



United Nations
Peacekeeping Missions
Military Aviation Unit
Manual

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Preface

We are delighted to introduce the United Nations Military Unit Manual on Aviation—an essential guide for commanders and staff deployed in peacekeeping operations, and an important reference for Member States and the staff at United Nations Headquarters.

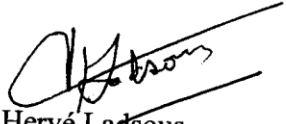
For several decades, United Nations peacekeeping has evolved significantly in its complexity. The spectrum of multi-dimensional UN peacekeeping operations includes challenging tasks such as restoring state authority, protecting civilians and disarming, demobilizing and reintegrating ex-combatants. In today's context, peacekeeping missions are deploying into environments where they can expect to confront asymmetric threats and contend with armed groups over large swaths of territory. Consequently, the capabilities required for successful peacekeeping missions demand greater flexibility and interoperability.

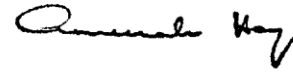
UN peacekeeping operations are rarely limited to one type of activity. While deployed in the context of a political framework supporting a peace agreement, or in the context of creating the conditions for a return to stability, peacekeeping missions require the performance of dangerous tasks involving the timely movement of personnel and logistics; and sometimes the judicious use of force, particularly in situations involving the protection of civilians where the host state is unable to provide security and maintain public order.

To meet these complex peacekeeping challenges, military components often play a pivotal role in maintaining safety, security and stability. Under these circumstances, the deployment of military aviation assets can contribute decisively towards successful achievement of the Mission's mandate.

As the UN continues its efforts to broaden the diversity of the troop contributing countries, and in order to ensure the effective integration of all types of UN military aviation units, there is a vital need to formalize capability standards. Together with the seminal work of military experts from numerous Member States, the Department of Peacekeeping Operations and the Department of Field Support have produced this Manual as a means of enhancing the preparation, operational readiness and efficiency of UN military aviation. In recognition of the work already done, and in anticipation of future improvements, we would like to express our sincere gratitude to the Member States who volunteered and devoted so much of their time, energy and expertise in the creation of this Manual. The result is a document that captures and consolidates the relevant dimensions of the UN military aviation assets into a single, convenient reference.

The Department of Peacekeeping Operations and the Department of Field Support will continue to refine and update this Manual ensuring its relevance in the ever-changing operational environment. In the meantime we have every expectation that this document, especially with the concerted efforts of its intended readers, will contribute immensely to improving and enhancing our collective performance in the pursuit of peace.


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Military experts of the UN Peacekeeping Missions Military Aviation Unit Manual Working Group, Islamabad, Pakistan 2014.

Purpose

This first edition of the United Nations Manual on Military Aviation provides field commanders and their staff a guide for planning and conducting military aviation operations in support of United Nations peacekeeping operations. What is more, United Nations Headquarters and Mission staff will find this manual an essential reference as they plan for, generate and employ military aviation for UN Missions.

The intent of this manual is not to attempt to override the national military aviation or safety doctrines/policies of individual Member States or Troop Contributing Countries, nor impose requirements on national training, operations or structures. This manual does *not* prescribe any military tactics, techniques and procedures which remain the prerogative of individual Member States. Nor is it the intent of this manual to serve as an instrument for military aviation unit selection. Indeed military aviation unit structures will be adapted, ultimately, in accordance with any Memorandum of Understanding negotiated between the UN and troop contributing country. Instead, this manual serves as a complement to existing or emerging Troop Contributing Countries' military aviation capability, and preparation for the enhanced performance achieved through interoperability with other Troop Contributing Countries participating in the peacekeeping operation.

This manual is written primarily at the operational level. It is based on UN guidance reflecting lessons learned, feedback from field missions and input from peacekeeping practitioners experienced in UN military aviation operations. Workshops conducted by interested Member States and Troop Contributing Countries produced the original draft that was finalized after extensive coordination within DPKO and DFS. The result is a most comprehensive body of thought on UN military aviation operations that is especially designed to assist contingents in the re-orientation of their units from a national military aviation focus to one in which they are an integral part of a unified UN peacekeeping operation.

