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Keeping Peace from Above: Air Assets in UN Peace Operations

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Cover Photo: C-130 from Bangladesh, Bukavu Airport, Democratic Republic of the Congo, May 2017. Alexandra Novosseloff.

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CONTENTS

Abbreviations iii

Executive Summary 1

Introduction 2

A Short History of Aviation in Peacekeeping Operations 4

Types of Air Assets in UN Peace Operations 7

Policies, Procedures, and Lines of Authority for Aviation Assets 12

- ORGANIZATION OF AVIATION ASSETS AT UN HEADQUARTERS
- ORGANIZATION OF AVIATION ASSETS IN THE FIELD

Issues of Capacity and Capabilities of Aviation Assets 20

Recent Improvements and Recommendations 23

Abbreviations

CasEvac	Casualty Evaluation
DFS	Department of Field Support
DPKO	Department of Peacekeeping Operations
HIPPO	High-Level Independent Panel on Peace Operations
MedEvac	Medical Evaluation
MINUSCA	UN Multidimensional Integrated Stabilization Mission in the Central African Republic
MINUSMA	UN Multidimensional Integrated Stabilization Mission in Mali
MONUSCO	UN Organization Stabilization Mission in the Democratic Republic of the Congo
ONUC	UN Operation in the Congo
UAS	Unmanned aerial system
UNIFIL	UN Interim Force in Lebanon
UNMISS	UN Mission in the Republic of South Sudan

Executive Summary

Aviation assets (fixed-wing aircraft, utility and attack helicopters, and unmanned aerial systems) are key enablers that give any peace operation the mobility and agility it needs to deter and prevail against hostile actors. Beyond enablers, air assets are also force multipliers that enhance the effectiveness of operations. They are essential to ensure that peacekeepers have the support and mobility they need on the ground, to enable casualty evacuation (CasEvac) and medical evacuation (MedEvac), to gather information, and to make peace operations robust enough to deter armed elements threatening civilians and UN personnel. All of this, in turn, allows missions to implement their mandates, including the protection of civilians, which is not possible without strong aviation capacities.

However, aviation assets can also be seen as threats or viewed with suspicion by the host country or the parties to the conflict, which can lead governments to restrict air movement, even for medical evacuation. Moreover, missions have had to adapt their approach to aviation to face increasingly challenging environments with harsh climatic conditions and asymmetric threats. Aviation assets are also expensive, accounting for the UN's second biggest expenditure after personnel.

As of June 2017 the UN had a fleet of 224 aircraft (54 fixed-wing aircraft, 140 helicopters, and 50 unmanned aerial systems). Military aircraft are deployed through letters of assist with member states (seventeen of which currently contribute air assets), while civilian aircraft are obtained through commercial contracts.

But these numbers hide the fact that aviation is often the "Achilles' heel" of UN peacekeeping, as these expensive assets are scarce relative to the large size of the territories covered and often lack all the required capabilities. There is a chronic shortage of military air assets, and the pressure to cut costs is likely to push missions to further rationalize and reduce the use of air assets. Moreover, UN aviation assets are managed by a mix of civilian and military personnel who come from different countries and aviation cultures and who often do not understand the policies and procedures in place.

This study, therefore, looks at how missions' air assets are organized, generated, managed, tasked, controlled, and commanded. Overall, the UN has steadily improved its operating procedures for military helicopters over the past several years. Numerous steps have been taken by the Department of Peacekeeping Operations (DPKO) and Department of Field Support (DFS) to strengthen existing policies and by missions to improve coordination and integration between civilian and military components. These procedures should be implemented and respected by all. But the persistent lack of needed assets and capabilities, combined with the reluctance to use them when available, causes problems.

This report makes a number of recommendations to address these problems. At the headquarters level:

- **Increase cooperation between DPKO and DFS:** DPKO's Office of Military Affairs and the aviation, finance, and medical divisions of DFS should increase cooperation in planning and in defining statements of unit requirement (SUR).
- **Increase communication between headquarters and the field:** UN headquarters should consult more with field missions in defining statements of unit requirement, and letters of assist for aviation assets should have force requirements clearly attached to them.
- **Take a more strategic approach to deploying air assets:** The UN should renew its thinking so that the number of air assets deployed to missions is driven by the demands of the task and is not solely based on the number of troops in the mission.
- **Facilitate multinational rotation contributions:** The UN Secretariat should consider playing a greater role in "match-making" for multinational rotation contributions of air assets, whereby multiple troop-contributing countries agree to rotate responsibility for deploying certain assets.
- **Encourage triangular partnerships:** The UN Secretariat should encourage triangular partnerships between UN missions, national or regional actors with air assets, and member states willing to support those actors by equipping or training them.
- **Share air assets among missions:** DFS should procure air assets that could be shared across different missions.

- **Review the policy for command and control:** The UN should encourage troop-contributing countries to support the proposed review of the current UN policy for command and control so that it can best support operational needs and make troop-contributing countries more confident in the procedures.

At the mission level:

- **Implement UN policy requiring that civilian and military components of aviation units be integrated:** Field missions should standardize the establishment of integrated aviation units through which military and civilian personnel keep one another informed on planned and current operations and can de-conflict issues and priorities.
- **Implement existing policies and procedures:** Field missions should implement existing command-and-control policies and standardize and unify procedures and approaches across all missions.
- **Provide training on standard operating procedures:** In their induction week, civilian personnel in aviation units and military U5-AirOps officers joining these units should be jointly trained on the appropriate standard operating procedures.
- **Restrict the use of special flights:** Field missions should restrict the number of special flights to those of strict operational necessity.

Introduction[1]

In a report released in 2010, the secretary-general remarked on the importance of mobility for peacekeeping operations: "Many of the tasks undertaken by peacekeeping operations today, including, but not limited to, support to the extension of State authority, protection of civilians, elections support, and monitoring of sanctions, cannot be supported by a static peacekeeping presence. Instead, they call for mobile and adaptable peacekeeping missions."[2] Aviation assets are key to that objective.

Aviation assets (fixed-wing aircraft, utility and attack helicopters, and unmanned aerial systems) are key enablers for any military operation, but they are even more so for peacekeeping operations. These operations are generally deployed across a vast territory with long logistical lines and almost no infrastructure, making them part of broader logistics partnerships and a web of actors.[3] As said by former Canadian force commander Roméo Dallaire, "For peacekeepers in distant war-torn parts of the world, aircraft often serve as the lifeline for survival and sanity."[4] They are critical for each and every peace operation to effectively carry out its mission. As the Special Committee on Peacekeeping Operations acknowledged in its 2017 report, "Military aviation makes [a critical contribution] to the operational effectiveness and safety and security of peacekeepers."[5] Aviation assets give any operation the mobility and agility it needs to deter and prevail against hostile actors. Beyond enablers, air assets are also force multipliers "that [enhance] the effectiveness of typically undermanned peace operations forces."[6]

This is especially essential to peacekeeping operations mandated to protect civilians, particularly those operating in environments with poor road infrastructure. Aviation assets provide peace operations with mobility, support, and information and give them the military robustness they need to implement a protection mandate. They can also support timely action by local institutions and, where applicable, assist local security entities to mediate, initiate peace processes, or even conduct security operations (e.g., arrest leaders of hostile groups, respond to threats of massacres). Effective protection of civilians is not possible without strong aviation capacities and the mobility they can

1 This report is based on information gathered through several months of desk research and interviews conducted in person or by phone with senior leadership and other staff in UN field missions and with staff at UN headquarters in New York from February to June 2017, as well as representatives of UN member states' permanent missions and their supporting political and military staff. In-person interviews were also conducted during field visits to Kinshasa, Goma, Bukavu, and Bunia in the Democratic Republic of the Congo in April 2017 and to Naqura in Lebanon in May 2017.

2 UN General Assembly, *Administrative and Safety Arrangements Relating to the Management of Military Utility Helicopters in Peacekeeping Operations—Report of the Secretary-General*, UN Doc. A/64/768, May 4, 2010, para. 2.

3 For a detailed report on these partnerships, see Katharina P. Coleman and Paul D. Williams, "Logistics Partnerships in Peace Operations," International Peace Institute, June 2017, available at www.ipinst.org/2017/06/logistics-partnerships-in-peace-operations .

4 Roméo Dallaire, Preface, in *Air Power in UN Operations: Wings of Peace*, A. Walter Dorn, ed. (Franham, UK: Ashgate Publishing, 2014).

5 UN General Assembly, *Report of the Special Committee on Peacekeeping Operations: 2017 Substantive Session*, UN Doc. A/71/19, March 20, 2017, para. 117.

6 Erik Lin-Greenberg, "Airpower in Peace Operations Re-examined," *International Peacekeeping* 18, no. 4 (2011), p. 439.

provide.

