, and force protection.

BASING

Owing to the transient nature of aviation assets, such assets require somewhere to land and take off, in order to be stored and maintained. In the case of peacekeeping missions, this generally takes place at operating bases, within mission settings, although some aircraft may be based in a regional hub, such as that located in Entebbe. In missions, bases are hubs for mission operations, logistics, and medical support. The establishment of operating bases often underpins the UN presence in the field but also requires a high level of protection to enable operations (detracting from other operational requirements in a mission), both from potential adversaries but increasingly also climate-related events. Recent experience suggests that large, fixed bases will increasingly be vulnerable targets for armed drones and loitering munitions.³³

SUSTAINMENT

To effectively harness air power, peacekeeping missions require personnel who have the skills and training to generate air operations. This includes everything from assessment and planning processes for missions and the development of guidance and training materials to strategic force-generation and aircraft maintenance. Sustainment requires engagement and cooperation between DOS and DPO to ensure that the right mix of military and civilian assets are identified and deployed to support missions, including personnel with expertise in integrating gender considerations into the air operations. It also requires political support from member states to provide the necessary resources and capabilities to enable peacekeeping forces to deliver on their mandates. As the threat environment in the air domain continues to evolve, sustainment roles are also likely to incorporate considerations pertaining to future technologies and their application to peacekeeping missions.

COMMAND AND CONTROL

Although C2 processes cover the spectrum of mission operations, certain aspects require specific consideration and expertise to enable the efficacious employment of air power. Effective C2 requires close coordination with the host-country authorities or other partners who may have control of the air space to ensure the mission can effectively deploy its aircraft to undertake tasks in the mission. Air assets are frequently in high demand in operational settings and require ongoing cooperation among stakeholders (e.g., director of mission support and the force commander, or sector designates) to support their prioritization and effective use. Future consideration for C2 may involve a wider spectrum of tools to deploy and use in the air domain to protect the force or carry out tactical operations against adversaries if the threat environment in the air continues to evolve (e.g., electromagnetic defensive measures).

COMMUNICATIONS

Effective, ongoing air operations require connectivity with a range of platforms across missions to ensure that the aircraft crew are coordinating properly in carrying out their tasks. Exchange of such information can be critical for situational awareness and the operation of other mission components. Limited interoperability between different troop-contributing countries can be a constraint on effective communication, despite requirements within the UN to standardize processes and equipment. UN peacekeeping missions also rely on external satellite communications providers in missions, which is a vulnerability.

FORCE PROTECTION

Peacekeeping missions cannot conduct air operations without ongoing force protection. Air assets and bases have come under attack in a range of missions. Force protection measures may include defense of air bases and air assets on the ground, as well as defensive measures to protect aircraft undertaking operations. The use of UAS by adversaries raises new considerations for missions in terms of force protection, including the deployment of counter-UAS capabilities.



Members of the Canadian medical team work on a simulated casualty during a medical evacuation exercise. UN Photo/Marco Dormino.

4. Strategic and Operational Obstacles

A range of strategic and operational obstacles restrict the ability of UN peacekeeping missions to effectively employ air power. Mandates are established by the Security Council, but they might not be supported adequately to achieve the desired end state or effect on the ground for a number of reasons. Several of these obstacles are more likely to exist in mission settings where there is a lack of so-called “advanced” military contributors and the security environment is hostile to the peacekeeping mission.³⁴

4.1 Denial of Freedom of Movement of Air Assets by Host Authorities

One of the key principles of UN peacekeeping is the requirement for the *consent of the parties*.³⁵ In multidimensional peacekeeping missions that are deployed to support peace in contexts of intra-state conflict, this has generally meant the consent and invitation of the host government to deploy a UN mission. Thus UN missions should have “the necessary freedom of action, both political and physical, to carry out its mandated tasks.”³⁶ This is articulated in each mission’s status of forces agreement (SOFA), which, in the context of the air domain, provides that the peacekeeping mission’s aircraft should enjoy freedom of movement throughout the host country or territory.³⁷

Despite agreements with host-country authorities that peacekeeping missions should have freedom of movement, obstruction of the use of air assets in peacekeeping missions has increased, particularly in the last decade. This has included:

- ▶ *Mission-wide grounding of aircraft.* This was the case in MINUSMA in January 2022, when the Malian authorities grounded all flights following the application of sanctions on the military junta.³⁸ Even though the grounding was temporary, the Malian authorities continued to apply restrictions following the grounding by denying or not responding to flight requests.³⁹
- ▶ *Requirement for prior authorization and/or supervision of flights.* Following the grounding of aircraft in Mali, the authorities implemented a requirement for “prior authorization by the competent aviation authorities,” which “is part of the management of Malian airspace.”⁴⁰
- ▶ *Restrictions on night flights.* In MINUSCA, the Central African government imposed night-flight restrictions that prevented the mission from operating air assets at night. These were only

lifted in December 2022 for medical and casualty evacuations and for MINUSCA to support the national defense and security forces on operations.⁴¹

- ▶ *Restrictions on the use of UAS platforms.* Several host nations have denied peacekeeping missions the ability to deploy or use UAS platforms. South Sudan has long opposed the use of UAS as part of UNMISS.⁴² More recently, the use of UAS was suspended by the minister of national defence and reconstruction in the Central African Republic (restricting the use in MINUSCA) following an attack by an uncrewed aircraft on a helicopter.⁴³ Those restrictions were recently lifted with a notification system put in place.⁴⁴ Most of the flight requests that were denied or received no response in MINUSMA in late 2022 pertained to uncrewed systems.⁴⁵
- ▶ *Requirement for flight safety assurances (FSAs).* In UNMISS, the mission has had a policy of *flight safety assurances* in place since the shooting down of mission aircraft in 2012 and 2014.⁴⁶ This mechanism has provided the Sudan People's Liberation Movement and opposition actors with the de facto ability to restrict peacekeepers' access to certain areas in the country by failing to acknowledge the requests at the national or local levels.⁴⁷
- ▶ *Denying access to land for the construction of airfields.* For example, in Mali, MINUSMA peacekeepers were waiting for authorization from the Malian authorities to build critical air infrastructure on a 5-hectare piece of land.⁴⁸ As a result, an ISR unit that had been pledged for deployment to Timbuktu in 2020 was unable to deploy.

By denying the mission freedom of movement in the air, host-country authorities can restrict the ability of the mission to protect civilians, monitor human rights abuses, and enable humanitarian access in locations where it may be inconvenient for the host authorities to have the mission operate.⁴⁹ This may be due to the movement of host-country security forces; the activities of private military or security companies (e.g., Russia's Wagner Group), which may be in violation of UN sanctions regimes;⁵⁰ or the possible implication of those actors in human rights abuses. In many instances, these environments are inaccessible by road and peacekeeping missions are overstretched geographically, therefore the only means for obtaining situational awareness is via the air.

But restrictions on the use of the air domain also have unintended consequences. Limitations on the force's freedom of movement directly impact the safety and security of peacekeepers by eroding the UN's ability to achieve its 10-1-2 response time frame for mission casualties.⁵¹ The death of two Bangladeshi peacekeepers in the Central African Republic in October 2022 was directly linked to the inability of MINUSCA to responsively launch an air asset to achieve the 10-1-2 timeline.⁵² The UN Secretary-General subsequently called upon the CAR authorities to lift restrictions on night flights due to the negative impact on the safety and security of peacekeepers.⁵³ The Security Council attempted to address this issue through the inclusion of language in the revised mandate for MINUSCA which urged the parties in CAR to enable freedom of movement "by air and at night" in compliance with the SOFA.⁵⁴

The denial of freedom of movement by air also has implications for the ability of missions to move by ground, where convoy movement in areas of IED threats with UAS overwatch represents global military best practice. For instance, in MINUSMA, without ISR support from the air, some troop-contributing countries were unwilling to move owing to safety and security concerns, with each road convoy requiring its own negotiation.⁵⁵ Troop-contributing countries had become accustomed to UAS flights when Operation Barkhane was deployed and the French were controlling the air space, but that situation shifted when the Malian authorities took control.⁵⁶

A more systemic effect of restrictions on the freedom of air movement is the inability to undertake routine training flights to maintain mandated currency requirements for aircrews.⁵⁷ Pilots are required to maintain a wide range of competencies in airborne events, many of which are not easily conducted during operational missions. For instance, pilots and crew members might need to log a certain number of night landings or conduct instrument-landing procedures each month for their experience to be considered “current.” The frequency of these events is tied to the complexity of the activity, thus flight restrictions imposed by host-country authorities can have significant safety-of-flight implications if they affect the ability of aircrews to practice flight events requiring the precision borne of frequent repetition. Such restrictions also render pilots that have deployed to missions unable to fly if they cannot maintain currency in the mission setting.

4.2 Limited Supply of Required Assets and Capabilities

The lack of available assets is a key factor complicating the UN’s ability to effectively harness the air domain.⁵⁸ The UN relies on a combination of military and commercial aircraft to conduct air operations in peacekeeping missions. Unlike other UN settings, which rely primarily on commercially contracted aircraft (e.g., World Food Program, UN Humanitarian Air Service), peacekeeping missions need a diverse combination of military air assets to operate with deployed personnel and provide a range of effects fit for hostile operating environments (e.g., helicopters that are armed and equipped with ISR capabilities, or mobility aircraft fitted with countermeasures to mitigate the risk of surface-to-air attacks).

The UN’s Office of Military Affairs (OMA) and DPO have made considerable efforts during the last decade to strengthen force-generation efforts and better match capabilities with mission requirements. This was one of the reasons for the establishment of the Strategic Force Generation and Capability Planning Cell, which works with troop-contributing countries to address mission gaps. Such initiatives have been supported by more frequent circulation of Uniformed Capability Gap lists,⁵⁹ the establishment of the Peacekeeping Capability Readiness System (PCRS),⁶⁰ and, since 2015, regular peacekeeping ministerial events where member states are encouraged to make practical pledges to meet peacekeeping mission needs.⁶¹ Despite these efforts, the scarcity of aviation assets has persisted.⁶²

One of the primary reasons for these gaps pertains to a lack of political will among current and potential troop-contributing countries. Expensive military aircraft equipped with self-protection measures are often required for national support tasking and take priority over UN commitments (which, in part, explains the absence of many Western and European contributors to aviation in peacekeeping). Air assets are expensive, and military procurement processes can take years. This has resulted in a reluctance on the part of some countries to pledge platforms, particularly in Mali,⁶³ where Germany's Heron UAVs were not fully utilized. Notwithstanding restrictions imposed by host-country authorities, such platforms were not considered to be the right tool for combat support operations⁶⁴ which, for some, sent a clear message indicating a lack of strategic view on the use of air assets in peacekeeping operations.⁶⁵

Although supply-side constraints help to explain part of the puzzle, the complex bureaucracy of the UN makes it difficult to effectively and efficiently use capabilities that *are* made available, making member states even more reluctant to offer high-value military capabilities to peacekeeping missions. The UN has acknowledged that airlift aircraft could potentially serve multiple missions.⁶⁶ In several cases, aviation units and aircraft have served across missions as part of more formal inter-mission cooperation arrangements.⁶⁷ However, the use of such assets has at times proven challenging in practice. One example is Canada's experience during Operation PRESENCE.⁶⁸ An important component of the operation was the episodic deployment of a C-130J Hercules to Entebbe, Uganda, in support of the UN's Regional Support Centre. Conceptually, the aircraft was provided — at minimal cost to the UN⁶⁹ — to support UN operations in Africa; however this plan to service multiple UN missions soon became complex. Of particular concern were administrative arrangements associated with the aircrews, concerns pertaining to budget line items, and even visas — all of which significantly impacted the UN's use of a valuable asset.⁷⁰ More broadly, inter-mission cooperation remains underexplored given the geographic proximity of many current missions.⁷¹ This may be due in part to the prerequisites required to reassign assets across missions (e.g., troop- and police-contributing country support, host-country approval, and Security Council authorization). Nonetheless, there is scope for a more strategic approach to the use of air assets, particularly where missions are in geographic proximity to one another.