Scope

UN Missions have both civilian and military aviation assets. However, as this is a peacekeeping operations *military* aviation manual, the chapters herein focus on UN military, not civilian, aviation. Discussed within is an overview of the military aviation setting in UN peacekeeping operations. The capabilities of rotary- and fixed-wing aviation are examined in terms of their employment concept, tasks, organization and support requirements (pre-deployment, in-mission, and during relief, rotation and repatriation). Military aviation training for air and ground crews as well as military aviation unit commanders and staff is examined with checklists provided along with tasks, conditions and standards that can be modified to suit any troop contributing country's aviation contingent. Additional discussion takes place on the subject of self-evaluations, including checklists, along with advice on seeking support from the UN or third parties. Most importantly, we provide an annex (Annex D) with suggestions on how contingents can create an organizational culture that promotes operational readiness through active safety programs.

Having stated that this manual focuses on the military aspects of UN Mission aviation, there is one caveat. Personnel new to UN Mission operations will find the description of UN military aviation asset command and control most enlightening and perhaps rather unexpected. 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 exception to the civilian logistical tasking authority is when UN military aviation assets are in direct support of the Mission's military operations. The dual nature of UN military aviation command and control is explained in Chapter 1. While military personnel may find this divided command and control structure unfamiliar, the intent of this manual is to clarify key aspects of UN military aviation for both military and civilian personnel, and thereby foster a unified approach to aviation field employment.

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Chapter 1

Employment Concept for UN Military Aviation

1.1 Introduction

This chapter will assist the Force and Sector Commanders, and all UN Mission staff, understand and correctly employ the full capability of UN military aviation assets. The current momentum in peacekeeping operations necessitates a highly responsive approval authority—reflecting the urgencies of daily military operations as well as civilian logistical requirements. Understanding the proper employment and approval authority for UN military aviation assets is essential to meeting time-sensitive operational demands.

1.2 Command and Control

1.2.1 UN military aviation assets are OPCON to the Force Commander, who is authorized to further assign aviation assets under Tactical Control (TACON) to a designated commander for specific purposes and periods. TACON includes the detailed and local direction and control of movement or maneuvers necessary to accomplish an assigned mission or specific tasks. However, due to their criticality in civilian as well as military functions, not to mention related financial implications, military aviation assets are under the UN Tasking Authority of the civilian Director or Chief of Mission Support.

1.2.2 The Chief of Service Delivery¹ reports to the Director or Chief of Mission Support (DMS/CMS). The Chief of Service Delivery centrally manages and exercises tasking authority on behalf of the DMS/CMS over all assigned uniformed logistics personnel and enabling units,² including UN military aviation assets (with the exception of those aviation assets in direct support of military operations), along with signals, engineers, transportation, medical and explosive ordnance disposal. The Mission's aviation priorities are determined by the Special Representative of the Secretary-General (SRSG)/Head of Mission (HOM) as advised by the Mission's senior executive team. For a definitive discussion of the chain of command authorized to sanction different aviation missions, refer to the DPKO/DFS Policy on Authority, Command and Control in United Nations Peacekeeping Operations (Ref. 2008.4, dated February 2008).

1.3 Planning Considerations for Air Operations Staff. For the purposes of this UN military aviation manual, the employment concept for UN military aviation assets is organized by

¹ Service Delivery was formerly known as Integrated Support Services.

² See also the other UN Military Unit Manuals on some of these enablers available at:

<http://ppdb.un.org/SearchCenter/Results.aspx?s=PPDB%20Scope&k=2.%09SOP%20on%20Implementation%20of%20Amendments%20on%20Conduct%20and%20Discipline%20in%20the%20Model%20Memorandum%20of%20Understanding%20Between%20UN%20and%20TCCs>.

considering separately the distinct capabilities, airframes and employment concept of rotary and fixed-wing assets; but first, a brief examination of planning considerations.

1.3.1 The prime responsibility of the air operations staff at Sector and Force Headquarters is to assign tasks to military aviation units best suited for a particular operation. Planning considerations for task assignment include:

- Type of mission.
- Type of terrain.
- Number of passengers.
- Details and nature of load to be carried.
- Tactical situation.
- Conditions of Pick-Up and Landing Zones/airstrips.
- Duration of mission.
- Nature of urgency.
- Crew proficiency.
- Helicopter/aircraft capabilities.
- Risk assessment/flight safety.
- Availability of ground support facilities.
- Type of fuel available.
- Requirement, type and availability of ammunition.
- Availability of specialized equipment for specialized operations.
- Weather conditions.