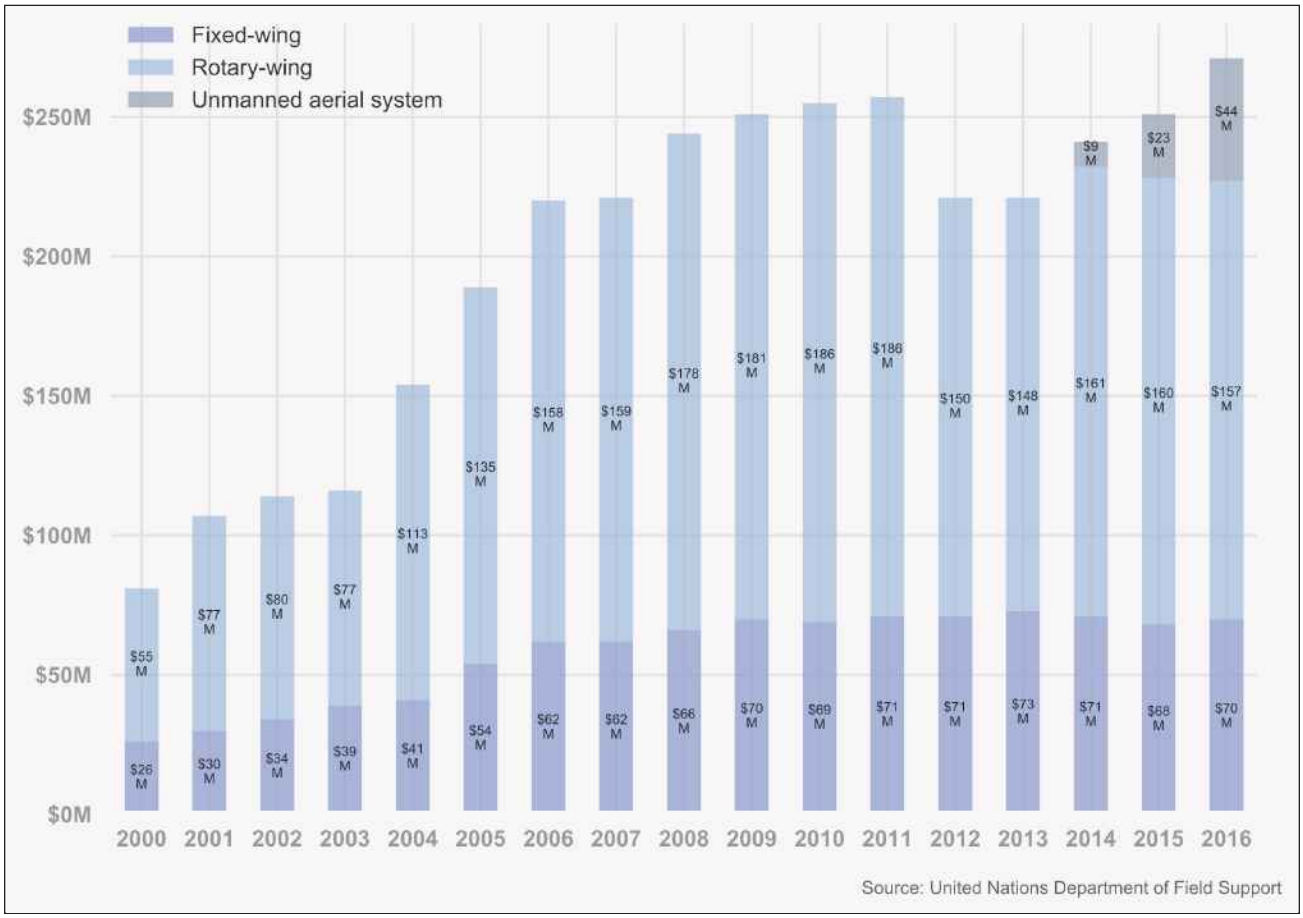
Aviation assets have a role across the spectrum of multidimensional operations, from supporting political, mediation, and electoral processes to supporting the work of humanitarian actors. In many host countries, the UN provides the bulk of aviation capabilities and is therefore heavily involved in fixing local infrastructure such as airstrips and control towers, as well as supporting the host government when possible.

At the same time, aviation assets can also be seen as threats or viewed with suspicion by the host government or the parties to a conflict when they are reluctant to implement Security Council road maps or feel that their sovereignty is being threatened. This can lead governments to restrict air movement, even for medical evacuation (as in Darfur and South Sudan), as all UN flights are conducted in cooperation with the relevant aviation authorities of the host country.

Aviation assets are undoubtedly expensive, accounting for the UN's second biggest expenditure after personnel—approximately $750 million in 2015/2016 (see Figure 1). The UN had, as of June 2017, a fleet of 224 aircraft (54 fixed-wing aircraft, 140 helicopters, and 50 unmanned aerial systems), at its disposal either through letters of assist for military aircraft or through commercial contracts for civilian aircraft (of which the UN had seventy in 2016). In 2016 UN aircraft flew 116,184 flight hours, carried 880,338 passengers, and transported 39,993 tons of cargo. Five unmanned aerial systems (UASs) were deployed in the UN Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO) and forty-five in the UN Multidimensional Integrated Stabilization Mission in Mali (MINUSMA). Seventeen member states contribute aviation assets to peacekeeping operations, with China being the most recent to join the "UN fleet" with the deployment of helicopters in Darfur in July 2017.

But these numbers hide the fact that aviation is often the "Achilles' heel" of UN peacekeeping, as these assets are scarce in proportion to the size of

Figure 1. Aviation expenditures in UN peace operations



the vast territories covered and are often obsolescent, lacking all the required capabilities to operate in demanding environments.

Further, there is often a chronic shortage of military air assets, which can only be partially made up for by contracting commercial air assets. For example, MINUSMA, which is operating in a challenging security environment and harsh climate, only had eleven operational military helicopters, out of twenty-four authorized, in May 2017; its military air assets had been damaged in attacks in Kidal and Gao over the past year, and two attack helicopters—one Dutch Apache and one German Tiger—had crashed since 2015. Such incidents may also make troop-contributing countries reluctant to provide expensive air assets.

On top of this, pressure to cut costs is likely to push missions to further rationalize the use of air assets; indeed, MINUSMA is reducing its number of flights to implement a budget cut that was imposed on the mission. Across all missions, a force requirement analysis in 2011 anticipated a shortfall of 56 out of a total of 137 helicopters required (predominantly military utility helicopters)—a gap of over 40 percent.[7] In 2017 peacekeeping missions had a shortfall of 26 helicopters (16 utility helicopters and 10 attack helicopters; see Figure 5).[8] In April 2014 Secretary-General Guterres decided to launch "an initiative to increase the efficiency in the use of UN air assets," asking "every mission with any number of dedicated aircraft to systematically analyze and adjust the composition and utilization of its fleet," with the aim of reducing costs by up to 15 percent and issuing recommendations by December 31, 2017.

What is true for helicopters is also true for fixed-wing aircraft. Tactical and strategic transport aircraft are often missing. MONUSCO has only two C-130 aircraft (one military and one civilian), and MINUSMA also has two, with one under maintenance. Further, these aircraft do not always have the necessary capabilities, such as night vision, or the supporting infrastructure needed to accomplish their tasks. Given that it is becoming increasingly difficult to acquire the commercial equivalent of the military C-130 aircraft (the L-100 Hercules), the UN demand for such fixed-wing military aircraft may increase in the future, particularly if the UN continues to operate in challenging security environments. This may also increase the demand for UASs as observation tools to increase situational awareness.

Aviation assets in UN operations are both civilian and military and hence are managed by a mix of civilian and military personnel. The assets usually come from different countries, which poses challenges in terms of interoperability. They therefore require coordination and integration across the operation, which is often met with reluctance by competing stakeholders who wish to keep control over their use and management. As one interviewee pointed out, "Procedures are similar until egos come in [to play]."[9]

The aim of this study is to look at how UN missions' air assets are organized, generated, managed, tasked, controlled, and commanded. What are their operational requirements? What are the restrictions on their use or the limitations of their capabilities? How can they fulfill both civilian and military tasks under missions' mandates in the most cohesive, effective, and efficient manner? How can the differences in purpose, capability, range, level of protection, flexibility, and risk between military and commercial aircraft be managed at all levels and under all circumstances, especially in times of crisis?

A Short History of Aviation in Peacekeeping Operations

Air assets have been used since the beginning of peacekeeping operations to supply troops, conduct surveillance and monitoring, provide logistics support, and move around assets and personnel, and they have continued to be used throughout the years. As described by Walter Dorn, "From its earliest peacekeeping experience, the United Nations has used airlift to deploy, employ, and sustain its missions, especially in difficult conflict

7 Jake Sherman, Alischa Kugel, and Andrew Sinclair, "Overcoming Helicopter Force Generation Challenges for UN Peacekeeping Operations," *International Peacekeeping* 19, no. 1 (2012).

8 Document provided by the UN Aviation Unit.

9 Interview with representative of MONUSCO, April 2017.

zones in remote locations. To move military forces and their equipment, including the weapons and ammunition, from around the world in a timely manner, air transport remains essential."[10]

Apart from new technological instruments (such as UASs and aerostats), the whole range of air assets has been used since the beginning, from helicopters to fighter jets to bombers, in particular in the first multidimensional peacekeeping operation, the UN Operation in the Congo (ONUC, 1960–1964).

As recalled by Dorn, ONUC was:

> the most robust operation [during the Cold War], utilizing ground and air power in an unprecedented and, in fact, unrepeated fashion among UN peace operations. It was, for example, the only UN peace operation to date to use bomber aircraft.… In October 1961, Sweden provided five J-29 Tunnan ('flying barrel') fighter jets, Ethiopia sent four F-86 Sabre jets, and India backed the mission with four Indian B(1)58 Canberra light bombers.[11]

These aircraft became what mission personnel dubbed the first "UN air force," and in November 1961 the UN issued its first rules of engagement for the use of air power in combat.

The mission's air assets increased further in 1962, but eventually ONUC concluded "that air resources were inadequate to meet the…threat" of the rebellion in Katanga. Moreover, "due to serviceability problems, only about 60 to 70 percent of ONUC aircraft would be available for operations."[12] Nevertheless, ONUC's force



Tunisian troops with the UN Operation in the Congo (ONUC) unload a plane, Luluabourg, Republic of the Congo, August 10, 1960. UN Photo.

10 A. Walter Dorn, "Airlift: Lifeline for UN Missions," in *Air Power in UN Operations: Wings of Peace*, A. Walter Dorn, ed. (Franham, UK: Ashgate Publishing, 2014), p. 59. See this volume for a complete account of the use of air assets in the early days of peacekeeping.

11 A. Walter Dorn, "The UN's First 'Air Force': Peacekeepers in Combat, Congo 1960–64," *Journal of Military History* 77, no. 4 (October 2013).

12 Ibid.

commander requested UN headquarters in New York to reinforce the mission's air divisions and provide several additional assets, such as photo-reconnaissance aircraft, fighter squadrons, antiaircraft defenses for UN air bases, radar, heavy-caliber and napalm bombs, and communications equipment. At the time, this was considered "to be the bare minimum necessary for the operation,"[13] but the operation had clearly lost the strategic purpose set out by the Secretariat.

After this episode, UN peacekeeping went back to more traditional uses of aircraft such as monitoring cease-fire lines or supplying troops. At times the UN asked for air protection from NATO, such as for the UN Protection Force in Bosnia, but the difficulties of coordination (with the "dual key" system requiring such military operations to be approved by both UN and NATO officials) limited the effectiveness of that partnership.[14]

From the end of the 1990s onward, the deployment of multidimensional peacekeeping operations with robust mandates in isolated areas, which included the protection of civilians, led to a significant increase in the size of the "UN fleet":

> It has significantly expanded in size, fleet composition, utilization, route complexity and support.… Whereas aircraft usually operated largely out of capital cities with reasonably developed airport infrastructure, no matter how weakened by the ravages of war, missions are now found with major bases in remote areas and with virtually no infrastructure and poor runways.[15]

In 1999 the UN had 47 aircraft worldwide, in 2000/2001 it had 104 aircraft supporting fifteen missions, and by 2011/2012 the UN aviation fleet had reached 289 aircraft supporting twenty missions. The UN has since reduced and rationalized its fleet, with 231 aircraft in January 2017 (146 civilian and 85 military, including fixed-wing aircraft and medium utility, light utility, attack, and observation helicopters) and 50 UASs. MONUSCO remains the mission with the biggest aviation fleet, with 47 aircraft (19 civilian and 28 military) and 5 UASs. MINUSMA comes second with 32 aircraft and 42 UASs, followed by UNMISS, the African Union–United Nations Hybrid Operation in Darfur (UNAMID), and the UN Support Office in Somalia (UNSOS).