Many of these challenges extend into the use of aircraft that are deployed to missions. The UN rents the “service” of military air assets by agreeing to pay for hours flown (except attack helicopters),⁷² and the organization needs to go through a procurement process for *each* air asset because there are no standardized rates for air assets provided by member states. This means that a disparity exists regarding what is paid to various aviation contributors.⁷³ Furthermore, some troop-contributing countries have been reluctant to provide air assets under letters of assist that do not provide compensation for damage when an air asset is attacked in the mission.⁷⁴ Such situations have generally arisen when the member state has not had insurance for the aircraft; thus the member state has borne the direct cost when it is damaged and no longer in use.⁷⁵

There is also no effort to define aviation requirements for peacekeeping missions in a consistent manner; some aviation experts are concerned that the Statement(s) of Unit Requirements (SURs) are old and unresponsive to the current threat environment of missions.⁷⁶ For instance, some assets

pledged on the PCRS may lack nighttime flying capabilities.⁷⁷ Further, there are different approaches to military and civilian air assets, despite their combined contribution to strategic effect. For instance, there might be a SUR in terms of a military contribution, but there no assessment has been undertaken to see whether those needs could be met commercially.⁷⁸

Commercial assets have generally been more reliable to source for missions, but they can be more costly. Efforts to tap commercial air assets for peacekeeping missions have also been affected by the war in Ukraine: Prior to the war, the UN had predominantly relied on Ukrainian and Russian commercial contractors to support its air fleet in peacekeeping missions. Owing to cost constraints and geopolitics, the UN was willing to rely on a small number of contractors rather than diversify the fleet and risk increasing costs. The war in Ukraine and Russia's lack of compliance with ICAO regulations dramatically reduced the UN air fleet. In addition, in the case of military air assets, some troop-contributing countries use Soviet-era aircraft, which require parts that have been impacted by sanctions.⁷⁹ The UN's approach to contracting civilian air assets highlights the difficulty it faces in balancing different types of risks. Although the financial risk of diversifying the contracted fleet could result in short-term increased costs,⁸⁰ such a move might result in an overall reduction in *systemic* risk to operational effectiveness because events such as ICAO identifying a significant safety concern with a particular operator or member state would be less likely to affect the entire peacekeeping enterprise.

4.3 Restrictions and Caveats Applied by Troop-Contributing Countries

Even when countries have the political will to deploy air assets to a mission, an enduring challenge to the UN's ability to raise and deploy member-state military capabilities is the application of caveats.⁸¹ In general, caveats are seen as undesirable in the UN system due to the perception that they “break the equality between contingents and damage the integration required to maintain security,”⁸² but undeclared caveats have the additional potential to introduce friction and complexity to the operational environment at crucial moments if contingent commanders refuse orders from senior mission staff during time-critical contingencies. The Shared Declaration for the Action for Peacekeeping Agenda agreed to by member states in 2018 included a commitment to avoiding caveats or communicating them if they applied,⁸³ which was also articulated in the Fifth Committee's crosscutting peacekeeping resolution adopted in June 2022.⁸⁴

Despite the undesirability of caveats, the UN is often confronted with a choice between having no air asset or accepting one with restrictions. Some troop-contributing countries place restrictions on where they will deploy air assets or the types of operations that they are willing to conduct.⁸⁵ This can present challenges when air assets are required in *extremis* situations and have implications not only for the safety and security of personnel, but also for the reputation of the mission. Such restrictions can also affect the mindsets of peacekeepers.⁸⁶

The application of caveats or lack of specialist capabilities (for example, night-vision capabilities, which allow for a broader range of utility in low-light environments) has led the UN to rely on commercially contracted civilian aircraft to fill aviation gaps, particularly for medical evacuations.⁸⁷

4.4 Contested Command-and-Control Processes

Unlike national militaries, control of most aviation assets within peacekeeping missions is delegated to a civilian lead. The UN Policy on Authority, Command and Control notes that the director/chief of mission support (DMS/CMS) “is responsible and accountable for the effective utilization and tasking of all United Nations commercial/military mission enabling assets,” with the head of the military component (e.g., the force commander) exercising “sole tasking authority over all combat units i.e., attack helicopters and combat engineers.”⁸⁸

The policy has long been a source of contention among troop- and police-contributing countries, who expect that the military will have control over military assets in the mission. For them, this serves to complicate the risk calculus for force commanders because they do not directly control contingency-response aircraft such as utility helicopters, which are often required for CASEVAC. However, the utility helicopters are often under the command of the DMS because they can be used for nonmilitary purposes (e.g., scheduled flights). Some measures have been implemented that offer greater flexibility in extremis contingencies in the C2 policy, including standing approval procedures for tasking of mission assets on short notice (e.g., deployment of Quick Reaction Forces and CASEVAC). Similarly, the policy stipulates that large missions should decentralize and delegate to the field-office level where appropriate. However, this has not mitigated concerns among some troop-contributing countries that assigning command and control of mission aviation assets to personnel outside the military chain of command creates the potential for misaligned incentives, despite evidence from the UN that force commanders generally underuse their allotment of flight hours.⁸⁹

Force commanders’ direct command responsibility for the uniformed peacekeepers drives their decision calculus. For example, a military commander might consider the risk to a convoy movement high enough to warrant further consideration of the options for the execution of the mission. Absent operational control of the air assets, the only options available to the commander within their span of responsibility are to increase the force protection assigned to the convoy (and, by extension, expose more peacekeepers to the risk), or decide not to proceed with the mission. By comparison, the DMS is incentivized to focus more on the management of air assets as a *resource* cognizant of the mission’s budgets and resources, rather than a vehicle to achieve mission effects. Both perspectives are required when making decisions about the use of air assets given the geopolitics, security concerns, and financial considerations underpinning the nature of multilateral peacekeeping, but the weight of these considerations can differ depending on the context, operational requirements, and risks to the safety and security of personnel, or the protection needs of civilians. In the words of one senior UN military official, there is a need to understand what the expectations of others are, with a “mix of humility and responsibility.”⁹⁰

4.5 Cost Efficiencies Driving Force-Generation and Procurement Processes

Cost efficiencies remain a key driver in assessing whether certain platforms are engaged for UN missions. In the words of one interviewee from a troop-contributing country “it’s all about money, not a warfighting concept.”⁹¹ Air operations are one of the more expensive line items in the peacekeeping support account. For instance, the approved resources for air operations in the 2023-2024 budget were \$571,557,200.⁹² Air operations amounted to approximately 9% of the overall peacekeeping budget of nearly \$6.1 billion. There are strong incentives for identifying areas to save money in a geopolitical environment in which government officials are always looking for ways to reduce the peacekeeping budget. However, there are also inherent risks associated with basing force-generation and procurement decisions on narrow assessments of the lowest-cost provider.

The UN seeks to control these costs through cost-effective contract mechanisms, and until recently, this meant most contracts for civilian air support were awarded to Russian and Ukrainian companies. However, this approach has risks, as demonstrated by ICAO’s issuance of a significant safety concern to the Russian Federation for infractions of the *Chicago Convention*, which governs international aviation.⁹³ UN procurement rules require “[t]he State of Registry of aircraft [to] have no unresolved ICAO Significant Safety Concern[s],”⁹⁴ thus the UN was forced to risk-manage and effectively ground Russian-registered aircraft. These developments demonstrate the importance of a comprehensive, risk-based calculus when assessing the value-for-the-money of a contract.

There is currently no mechanism to ascertain whether *apparently* cost-effective contracts are worth the money spent by the UN.⁹⁵ Military aircraft are engaged under letters of assist on a per-flight-hour basis. Despite the expense associated with aviation, the budget for air operations is subject to significant fluctuation due to varying costs across missions.⁹⁶ There is a need to look at what is being spent and where available funds are being underspent and underused in mission settings. There is also no systemic assessment of the impact that the deployment of certain air assets or capabilities has on the implementation of mission mandates. The use of air assets is not currently tracked through mechanisms such as the Comprehensive Planning and Assessment System, although hours flown and quantitative measures are captured as part of Result-Based Budgeting processes.

Cost reimbursement based on usage does not necessarily capture the value of idle air assets that may be in place to support strategic effects, nor the importance of utilizing a certain asset in specific mission settings that differ from the immediate tasking. The one exception here is attack helicopters, which are reimbursed on a monthly rental basis, recognizing that their “availability alone serves as a deterrent and show of force.”⁹⁷ But generally these are in short supply, even though there can be a psychological value in using certain armed helicopters (e.g., Apache) over other assets when there is a need to deter.⁹⁸ Through an accounting lens, the procurement of assets for contingency purposes may not represent value for the money spent. However, similar to the cost/benefit analyses that underpin a city’s decision to fund emergency services such as fire and police, the financial risk of latent capabilities should be weighed against the overwhelming benefit of having the assets on hand for contingency purposes.⁹⁹

Finally, criteria that guide decisions around force generation and procurement also do not comprehensively consider carbon footprints and the environmental impacts of certain aircraft. According to some of those interviewed, these conversations are starting to shift, particularly as member states request a greater focus on the environmental impact of peacekeeping¹⁰⁰ and missions are required to comply with environmental policies.¹⁰¹

4.6 Limited Expertise and Diversity to Fully Employ Air Assets

The evolving nature of technology in the air domain requires personnel that are skilled in the operation and management of air assets. In addition to personnel and flight crews, for missions to fully employ air assets and the air domain, there is a requirement for specialized personnel who can process and analyze imagery. Several missions have UAS and imagery officers supporting the use of UAS platforms in the missions. For example, the MINUSCA mission has three UAS specialists and four imagery specialists.¹⁰² But there is no guarantee that personnel being deployed to those positions will necessarily have the required background, particularly in intelligence. Technical challenges may also arise with the use of data obtained by platforms. For instance, some troop-contributing countries do not have the expertise to download data from different UAS platforms.¹⁰³

That expertise also extends into a requirement to understand and integrate human considerations — such as gender — into the use of air power. There are several DPO policies on gender-responsive peacekeeping.¹⁰⁴ More recently, the UN has developed clear guidance on the expectations of military components for integrating a gender perspective into operations, detailing the different responsibilities for the U2 (intelligence) and U3 (operations) sections of the military component for gender-responsive conflict analysis as part of peacekeeping-intelligence processes, as well as planning, activities, and operations that can include air operations.¹⁰⁵ Nonetheless, gaps remain on systemic guidance for military *and* civilian aviation units in terms of planning or operations. Without explicit direction for these units to be gender-responsive, these concerns are unlikely to be integrated consistently. Given UN peacekeeping's leadership on gender-responsive operations, such expertise should inform a clear gender-responsive approach to the air domain.¹⁰⁶

Although a concerted effort is under way to track the number of women serving at various levels across missions, including in contingents and as experts on missions as part of the Uniformed Gender Parity Strategy, this effort is not taking place in different military and civilian aviation components, which could illustrate potential gaps in the air domain. Peacekeeping missions should capture gender-disaggregated data in aviation units and report on it to identify gaps and areas for improvement in the sector. Barrier assessments undertaken within troop- and police-contributing countries should also seek to identify why gaps exist in air units in deploying countries because these might require more targeted reforms in relation to basing and infrastructure in missions, as well as institutional support while on deployment. Furthermore, adapting terminology in the Aviation Manual (which uses “him”) would be a helpful starting point to strengthen inclusivity within the air domain.

5. Enabling Safety and Security and Mandate Implementation

In the same way that national security strategies tend to guide the role of air power in domestic contexts, the Security Council mandates set the strategic objectives of peacekeeping missions. These are translated to the military component through the development of military CONOPS and rules of engagement, as well as statements of unit requirements that articulate the uniformed capability needs of a mission to deliver on a particular mandate, often based on earlier planning missions that have been undertaken. However, throughout these processes, the role of the air domain is rarely conceptualized in its entirety to consider how it might deliver effects based on the overall objectives of a mandate.