1.3.2 Another key planning consideration is the need for clearly delineated task assignments for airfield and forward operating base security. Normally, the Mission will assign the airfield security task to one of its infantry units, which may or may not be from the same troop contributing country as the military aviation unit. In cases where the supporting security detachment is not from the same troop contributing country as a military aviation unit, clearly defined command and control arrangements must be established. However, if the military aviation unit's troop contributing country requires the use of its own soldiers for security, this requirement will need to be negotiated with the UN.

1.4 Rotary-Wing Unit Employment Concept

In addition to performing essential personnel and equipment movement, military rotary-wing units support the Mission's security and stability by performing aerial reconnaissance and surveillance, observation, screening and security operations. When required, rotary-wing units conduct show of force, support and intervention operations. Unit tasks will of course depend upon the type of helicopters available. In addition to those already mentioned, additional tasks may also include: armed reconnaissance, air assault/quick reaction operations, close air support missions, CASEVAC/MEDEVAC, search and rescue operations, VIP transportation, helicopter landing site reconnaissance operations and joint operations.

1.4.1 Reconnaissance and Surveillance



Helicopter reconnaissance and surveillance are keenly important by virtue of the real-time ability to identify and report the locations of hostile forces and equipment. The ability to identify and geo-locate elements on the ground can support a variety of UN operations by providing early warning of peace violations, enhancing force protection, and improving Mission readiness to mitigate most threats. These types of operations may include a variety of reconnaissance and surveillance techniques such as:

- **Reconnaissance:** the collection of visual, photographic, infrared or electronic information about opposing factions or terrain.
- **Surveillance:** the systematic observation of airspace or surface areas by visual, aural, electronic, photographic or other means. Surveillance includes the systematic observation of a given area for patterns of activity of any kind, as opposed to more focused scouting or reconnaissance.
- **Planning considerations, include:**
 - Commanders intent (what is the mission?)
 - Effects to be created.
 - Command and Control.
 - Helicopter capabilities including self-protection, design and equipment to perform the intended task.
 - Crew capabilities and qualifications.
 - Terrain.
 - Obstacles.
 - Weather conditions.
 - Aeronautical information (Aeronautical Information Publications (AIP), Notices to Airmen (NOTAM), airspace).
 - Minimum safe altitude.
 - General security situation/threat analysis.
 - Clearance from host nation.
 - Adequate support planning.
 - Flight plan filing as per UN and host country rules.
 - Rules of Engagement.

1.4.2 Armed Reconnaissance



- If authorized under the Mission mandate and approved by appropriate UN authorities, *armed reconnaissance* is reconnaissance to gather information while simultaneously being prepared to use force, mainly in self-defense, by locating and attacking hostile armed elements as they arise during the course of the reconnaissance in assigned general areas, rather than attacking pre-designated targets. Armed reconnaissance often involves engaging hostile elements as they threaten the local civilian population.
- **Planning Considerations Include:**
 - Command and control
 - Helicopter capabilities (including self-protection, design and equipment to perform the mission).
 - Crew capabilities and qualifications.
 - Terrain.
 - Obstacles / heights in reconnaissance area.
 - Weather conditions.
 - Aeronautical information (AIP, NOTAM, airspace).
 - Minimum safe altitude.
 - General security situation/threat analysis.

- Ammunition to be used.
- Availability of required logistical support.
- The number of helicopters to perform the mission (recommendation: 2, for mutual support in case of emergencies).
- Host nation clearance.
- Flight plan filing as per UN/host nation rules.
- Rules of Engagement



1.4.3 Passenger Transportation



Passenger transportation is an air movement of passengers from one location to another using UN aviation assets. Military aircraft operating under a Letter of Assist (LOA) must meet contributing nation and UN standards for military aviation operations and comply with the terms and conditions of the LOA.

- **Planning Considerations**

- Helicopter capabilities (including self-protection, availability of passenger safety equipment and design features etc.).
- Crew capabilities and qualifications.
- Command and control.
- Terrain and safety altitude.
- Weather conditions including day/night operations.
- Aeronautical information (AIP, NOTAM, airspace).
- General security situation of route and destination.
- Host nation clearance.
- Support planning for primary and alternate destinations.
- Flight plan filing as per UN/host nation rules.