Despite the recent reduction in the size of the fleet, "due to the dynamic, demanding and urgent nature of these operations, as well as their often geographically and logistically challenging environments, missions have become increasingly dependent on helicopters to implement their mandates."[16] The use of some of these assets (mainly attack helicopters) has been crucial in conducting heavy military operations in recent crises. During a post-election crisis in early 2011, for example, the UN Operation in Côte d'Ivoire (UNOCI) relied on military attack helicopters to defeat the heavily armed forces of former President Laurent Gbagbo.[17]

Such helicopters have also been used several times in eastern Congo. They were used from 2005 to 2007 to provide fire power when forcefully disarming militias in the district of Ituri (in particular in 2006 during rebel leader Laurent Nkunda's attack on Goma). In October 2013 MONUSCO conducted the largest airmobile operation in the recent history of UN peacekeeping (ONUC excluded), deploying 250 troops from the mission's Force Intervention Brigade and more than fifteen vehicles, including armored ones, to Kiwanja in North Kivu. The objective was to protect civilians from illegal armed groups operating next to UN bases and help the Congolese armed forces conduct offensive operations against M23 rebels outside of highly populated areas. Due to the availability of a large fleet, including South African attack helicopters, and the will of pilots-in-command to operate in a hostile environment, the whole operation was successful in supporting a nine-day offensive that neutralized M23 without civilian casualties caused by Congolese or MONUSCO troops.[18] Similar operations are still being conducted in the region of Beni, where helicopters are being used to provide

13 Ibid.

14 Paul F. Horvitz, "U.S. Opposes 'Dual Key,'" New York Times, July 18, 1995, available at www.nytimes.com/1995/07/18/news/18iht-policy_1.html?mcubz=1 .

15 Kevin Shelton-Smith, "Advances in Aviation for UN Peacekeeping: A View from UN Headquarters," in Air Power in UN Operations: Wings for Peace, A. Walter Dorn, ed. (Franham, UK: Ashgate Publishing, 2014), p. 286.

16 Sherman et al., "Overcoming Helicopter Force Generation Challenges for UN Peacekeeping Operations," p. 77.

17 "Attack Helicopters Arrive to Reinforce UN Peacekeepers in Côte d'Ivoire," UN News Centre, March 3, 2011, available at www.un.org/apps/news/story.asp?NewsID=37677#.WcLt9LKGOUk .

18 Interview with representative of MONUSCO, April 2017.

tactical and operational support.

While circumstances have forced the UN to use its aviation assets for more than just logistics, recent reductions in the size of the fleet have meant that the number of available aircraft has often been insufficient to support the number of troops on the ground, requiring missions to use these assets more strategically: "To meet the ends desired by the UN—the cessation of violence between states, groups or organizations—it is often necessary to utilize air power's various capabilities…in order to moderate and influence the behavior of the parties involved."[19] This requires managing air assets and capabilities more in terms of their strategic potential. For example, training flights could also be used as a form of deterrence by flying over areas where tensions could arise. When air assets are used in this way, their number matters less than their capabilities.

The current debate on aviation should also be part of the planning of missions as a whole, and of military planning especially. Missions that have large, static super-camps require substantial air assets, but mostly to resupply; more mobile, flexible missions may require not fewer air assets but different kinds of assets used in a different way. Discussions on aviation might also look at the types of troop-contributing countries that provide such assets, which would trigger a debate on the level of reimbursement for these expensive assets and the balance between civilian and military assets.

Types of Air Assets in UN Peace Operations

There are three kinds of air assets in UN peace operations (see Box 1, Table 1, and Figure 2):

- Fixed-wing aircraft, which are aircraft "capable of heavier-than-air flight whose lift is generated not by wing motion relative to the aircraft, but by forward motion through the air";
- Rotary-wing aircraft (or "rotorcraft"), which are "heavier-than-air flying machines that use lift generated by rotor blades that revolve around a mast"; and
- Unmanned aerial systems (UASs), which are "aircrafts that are intended to be operated with no pilot on board" and "piloted from a remote pilot station," and "whose components include one or more unmanned aircraft, the supporting network and all equipment and personnel necessary to control the unmanned aircraft."[20]

The UN has different acquisition mechanisms for the different types of aviation it needs to meet its requirements:

- For civilian assets, it can sign contracts (standby, short-term, or long-term) with private companies.
- For military assets, it can sign letters of assist with troop-contributing countries.[21] These letters of assist serve "as the formal contractual arrangement negotiated and concluded between a Member State as a troop-contributing country and the United Nations." They reflect "the force requirement as derived from the military concept of operations to support the mission mandate." And they outline "the troop-contributing country's responsibilities to the United Nations with respect to the operation and maintenance of the aircraft, necessary qualifications of the aircrew, and the set of tasks the aircraft is permitted to carry out on behalf of the United Nations."[22] Only attack helicopters are provided solely through letters of assist or pro bono.
- Also for military assets, it can have an existing pro bono memorandum of understanding with troop-contributing countries by which they provide certain urgently needed capacities for a new mission or to face a crisis. For example, Australia provided military helicopters to the UN Transitional Administration in East Timor (UNTAET) in the early 2000s, the UK provided a

19 Ross Mahoney, "Book Review—Air Power in UN Operations: Wings for Peace," Thoughts on Military History blog, July 12, 2015, available at https://thoughtsonmilitaryhistory.wordpress.com/2015/07/12/book-review-air-power-in-un-operations-wings-for-peace .

20 DFS, *Aviation Manual*, draft, June 2017.

21 As defined by the United Nations, "a letter of assist…is a legally binding contractual document between the United Nations and a Government. It provides the appropriate authority for procurement of services on behalf of the United Nations. The [letter of assist] will specify whether the United Nations will provide services from the Government or requests the Government to provide these directly to a Mission. The [letter of assist] will also specify how reimbursement will be made." UN General Assembly, *Letter Dated 28 February 2014 from the Chair of the 2014 Working Group on Contingent-Owned Equipment to the Chair of the Fifth Committee*, UN Doc. A/C.5/69/18, January 20, 2015, p. 123.

22 UN General Assembly, *Administrative and Safety Arrangements Relating to the Management of Military Utility Helicopters in Peacekeeping Operations—Report of the Secretary-General*, UN Doc. A/64/768, May 4, 2010, para. 8.

Figure 2. Current deployment of civilian and military air assets to UN peace operations

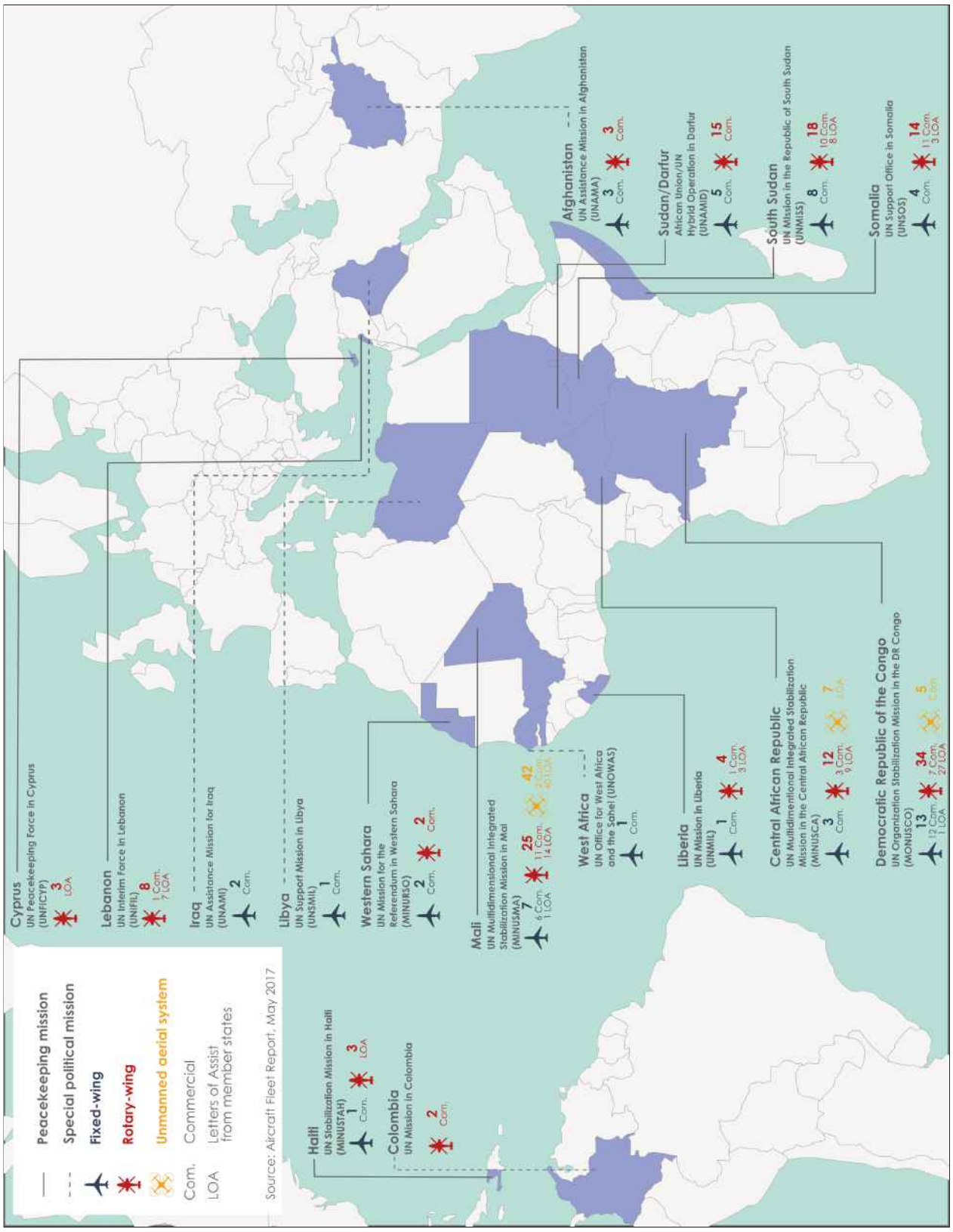


Table 1. Types of aircraft deployed to UN peacekeeping operations[23]