Before even considering how the air domain can advance mandate implementation in UN peacekeeping missions, it is essential to consider the centrality of air power to the **safety and security of personnel** because without it, peacekeeping forces are unable to deliver on their mandates. Although most of the threats to peacekeepers currently emanate from land,¹⁰⁷ in some instances local security forces have been subject to attacks from UAS in the air.¹⁰⁸

The evolving exploitation of the air domain in other conflict settings has implications for the ability of peacekeeping forces to protect civilians. Conflicts in the Middle East, Africa, and more recently, Ukraine, have demonstrated the spread of commercial and military-grade drones.¹⁰⁹ Peacekeeping missions have already reported observing UAS flying over bases. Although it is not clear at this stage whether any have been weaponized with IEDs, peacekeeping forces need to be prepared for IED use against civilians and a potential threat to their own safety and security.¹¹⁰ As noted earlier, peacekeepers have died as a consequence of being shot down in air frames, and air assets have recently been attacked by surface-to-air missiles.

The use of air assets has historically provided a means for missions to mitigate the threat to land convoys in mission settings by providing *mobility*. For example, in Mali, it could take up to four weeks for a convoy to reach the farthest location of the mission at considerable risk of ambush or IED attack.¹¹¹ Such risks prompted some troop-contributing countries (such as Egypt) to suspend their activities in MINUSMA in July 2022 following the death of seven peacekeepers.¹¹² This consequently required a surge in air operations to maintain supply chains, which proved unsustainable in the longer-term, despite the fact that doing so effectively removed the risk of IED attack, thereby significantly improving the safety and security of deployed forces.¹¹³ The use of air assets including fixed-wing and UAS can also provide important *situational awareness* and ISR capabilities in support

of mission ground movements, thereby providing another layer of force protection.¹¹⁴ The loss of such situational awareness due to flight denials for UAS in MINUSMA prompted some troop-contributing countries to withdraw from the mission.¹¹⁵ Similarly, air assets — particularly armed military helicopters — can provide an important deterrent effect and *response* if peacekeepers are attacked and are required to use force in self-defense.¹¹⁶

As noted earlier, the effective employment of air power in peacekeeping contexts affects the mindsets of peacekeepers and their contributing countries, and therefore impacts sustainment. Peacekeepers cannot be dedicated to their mission if they are not convinced they will be rescued. If peacekeepers believe they will be rescued, they are more likely to be committed to the mission, which leads to operational success. There is a strong link between efficient and effective medical evacuation and the commitment of peacekeepers.¹¹⁷ Effective use of air power can therefore contribute to more positive mindsets to deliver on the mission mandate.¹¹⁸

In addition to its clear utility in enhancing the safety and security of personnel, air power can advance mandate implementation at a strategic level in four ways: by protecting civilians (including through the facilitation of humanitarian assistance and monitoring violations to human rights); supporting cease-fires and political processes through observation, monitoring, and reporting (including arms interdictions and buffer zones); undertaking peacebuilding activities (including electoral support); and providing logistical and enabling support to host authorities and other partners (e.g., African Union (AU) missions).

5.1 Protection of Civilians

Protection of civilians (POC) has been a core component of UN peacekeeping missions for over two decades. This requires a whole-of-mission response, with the military component assuming significant responsibility for actions under the UN's "Tier II Provision of Physical Protection." Although there is no explicit reference to aviation capabilities in the current DPO *Policy on the Protection of Civilians in United Nations Peacekeeping*, the policy does explicitly note that assets "should be mobilized to implement the POC mandate, as necessary."¹¹⁹ Several mandates refer to the importance of the mission maintaining proactive deployments that have a "mobile, flexible, robust and effective posture, including by conducting active patrolling by foot and by vehicle."¹²⁰ Some are even quite explicit on the use of air assets when it comes to protection of civilians. The mandate for MINUSMA called upon the mission to protect civilians with the support of the Malian authorities by "prioritizing the deployment of ground and air assets, as available, in areas where civilians are most at risk."¹²¹

Geographical overstretch and limited resources mean that the mobility, situational awareness, and response provided by air assets is essential in ensuring that missions can deliver on their POC mandates. Air assets such as helicopters enable the movement of military and civilian personnel to remote locations to undertake patrols and engage with communities; the heavy lift provided by a range of fixed-wing aircraft can support the evacuation of civilians that might be under threat.¹²² The

presence of air assets can act as a *deterrent* to potential armed groups or aggressors, even if they do not conduct any offensive operations.¹²³ And when required, missions have relied on armed military helicopters to deter and respond to aggressors from attacking civilians.¹²⁴

The deployment of UAS has also revolutionized the ability of missions to gather *information* about threats to civilians during the last decade and monitor potential human rights abuses in locations that peacekeeping missions might find difficult to access. For instance, UAS can loiter — at relatively low risk, compared to crewed systems — where armed elements operate and gather imagery about patterns of life.¹²⁵ Nonetheless, their deployment has been limited in several missions owing to restrictions on their use in the mission in certain areas (e.g., not across borders) or at different times of day by the host government. Many of these restrictions have been characterized as concerns about intrusions over state authority, but restrictions are increasingly being applied in contexts where there are multiple security actors and allegations of human rights abuses.¹²⁶ As a result, the multiplier effect that could be delivered through the information gathered by UAS in terms of mobilizing other resources to prevent and respond to attacks on civilians is severely limited in some mission contexts.

Furthermore, in instances where air assets such as armed military helicopters are required to *respond* and use firepower to protect civilians, consideration will need to be given to the application of civilian harm mitigation in the application of air power. If there is more use of air assets to deter and respond to attacks, then measures need to be put in place to ensure any increased likelihood for civilian harm is mitigated.¹²⁷

Ultimately, there are limits to what air power can achieve in supporting efforts by peacekeeping missions to protect civilians. Any effective use of the air domain will rely upon the activities of other mission components including the military, police and civilians working on the ground (e.g., political affairs, civil affairs) to understand the threats to civilians, provide early warning, and support and enable a joint mission response. Efforts to protect civilians in the air domain will need to be gender-responsive and factor in the intersecting vulnerabilities and needs of different groups. It will require consideration of the second and third order impacts resulting from the use of air power to deter attacks on civilians.¹²⁸ Furthermore, such efforts will require ongoing engagement and cooperation with the local population to understand their perception of threats and needs. These limitations need to be clearly articulated in the development of any operational plans to employ air power to protect civilians.

5.2 Observe, Monitor, and Report

Traditional peacekeeping missions — also referred to as “one dimensional missions”¹²⁹ — include mandates with functions to observe, monitor, and report.¹³⁰ This can include observations of cease-fires (e.g., MINURSO), buffer zones (e.g., the United Nations Peacekeeping Force in Cyprus (UNFICYP)), or monitoring of the implementation of arms embargoes (e.g., UNIFIL).

The use of air assets often complements the deployment of military observers in missions or other surveillance and monitoring technologies that might be providing situational awareness and deterring illegal activities by the parties to the conflict. In Western Sahara, air patrols are deployed to monitor compliance with cease-fire arrangements in the mission.¹³¹ In Cyprus, the mission uses the aviation unit to support its mandates to supervise the cease-fire line and maintain a buffer zone. The aviation unit “enables the force to identify violations by air in both sensitive areas and areas that are inaccessible owing to terrain.”¹³² Video footage from air patrols may be shared with the parties to demonstrate violations of the buffer zone.¹³³ Even when flights are undertaken for transport or medical evacuation, they can provide an opportunity to observe suspicious anomalies.

5.3 Peacebuilding Activities and Extension of State Authority

The *mobility* provided by using air assets can be an important enabler to facilitate implementation of peacebuilding tasks in a peacekeeping mission mandate. For example, peacekeeping missions are frequently mandated — usually at the invitation of the host government — to facilitate and support the conduct of free-and-fair elections. Elections are an enormous logistical undertaking in countries that lack infrastructure, roads, and transport. In the DRC, MONUSCO provided logistical “support to the Independent National Electoral Commission by airlifting 50 tons of electoral material from Goma to Bunia and Beni.”¹³⁴ Air assets have therefore played a critical role in providing support for the conduct of elections, including through the movement of ballots.

Similarly, air assets have supported the movement of people and materials to support government-led reform activities. For example, in Mali, MINUSMA “provided air transport to 213 individuals and 2 tons of electoral materials in support of Government-led activities on political and institutional reforms.”¹³⁵ If employed effectively, mission air assets can enable the wider implementation of mission mandates — for instance, in support of civil society engagement and women’s political participation — by ensuring that marginalized groups are transported to take part in political dialogues and engagement activities.

Peacekeeping missions frequently support and enable the host state to extend its authority through presence, capacity, and legitimacy.¹³⁶ Logistical support is often essential to extend the physical reach of certain government services as well as the security forces. Missions can facilitate the movement of people and commerce in contexts where infrastructure is lacking or there are no reliable air services (e.g., the DRC, South Sudan). Furthermore, missions can be mandated to undertake joint operations with security forces (in compliance with the Human Rights Due Diligence Policy). All these activities rely upon the mobility provided by air assets. When peacekeeping missions withdraw, this can result in an acute gap for a follow-on mission presence or the UN country team, as well as host countries, which may have become reliant upon the logistical support provided by the UN assets, particularly for extending state authority in remote areas.

5.4 Support to Regional and Parallel Operations

Some UN peacekeeping missions have also been mandated to provide logistical air support to partners operating in parallel with them. For example, when MINUSMA was deployed, its mandate included provisions for the mission to provide MEDEVAC and CASEVAC and access to life-support consumables to the G5 Sahel Force (FC-G5S), among other tasks.¹³⁷ Such support required the use of MINUSMA aviation assets to provide logistics and movement of goods and to intervene as required if personnel needed transport for medical reasons.¹³⁸ More recently, the Secretary-General asked the Security Council to consider giving MONUSCO a mandate to provide ISR and aviation support for air and ground movement to the East African Community regional force in the DRC as part of the mission transition process.¹³⁹ This has been superseded with the deployment of the Southern African Development Community regional force, however the Council is expecting the Secretary-General to report on “possible logistical and operational support” to “regional forces present in DRC” in June.¹⁴⁰

The UN has operated alongside a range of partners during the last three decades, with some of those partners providing air power supporting the mission to fulfill its mandate, whereas in other cases the UN has been in the lead providing logistical support.¹⁴¹ The *New Agenda for Peace* acknowledges that the UN might be operating alongside other regional and multinational partners in supporting or enabling peace enforcement activities in the future.¹⁴² With the recent adoption of Security Council resolution 2719 authorizing the use of UN-assessed funds for AU-led peace support operations, more consideration of the implications of these mission models and partnerships for air power will be required. This could be through a range of different mission models, including through logistical support packages, for instance. This has been the case in the UN Nations Support Office in Somalia (UNSOS). Although not a peacekeeping mission, the operation relies on many of the same mission templates in delivering support to the AU-led peace operation in Somalia (ATMIS). This has included deploying its aviation fleet (which includes eight fixed-wing and 17 rotary-wing aircraft) to move critical supplies, providing oversight of the aviation safety standards in UNSOM (ATMIS’s predecessor mission), training and mentoring ATMIS personnel on aviation security, and establishing airfields for Somali Security Forces.¹⁴³ The Secretary-General recently recommended the deployment of a logistical support package to support a potential multinational force in Haiti (excluding strategic airlift).¹⁴⁴

These developments demonstrate a need for more comprehensive consideration of the different UN mission needs (e.g., peacekeeping, special political missions, logistical support packages) when working alongside multinational, regional, and bilateral partners — and how they can cooperate, coordinate, and de-conflict in delivering strategic effects from the air domain.