1.4.4 Cargo Transportation



This task involves the carrying or moving of cargo within the Mission by UN utility helicopters. The cargo can be loaded inside a cargo compartment, or outside the cargo compartment using a sling (depending upon the availability of special equipment and helicopter capability). As with passenger transportation, military aircraft operating under a Letter of Assist (LOA) must meet contributing nation and UN standards for military aviation operations and comply with the terms and conditions of the LOA.

- **Planning Considerations**

- Loading/of loading plan (locations, procedures, handling equipment).
- Helicopter capabilities.
- Crew capabilities/training standards.
- Loading as per cargo packing list and manifest.
- Specialized equipment requirements for sling, jib crane, etc.
- Weather conditions.
- Aeronautical information (AIP, NOTAM, airspace).
- Weight and volume according to the helicopter's allowable limits.
- Type of cargo (dangerous goods or fragile cargo).
- Terrain and safety altitude.
- Host nation clearance.
- Support planning for primary and alternate destination.
- Filing of flight plan as per UN/host nation rules.

1.4.5 Air Assault/Quick Reaction Operations



Air assault is the movement of ground-based UN military forces by UN military helicopter to protect vulnerable groups, support legitimate forces, secure areas not yet fully secured and to directly engage hostile forces.

- **Planning Considerations**

- Helicopter capabilities.
- Crew capabilities and training standards.
- Detailed briefings and coordination on air assault techniques and tactics by concerned agencies and units.
- Coordination required between different types of helicopters (utility and combat).
- Area of operations.
- Security situation/threat analysis.
- Weather conditions (VMC).
- Aeronautical information (AIP, NOTAM, airspace).
- Terrain, obstacles and safety altitude.
- Host nation clearance.
- Adequate logistics planning including fuel and ammunition.
- Air assault techniques and training plus coordination with ground troops.
- Rules of Engagement.

1.4.6 Close Air Support Missions



Close air support is action by armed helicopters against hostile targets that are close to UN ground and maritime forces. Close air support requires detailed integration of each air mission with the fire and maneuver of UN ground or maritime forces, and must be in accord with the Mission's Rules of Engagement and Concept of Operations (CONOPS)/mandate.

- **Planning Considerations**

- Helicopter capabilities (must be designed and equipped to perform close air support tasks).
- Crew capabilities and training standards.
- Area of operations.
- Security situation and threat analysis.
- Terrain /obstacles and safety altitude.
- Weather conditions.
- Aeronautical information (AIP, NOTAM, airspace).
- Coordination measures such as air to ground communication to avoid fratricide.
- Ammunition that is consistent with Mission mandate.
- Measures to avoid and minimize collateral damage.
- Host nation clearance.
- Support planning for the mission's duration.
- Rules of Engagement.
- Battlefield air interdiction.

1.4.7 Aerial Patrol

Aerial patrols are helicopter patrols over an objective, critical area, or other UN area of responsibility for the purpose of observing and gathering early warning information.

- **Planning considerations**

- Helicopter capabilities (appropriate equipment for visual/electronic surveillance and real time audio/visual relay).
- Crew capabilities and training standards.
- Terrain, obstacles and safety altitude.
- Weather conditions.
- Aeronautical information (AIP, NOTAM, airspace).
- General security situation/threat analysis.
- Host nation clearance.
- Appropriate support planning.



1.4.8 Casualty Evacuation (CASEVAC)



CASEVAC is the emergency transportation of any injured or sick person, whose condition is life-threatening, to Initial or Medical Treatment Facilities. Rapid evacuation of casualties is vital to operational effectiveness. Early evacuation to the appropriate treatment level offers a high probability of saving life and limb. Prompt and efficient casualty evacuation is a leadership top priority and Mission responsibility.

- **Planning Considerations**

- Alert matrix
- Command and Control
- Operating hours since major engine overhaul
- Civil aviation in the area
- Medical Teams
- Threat on the ground
- Landing and Pick-up Zones (LZ/PZ)
 - Location. The LZ/PZ must be in close proximity to the aid station. Casualties may require carrying by hand to the waiting aircraft. However, the LZ/PZ must be set up at sufficient distance so that it will not interfere with aid station operations. If possible, the LZ/PZ should be selected downwind from the aid station to avoid blowing dust on the aid station.
 - Marking. LZ/PZ markings must be visible from the air.
 - Communications. Radio frequency and call signs used by the ground unit at the LZ should be preplanned.
 - Capacity. LZ/PZ size determines how many helicopters can land at one time to load casualties.