	Aircraft type	Main purpose of aircraft
	An-26B	Medium cargo aircraft: logistical resupply, MedEvac/CasEvac, observation/monitoring
	DHC-8	Medium passenger aircraft: logistical resupply, passenger transport, VIP transport, MedEvac/CasEvac, troop rotation
	B1900	Light passenger aircraft: logistical resupply, passenger transport, VIP transport, MedEvac/CasEvac, troop rotation
	L-382G	Medium cargo aircraft: logistical resupply, cargo transport, MedEvac/CasEvac
	CRJ-200	Passenger jet aircraft: logistical resupply, passenger transport, VIP transport, MedEvac/CasEvac, troop rotation
	Mi-8AMT	Medium utility helicopter: logistical resupply, passenger transport, VIP transport, MedEvac/CasEvac, troop rotation
	S-61N	Medium utility helicopter: logistical resupply, passenger flights, VIP transport, MedEvac/CasEvac, troop rotation
	UASs	Short- or medium-altitude long endurance systems
	Mi-24	Attack helicopter: support to ground combat operations (fire support, armed anti-armor support), armed escort, quick-reaction force response, troop transport, fire support to search and rescue, search and rescue, extraction operations, deterrence, surveillance, MedEvac/CasEvac, emergency logistics support, patrol/observation/monitoring
	Mi-8MTV	Utility helicopter: troop transport (up to 22 people), patrol/observation/monitoring, reconnaissance and surveillance, cargo transport (up to 4,000 kg), MedEvac/CasEvac
	Bell 212	Utility helicopter: troop transport (up to 10 people), MedEvac/CasEvac, night vision
	Puma	Utility helicopter: MedEvac/CasEvac, patrol/observation/monitoring, search and rescue, troop transport (up to 18 people), cargo transport (up to 2,000 kg)
	Mi-17	Utility helicopter: cargo transport (up to 3,000 kg), troop transport (up to 18 people), MedEvac/CasEvac, search and rescue, surveillance, patrol/observation/monitoring
	C-130B	Medium cargo aircraft: administrative and logistics support, humanitarian aid distribution, cargo transport, troop transport, troop insertion and extraction, quick-reaction force response, VIP transport, MedEvac/CasEvac, search and rescue, reconnaissance, support for airmobile operations, patrol/observation/monitoring
	Oryx	Utility helicopter: cargo transport (up to 2,000 kg), troop transport (up to 12 people), sling-load capability, night vision, MedEvac/CasEvac, observation/monitoring/surveillance
	Rooivalk	Attack helicopter: armed escort, fire support, combat search and rescue, extraction operations, patrol/observation/monitoring, reconnaissance and surveillance, night vision, defensive flares

23 UN Presentations during field mission in MONUSCO.

Box 1. Types of aviation units in UN peacekeeping operations[24]

Rotary-wing (UASs)	Fixed-wing	Unmanned aerial systems
Light utility helicopter unit	Light air reconnaissance unit	Class I (micro, mini, or small)
Medium utility helicopter unit	Transport/tactical airlift unit	Class II (tactical)
Heavy cargo helicopter unit		Class III (medium- or high-altitude)
Attack/armed helicopter unit		Long-endurance (medium- or high-altitude)

Box 2. Tasks performed by air assets

Civilian rotary- and fixed-wing aircraft[25]	• VIP transport • Passenger transport • Cargo transport • MedEvac/CasEvac • Search and rescue • Aerial work, observation, and monitoring
Military rotary- and fixed-wing aircraft[26]	• Troop insertion and extraction at unsafe/hostile landing sites • Armed escort • Quick-reaction force response • Combat search and rescue • Patrol, observation, and monitoring • Reconnaissance and surveillance • Support for airmobile operations • Deterrence through show of force
Unmanned aerial systems (UASs)[27]	• Protection of civilians and monitoring of human rights violations • Detection of armed groups' encampments • Strike/operational support and direction of efforts • Confirmation of military positions (anti-fratricide) • Detection of illegal economic activity • Monitoring and tracking of internally displaced persons • Support to civilian agencies (e.g., survey of new settlements, agricultural activity) • Overview of politically related activity

C-130 to the UN Mission in the Republic of South Sudan (UNMISS) for a few months, and Germany has provided attack helicopters to MINUSMA since March 2017 under such agreements.

Because of the numerous caveats from troop-contributing countries on the use of their assets, the UN is increasingly using civilian aircraft that can undertake many of the tasks usually assigned to military aircraft. A recent study pointed out that "many [troop-contributing countries] are not capable of providing important military capabilities required by the [statements of unit requirement], whereas commercial vendors have been able to,

24 DFS, *Aviation Manual*, draft, June 2017.

25 Ibid.

26 Ibid.

27 MONUSCO, briefing on unmanned aerial systems, April 2017.

especially as regards night-vision and MEDEVAC capabilities."[28] This has particularly been the case for the UN Support Office in Somalia (UNSOS), which has relied on civilian aircraft for CasEvac and MedEvac. Most interlocutors, however, believed that the UN should keep a balance between military and civilian assets to remain flexible and to have a number of member states contributing to what should be a collective endeavor.

The role and tasks of these various air assets therefore cover the whole spectrum of functions undertaken by peace operations as mandated by the Security Council (see Box 2). They are deployed under three overarching principles: (1) operational safety and security; (2) respect for all UN aviation civilian and military manuals, policies, and directives; and (3) cost-effective operational performance and efficiency (see Box 3 for detail). They are also subject to a number of operational rules, international standards, and UN regulations (see Box 4).

As per UN regulations, all aircraft must be painted white with a black UN logo. But in reality, some troop-contributing countries choose not to paint the aircraft they put at the disposal of UN missions if they are being rotated in for a short period of time (four to six months) or are covered with special paint. In those cases—which remain exceptional—the UN marking is painted distinctively but the aircraft remains green.

Box 3. Principles governing aviation operational support[29]

- **Responsive** to the needs of the mission and able to support all levels of anticipated air transport requirements
- **Economical** with regard to cost-efficiency, where consistent with maintaining safety and security, and in accordance with the aviation operational standards
- **Flexible** and able to be agile, effective, and timely in response to changing logistical, administrative, and operational requirements
- **Safe**, by satisfying the three requisites above without jeopardizing people and resources and while observing DFS's established aviation regulatory regime
- **Secure**, by protecting resources (personnel, aircraft, equipment, etc.) from unlawful interference by following aviation security standards

Box 4. Regulations governing aviation operations and assets[30]

- International Civil Aviation Organization Standard and Recommended Practices
- UN Aviation Standards for Peacekeeping and Humanitarian Air Transport Operations
- *UN Air Operations Manual*, transformed into the Department of Field Support *Aviation Manual*
- UN Department of Peacekeeping Operations *Movement Control Manual*
- UN *Aviation Safety Manual*
- *UN Peacekeeping Missions Military Aviation Unit Manual*
- Standard operating procedures of individual missions
- Military aviation operational tasking and control procedures
- Letters of assist
- Standard operating procedures and operation manuals of aviation companies

28 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, p. 24, available at www.ipinst.org/wp-content/uploads/2017/05/NUPI_rapport_Boutellis_Karlsrud.pdf .

29 DFS, *Aviation Manual*, draft, June 2017.

30 Ibid.

Policies, Procedures, and Lines of Authority for Aviation Assets

Two main factors govern how aviation assets are used in UN peace operations:

- **Ownership:** The United Nations, and therefore its various field missions, does not own any of the aircraft or other equipment in its fleet; they are provided through commercial contracts (for civilian assets) or letters of assist from member states (for military assets).
- **Management:** All air assets are administratively and financially managed by civilians. While military air assets are theoretically under the operational control of the force commander, they are managed by civilians (in terms of fuel, allocated hours, etc.). Moreover, some military aircraft (mainly military utility helicopters) can sometimes also be tasked by the chief/director of mission support, such as for logistical air transport.

Every UN field mission has a budget set by the General Assembly's Fifth Committee on a biannual basis. The Departments of Management and Field Support are accountable and responsible for the allocation of resources to the missions, and the chief/director of mission support serves as their agent on the ground (see Figure 3). Aviation is a big consumer of mission resources. The chief/director of mission support has financial authority and accountability for all resources and is also accountable for aviation safety in missions, which is governed by the internationally recognized standards of the International Civil Aviation Organization. In the end, all air assets, whether civilian or military, are considered mission assets. Aviation is needed both to support and to conduct military operations when the use of force is required, and different rules and regulations apply for each of these functions.

Military utility helicopters being used for military operations are tasked through the military chain of command through the chief military aviation officer, although their administrative tasking lies with the chief/director of mission support through the chief aviation officer and the chief of the mission air operations center. Attack helicopters are the only air assets that are under the operational control of the force commander, although troop-contributing countries ultimately retain full command.

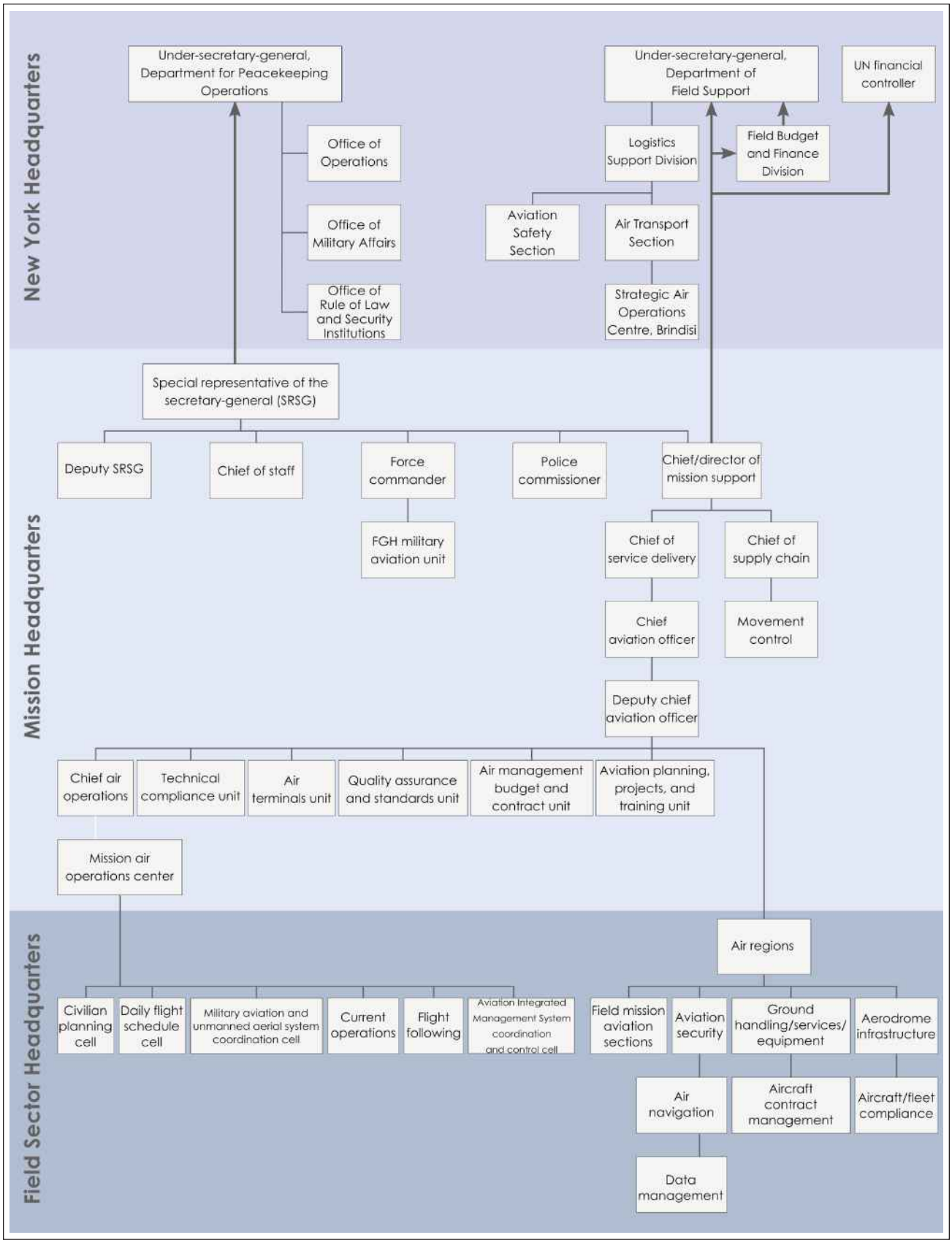
In this regard, the Department of Field Support's (DFS) draft *Aviation Manual*, initially published in 2005 by DPKO (as a *United Nations Air Operations Manual*) and currently being revised, states that the head of a field mission is accountable for overall aviation safety and air operations (UN aviation staff, equipment, services, and aircraft). The chief/director of mission support is responsible for the effective, efficient, and safe utilization of all the mission's aviation resources, as well as for the administrative and financial management of mission assets, including accounting for the utilization of military utility helicopters and monitoring compliance with the provisions of the letter of assist. The chief/director of mission support therefore makes sure that the mission does not go over budget.