BOX 1. THE FUTURE OF UN AIR POWER: MISSION MODELS AND THE ROLES OF AIR POWER

Several different types of future mission settings will rely on the total utilization of the air domain to deliver on mission mandates, but these may vary in the types of assets they require to achieve this effect due to the footprint of the mission (in terms of size and geography), the type of mandate, and whether they are operating with or alongside any other partners on the ground (e.g., regional or bilateral forces). Some potential scenarios include:

- ▶ ***Multidimensional UN peacekeeping missions with a POC mandate operating in hostile environments*** with a Chapter VII mandate (e.g., South Sudan, the DRC, CAR). Such UN missions are likely to require a sophisticated range of air assets to support heavy **mobility**, armed attack helicopters to provide **deterrence and response**, UAS platforms to support key **ISR** activities such as peacekeeping-intelligence, as well as countermeasures to mitigate potential attacks on bases or contingents from the air. Further, close integration through robust C2 mechanisms, would be necessary to ensure effective cohesion of operational effects.
- ▶ ***Lighter-footprinted UN peacekeeping mission operating under Chapter VI*** providing support for human rights monitoring and/or political processes or special political missions. Such missions are likely to have significant **mobility** requirements but rely less heavily on **ISR** activities to support peacekeeping-intelligence and **deterrence/response** given that their mandates are focused on political processes and that their forces will have been deployed into a setting where there is less fighting.¹⁴⁵ **Mobility** of mission personnel essential to facilitate engagement and good offices roles, particularly if the mission is deployed across large geographic areas and there is a need to access the population.
- ▶ ***UN peace operations mission operating in parallel to a regional, bilateral or coalition force providing air power.*** In some instances, a UN mission might be operating alongside a parallel force engaged in counterterrorism operations or peace-enforcement activities, and reliant on that external support to provide a strategic effect on the ground (e.g., Operation Barkhane, International Force East Timor (INTERFET)).¹⁴⁶ Similarly, there are historical examples of where UN peacekeeping missions have relied on the application of no-fly zones by parallel forces to produce a **deterrent** effect in support of UN mission activities. The UN will need to consider what strategic effect different types of parallel forces *could* bring to supporting the work of

UN peacekeeping, particularly if there is a reluctance of some contributors to provide their air assets and capabilities under UN command and control.

- ▶ *UN mission operating in parallel provides logistical support to another parallel force* (e.g., United Nations Support Office for the African Union in Somalia (UNSOS) in parallel with the African Union Mission in Somalia (AMISOM)). In these instances, the strategic effect required of the mission differs from that of other peace operations, given the focus on logistical support (e.g., through **mobility**) to move other forces, equipment, and personnel into theater.



Quick Reaction Force of MINUSMA hosts base in Ogossagou, Mali. UN Photo/Harandane Dicko.

6. The Future: Pathways to Modernize and Develop an Air Power Concept

As the UN marks 75 years of peacekeeping, the threat environment where peacekeeping missions are deployed is more complex than ever. Peacekeeping missions continue to adapt to “increasingly perilous threat environments.”¹⁴⁷ The different types of threats to peacekeeping missions can have a range of implications for the delivery of mission mandates. First, attacks on personnel not only result in a tragic loss of life but are likely to compel contributing countries to continue to apply caveats to the movement of personnel and use of air assets, which may in turn diminish mission mobility and any deterrence effect. Second, if the mission is unable to protect civilians from attack — either on land or through the air — the local population’s trust in the mission will be undermined. Third, attacks could result in damage to current air capability through damage to air assets or airfields,¹⁴⁸ thereby restricting mission operations and the ability to deliver on the mandate.

The nature of modern conflict requires an ability to undertake civil-military operations across a spectrum of domains, as spoilers and armed groups leverage digital and commercial tools rather than high-end military platforms to wage conflict.¹⁴⁹ An air power concept in UN peacekeeping will therefore need to consider a multidomain approach that factors in and assesses the likely threats emerging from land, sea, cyber space, and climate change, as well as the air, when planning for and implementing mission mandates.

AIR DOMAIN

The evolving exploitation of the air domain in modern conflict settings has important and immediate lessons for UN peacekeeping missions. Conflicts in the Middle East, Africa, and, more recently, Ukraine, Nagorno-Karabakh, and attacks on shipping in the Red Sea have demonstrated the proliferation of commercial and military-grade drones.¹⁵⁰ Peacekeeping missions have already reported observing UAS flying over bases, with some interviewees expressing concerns that it is only a matter of time before armed drones are used against missions by belligerents.¹⁵¹ Some missions have already sighted micro-UAS from unknown sources.¹⁵²

Peacekeeping missions will need to be prepared for the use of armed drones against civilians and a potential threat to the safety and security of peacekeepers.¹⁵³ This will require further consideration of the potential benefits and risks of counter-UAS systems. According to one interviewee, the SUR for the MINUSMA mission was beginning to require counter-UAS capabilities.¹⁵⁴ Some of those

interviewed for this paper suggested that the UN needs a more explicit policy on drones, which explores countermeasures, including the capacity to jam the frequency of drones.¹⁵⁵ Despite the overwhelming focus on potential threats, UAS platforms also have the potential to be used for mobility and logistics within missions (e.g., movement of blood and cargo);¹⁵⁶ this idea would benefit from further exploration.

BOX 2. THE FUTURE OF UN AIR POWER: MOVING AWAY FROM THE AIR BASE MODEL

Peacekeeping operations have traditionally relied on crewed fixed- and rotary-wing capabilities to deliver mission effects through the air domain. A weakness of these traditional capabilities is a reliance on large, fixed air base infrastructure to support and sustain operations. Moreover, the price of entry for armed groups to deliver asymmetric effects against this fixed infrastructure has been declining, and disruptive capabilities are becoming increasingly available to non-state actors.¹⁵⁷

Although a level of fixed air base infrastructure will always be needed — particularly for inter-theatre lift — technological advances in autonomous uncrewed, swarming, and expendable one-way systems offer opportunities for peacekeeping operations to untether from a complete dependency on intra-theatre static infrastructure. This would provide operational commanders with the ability to negate the impact of emerging threats through dislocation rather than just through overmatch by resourcing the protection of fixed bases and infrastructure.

Meanwhile, increasing opportunities are emerging with uncrewed platforms in the fields of air logistics, battlefield resupply, and casualty evacuation. Commercial entities are already well advanced in small-package delivery, and as payloads increase, the utility and applications will also expand commensurately for peacekeeping applications. Although crewed fixed and rotary-wing aircraft will conceivably continue to play a vital role in support of peacekeeping operations, as technology continues to evolve further experimentation, analysis, and comparison are warranted to understand how low-cost/high-volume autonomous uncrewed and runway-independent systems could be employed in peacekeeping operations to deliver increased flexibility in support of the mission's mandate.

LAND DOMAIN

Peacekeeping missions have faced threats to air assets and capabilities from land for decades, from hostile ground fire, through to the use of so-called man-portable air-defense systems (MANPADS) or potential damage to aircraft on the ground from indirect fire such as mortars.¹⁵⁸ MINUSMA, for instance, relied on a partnership with France to provide perimeter and counter-rocket, artillery, mortar radar to warn personnel in Kidal camp about potential threats.¹⁵⁹

Furthermore, threats on land such as IEDs lead to a heavy reliance on air mobility to move personnel between bases. These requirements have placed such significant demands on mission resources that it can take up to a week for flights to move people across locations, hampering operational effectiveness within the mission.¹⁶⁰ Some interviewees indicated there was a need for the UN to rethink its whole approach to air assets with the development of a mission movement concept that would consolidate planning across UN departments and identify the different transport and logistical requirements across a mission.¹⁶¹ The requirements of peacekeeping missions in landlocked settings differ greatly from the requirements for missions in areas that have access to the sea and infrastructure with suitable roads and different threat footprints.

MARITIME DOMAIN

Threats to the air domain can also emerge from the maritime or riverine environment. Although this is less likely to occur given the dominance of land-based operations, some missions (e.g., UNIFIL) have maritime components, or have relied on their ability to provide logistical support in maritime domains. These missions need to be prepared to defend assets (such as ships) from potential attacks. The recent attacks by Houthi rebels on civilian shipping in the Red Sea demonstrate the asymmetric capabilities of cheap UAS. Moreover, there is the potential for maritime platforms to be used to launch missiles, etc., into the air domain. Given strategic global concerns about the deteriorating maritime security in some parts of the world, this potential threat scenario will need to be considered.

CYBER AND SPACE DOMAINS

Aviation assets rely heavily on the communications systems to carry out their operations. However, these systems are increasingly vulnerable to interference from a range of tools that can jam communications or disrupt the electromagnetic spectrum.¹⁶² These tools can cripple communications, and render weapons guidance systems useless. This has not been a significant issue for peacekeeping missions to date. However, because threats from the air domain evolve and barriers to entry to access ground-to-air and UAS platforms proliferate in the hands of armed groups, peacekeeping missions will need to consider such capabilities, particularly as part of force-protection measures because they have a significant impact on air-power functions within missions.

Similarly, further consideration will need to be given to the role of space, particularly as more member states and private companies seek to exploit the space domain. Commercially available satellite imagery can provide important information to mission planners; however, information is often not available in real time. If peacekeeping is to utilize the air domain to its greatest effect, it will need to consider the tools and technologies that will enable it to implement its mission mandates more effectively, in a way that complies with the principles of peacekeeping. Although the use of open-source imagery may sidestep restrictions by host states, it may challenge the relationship by reinforcing the suspicion of the UN as gathering intelligence on host nations.¹⁶³ More important, modern aviation is heavily dependent on access to satellites for positioning, navigation and timing, and the UN should consider how it could continue to deliver air-power effects in situations where satellite access is degraded or defeated through jamming, access restrictions, or equipment failure.

BOX 3. THE FUTURE OF UN AIR POWER: MORE COMPREHENSIVE PEACEKEEPING ISR

Although beyond the scope of this paper, it is useful to consider options to strengthen ISR capabilities in peacekeeping missions through space-based and terrestrial (crewed and uncrewed) systems. Commercial Low Earth Orbit ISR systems with flexible and high-resolution systems are becoming increasingly accessible and offer significant utility for ISR support to UN peacekeeping operations, both now and into the future. Further, commercial systems offer the ability to share information across broad-spectrum communities of interest because they are not as hampered by security classifications and national release criteria, nor are they constrained by the same airspace restrictions as military ISR (although such uses of technology may not be viewed favorably by host authorities). The use of commercial space could harness strategic partnerships and contracts to deliver mission effects rather than requiring troop-contributing nations to deliver physical assets — much the same as many member states are already doing at an individual level. The data and imagery gathered would still require analysis and interpretation by trained personnel to gain trusted operational insights and actionable intelligence prior to dissemination.

Although the ability to force-generate some highly capable, exquisite airborne ISR capabilities will almost certainly remain important in some mission settings, there would also be merit in understanding how a much larger array of lower-cost/high-volume capabilities could generate an ISR mission effect. Similar to how an adversary could leverage the proliferation of low-entry and accessible technologies, the UN could adopt an approach to overhead ISR that generates synergies across multiple mission mandates and operational theatres.

CLIMATE DOMAIN

Although climate is not traditionally considered a “military domain,” it has significant impact on the air domain and the role of air power in peacekeeping. Air assets can be constrained by climate conditions such as extreme heat, which can render them unable to operate during certain weather events. Airborne ISR platforms might have limited effectiveness in environments with excessive cloud cover. Moreover, air infrastructure on the ground, such as parked aircraft and those at bases, could be susceptible to fires or flooding caused by climate-related events.