- Obstacles. LZs/PZs should be free of obstacles.
- Drop off location and follow-on medical support.
- Flexibility. The CASEVAC system must have sufficient flexibility to enable the health services to respond to changing operational and clinical situations.
- General security situation/security of pick-up site.
- Forecast casualty rate.
- Capabilities of the evacuation teams (resources, personnel and equipment).
- Capabilities of the assets such as payloads and ranges.
- Adequate support planning .

1.4.9 Medical Evacuation (MEDEVAC)

MEDEVAC is the movement and en route care by medical personnel of wounded, injured or ill persons, whose condition is not life-threatening, from the area of operations or other locations to a medical treatment facility. For comprehensive guidance on medical operational, logistical and administrative guidelines for Member States, UN Headquarters and field Missions, consult the Medical Support Manual for United Nations Peacekeeping Operations will be available at: http://ppdb.un.org/Nav%20Pages/PolicyFramework_Default.aspx.

In addition to a host of other essential information, the Medical Support Manual provides information on the command and control structure for integrating medical support in field Missions, CASEVAC/MEDEVAC procedures, pre-deployment medical screening requirements, entitlements to medical care in field Missions and certification requirements for field Mission medical professionals.

• MEDEVAC Planning Considerations

- Helicopter capabilities (availability of specialized equipment for en route medical care).
- Crew capabilities and training standards.
- Availability of adequately trained aero-medical evacuation crew.
- Weather conditions, terrain and safety altitude.
- Aeronautical information (AIP, NOTAM, airspace).
- Adequate support planning including necessary medical supplies.
- A medical risk assessment to ensure the patient's condition is within acceptable safety standards.
- Medical Treatment Facilities (levels 1, 2 and 3) should be notified and ready to receive the patient.

1.4.10 Search and Rescue Operations

Search and Rescue consists of operational tasks to locate, communicate with, and recover personnel from isolated and potentially hostile or denied areas. Search and Rescue is a specialized operation performed by rescue forces to affect the recovery of distressed personnel during contingency operations. Search and rescue is a technical activity rendered by a group of specially trained personnel.

- **Planning Considerations**

- Helicopter capabilities (including availability of required specialized equipment).
- Crew capabilities and training standards (including special missions).
- Area of operations and nature of terrain.
- Appropriate search patterns/techniques.
- General security situation/threat analysis.
- Weather conditions, obstacles and safety altitude.
- Aeronautical information (AIP, NOTAM, airspace).
- Appropriate support planning for maximum search endurance (including provisions for extra fuel tanks).

1.4.11 VIP Transportation

This is the movement of Very Important Persons (VIPs) on UN aircraft. VIP movement support to persons of High Rank (e.g., the Special Representative of the Secretary-General (SRSG), Deputy SRSG, Director or Chief of Mission Support (DMS or CMS), Force Commander (FC), Deputy FC, national heads of state or government as well as others identified by UN Headquarters) to locations of their request. In the conduct of this movement, an aircraft will be provided and dedicated by the Mission Air Operations Center (MAOC) for use by the VIP until the termination or completion of mission.

- **Planning considerations**

- Authorization process in Mission operating procedures.
- Helicopter capabilities including self-protection and VIP seating configuration.
- Crew capabilities and training standards, including necessary security clearances.
- Flight planning to include weather conditions, flight routes, obstacles en route, safety altitude, priority handling details, etc.
- General security situation / threat analysis.
- Weather conditions, obstacles and safety altitude.
- Aeronautical information (AIP, NOTAM, airspace).
- Host nation clearance.
- Appropriate logistics support planning.

1.4.12 Helicopter Landing Site Reconnaissance Operations

This is an operation to inspect, select and land on an unfamiliar landing site. Other than knowing the coordinates, other aspects of the landing site might not be known.

- **Planning Considerations**

- Helicopter capabilities (operational/technical limitations).
- Condition of underground materials (sand, rocks, slopes, surroundings).
- Crew capabilities/training standards.
- Necessary security clearances from UN and host country.

- Area of operations including general security situations and threat analysis.
- Mine / IED (improvised explosive device) clearance, if required.
- GPS coordinates, elevation and area weather.
- Aeronautical information (AIP, NOTAM, airspace).
- Presence of natural obstacles in the area.
- Force SOPs for reconnaissance of helicopter landing sites.
- Adequate logistics support planning.
- Filing of flight plan as per UN and host country rules.