As far as unmanned aerial systems (UASs) are concerned, the 2017 draft Aviation Manual recommends that command "is retained at the highest level through [an Unmanned Aircraft Systems] Integrated Command Group (ICG), comprising the Director of Mission Support, Mission Chief of Staff (COS) and Force Chief of Staff (FCOS), with tasking and operational control authorities being delegated as appropriate."[31] The director of mission support has administrative control over all UASs, both military and civilian.

The *UN Peacekeeping Missions Military Aviation Unit Manual*, published in January 2015 by DPKO's Office of Military Affairs, further explains that, in UN peacekeeping operations, military and civilian aviation assets have distinct, complementary, and sometimes overlapping roles. These overlapping, or reinforcing, roles require centralized management and tasking by the mission's civilian logistics management authorities, even though the military aviation assets remain under the formal operational control of the force commander. The only time these civilian authorities are not in charge of managing and tasking air

31 DFS, *Aviation Manual*, draft, June 2017.

Figure 3. Lines of authority for aviation assets



assets is when UN military aviation assets are directly supporting the mission's military operations.[32]

Different rules apply depending on the nature of the operations and of the aircraft (see Box 5). Flights of civilian aircraft are governed by the International Civil Aviation Organization's regulations (as for any commercial airplane) and operate on a regular schedule, whether for passengers or cargo. The "Weekly Regular Passengers Flight Schedule" is prepared and revised by the mission air operations center every three to six months. Passengers (including uniformed personnel) are only authorized to board a UN flight after receiving a "movement of personnel," a document "duly authorized and approved by the designated United

Box 5. Types of flights

- Regular flights
- Special flights/VIP flights
- Military flights
- Support flights
- Out-of-mission-area flights
- Other flights (crew proficiency, maintenance, training, etc.)



UN personnel and affiliates boarding a MINUSTAH flight, 2011. Alexandra Novosseloff.

32 United Nations, United Nations Peacekeeping Missions Military Aviation Unit Manual, January 2015, p. 4, available at http://dag.un.org/bitstream/handle/11176/89591/United%20Nations%20Peacekeeping%20Missions%20Military%20Aviation%20Manual.pdf?sequence=1&isAllowed=y .

Nations authority that authorizes personnel movement," as stated in the *Aviation Manual*.[33]

According to the draft manual (see Figure 4), an aircraft is tasked through an air tasking order process based on different levels of priority (see Box 6). This integrated, centrally coordinated and managed process is aimed at ensuring responsive, safe, and cost-effective aviation support that meets operational requirements and provides the head of mission, force commander, and other component heads optimal flexibility and responsiveness to execute the mission mandate. Only flights listed on the daily flight schedule are considered "authorized by the mission" and eligible for reimbursement. The chief aviation officer is delegated with the overall responsibility for approving, changing, or canceling air tasking orders. There can be "special flights" (i.e., unscheduled), which require special authorization from the chief/director of mission support. The joint logistics operations center/joint mission support centre and movement control section then initiate and coordinate a special flight request and submit it to the mission air operations center for planning.[34]

Military air assets that the force commander requires to be on standby for specific pre-planned tactical, combat, or surveillance functions or for immediate rapid response must therefore be coordinated, requested, and scheduled in advance, as above. Once that has been done, the force commander has the authority to release the aircraft for the approved task, provided it is in compliance with the UN aviation regulatory regime. At no time, however, does the tactical commander have the authority to further task the aircraft beyond the scope of the original approved air tasking order. It is recognized that, on occasion, there will be unforeseen tactical circumstances or emergencies where timeliness and responsiveness are of the essence. In these cases, tasks can be verbally authorized through the mission air operations center and all administrative documentation completed retroactively.[35]

There is a special procedure for unplanned, urgent military flights, as there is for special civilian flights. As stated in the draft *Aviation Manual*, the mission military component, under the force commander's operational control, uses a military aircraft tasking request exclusively for relevant military aviation support, such as combat, tactical, or surveillance operations. Urgent military flights that have to be launched at short notice are given verbal approval by the mission air operations center. However, in such cases, the military aircraft tasking request needs to be processed and signed subsequently.[36] In some missions, there is an "ask per day request" that ensures such reactivity. For military flights, the force commander can issue a "fragmented order" with the list of passengers in place of a movement of personnel document. Regulations, therefore, have a certain level of flexibility, particularly in times of crisis.

Box 6. Air tasking priorities[37]

- CasEvac: immediate
- Emergency evacuations/operations: immediate
- Search-and-rescue response: immediate
- VIP transport: priority on a case-by-case basis
- MedEvac: immediate or routine, depending on the case
- Logistics support (passengers/cargo): routine
- Welfare: routine
- Other tasks: routine or on a case-by-case basis

33 DFS, Aviation Manual, draft, June 2017.
34 Ibid.
35 Ibid.
36 Ibid.
37 Ibid.

Although civilian contracted helicopters undertake some tasks related to military logistics, their operational capacity to conduct tactical missions is limited by the international air transport regulatory framework, which particularly limits the transportation of dangerous goods. At times commercial air assets can perform missions the military is not able to when constrained by its own level of risk tolerance. Military helicopters are primarily employed for military tasks. However, they may be given administrative and logistical tasks if civilian helicopters are not available, if the threat assessment in an area of operation is medium or high, or for any other task authorized by the chief military aviation officer and approved by the chief aviation officer. Military tasks are initiated by the brigade aviation officer and approved in the chain of command through their civilian counterpart (the chief aviation officer).

When a mission's military component is not flying its air assets all the time, they can be used by the civilian component of the mission to ensure they are used effectively and efficiently. Such use is usually governed by a set of conditions described in specific standard operating procedures. For example, in March 2015 MONUSCO issued Military Aviation Operational Tasking and Control Procedures that define the command-and-control structure, approval process, and four conditions for military helicopters to be used for "tasks in support of administrative and logistical requirements." These conditions are that:

- Civilian helicopters are not available;
- Threat assessment in the required area of operation is medium or high;
- Technical capabilities of the civilian helicopters do not allow operations on the required routes and/or [helicopter landing sites]; [or]
- The use of military helicopters for administrative tasks is authorized by Chief Military Aviation Officer…and approved by the [Chief Aviation Officer].[38]

However, some troop-contributing countries (especially European countries) oppose civilian use of military air assets and make it explicit in their letters of assist that their military assets are to be kept under the strict authority of the force commander. This is the result of a lack of confidence in, understanding of, and training on UN procedures, as they differ significantly from those used in NATO and the EU.

ORGANIZATION OF AVIATION ASSETS AT UN HEADQUARTERS

At UN headquarters, aviation assets are managed by the Department of Field Support (DFS), while DPKO is responsible for overall aviation policies (see Figure 4). Within DFS, the Logistics Support Division is responsible for organizing and planning the support provided to peace operations. Within that division, the Air Transport Section is responsible for overseeing the global budgetary and programmatic aspects of air operations in respect to operational efficiency, safety, quality standards, and performance. It provides "the policy framework and strategic planning guidance for the conduct of United Nations air operations in peacekeeping, and validates mission annual air operations budget submissions and performance reporting."[39] The Air Transport Section also verifies that UN air assets are used efficiently.[40] Finally, it manages all commercial contracts and letters of assist for aviation assets.

The Air Transport Section is staffed with civilians with military backgrounds who are former pilots, aviation engineers, or safety inspectors. It has only one military aviation officer to link it to DPKO's Office of Military Affairs by adapting statements of unit requirement to missions' concepts of operations. In July 2017 the Office of Military Affairs was also recruiting a long-needed aviation officer to ensure that concepts of operations take aviation requirements into account and that the leadership of the office considers issues related to the use of air assets. This should help make planning more strategic, shifting away from the idea that the number of air assets should be based solely on the number of troops.