Whether it is the impact of the rainy season and flooding on missions, or the arid heat and significant high temperatures, weather events can limit the employability of air power. Air assets can also contribute significantly to carbon footprints. Force commanders and other decisionmakers will need to increasingly factor in climate impacts when planning air operations and making procurement decisions. For instance, this might mean reducing the carbon footprint through the application of new technologies (e.g., Shark Film that reduces drag and fuel consumption).¹⁶⁴ The UN is starting to consider the environmental footprint of various air assets and is re-examining relevant clauses in new-generation contracts.¹⁶⁵ Upstream and downstream issues will also need to be considered, as well as how to utilize positioning and de-positioning legs to minimize the frequency of sectors where an aircraft is empty.¹⁶⁶

The role of air power also varies throughout the lifecycle of a peacekeeping mission. During the startup phase, significant heavy airlift is likely to be required to move personnel and equipment into mission settings, and bases or airfields might need to be built or established. During transitions and exits, peacekeepers are focused on how to ensure they depart while avoiding harm and sustaining gains. This can be challenging when the host government refuses to provide authorization to use airspace for the evacuation and repatriation of personnel and equipment, as was the case when MINUSMA withdrew its personnel from Kidal in Mali in October and November 2023.¹⁶⁷ In the case of MONUSCO’s ongoing transition, discussions are under way within the Security Council to ensure the transition takes place in a manner that is sustainable and does not leave gaps in the capability of security forces to protect civilians. The handover to regional and national security forces in this context will require key mobility assets including air transport, as well as UAS and ISR capabilities to respond to the threat environment.¹⁶⁸

BOX 4. THE FUTURE OF UN AIR POWER: MISSION PLANNING AND OPERATIONS CONSIDERATIONS

The development of a coherent concept of UN air power in support of peacekeeping would assist mission planning processes and the development of military CONOPs to more clearly articulate the potential strategic effect of air power in a mission context.

Key considerations should include:

- ▶ An assessment of the *threat environment* in and to the air from various domains informed by a gender-responsive conflict analysis.
- ▶ The different requirements for strategic effects and possible aviation assets and countermeasures during *different stages of the mission lifecycle*, particularly during startup and transitions and exit.
- ▶ A clear articulation of the *different strategic effects* necessary to deliver on the mission mandate, including the identified roles as part of the mission's air power requirements (e.g., mobility, situational awareness, response).
- ▶ Detailed *measures of effectiveness* in the air domain, including how the mission will measure the impact of aviation assets and countermeasures in supporting the mission mandate (e.g., protection of civilians, safety and security etc.).
- ▶ *Clearly identified roles and responsibilities* for the UN peacekeeping mission pertaining to the air domain, to de-conflict the mission's use of air assets and capabilities with that of other deployed military partners, multinational forces, and/or regional or subregional forces.

7. Recommendations: Developing a More Comprehensive Use of Air Power in UN Peace Operations

Delivering a more comprehensive and modern use of the air domain in UN peacekeeping missions will require a coherent strategic approach to the generation and employment of air power. For air power to deliver effects in mission settings and in support of UN peacekeeping more broadly, the UN and member states need to focus on ensuring that current missions are fit for their purpose in addressing current and future threats, while also addressing the strategic political challenges that create obstacles hindering the use of the air domain in UN peacekeeping.

To deliver on a more strategic approach to air power in UN peacekeeping and peace operations more broadly, the authors of this study make the following recommendations:

1. To articulate and communicate how air power supports mission effectiveness and mandate implementation, the UN Secretariat, in consultation with member states and missions, should:

- ▶ Develop and **articulate a concept of air power for peacekeeping**. Developing and communicating a clearer conceptual framing of the capabilities and the delivery of strategic effects by different air assets and systems would better inform those member states that authorize peacekeeping missions (through the Security Council), determine their budgets (through the Fifth Committee) and provide air assets and capabilities (through force generation and procurement processes). This could include a set of guiding principles that articulate the unique characteristics of air power and how they support the implementation of peacekeeping mandates throughout the lifecycle of a mission.
- ▶ Systematically **capture data** on when and how air assets contribute to the implementation of mission mandates in order to capture the strategic effects delivered from and within the air domain. Doing so could include routine capturing of specific data pertaining to the deployment and use of air assets and potential counter-measures in peacekeeping missions, including those affecting protection of civilians, safety and security of personnel, and support to political processes.
- ▶ Develop guidance on the integration of **gender-responsiveness in the air domain** in peace operations, articulating specific considerations in terms of mobility, situational awareness and response, considering factors such as threat and conflict analysis, planning, procurement, resourcing and the effect of operations on the local population.

- ▶ Incorporate **concepts of air power into relevant pre-deployment and in-mission training programs** to sensitize mission personnel to the role and strategic effects of air assets and approach to the air domain in peacekeeping missions.

2. To ensure mission planning, procurement, and force-generation processes are focused on delivery of strategic effects in missions, the UN Secretariat and member states should:

- ▶ **Develop a framework as part of the force-generation processes that identifies the expected effect** that will be required from a potential contributor or contractor in the air domain rather than building on identification of potential platforms, and foster a conversation with potential contributors about their ability to address that mission gaps. Such an approach by the UN's DPO and DOS could also provide more flexibility in terms of costs and procurement.
- ▶ **Diversify contributors and supply chains for air assets** and platforms in peacekeeping missions. The UN should continue to engage in concerted efforts to diversify the range of countries and platforms required in peacekeeping missions.
- ▶ **Establish a coordination mechanism or focal point** shared across the Department of Political and Peacebuilding Affairs, DPO, and DOS that focuses on developing and managing the network of relationships with member state militaries and commercial providers that would ensure coherence of procurement and force generation, contracting, and letters of assist related to air capabilities. This coordination mechanism could also strengthen efforts to support and enable regional, subregional and multinational forces that may be deploying alongside the UN with air capabilities, or reliant on the UN for logistical support in the air domain.
- ▶ **Adopt an integrated, systems approach to the use of air assets** across the UN Secretariat. Doing so would foster more of a military mindset in DOS as well as an understanding of how different air assets contribute to strategic effects, and similarly, a more thorough understanding of the budget by the force commander.¹⁶⁹
- ▶ **Ensure that aviation procurement mechanisms in the UN system are underpinned by detailed projections of cost** that are regularly reviewed to ensure a contract with an air operator continues to provide the expected value for money. Consideration should be given to alternative methods of contracting air mobility services (determined by mission outcomes, such as cargo volume/weight carried, rather than simply time in the air) and whether these could provide a more effective and efficient use of resources.
- ▶ **Capture gender disaggregated data** on the personnel serving in aviation units to inform understanding on women's participation and efforts to address barriers across missions.

3. To identify capabilities to counter the future threat environment to and from the air domain, the UN Secretariat and member states should:

- ▶ **Develop a policy on UAS in peacekeeping missions.** This should clearly articulate the different uses and roles of unarmed UAS by missions to achieve strategic effects and how they support mandate implementation.
- ▶ **Develop a defensive counter-air policy** that identifies mitigation measures and responses to the emerging threats from the air domain. This should include a focus on potential threats to mission infrastructure, personnel, and air operations, as well as a comprehensive assessment of counter-UAS measures that can be adopted by peacekeeping missions to address the emerging threat of small commercial weaponized UAS platforms, airborne loitering munitions, and offensive electromagnetic measures.
- ▶ **Convene discussions with a coalition of aviation-contributing countries,** civilian contracting companies, and air strategists, as well as with force commanders and directors of mission support to consider the application of emerging technologies in the air domain in order to enhance force protection and mandate needs in peacekeeping missions. This should include comprehensive consideration of lessons from other conflict settings; opportunities offered by the space and cyber domains; and implications for procurement, force generation, and command and control of such platforms in missions.

4. To better prepare for different future models of peace operations operating alongside multinational, regional or subregional missions, the UN Secretariat, Security Council, and member states should:

- ▶ As part of member state consultations on the limits and future of peacekeeping, **consider the role of regional support models and inter-mission cooperation** — including the application of air power across multiple peacekeeping mission settings — to deliver greater strategic effect in the air domain across UN peace operations.
- ▶ Convene a dialogue with regional and subregional organizations — including the AU — to discuss the role of air power in different peace support operation settings to inform future operational partnerships and the UN’s approach to air power in parallel operations.

Endnotes

- ¹ One exception here is the work undertaken by A. Walter Dorn, who provides the most comprehensive historical analysis of the use of air power throughout UN peacekeeping history in his publication, see A. Walter Dorn (ed), *Air Power in UN Operations: Wings for Peace*, (Farnham: Ashgate, 2014). Similarly, Alexandra Novosseloff has also examined the role of air assets in peacekeeping missions, see Alexandra Novosseloff, *Keeping Peace from Above: Air Assets in UN Peace Operations*, International Peace Institute, October 2017, https://www.ipinst.org/wp-content/uploads/2017/10/1710_Keeping-Peace-from-Above-1.pdf.
- ² Author e-mail exchange with former UN force commander, November 2023.
- ³ “Central African Republic: MINUSCA Mandate Renewal,” Security Council Report, November 13, 2022, <https://www.securitycouncilreport.org/whatsinblue/2022/11/central-african-republic-minusca-mandate-renewal-2.php>.
- ⁴ In February 2024, there was a drone attack to civilian aircraft in Goma in eastern DRC, and allegations a surface-to-air missile had targeted a UN observation drone, see “DR Congo accuses Rwanda of airport ‘drone attack’ in restive east,” Al Jazeera, February 17, 2024, <https://www.aljazeera.com/news/2024/2/17/dr-congo-accuses-rwanda-of-airport-drone-attack-in-restive-east>.
- ⁵ Throughout this paper, the term *strategic effect* is used in the manner proposed by Colin Gray, that is, to describe any action (whether at the tactical or operational level) that contributes — even incrementally — to the overall (political) ends desired. See C. Gray, *Air Power for Strategic Effect*, (Maxwell AFB: Air University Press, 2012).
- ⁶ Virtual author interview with senior official in the UN DPO Office of Military Affairs, New York, February 2023.
- ⁷ This call was made in the UN Secretary-General’s *New Agenda for Peace* in 2023, see United Nations, *Our Common Agenda Policy Brief 9: A New Agenda for Peace*, July 2023. This approach also reflects earlier calls for a more comprehensive approach to the whole spectrum of peace operations by the High-level Independent Panel on Peace Operations (HIPPO) report in 2015, see United Nations General Assembly and Security Council, *Report of the High-level Independent Panel on Peace Operations on uniting our strength for peace: politics, partnership and people*, UN Doc. A/70/95-S/2015/466, June 2015.
- ⁸ UN Security Council resolution 2719, adopted in December 2023, provides a framework for the application of UN-assessed funding in support of African Union-led peace support operations.
- ⁹ Although not widely classified as a UN peacekeeping mission, air mobility was provided in support of one of the earliest UN interventions during the struggle for Indonesian independence from The Netherlands in 1947. See Steven Farram, “Australia and the 1947 United Nations Consular Commission to Indonesia”, *The European Legacy*, 2020, 25:5, 535-553, DOI: 10.1080/10848770.2020.1751954.
- ¹⁰ UN Security Council resolution 128 (1958). See also A. Walter Dorn, “UN Observer Group in Lebanon: Aerial Surveillance During a Civil War, 1958” in Walter Dorn (ed). *Air Power in UN Operations: Wings for Peace*, 2014.
- ¹¹ A. Walter Dorn, “Wings for Peace: The Four Facets of Air Power in UN Operations,” *Penser les ailes françaises*, No. 33, accessed at <https://www.walterdorn.net/224>.
- ¹² See A. Walter Dorn, “Peacekeepers in Combat: Fighter Jets and Bombers in the Congo, 1961-1963” in Walter Dorn (ed.), *Air Power in UN Operations*.
- ¹³ See, for example, Dorn (ed), *Air Power in UN Operations: Wings for Peace* and Novosseloff, *Keeping Peace from Above: Air Assets in UN Peace Operations*. Dorn argues that air power in UN peacekeeping consists of “four core capabilities” namely “transportation, observation, communication and firepower”, see Dorn, “Wings for Peace: The Four Facets of Air Power in UN Operations”.
- ¹⁴ Tami Davis Biddle, *Air Power and Warfare: A Century of Theory and History* (Carlisle: United States Army War College Press, 2019), 8.