1.4.13 Joint Operations. Joint operations are the integrated military activities of two or more UN components, such as Army, aviation assets, marine and police forces.

- **Planning considerations**

- Helicopter capabilities (including compatibility of communications with ground troops).
- Crew capabilities and training standards.
- Coordination for overall command and control of operation.
- Appropriate logistics support including ammunition and fuel.
- Area of operations, nature of terrain, obstacles and safety altitudes.
- General security situation/threat analysis.
- Weather conditions.
- Aeronautical information (AIP, NOTAM, airspace).
- Coordination for appropriate air to ground communications.
- Coordination / measures to avoid fratricide.
- Measures to avoid/minimize collateral damage.
- Necessary clearances from UN and host nation.
- Rules of Engagement
- CONOPS

1.5 Fixed-Wing Unit Employment Concept

1.5.1 Introduction. The role of fixed-wing assets is to support the Mission's execution of its mandate particularly regarding security and stability. Tasks depend upon the type of aircraft available. Fixed-wing tasks may include surveillance and reconnaissance (including electronic surveillance), passenger, cargo and dangerous goods transportation, aerial delivery operations (supply drops by parachute), CASEVAC/MEDEVAC, search operations, VIP transportation and aerial patrol.

1.5.2 Surveillance and Reconnaissance. Surveillance is the systematic observation of airspace or surface areas by visual, aural, electronic, photographic, or other means. Systematic observation of a given area reveals patterns of activity, as opposed to more focused scouting or reconnaissance. Reconnaissance is the collection of visual, photographic, infrared or electronic information about warning signs or terrain.



- **Planning Considerations**
 - Aircraft capabilities (must be designed and equipped to carry out the task).
 - Crew capabilities and training standards.
 - Area of operations including nature of terrain, weather conditions and obstacles.
 - Aeronautical information (AIP, NOTAM, airspace).
 - Minimum safe altitude for the mission.
 - General security situation/threat analysis.
 - UN and host nation clearance.
 - Adequate support planning for the mission.
 - Filing of flight plan according to UN/host nation rules.

1.5.3 Passenger Transportation



Fixed-wing assets conduct small to large scale air movement of passengers from one location to another. The aircraft must be properly equipped and configured to accommodate passengers. Military aircraft operating under a Letter of Assist (LOA) must meet contributing nation and UN standards for military aviation operations and comply with the terms and conditions of the LOA.

- **Planning Considerations**

- Aircraft capabilities (configured in accordance with International Air Transport Association/Civil Aviation Authorities (IATA/CAA) and UN rules for carrying passengers).
- Crew capabilities and training standards.
- Area of operations, terrain, obstacles and safety altitude.
- Weather conditions.
- Aeronautical information (AIP, NOTAM, airspace).
- General security situation/threat analysis.
- Terminal availability/passenger handling facilities.
- Flight planning and necessary UN and host nation clearances.
- Appropriate support planning.

1.5.4 Cargo Transportation



Fixed-wing UN transport utility aircraft, *properly configured to accommodate cargo*, move cargo from one location to another. Military aircraft operating under a Letter of Assist (LOA) must meet contributing nation and UN standards for military aviation operations and comply with the terms and conditions of the LOA. For mixed transportation of cargo and passengers, cargo aircraft must be certified for passenger transportation by a national certification authority.

- **Planning Considerations**

- Aircraft capabilities (configured in accordance with IATA/CAA/UN rules for cargo transportation).
- Crew capabilities and training standards.
- Aircraft loading plan/weight management plan.
- Cargo manifest and segregation of dangerous goods.
- Area of operations (including reconnaissance of landing sites), weather conditions and safety altitude.
- Aeronautical information (AIP, NOTAM, airspace).
- General security situation/threat analysis.
- Cargo handling and terminal facilities.
- Flight planning and necessary UN/host nation clearances.
- Appropriate support planning.

1.5.5 Transportation of Dangerous Goods

Dangerous Goods (DGs) are any articles and substances having properties that, if uncontrolled, could adversely affect the safety of the passengers, crew or aircraft on which they are carried. The IATA regulation is issued in order to provide procedures for the shipper of dangerous goods, and guidelines for the operator of UN military aircraft that facilitate the safe transportation of dangerous items. While DGs may be transported in military aircraft in accordance with national regulations, UN aircraft operators must adhere to IATA and International Civil Aviation Organization (ICAO) procedures, national and UN procedures (*whichever are more stringent*) regarding the movement of dangerous goods in military aircraft.