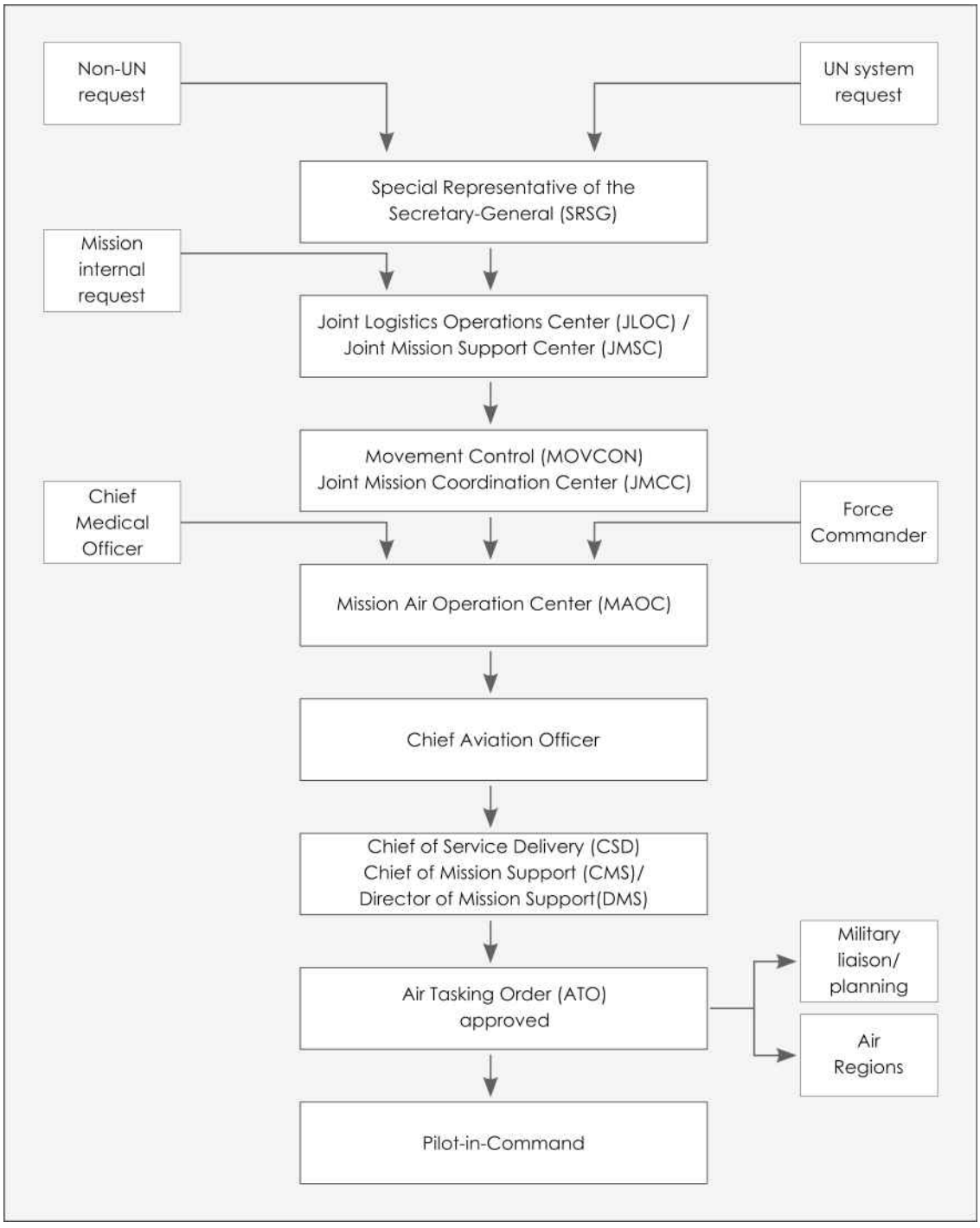
To request military aviation assets, the Office of Military Affairs' Mission Planning Service develops a statement of unit requirement on the basis of the mission's concept of operations. The problem is

38 MONUSCO, "Military Aviation Operational Tasking & Control Procedures," March 2015.

39 UN General Assembly, *United Nations Air Operations—Report of the Secretary-General*, UN Doc. A/65/738, February 17, 2011, para. 9.

40 In 2015/2016, the utilization rate of air assets in UN peacekeeping operations was 85 percent, compared to 84 percent the previous year.

Figure 4. Air tasking order for military assets[41]



41 DFS, *Aviation Manual*, draft, June 2017.

that most statements of unit requirement are never met by the troop-contributing countries. They are often unrealistic or unachievable, even for the countries with the most advanced capabilities, and they often do not correspond to the capacities of the troop-contributing countries available for the requested mission, even though it is required that "each military aviation unit include a logistics and support element."[42] The Office of Military Affairs should therefore better communicate with the field in defining statements of unit requirement, as only missions can really assess their needs. Relevant authorities should also look at statements of unit requirement, memoranda of understanding, and letters of assist at the same time to identify and deal with gaps.

ORGANIZATION OF AVIATION ASSETS IN THE FIELD

In the field, each peacekeeping mission where aviation assets are deployed has an aviation section in the office of the chief/director of mission support (see Figure 4). This section is under the authority of the chief of service delivery and the leadership of the chief aviation officer. Aviation sections also exist in each sector or region where the mission is deployed. The designated chief aviation officer within the mission is responsible for the overall management and control of the aviation resources, under the delegated authority of the chief/director of mission support. The scope of responsibilities includes all aircraft and aviation resources assigned to the mission. The mission air operations center, under the chief aviation officer's authority, is the support element that combines civilian and military staff, and is responsible for providing the required aviation support for all the mission's operational needs.[43] While the force commander exercises "UN operational control" over military aviation units, "tactical control" is exercised by unit commanders. The force commander is provided a monthly written allotment of flying hours for utility helicopters and can use these for tasks such as operational movement of reserves and reinforcements (emergency MedEvac is always available regardless of the hours allotted).

Many soldiers and officers deployed to UN missions are uncomfortable with this management structure, as it gives them the impression that they are not in full control of the assets they need to implement the mission's mandate. They feel they have to follow administrative rather than operational regulations. For example, the troops aboard operational flights have to go through the normal movement-control procedures, as a movement of personnel document is mandatory for troops boarding any aircraft, even operational flights. This has often created friction between the force commander and the chief/director of mission support and has at times delayed the launch of operations, which can have serious consequences (in cases of MedEvac, for example). The situation is particularly critical during mission start-up, when not all procedures are in place, emergencies predominate over day-to-day tasks, and people have not had time to familiarize themselves with one another.

Most military officers deployed to missions have no prior knowledge of and do not receive training on UN rules and regulations or standard operating procedures. As a result, many think they can request an aviation asset twenty-four hours before an operation. This is often far too late, as assets are likely already scheduled for another task. Moreover, each mission tends to be organized in a different way, so any previous peacekeeping experience might be misleading. Civilians also often do not know the rules and regulations and tend to default to a restrictive approach. Tensions are likely when air assets are needed for high-tempo military operations, for a sudden or ad hoc operation, or when the chief/director of mission support or force commander are not flexible enough to work around rules and regulations to accommodate each other's needs. Even when the mission's leadership does decide to deploy an air asset, hidden constraints set by a troop-contributing country can limit how it is used.[44]

However, over the years, missions have put in place a number of regulations and procedures that

42 United Nations, *United Nations Peacekeeping Missions Military Aviation Unit Manual*, p. 60.

43 Ibid.

44 For a general discussion on caveats, hidden restrictions, and acts of tacit disobedience, see Alexandra Novosseloff, "No Caveats, Please?: Breaking a Myth in UN Peace Operations," *Global Peace Operations Review*, September 23, 2016, available at http://peaceoperationsreview.org/thematic-essays/no-caveats-please-breaking-a-myth-in-un-peace-operations .

ease the burden of these processes and put operational considerations before any administrative ones. For urgent operations, procedures can be drastically shortened to allow the mission to be reactive, such as by filling in the manifest for troops boarding flights after the operation. The tactical employment of military aircraft in special operations was in the past governed by the UN *Aviation Manual*, which severely restricted it. Helicopter flights were only possible with all the doors closed, and troops could only exit after the helicopters had landed at a suitable site. This restricted the versatility of helicopters, which could be used more effectively if certain regulations could be relaxed. In the past, waivers have been given by DPKO/DFS to allow tactical flights as requested by the force commander.

Troop-contributing countries have been made responsible for their own helicopters. They can implement the tactical rules they think relevant and, if engaged in a military operation, use their own operational regulations instead of those in the *Aviation Manual*. Helicopters therefore have flown with open doors, depending on the practice and agreement of the pilot-in-command. While helicopters are supposed to land in a secured area like a camp or recognized helipad, military helicopters can land anywhere, depending on the crew's assessment and the standard operating procedures of the troop-contributing country. Moreover, specific training is conducted to drill contingents and military helicopters in these procedures. However, more needs to be done to allow joint operations with helicopters of different types and from different countries. This would require training hours and development of procedures signed by the appropriate authority.

A number of measures have been undertaken to facilitate compliance with rules and regulations. Civilian aviation units are now often staffed to include officials with military backgrounds who understand the operational requirements of the military component and the need to allow military leadership the room to maneuver. In MONUSCO, the director of mission support released Military Aviation Operational Tasking and Control Procedures in March 2015. In UNIFIL, standard operating procedures on aviation operations are regularly reviewed, and a database called the Aviation Integrated Management System allows the monitoring of all aviation activities from planning to allocation of hours to invoicing and payment. In MINUSMA, software called Electronic Aviation Service has been created to facilitate compliance with procedures, and a "standby aircraft military request" is available for any sudden operation. In MINUSCA, the head of military air operations is the deputy chief aviation officer. To military interlocutors, the force commander should have control of military air assets to ensure predictability of tasking, while recognizing that some of these assets can be used for other purposes if need be.

Such close coordination is also crucial for CasEvac and MedEvac (see Box 7) and emergency search-and-rescue flights. After a series of failures on the ground, and following recommendations from HIPPO,[45] DFS decided in 2016/2017 to create

Box 7. MedEvac and CasEvac[46]

A MedEvac is normally requested by the mission chief medical officer or his or her delegated authority for a regularly scheduled flight (passenger priority 1). However, a special flight request can be made if the condition of the patient requires a medically equipped aircraft and unique medical care during transportation or if the destination of the patient is not served by scheduled flights.

A CasEvac may be requested by anyone in the field mission and is authorized by the medical emergency control center, which is led by the medical emergency coordinator under the delegated authority of the chief medical officer. A CasEvac may be performed using any available aircraft.

45 "Medical evacuation capacity is a particularly important requirement. In more dangerous and remote mission settings, missions must deploy anticipating the possibility of casualties from the outset. In this regard, traditional approaches to gradually building up medical capacities are insufficient. Timely and reliable medical evacuation and casualty evacuation should be a priority in all mission start-up phase and must be maintained continuously throughout the life cycle of the mission, including with night flight capability. No mission should be assessed to have reached an initial operating capability unless such arrangements are in place. Clear capability standards should be established for casualty evacuations and medical evacuations." UN General Assembly and UN Security Council, *Report of the High-Level Independent Panel on Peace Operations*, para. 215.

46 DFS, *Aviation Manual*, draft, June 2017.

an internal working group to review its CasEvac policy. This review set out "minimum requirements to ensure timely evacuation of UN personnel and any other casualties in accordance with the mission mandate" and to "articulate how UN actors at the UN Headquarters and mission level should coordinate and integrate actions."[47] This is particularly important, as troop-contributing countries need to be confident that, if there are casualties, wounded troops on the ground will be provided with CasEvac without hesitation and without prior clearance by a doctor, whom it may take minutes or even hours to find. Having an efficient CasEvac mechanism is crucial to ensuring that member states trust UN missions and their leadership and, in particular, that they meet the "golden hour" requirement (i.e., getting a casualty to field surgery within one hour).[48]

Missions have not waited for this general review to improve their own standard operating procedures, especially in asymmetric threat environments where they risk suffering higher casualties and in cases where missions are obligated to undertake humanitarian evacuations. MONUSCO, for example, has established a "centralized unit" that coordinates all requests to the mission medical cell through the joint operations center and has a twenty-four-hour on-call system. MONUSCO was able to successfully conduct 675 CasEvacs in 2016. UNIFIL has established a procedure that allows any helicopter to be ready within thirty minutes after a request has been issued.