- ¹⁵ For example, during the UN Security Council open debate focused on trends in UN peacekeeping operations in June 2014, member states such as Egypt, speaking on behalf of the Non-Aligned Movement, made clear that the use “of technology designed to enhance situational awareness, including unmanned aerial vehicles, should be conducted on a case-by-case basis and must uphold the principles enshrined in the Charter,” and that the relevant “legal, operational, technical and financial implications” needed further consideration by member states. See United Nations, *Security Council, 7196th Meeting*, UN Doc. S/PV.7196, June 11, 2014, 54.
- ¹⁶ The UN defines UAS as ‘a system whose components include one or more unmanned aircraft, the supporting network and all equipment and personnel necessary to control the unmanned aircraft’, and UAV as ‘an unmanned aircraft that is remotely controlled by a UAV operator’. See UN DPO/DOS, *United Nations Use of Unmanned Aircraft Systems (UAS) Capabilities*, February 2019, 5.
- ¹⁷ The South Sudanese government opposed the deployment of UAS due to sovereignty concerns. As a consequence, “UNMISS has not deployed unmanned aerial vehicles.” See United Nations, *Budget for the United Nations Mission in South Sudan for the period from 1 July 2020 to 30 June 2021*, UN Doc. A/74/741, March 9, 2020, 66. For consideration of the issue by the Security Council, see United Nations, *Security Council 7581st Meeting*, UN Doc. S/PV.7581, December 15, 2015.
- ¹⁸ United Nations, *Peacekeeping Missions Military Aviation Unit Manual*, Second Edition, April 2021.
- ¹⁹ Author interview with official from the UN DPO Office of Military Affairs, New York, January 2023.
- ²⁰ Challenges Forum, *Considerations for Senior Mission Leadership in UN Peace Operations*, 2nd edition, 2021, 18.
- ²¹ See, for example, Australian Department of Defence, Air and Space Power Centre, *The Air Power Manual*, 7th edition, 2022; UK Ministry of Defence, *UK Air Power*, Joint Doctrine Publication 0-30 (third edition), 2022; and Indian Air Force, *Doctrine of the Indian Air Force*, IAP 2000-22, 2022. Although national approaches differ, some general, consistent principles underpin the use and application of air power. The ones cited here are examples.
- ²² Joint operations with host-country security forces in the air domain could theoretically support efforts to control the air, but UN peacekeeping missions do not seek to exploit the air domain to launch offensive campaigns as part of their mandate.
- ²³ See Julie Gregory and Lisa Sharland, *Host-Country Consent in UN Peacekeeping*, Stimson Center, Washington DC, 2023.
- ²⁴ In MONUSCO, the issue is speed; in the United Nations Mission for the Referendum in Western Sahara (MINURSO), peacekeepers cannot operate west of the berm without air assets; and in the United Nations Interim Security Force for Abyei (UNISFA), they cannot move without air assets in certain areas. Author interview with military advisor from UN member state, New York, January 2023.
- ²⁵ Air assets may also be employed to evacuate or move non-UN personnel requiring medical treatment (e.g., parallel forces) and in certain situations, civilians requiring medical or humanitarian assistance, but policies on the application of UN air assets in the case of non-UN civilians remains unclear. See Seán Smith, *Improving Casualty Evacuations in UN Peacekeeping: MINUSMA’s Experience of Decentralizing Launch Authority*, Center for Civilians in Conflict, January 2022.
- ²⁶ Selection of the platform may depend on the requirements “for speed and payload (where manned assets may be superior) and endurance (where UAS may be superior).” See United Nations, *UN Peacekeeping Missions Military PKISR Unit Manual*, 2022, 39.
- ²⁷ Author interview with officials from the UN Department of Operational Support, New York, January 2023.
- ²⁸ Self-defense and defense of the mandate is one of the three core principles of peacekeeping.
- ²⁹ These “weapons may include advanced tactical radars, anti armor, air to ground, or air-to-air guided weapons, and equipped with integrated fire control and aiming system.” See United Nations, *Military Aviation Unit Manual*, April 2021, 39.
- ³⁰ Virtual author interview with senior official in the UN DPO, Office of Military Affairs, New York, February 2023.
- ³¹ See United Nations, *Military Aviation Unit Manual*, 40.

- ³² For example, in Cote d'Ivoire in April 2011, the UN peacekeeping force used attack helicopters to fire on military bases with heavy weapons that were under the control of deposed President Laurent Gbagbo's forces, who had been undertaking attacks against peacekeepers and civilians. See "Battle rages in Ivory Coast, UN fires on Gbagbo bases", *Reuters*, April 4, 2011, <https://www.reuters.com/article/idUSLDE7331FN/>.
- ³³ See Brendan Deveraux, "Loitering Munitions in Ukraine and Beyond", *War on the Rocks*, April 22, 2022, <https://warontherocks.com/2022/04/loitering-munitions-in-ukraine-and-beyond/>.
- ³⁴ Many of the challenges identified are less frequent in mission settings where there tends to be a critical mass of Western and European military contributors who provide higher-end capabilities, for example, Cyprus (UNFICYP) and Lebanon (UNIFIL).
- ³⁵ Three principles guide UN peacekeeping: consent of the parties, impartiality, and nonuse of force except in self-defense and defence of the mandate. See United Nations, *United Nations Peacekeeping Operations: Principles and Guidelines*, ("Capstone Doctrine"), 2008.
- ³⁶ United Nations Peacekeeping, "Principles of Peacekeeping", <https://peacekeeping.un.org/en/principles-of-peacekeeping>.
- ³⁷ Each peacekeeping mission with a military component has a SOFA in place, which is based on the 1990 Model SOFA, see United Nations General Assembly, *Report of the Secretary-General: Model status-of-forces agreement for peace-keeping operations*, October 9, 1990, UN Doc. A/45/594.
- ³⁸ Flights were suspended on 14-20 January, 2022. See United Nations Security Council, *Report of the Secretary-General – Situation in Mali*, March 30, 2022, UN Doc. S/2022/278, 14. See also Annie Risemberg, "UN Mali Mission Temporarily Grounds All Flights Following Sanctions Restrictions," *Voice of Africa (VOA)*, January 17, 2022, <https://www.voanews.com/a/un-mission-to-mali-temporarily-grounded-all-flights-citing-sanctions-restrictions-/6399884.html>.
- ³⁹ From October 4, 2022 through until the release of the Secretary-General's report on January 6, 2023, 237 MINUSMA flight requests were "denied or received no response from Malian authorities." See United Nations, *Report of the Secretary-General – Situation in Mali*, January 6, 2023, UN Doc. S/2023/21, 12.
- ⁴⁰ United Nations, *Report of the Secretary-General – Internal review of the United Nations Multidimensional Integrated Stabilization Mission in Mali*, 16 January 2023, UN Doc. S/2023/36, 26 (hereafter "MINUSMA Internal Review").
- ⁴¹ United Nations, *Report of the Secretary-General – Central African Republic*, February 16, 2023, UN Doc. S/2023/108, 12.
- ⁴² Tito Justin, "South Sudan Doesn't Need Drones, Attack Helicopters," *VOA*, June 18, 2015, <https://www.voaafrica.com/a/south-sudan-un-drones-chapter-7-unmiss-herve-ladsous/2827947.html>.
- ⁴³ United Nations, *Report of the Secretary-General – Central African Republic*, UN Doc. S/2023/108, 4.
- ⁴⁴ United Nations, *Report of the Secretary-General – Central African Republic*, June 15, 2023, UN Doc. S/2023/442, 15.
- ⁴⁵ United Nations, *Report of the Secretary-General – Situation in Mali*, January 6, 2023, UN Doc. S/2023/21, 12.
- ⁴⁶ See Lisa Sharland and Aditi Gorur, *Revising the UN Peacekeeping Mandate in South Sudan: Maintaining Focus on the Protection of Civilians*, The Stimson Center and the Australian Strategic Policy Institute, December 2015, 12; and Lauren Spink, *Moving Toward Mobility: Providing Protection to Civilians Through Static Presence and Mobile Peacekeeping in South Sudan*, Center for Civilians in Conflict, March 2019, 13.
- ⁴⁷ United Nations, *Report of the Secretary-General – Situation in South Sudan*, February 23, 2021, UN Doc. S/2021/172, 14-15.
- ⁴⁸ MINUSMA Internal Review 2023, 9.
- ⁴⁹ See Julie Gregory and Lisa Sharland, *Host-Country Consent in UN Peacekeeping*, Stimson Center, Washington DC, 2023.
- ⁵⁰ See, for example, United Nations, *Final report of the Panel of Experts on the Central African Republic extended pursuant to Security Council resolution 2536 (2020)*, June 25, 2021, UN Doc. S/2021/569.

- ⁵¹ Under the 10-1-2 framework, enhanced first aid to control bleeding and support breathing is established in the first 10 minutes after an injury is sustained, advanced medical resuscitation is available within one hour, and damage-control is done no later than two hours. See United Nations. *Policy: Casualty Evacuation in the Field*, Ref. DOS/2020.7, March 1, 2020, New York.
- ⁵² The Bangladeshi peacekeepers succumbed to their injuries from an IED attack because air assets were not authorized to fly by the CAR government, and subsequent delays occurred during their evacuation for medical care. According to one interviewee, lives could have been saved if the peacekeepers had been evacuated in a timely manner by air rather than having to travel overland for assistance. This explanation draws on an author interview with member state representative in New York, January 2023.
- ⁵³ United Nations, “Expressing Condolences for Peacekeepers Killed in Central African Republic, Secretary-General Urges National Authorities to Identify Perpetrators,” October 4, 2022, UN Doc. SG/SM/21515, <https://press.un.org/en/2022/sgsm21515.doc.htm>.
- ⁵⁴ United Nations Security Council resolution 2659, UN Doc. S/RES/2659 (2022), para. 52. See also “Central African Republic Mandate Renewal,” *Security Council Report*, 13 November 2022, <https://www.securitycouncilreport.org/whatsinblue/2022/11/central-african-republic-minusca-mandate-renewal-2.php>.
- ⁵⁵ Workshop hosted by Stimson Center and Permanent Mission to Australia: “Role of the Air Domain in UN Peacekeeping: Addressing Current Challenges and Future Threats,” May 4, 2023 (hereafter referred to as ‘Stimson workshop, May 2023’). The lack of “overwatch” was one of the reasons Jordan provided for withdrawing from MINUSMA.
- ⁵⁶ *Ibid.*
- ⁵⁷ The UN Military Aviation Unit Manual defines flight currency as “a theoretical and practical knowledge required periodically by a certified/licensed flight operation/aircrew to enable him to perform his mission/task,” see United Nations, *Military Aviation Unit Manual*, 2021, 221.
- ⁵⁸ Novosseloff, *Keeping Peace from Above: Air Assets in UN Peace Operations*, 21. See also Shelton-Smith, “Advances in Aviation for UN Peacekeeping: A View from UN Headquarters,” in A. W. Dorn (ed), *Air Power in UN Operations*.
- ⁵⁹ These are regularly issued to member states. Refer to the UN Peacekeeping Capability Readiness System website for further information and previous lists: <https://pcrs.un.org/Resources/Forms/AllItems.aspx> (accessed on April 1, 2024).
- ⁶⁰ The system establishes four levels of readiness based on whether there has been an Assessment and Advisory Visit and whether the member state complies with the Statement of Unit Requirements and is ready for rapid deployment. See United Nations, *Guidelines: Peacekeeping Capability Readiness System (PCRS)*, January 1, 2019.
- ⁶¹ See 2023 United Nations Peacekeeping Ministerial, <https://peacekeeping.un.org/en/2023-United-nations-peacekeeping-ministerial>.
- ⁶² The pledging guide for the 2023 Peacekeeping Ministerial in Ghana asked member states to pledge aviation units including attack, armed, and medium utility helicopters, as well as fixed-wing tactical airlift aircraft. Currently no attack helicopters are pledged in the PCRS. See United Nations, *Pledging Guide for the 2023 United Nations Peacekeeping Ministerial*, May 2022, https://peacekeeping.un.org/sites/default/files/peacekeeping_ministerial_pledging_guide_22_may_2023_0.pdf.
- ⁶³ Author interview with officials from the UN DPO Office of Military Affairs, New York, January 2023.
- ⁶⁴ The Herron is a medium-altitude, long-endurance UAV that struggled to provide the desired effect and was deemed to be a less cost-effective means (when compared with smaller, cheaper drones) of providing aerial support to land convoys to assess potential threats by ground. Virtual author interview with military advisor from UN member state, January 2023.
- ⁶⁵ Germany also supplied Tiger helicopters to provide close air support for convoys in Mali. However, they too were underutilized (e.g., could have been usefully used to deter attacks, yet they never fired a bullet). Virtual author interview with military advisor from UN member state, January 2023.
- ⁶⁶ United Nations, *Pledging Guide for the 2023 United Nations Peacekeeping Ministerial*, May 2022, 4.