Adhering to UN rules and regulations requires good coordination, communication, and understanding between the military and civilian components of a mission. This is dependent on the level of integration of a mission and the personalities of the mission leadership. Trust between the military leadership and the various troop-contributing countries' contingent commanders can help ensure forces are willing to conduct operations. In the end, the pilot-in-command (of both military and civilian flights) remains the only one in the chain of command who decides if a mission can be executed or not.

Issues of Capacity and Capabilities of Aviation Assets

Overall, the UN has steadily improved its operating procedures for using military helicopters over the past few years, and there has been significant progress in a number of other areas: security of flights has been improved, standards and doctrine issued, reimbursement rates increased, command-and-control problems solved, missions better integrated, and performance-management criteria introduced. If procedures are understood and respected, they will rarely cause incidents or prevent the conduct of any operation. But while progress has been steady, capacities still lag behind. According to numerous interlocutors, the real debate is around the lack of capacity and capabilities of the assets put at the disposal of UN peace operations.

Most multidimensional peacekeeping operations have regularly faced serious gaps in the capacity of their air assets (especially helicopters), particularly the missions in Darfur, Mali, and Eastern Congo (see Figure 5). Air assets have been at the core of lists of missing assets established by DPKO for the past ten to twenty years. In 2010 the secretary-general pointed out that "the lack of crucial assets such as aerial mobility impedes missions' ability to implement mandates effectively."[49] In a previous report to the General Assembly's Special Committee on Peacekeeping Operations (C-34), he had already stated that "the mobility of personnel is undermined by the lack of surface and aerial mobility assets, including military utility helicopters, transport aircrafts and unmanned aerial systems."[50]

As a result, the Special Committee on Peacekeeping Operations recognized "the need for increased contributions by troop-contributing

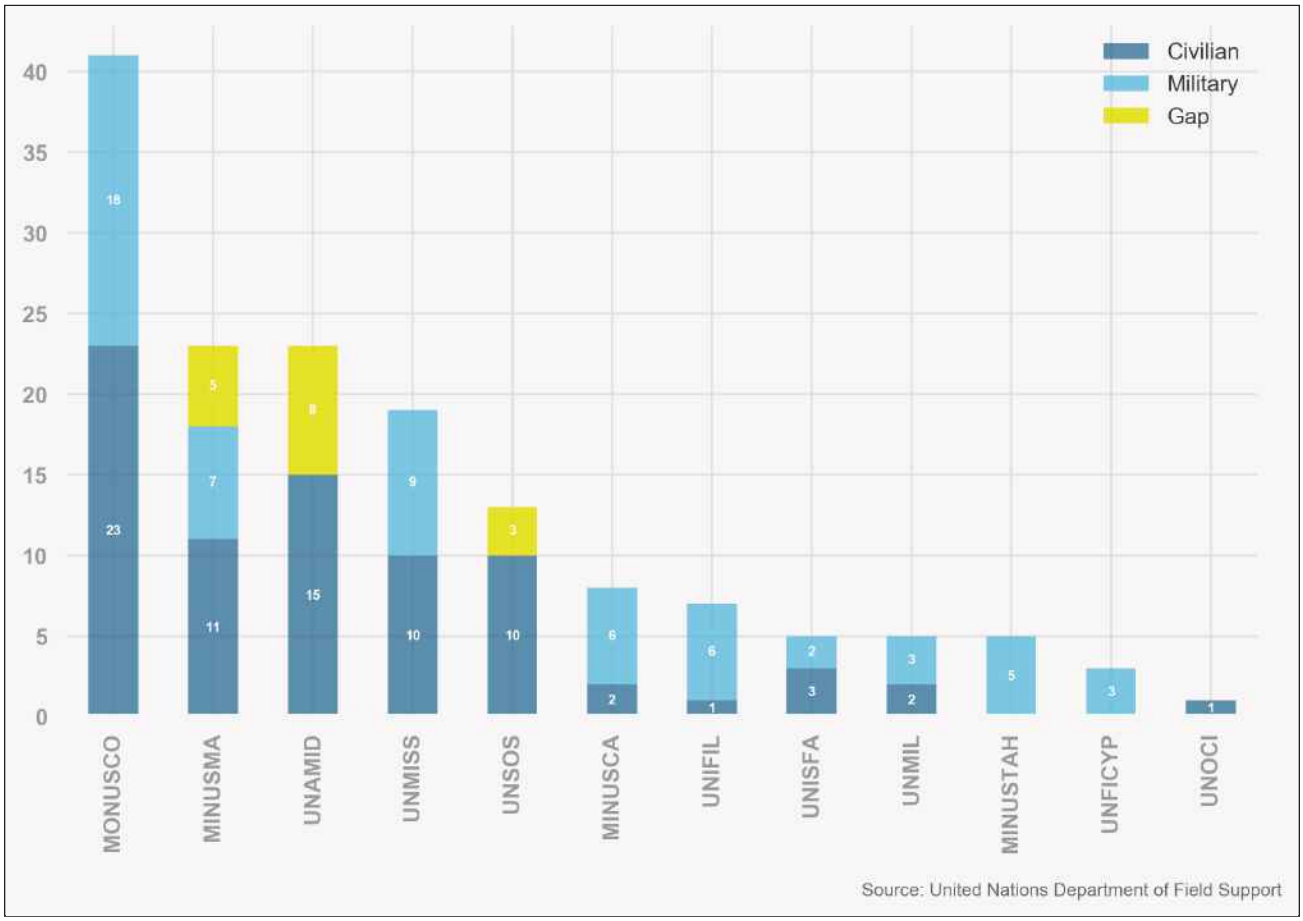
47 DFS, *Aviation Manual*, draft, June 2017.

48 The "golden hour" concept demonstrates that patient survival rates increase significantly when advanced life support is provided within one hour after a trauma or when symptoms first occur. DPKO/DFS, *Medical Support Manual for United Nations Field Missions*, 3rd ed., 2015, p. 47.

49 UN General Assembly, *Administrative and Safety Arrangements Relating to the Management of Military Utility Helicopters in Peacekeeping Operations—Report of the Secretary-General*, UN Doc. A/64/768, May 4, 2010, para. 4.

50 UN General Assembly, *Implementation of the Recommendations of the Special Committee on Peacekeeping Operations—Report of the Secretary-General*, UN Doc. A/64/573, December 22, 2009, para. 39.

Figure 5. Number of helicopters in current UN peacekeeping missions



countries in terms of military utility helicopters and for the review of the reimbursement system."[51] In 2011 a study from the Center on International Cooperation pointed out that the UN only has 81 of the 137 helicopters it needs, a gap of over 40 percent.[52] In 2017 only 11 of MINUSMA's 24 military helicopters were operational; MINUSMA's authorities consider the lack of helicopters and of tactical air transport capacity to be one of the mission's major weaknesses.[53] In its 2017 report the Special Committee on Peacekeeping Operations reiterated its concern about "the negative impact that the absence of critical assets, including military helicopters, is having on the mobility of personnel and, as a result, on the ability of the missions to successfully carry out their mandates" and recognized "the continuing shortfall in the availability of military helicopters."[54]

This gap exists because military helicopters and strategic or tactical airlift capabilities are expensive and rare, and countries tend to keep them for themselves before putting them at the disposal of the United Nations. Furthermore, constant use, maintenance requirements, and other factors (such as restricted interoperability, air crew rotations, serviceability issues, and delays in receiving broken parts) often reduce the availability of air assets on the ground. For example, in MONUSCO, at any given time the military component of the mission has access to an average of 70 percent of military air assets (eighteen helicopters; see Figure 5). Missions are also in dire need of air assets with night-vision

51 UN General Assembly, *Report of the Special Committee on Peacekeeping Operations: 2010 Substantive Session*, UN Doc. A/64/19, May 10, 2010, para. 73.

52 Center on International Cooperation, "Assessment of Force Generation Challenges Relating to Rotary Wings Assets for UN Peacekeeping Operations," discussion paper prepared for the US Department of State's Global Peace Operations Initiative, April 2011.

53 Interview with representative of MINUSMA, May 2017.

54 UN General Assembly, *Report of the Special Committee on Peacekeeping Operations: 2017 Substantive Session*, UN Doc. A/71/19, March 20, 2017, paras. 116–117.

capability (in particular for CasEvac).

In other cases, assets are not fit for the extreme conditions under which they need to operate. Sometimes the most sophisticated machines are not the most robust and the easiest to maintain in harsh environments. For example, the German Army's Tiger combat helicopters, which deployed to MINUSMA in May 2017, had not been cleared to operate in temperatures exceeding 43.26 degrees Celsius, yet daytime temperatures near Gao can run over 45 degrees.[55] The crash of one of these helicopters on July 26, 2017, will no doubt raise questions, even though temperatures were lower on that day.[56]

A 2011 study by the Center for International Cooperation considered that "the shortage of military helicopters to UN peacekeeping stems from internal rules, policies and procedures agreed by Member States, which inadequately incentivize troop-contributing countries for contribution of assets. At the same time, the small pool of countries that possess sufficient helicopter assets and the capacity to sustain them in the field, combined with competing national demands, limits potential supply."[57] This finding remains valid today, even though European countries in theory should have more assets available now that they are less committed to the operations in Afghanistan.

The UN's reimbursement rate does not come close to covering actual expenses incurred by countries contributing advanced technology, and most air assets are not part of the Contingent-Owned Equipment Manual, as they are considered specific rather than general assets. A German helicopter costs $32,000 per flying hour, and a Dutch one $18,000, but the UN's reimbursement rate for a helicopter is $6,000 per flying hour.[58] Many contributing countries cannot afford to be only partially reimbursed for their contributions. UN peacekeeping missions therefore have to operate with old machines and obsolescent equipment.

In order to compensate for gaps in air assets provided by contributing countries, some missions resort to commercial air assets. Commercial assets have the advantage of being easier to manage (light logistics footprint, no need to manage crew rotation, no need for training, etc.). At the same time, however, commercial providers can refuse missions they consider too dangerous, and contracts can lack flexibility, especially in high-tempo operations. Relying on purely civilian (i.e., commercial) capacities would be too costly and would not provide adequate operational flexibility (e.g., due to different regulations and security protocols). In Mali, because troop-contributing countries arrived without night-vision capability, the UN contracted two helicopters, three sets of crews, and two teams of paramedics from a private company at the cost of $20 million per year. This was not budgeted for, as these capabilities were initially supposed to be provided by troop-contributing countries.