- ⁶⁷ Examples include sharing of aviation units including military utility and armed utility helicopters between the UN missions in Liberia (UNMIL) and Cote d'Ivoire (UNOCI) in 2010 and 2011. See UN Security Council resolutions S/RES/1951 (2010), S/RES/1968 (2011) and S/RES/2116 (2013); and more recently, between UNMISS and MINUSMA, see United Nations, *Inter-mission cooperation: UNMISS peacekeeping boost MINUSCA capacity*, February 22, 2021, <https://peacekeeping.un.org/en/inter-mission-cooperation-unmiss-peacekeepers-boost-minusca-capacity>. For background context, see also *Inter-mission cooperation*, Casquebleu, https://casquebleu.org/index.php?title=Inter-mission_cooperation (accessed on February 25, 2024).
- ⁶⁸ Government of Canada, "Operation PRESENCE", <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/op-presence.html> (accessed on April 1, 2024).
- ⁶⁹ Canada charged the UN \$1 (Canadian) per flight hour — a significant discount. Virtual author interview with military advisor from UN member state, February 2023.
- ⁷⁰ Virtual author interview with military official from UN member state, February 2023.
- ⁷¹ Author interview with officials from UN Department of Operational Support, January 2023.
- ⁷² Unlike utility helicopters, "attack helicopters are reimbursed on a monthly basis, due to the unique role of such aircraft whose availability alone serves as deterrence and show of force, and as such, benefits UN peacekeeping operations with specialized military mandates," UN Department of Operational Support, *United Nations Procurement Manual*, June 30, 2020, UN Doc. DOS/2020.9, p.134.
- ⁷³ *Ibid.*
- ⁷⁴ One interviewee from a troop-contributing country noted that their government had received no compensation when their military helicopters had been destroyed while parked in Mali. As a result, the country decided it would not deploy additional aircraft to MINUSMA. Author interview in New York, January 2023.
- ⁷⁵ Author interview with officials from UN Department of Operational Support, January 2023. Clause 17.1 of the template letter of assist in the *UN Military Aviation Unit Manual* notes that governments "bear the risk of loss or damage to the body and parts of the Aircraft" and that they may meet that responsibility through insurance or self-insurance.
- ⁷⁶ Stimson workshop, May 2023.
- ⁷⁷ Author interview with official from UN DPO, New York, January 2023.
- ⁷⁸ *Ibid.*
- ⁷⁹ Author interview with military advisor from UN member state, New York, January 2023.
- ⁸⁰ One could mount an argument that diversifying the number of contractors involved in peacekeeping operations could actually drive down costs. This is particularly important for contracting aircraft because operators have many ways to surreptitiously increase their profit in the framework of seemingly cost-effective contracts. The Board of Auditors noted that the successive ICAO rulings — termed an 'exogenous event' — was a high risk to air operations across the organization and required significant risk management. See United Nations, *Financial report and audited financial statements for the 12-month period from 1 July 2021 to 30 June 2022 and Report of the Board of Auditors Volume II United Nations peacekeeping operations*, UN Doc. A/77/5 (Vol. II), January 24, 2023, 38.
- ⁸¹ Novosseloff, *Keeping Peace from Above: Air Assets in UN Peace Operations*, 10. This term refers to limitations placed on the posture and use of pledged individuals, contingents, or capabilities. Caveats may be *declared*, if a member state formally advises UN Headquarters of the restriction(s), or *undeclared*, which describes a situation where the restrictions are known only to the national command chain — until invoked in an operational setting. For further discussion of caveats, see United Nations, *Security Council 7464th Meeting*, June 17, 2015, UN Doc. S/PV.7464. See also Alexandra Novosseloff, "No Caveats, Please? Breaking a Myth in UN Peace Operations," *Global Peace Operations Review Annual Compilation 2016*, 46.
- ⁸² United Nations, *Improving Security of United Nations Peacekeepers: We need to change the way we are doing business*, December 2017, 14 ('dos Santos Cruz Report').

- ⁸³ “We stress the importance of avoiding all caveats which have a detrimental impact on mandate implementation and performance. We as Member States commit to all redouble efforts to identify and clearly communicate any caveats or change in status of caveats, and to work with the Secretariat to develop a clear, comprehensive and transparent procedure on caveats.” United Nations, *Action for Peacekeeping: Declaration of Shared Commitments on UN Peacekeeping Operations*, <https://peacekeeping.un.org/sites/default/files/a4p-declaration-en.pdf>.
- ⁸⁴ See Daniel Forti, “The 2022 Peacekeeping Budget: Signs of Progress or a Fleeting Moment of Consensus?” *International Peace Institute*, July 20, 2022, <https://theglobalobservatory.org/2022/07/2022-un-peacekeeping-budget/>.
- ⁸⁵ Stimson workshop, May 2022.
- ⁸⁶ Fiifi Edu-Afful, *Peacekeeping in Nonpermissive Environments: Assessing Troop-Contributing Countries’ Perspectives on Capabilities and Mindsets*, International Peace Institute, March 2023, 8.
- ⁸⁷ Novosseloff, *Keeping Peace From Above: Air Assets in UN Peace Operations*, 22. See also Arthur Boutellis and John Karlsrud, *Plug and Play: Multinational Rotation Contributions for UN Peacekeeping Operations*, Norwegian Institute of International Affairs and International Peace Institute, May 2017, 24, www.ipinst.org/wp-content/uploads/2017/05/NUPI_rapport_Boutellis_Karlsrud.pdf.
- ⁸⁸ United Nations DPO/DOS, *Policy – Authority, Command and Control in United Nations Peacekeeping Operations*, October 25, 2019.
- ⁸⁹ Author interview with official in UN DPO Office of Military Affairs, New York, January 2023. See also Matthew Fisher, *Canadian Peacekeepers Returning Home from Mali Feeling Under Utilized*, Canadian Global Affairs Institute, September 9, 2013, https://www.cgai.ca/canadian_peacekeepers_returning_home_from_mali_feeling_under_utilized (accessed online August 11, 2023).
- ⁹⁰ Virtual author interview with senior official in the UN DPO Office of Military Affairs, New York, February 2023.
- ⁹¹ Virtual author interview with military advisor from UN member state, January 2023.
- ⁹² United Nations, *Approved resources for peacekeeping operations for the period from 1 July 2023 to 30 June 2024 – Note by the Secretary-General*, June 30, 2023, UN Doc. A/C.5/77/32.
- ⁹³ International Civil Aviation Organization, *Infractions of the Convention on International Civil Aviation by the Russian Federation*, Assembly – 41st Session, Working Paper presented by the Council of ICAO, https://www.icao.int/Meetings/a41/Documents/WP/wp_430_en.pdf.
- ⁹⁴ United Nations Procurement Division, <https://www.un.org/Depts/ptd/aviation> (accessed April 1, 2024).
- ⁹⁵ For instance, an air operator could win a contract through undercutting competitors with a low per hour “rate,” while establishing procedures by which their crews fly sectors slower than necessary to bill more of these “cheaper” hours. In addition, a contract might enable an operator to bill the UN for flight hours from the moment an aircraft starts its engines for a mission to the moment when they are shut down at the end of the flight. An operator might then conduct unnecessary technical activities (such as engine runs) between engine start and takeoff, which could add one-to-two hours to the bill presented to the UN, for which the peacekeeping mission achieved no tangible benefit.
- ⁹⁶ See, for example, air operations in United Nations, *Overview of the financing of the United Nations peacekeeping operations: budget performance for the period from 1 July 2021 to 30 June 2022 and budget for the period from 1 July 2023 to 30 June 2024*, UN Doc. A/77/779, March 1, 2023, 106.
- ⁹⁷ United Nations, *United Nations Procurement Manual*, DOS, June 30, 2020, 134.
- ⁹⁸ Author interview with officials from the UN DOS, New York, January 2023.
- ⁹⁹ Author interview with officials from the UN DPO, New York, January 2023.
- ¹⁰⁰ See United Nations General Assembly, *Report of the Special Committee on Peacekeeping Operations 2023 substantive session*, UN Doc A/77/19, para.44.

- ¹⁰¹ These include the United Nations, *Environmental Policy for Peacekeeping Operations and Field-Based Special Political Missions*, April 2022. That policy requires missions to reduce greenhouse gas emissions, including from commercial air travel and chartered transport (which must be reported on an annual basis), but it does not specify any requirements in terms of military equipment.
- ¹⁰² Virtual author interview with official in MINUSCA, January 2023.
- ¹⁰³ Author interview with officials from the UN DPO Office of Military Affairs, January 2023.
- ¹⁰⁴ See, for example, UN Department of Peace Operations, *Policy on Gender Responsive United Nations Peacekeeping Operations*, UN Doc. 2018.01, February 1, 2018, and UN Department of Peace Operations, *Gender and Peacekeeping-Intelligence*, UN Doc. 2022.08, July 1, 2022.
- ¹⁰⁵ UN Department of Peace Operations, *Guidelines: Implementing a Gender Perspective into the Military Component of United Nations Peace Operations*, Ref. 2023.02, March 1, 2023.
- ¹⁰⁶ There are some examples of this approach in national militaries. See, for example, Commonwealth of Australia, *Gender in Air Operations*, AFDN 1-18, 2018.
- ¹⁰⁷ For example, an attack on a MONUSCO helicopter in February 2023 resulted in the death of one peacekeeper, and a United Nations Humanitarian Air Service flight came under fire near Goma. See United Nations, *Report of the Secretary-General — United Nations Organization Stabilization Mission in the Democratic Republic of the Congo*, March 20, 2023, UN Doc. S/2023/208.
- ¹⁰⁸ For example, in the Central African Republic, on January 21, 2023 in Ndélé, an attack on security personnel by suspected uncrewed aircraft damaged a helicopter. See United Nations, *Report of the Secretary-General-Central African Republic*, February 16, 2023, UN Doc. S/2023/108.
- ¹⁰⁹ Kelly A. Grieco, “What Can UN Peacekeeping Learn From Ukraine’s Drones?”, Stimson Center, May 15, 2023, <https://www.stimson.org/2023/what-can-un-peacekeeping-learn-from-ukraines-drones/>.
- ¹¹⁰ Author interview with officials from UN DPO, New York, January 2023; and virtual interview with official from MINUSMA, March 2023.
- ¹¹¹ MINUSMA Internal Review, 9. More than 548 IED attacks targeting MINUSMA peacekeepers occurred since the mission deployed in July 2013.
- ¹¹² United Nations, *Report of the Secretary-General – Situation in Mali*, UN Doc. S/2022/731, October 3, 2022, 11-12.
- ¹¹³ *Ibid.*
- ¹¹⁴ For instance, helicopter reconnaissance and surveillance can identify and report on hostile forces in real time and might enable missions to geolocate threats from hostile groups on the ground. United Nations, *Military Aviation Unit Manual*, 4.
- ¹¹⁵ Stimson workshop, May 2023.
- ¹¹⁶ United Nations, *Military Aviation Unit Manual*, 5.
- ¹¹⁷ Virtual author interview with senior official in the UN DPO Office of Military Affairs, New York, February 2023.
- ¹¹⁸ *Ibid.*
- ¹¹⁹ United Nations Department of Peace Operations, *Policy on the Protection of Civilians in UN Peacekeeping*, April 2023, https://peacekeeping.un.org/sites/default/files/2023_protection_of_civilians_policy.pdf.
- ¹²⁰ See, for example, United Nations Security Council resolution 2666, UN Doc. S/RES/2666 (2022).
- ¹²¹ United Nations Security Council resolution 2640, UN Doc. S/RES/2640 (2022).
- ¹²² Coordination of air assets and strategic lift have been essential to evacuate civilians during times of crises in missions, such as the outbreak of hostilities in South Sudan in December 2013, see United Nations, *The Protection of Civilians in United Nations Peacekeeping, Handbook*, 2020, 143.

- ¹²³ For instance, long-range patrol aircraft have been used to disrupt the threat posed by armed groups. In Haiti, Canada flew CP-140 Aurora long-range aircraft over the airspace in an attempt to disrupt recent gang violence, see “Canada deploys military aircraft over Haiti to disrupt gangs”, *Reuters*, February 5, <https://www.reuters.com/world/americas/canada-deploys-military-aircraft-over-haiti-disrupt-gangs-2023-02-05/>.
- ¹²⁴ For instance, in Bambari in the Central African Republic in February 2017, the force warned armed groups that any further advance would be a clear threat to civilians and an armed helicopter consequently engaged after 300 members of one of the armed groups crossed the line. See United Nations, *Report of the Secretary-General on the Central African Republic*, UN Doc. S/2017/473, June 2, 2017, 3.
- ¹²⁵ Virtual author interview with official in MINUSCA, January 2023.
- ¹²⁶ For example, this was the case in Mali, where the mission had restrictions placed on its freedom of movement, see United Nations, *Internal review of the United Nations Multidimensional Integrated Stabilization Mission in Mali – Report of the Secretary-General*, UN Doc. S/2023/36, January 16, 2023, 8.
- ¹²⁷ Author interview with officials from the UN DPO, New York, January 2023.
- ¹²⁸ See, for example, Commonwealth of Australia, *Gender in Air Operations*, AFDN 1-18, 2018.
- ¹²⁹ See Alexandra Novosseloff, *A Comparative Study of Older One-Dimensional UN Peace Operations*, Effectiveness of Peace Operations Network and Friedrich Ebert Stiftung, April 2022.
- ¹³⁰ “The tasks assigned to traditional United Nations peacekeeping operations by the Security Council are essentially military in character and may involve the following: Observation, monitoring and reporting – using static posts, patrols, over-flights or other technical means, with the agreement of the parties.” See United Nations, *United Nations Peacekeeping Operations: Principles and Guidelines*, 2008, 21.
- ¹³¹ See United Nations, *Report of the Secretary-General - Budget performance of the United Nations Mission for the Referendum in Western Sahara for the period from 1 July 2020 to 30 June 2021*, November 15, 2021, UN Doc. A/76/529.
- ¹³² United Nations, *Report of the Secretary-General – Strategic review of the United Nations Peacekeeping Force in Cyprus*, 28 November 2017, UN Doc. S/2017/1008, 8.
- ¹³³ A. Walter Dorn, “Electronic Eyes on the Green Line: Surveillance by the United Nations Peacekeeping Force in Cyprus”, *Intelligence and National Security*, Vol. 29, Iss. 2, 184-207 (2014), available here <https://www.walterdorn.net/196-eyes-on-the-green-line-surveillance-in-cyprus-peacekeeping-force#t51>.
- ¹³⁴ United Nations, *Report of the Secretary-General – United Nations Organization Stabilization Mission in the Democratic Republic of the Congo*, UN Doc. S/2023/208, March 20, 2023, 10.
- ¹³⁵ This included “the dissemination of the new electoral law, briefings on the draft constitution and the yearly update of the electoral roll.” See United Nations, *Report of the Secretary-General – Situation in Mali*, UN Doc. S/2023/21, January 6, 2023, 2-3.
- ¹³⁶ United Nations, *Presence, Capacity and Legitimacy: Implementing Extension of State Authority Mandates in Peacekeeping*, 2017, https://peacekeeping.un.org/sites/default/files/civil_affairs_esa_study_19_may_2017final.pdf.
- ¹³⁷ See United Nations Security Council resolution 2391, UN Doc. S/RES/2391 (2017), para. 13(b). This support was limited to when the joint force conducting counter-terrorist operations, the *Force conjointe du G5 Sahel (FC-G5S)*, was operating in Mali.
- ¹³⁸ For example, the mission responded to a request from the G5 Sahel Force to the air delivery of food from Mopti to Bouliekessi by medium utility helicopters in August 2020, see United Nations, *Report of the Secretary-General on the Joint Force of the Group of five for the Sahel*, UN Doc. S/2020/1074, November 2, 2020, 8.
- ¹³⁹ See United Nations, *Report of the Secretary-General on Options for adapting the configuration of the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo and the future United Nations configuration in the country beyond the current mandate of the mission*, UN Doc. S/2023/574, 9.
- ¹⁴⁰ The Security Council requested the Secretary General to report by 30 June 2024, see United Nations Security Council resolution 2717, UN Doc. S/RES/2717 (2023), para. 48, December 19, 2023.

- ¹⁴¹ See Alexandra Novosseloff and Lisa Sharland, *Partners and Competitors: Forces Operating in Parallel to UN Peace Operations*, International Peace Institute, November 2019.
- ¹⁴² United Nations, *Our Common Agenda Policy Brief 9: A New Agenda for Peace*, July 2023, 26.
- ¹⁴³ See United Nations, *Report of the Secretary-General on Budget performance of the United Nations Support Office in Somalia for the period from 1 July 2021 to 30 June 2022*, UN Doc. A/77/684, January 5, 2023.
- ¹⁴⁴ United Nations Security Council, *Letter dated 14 August 2023 from the Secretary-General addressed to the President of the Security Council*, UN Doc. S/2023/596, August 15, 2023. The Security Council did not authorize a support package for the Multinational Security Support mission in Haiti, see S/RES/2699 (2023).
- ¹⁴⁵ This may differ, of course, if the peacekeeping mission or special political mission is deployed in parallel with a force undertaking counterterrorist operations or active military operations (e.g., UNAMA, UNAMI, AMISOM etc.).
- ¹⁴⁶ Novosseloff and Sharland, *Partners and Competitors: Forces Operating in Parallel to UN Peace Operations*, International Peace Institute, November 2019.
- ¹⁴⁷ United Nations, *Overall performance of United Nations peacekeeping operations: Report of the Secretary-General*, UN Doc. S/2023/646, September 1, 2023, 4.
- ¹⁴⁸ For example, in October 2016, three medium utility helicopters were damaged due to a mortar attack on a MINUSMA camp in Kidal. In November 2016, six MINUSMA aircraft (five helicopters and one fixed wing aircraft) were damaged when two vehicles with explosives were driven into Gao airport. See also United Nations Security Council, *Report of the Secretary-General on the situation in Mali*, UN Doc. S/2016/1137, December 30, 2016, 7.
- ¹⁴⁹ Mick Ryan and Clint Hinote, “Uncrewed Systems and the Transformation of U.S. Warfighting Capacity”, War on the Rocks, February 9, 2014, <https://warontherocks.com/2024/02/uncrewed-systems-and-the-transformation-of-u-s-warfighting-capacity/>.
- ¹⁵⁰ Grieco, “What Can UN Peacekeeping Learn From Ukraine’s Drones?”, 2023.
- ¹⁵¹ Virtual author interview with military advisor from UN member state, February 2023. Particular concern was expressed about the risks in the United Nations Disengagement Observer Force (UNDOF).
- ¹⁵² Virtual author interview with official in MINUSCA, January 2023.
- ¹⁵³ Author interview with officials from the UN DPO, New York, January 2023.
- ¹⁵⁴ Author interview with official from UN DPO, New York, January 2023.
- ¹⁵⁵ Author interview with military advisor from UN member state, New York, January 2023.
- ¹⁵⁶ Author interview with official from UN DOS, New York, January 2023.
- ¹⁵⁷ This was starkly evident in the 2019 attack on a Saudi oil refinery, where a reasonably competent irregular/asymmetric force faced with the prospect of being targeted by a conventional air force was able to negate the classical doctrinal roles of air power that underpin its employment.
- ¹⁵⁸ As recently as February 2020, the US Federal Aviation Administration assessed that there was risk to civilian aircraft transiting Malian airspace from indirect-fire weapons such as mortars and rockets, as well anti-aircraft-capable weapons, including MANPADS, because some armed groups were suspected of having them or having access to such weapons. See “FAA Background Information Regarding U.S. Civil Aviation in Mali”, February 26, 2020, https://www.faa.gov/air_traffic/publications/us_restrictions/media/FAA_Background_Information-Mali.pdf.
- ¹⁵⁹ Virtual author interview with military advisor from UN member state, January 2023. See also Partnership Initiatives, Department of Operational Support, <https://operationalsupport.un.org/en/partnership-initiatives>.
- ¹⁶⁰ Stimson workshop, May 2023.
- ¹⁶¹ Author interview with official from UN DOS, New York, January 2023.

¹⁶² The electromagnetic spectrum can be defined as “the entire frequency spectrum of radiated energy to include radiowaves, micro waves, infrared light, visible light and ionizing radiation.” See John Christianson, “Fighting and Winning in the Electromagnetic Spectrum”, *War on the Rocks*, December 5, 2022, <https://warontherocks.com/2022/12/fighting-and-winning-in-the-electromagnetic-spectrum/>. In February 2022, several Security Council members expressed their concerns about the use of jamming devices in the Central African Republic, see United Nations, *Security Council 8971st Meeting*, UN Doc. S/PV.8971, February 22, 2022.

¹⁶³ When the Malian Foreign Minister addressed the Security Council in June 2023, he noted that images that had been obtained via satellites to inform human rights reporting in the country “without the knowledge of the national authorities” was “a classic case of espionage.” Although this was a reference to a report from the Office of the High Commissioner for Human Rights, it was in the mission area of operations and highlights the sensitivities about the use of such technology. See United Nations, *Security Council 9350th meeting*, UN Doc. S/PV.9350, June 16, 2023, 19.

¹⁶⁴ Author interview with official from UN DOS, New York, January 2023.

¹⁶⁵ Ibid.

¹⁶⁶ Ibid.

¹⁶⁷ The mission withdrawal from Kidal, Mali, included an eight-day road convoy of more than 800 peacekeepers and 143 vehicles traveling to Gao. This was due to a lack of authorization to carry out air rotations, which also meant the convoy traveled without air cover to mitigate potential terrorist threats. See MINUSMA, *Odyssey of the Last MINUSMA Convoy from Kidal to Gao*, November 10, 2023, <https://minusma.unmissions.org/en/odyssey-last-minusma-convoy-kidal-gao>.

¹⁶⁸ See United Nations, *Report of the Secretary-General on Options for adapting the configuration of the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo and the future United Nations configuration in the country beyond the current mandate of the mission*, UN Doc. S/ 2023/574, 9.

¹⁶⁹ Stimson workshop, May 2023.

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