Indeed, assets provided by troop-contributing countries do not always have the necessary capabilities, such as night vision, which limits their use. Seventy percent of helicopters deployed are not equipped with night vision. To some extent, all aircraft and crews can fly at night without night-vision equipment, and full night-vision capability may not be necessary in many cases since flight operations would not normally take place at night or support ground operations. But this does not concern the conduct of (tactical) ground support operations at night, which is therefore de facto limited by the absence of night-vision equipment.

Night vision is typically needed for a limited set of tasks, primarily CasEvac support. For example, in the eastern Democratic Republic of the Congo, most attacks happen at sunset because armed groups want to take advantage of the night to escape. If there are casualties and no night-vision-capable MedEvac assets, UN forces would have to leave the wounded behind during the night. Therefore, while requiring all commercial aircraft to have night-vision devices or goggles would be

55 "Mali Too Hot for Half of Bundeswehr MINUSMA Vehicles," Deutsche Welle, April 19, 2017, available at www.dw.com/en/mali-too-hot-for-half-of-bundeswehr-minusma-vehicles/a-38481363 .

56 See Andrea Shalal, "Germany Defends Performance of Crashed Tiger Helicopter in Mali," Reuters, July 27, 2017, available at www.reuters.com/article/us-mali-un-crash-germany/germany-defends-performance-of-crashed-tiger-helicopter-in-mali-idUSKBN1AC2YL ; and "Mali Crash: German Military Pilots' Group Cites Deficiencies," Deutsche Welle, July 28, 2017, available at www.dw.com/en/mali-crash-german-military-pilots-group-cites-deficiencies/a-39869709 .

57 Center on International Cooperation, "Assessment of Force Generation Challenges Relating to Rotary Wings Assets for UN Peacekeeping Operations."

58 Interview with representative of a troop-contributing country, January 2017.

unnecessarily costly, they are often required for military assets to support CasEvac and to enable military operations.

When the number of helicopters is limited, they tend to be overtasked (as the mission leadership can always ask for more allocated hours), and capacities can easily get stretched when a new crisis arises. Missions should therefore pay particular attention to the number of special flights, which should only be used out of operational necessity, not, for example, to accommodate any delegation of visitors. This can at times be a burden to missions that already have limited capacities. Special flights should therefore be carefully managed.

In a world of limited financial resources, the UN has already looked at the possibility of sharing assets between missions. For example, the UN Integrated Peacebuilding Office in Guinea-Bissau (UNIOGBIS) has a dedicated percentage of flight hours for the one fix-wing plane assigned to the UN Office for West Africa and the Sahel (UNOWAS). The CRJ-200 passenger jet assigned to the UN Interim Security Force in Abyei is shared with MONUSCO and UNMISS on a pro rata basis. MONUSCO and MINUSMA share a commercial C-130 variant on a six-month basis. The executive jet assigned to UNMISS and based in Entebbe is often shared with missions in the region for VIP and MedEvac operations in a de facto sharing arrangement.

Recent Improvements and Recommendations

A series of issues related to the use of aviation assets has been identified over the years (see Box 8). Some of these issues remain today. In 2015 the High-Level Independent Panel on Peace Operations (HIPPO) recommended that:

> in the light of the demands of contemporary missions, the Secretariat should identify and remove constraints on the use of military aircraft, particularly for operational and medical emergencies, through the amendment of its Aviation Operational Risk Management Policy and a review of the application of International Civil Aviation Organization and other rules to military assets in demanding operating environments. Force commanders should have increased direct tasking authority for military utility helicopters when the mission concept of operations requires it, and where there is need. Letters of assist should be reviewed with the concerned Member States to allow for rapid short-term redeployments of military air assets in support of operational requirements.[59]

Box 8. Recurrent complaints about air assets[60]

- Chronic shortage of military air assets in UN peacekeeping operations
- Commitment gaps among Western countries (with the exception of the UN Interim Force in Lebanon)
- Limited or obsolete capabilities
- Insufficient interoperability
- Command-and-control problems
- Reimbursement issues and complaints
- Limited outreach to other strategic partners
- Slow deployment or employment
- High levels of risk aversion
- Prohibitions against collateral damage
- Lack of military air operations doctrine or standard operating principles
- Limited military staff capacity in UN headquarters in New York

59 UN General Assembly and UN Security Council, *Report of the High-Level Independent Panel on Peace Operations*, para. 226.

60 A. Walter Dorn, Filip Van Der Linden, and Ryan Cross, "UN Aviation: Some Basics," June 2011, available at http://walterdorn.net/pdf/UN-Aviation-Basics_Dorn-VanDerLinden-Cross_Mas_Compressed-Optimized_WP-2011_19June2011.pdf .

It also recommended that:

> the Secretariat and Member States revisit accommodation standards to permit greater tactical mobility and remove military aviation constraints to enable more mobile operations, and continue to pursue with Member States greater use of coordinated movement planning and the establishment of regional supply chain networks wherever practicable.[61]

Military, political, and financial issues remain a constant challenge, including the limited range of certain helicopters, gaps in commitment of air assets, limits in capacities and capabilities, and lack of interoperability. As mentioned above, however, numerous other issues have been addressed by the Secretariat and missions on the ground: security of flights has been improved, standards and doctrine issued, reimbursement rates increased, command-and-control problems solved, missions better integrated, and performance-management criteria introduced.

DPKO and DFS have taken numerous steps to strengthen existing policies, and peacekeeping missions have improved coordination and integration between their civilian and military components. DPKO issued the *United Nations Peacekeeping Missions Military Aviation Unit Manual* in January 2015. DFS started revising the *Aviation Manual* in January 2017, which should be ready by the end of the year, and is developing a new policy on CasEvac. Procedures are therefore in place and should be respected by all. The problem remains the lack of assets and capabilities and insufficient proactivity in using those assets.

Working in a UN peacekeeping operation is often a culture shock for military personnel (in particular those from countries that have not previously contributed to contemporary UN peacekeeping missions, including some Western troop-contributing countries). The procedures, policies, and mindsets differ from other military settings, and civilians have a greater and more controlling role in peacekeeping than in other military operations. This means that specific training is required on UN policies and procedures, in particular on operational tasking and command-and-control procedures for military air assets. This is particularly needed at the outset of a mission to avoid the tendency to create new procedures rather than using those that exist. Missions also need to maintain a balance of military and civilian assets to circumvent possible caveats from troop-contributing countries.

Logistics are fundamental to the manning and conduct of peacekeeping operations, enabling them to be proactive, stable, predictable, and sustainable, and air assets are an essential part of logistics. But in the face of financial constraints that are reducing the budgets of peacekeeping operations, the Security Council and missions themselves need to focus on how to use expensive air assets more effectively and efficiently. They may have to make concepts of operations less ambitious and reduce the number of air assets, looking less at numbers and more at capabilities and how to use their limited air assets more strategically. As pointed out by one interlocutor, the UN has "to evolve from an organization that uses aviation assets as a purely logistical tool to an organization that uses this important tool also as a critical force multiplier for mandate delivery."[62] At the same time a clear focus must be maintained on the mobility, safety, and security of personnel, particularly on ensuring that missions develop and retain capacity for rapid medical evacuation.

More importantly, the UN could also look more seriously at using national or regional aviation capacity for logistical tasks. Through targeted partnerships, UN missions could build these capacities. In the Democratic Republic of the Congo, for example, MONUSCO could have built a partnership with the national aviation company (with the help of an international company) to ensure the safety and security of regular inland flights. Greater attention should also be given to airfield infrastructure, which is key to lowering the cost of air transport for UN missions.

The following recommendations could help the UN achieve this goal. At the headquarters level:

- **Increase cooperation between DPKO and DFS:** DPKO's Office of Military Affairs and the aviation, finance, and medical divisions of DFS should increase cooperation in planning and in defining statements of unit requirement.

61 Ibid., para. 229.

62 Interview with former force commander, New York, July 2017.

Statements of unit requirement should better correspond to the capacities of the various troop-contributing countries and to the needs of missions through better back-and-forth communication.

- **Increase communication between headquarters and the field:** UN headquarters should consult more with field missions in defining statements of unit requirement, as only missions can accurately assess their needs (taking into account budgetary constraints). Moreover, letters of assist should have force requirements clearly attached to them to enable missions to better identify the gaps in assets provided by troop-contributing countries.
- **Take a more strategic approach to deploying air assets:** The UN should renew its thinking so that the number of air assets deployed to missions is driven by the demands of the task and is not solely based on the number of troops in the mission.
- **Facilitate multinational rotation contributions:**[63] The UN Secretariat should consider playing a greater role in "match-making" for multinational rotation contributions of air assets, whereby multiple troop-contributing countries agree to rotate responsibility for deploying certain high-capability and rare assets such as C-130 planes and helicopters. The Secretariat could facilitate such arrangements by identifying lead countries to help bring on board additional partner countries and by making the force generation process more transparent.
- **Encourage triangular partnerships:** DPKO should encourage triangular partnerships between UN missions, national or regional actors with air assets, and member states willing to support those actors by equipping or training them. Such partnerships could help build local capacity to provide air assets to UN missions.
- **Share air assets among missions:** To increase the capacity of missions for mobility and airlift, DFS should procure air assets that could be shared among different missions through the Regional Service Centre in Entebbe, Uganda. Missions could also share certain air assets, making them available for a certain amount of time in each, though this would require tackling the resulting budgetary challenge.
- **Review the policy for command and control:** The UN should encourage troop-contributing countries to support the proposed review of the current UN policy for command and control so that it can best support operational needs and make troop-contributing countries more confident in the procedures.

At the mission level:

- **Implement UN policy requiring that civilian and military components of aviation units be integrated:** Field missions should standardize the establishment of integrated aviation units through which military and civilian personnel keep one another informed on planned and current operations and can de-conflict issues and priorities. That modus operandi should be explained to any new country contributing assets at the strategic and tactical levels.
- **Implement existing policies and procedures:** Field missions should implement existing command-and-control policies and standardize and unify procedures and approaches across all missions. MONUSCO's Military Aviation Operational Tasking and Control Procedures could serve as a good basis.
- **Provide training on standard operating procedures:** In their induction week, civilian personnel in aviation units and military U5-AirOps (military planning) officers joining these units should be jointly trained on the appropriate standard operating procedures.
- **Restrict the use of special flights:** Field missions should restrict the number of special flights to those of strict operational necessity. This requires better defining "operational necessity" to avoid multiple interpretations. Priorities should be established based on these definitions and in order to accommodate the needs of the mission as a whole rather than of particular contingents.

63 Interview with former force commander, New York, July 2017.

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