- **Planning Considerations**

- Proper inspection by qualified personnel before packaging.
- Dangerous Goods packaging, labeling and segregation.
- Aircraft capabilities (availability of specific DG handling/loading/unloading equipment and qualified crew).
- All other considerations for cargo transportation remain valid.



1.5.6 Aerial Delivery Operations



Fixed-wing aircraft may be used for aerial supply by parachute or airdrop, such as in the aftermath of natural calamities like earthquakes or floods where landing facilities may not be available or when other means are not available or less efficient. Aerial Delivery Operations may also be used for inserting specialized parachute troops if required in support of a UN mandate. Conducting aerial delivery operations requires aircraft and crew that have been specially configured and trained.

- **Planning Considerations**

- Aircraft capabilities (specially configured for parachute operations).
- Crew capabilities and training standards.
- Availability of parachute rigging/packing/repacking facilities.
- Coordination for drop zone selection and marking.
- Aeronautical information (AIP, NOTAM, airspace).
- Area of operations, weather conditions and safety altitude.
- General security situation/threat analysis.
- Availability of load masters (expert cargo handlers).
- All other considerations for cargo transportation remain valid.

1.5.7 Casualty Evacuation

As with rotary-wing operations, CASEVAC is the emergency transportation of any injured or sick person, whose medical condition is life-threatening, to Initial or Medical Treatment Facilities without medical personnel or equipment on board. Rapid evacuation of casualties is a command responsibility and vital to operational effectiveness. Early evacuation to the appropriate treatment level offers a higher probability of saving life and limb.

- **Planning Considerations**

- Aircraft capabilities (configured to carry lying and sitting personnel).
- Crew capabilities and training standards.
- Availability of paramedical staff.
- Forecasted casualty rate (in case of a sustained military/humanitarian operation).
- Nature and disposition of nearest health facilities.
- Number and type of evacuation platforms available.
- Area of operations, weather conditions, safety altitude.
- Aeronautical information (AIP, NOTAM, airspace).
- General security situation/threat analysis.
- Flight planning and necessary UN and host nation clearances.
- Adequate support planning.

1.5.8 Medical Evacuation

As with rotary-wing operations, Medical Evacuation (MEDEVAC) in fixed-wing operations is the movement and en route care by medical personnel of wounded, injured or ill persons, whose medical condition is not life-threatening, from the area of operations and/or other locations to a Medical Treatment Facility. Once again, for comprehensive guidance on medical operational, logistical and administrative guidelines for Member States, UN Headquarters and field Missions, readers should consult the Medical Support Manual for United Nations Peacekeeping Operations available at:

http://ppdb.un.org/Nav%20Pages/PolicyFramework_Default.aspx.

- **MEDEVAC Planning Considerations**

- Aircraft capabilities (configured for en route medical care).
- Crew capabilities and training standards.
- Availability of specially trained aero-medical staff.
- A risk assessment should be completed by a medical assessment team, fully assigned and transferred to the aircraft crew, to ensure that the risks involved are understood and the level of risk is within acceptable safety standards.
- Ensure proper documentation of flight safety assurance/doctor-certified patient risk assessment and fitness to travel by air.
- Medical Treatment Facilities (levels 1, 2 and 3 clinics) should be notified and ready to receive the patient.

- Area of operations, weather conditions, safety altitude.
- Aeronautical information (AIP, NOTAM, airspace).
- General security situation/threat analysis.
- Flight planning and necessary clearances in accordance with UN and host nation rules.
- Appropriate support planning.

1.5.9 Search Operations

A search operation is the use of any aircraft for gathering and detecting any activity in order to provide information. While on search, aircraft may provide direct information or direction to ground or maritime units that are also conducting search activities.

- **Planning Considerations**

- Aircraft capabilities (availability of mission specific equipment).
- Crew capabilities and training standards.
- Area of operations, obstacles, safety altitudes, weather conditions.
- Aeronautical information (AIP, NOTAM, airspace).
- Landing area analysis/final clearance for landing.
- General security situation/threat analysis.
- Filing of flight plan and necessary UN and host nation clearances.
- Adequate support planning.

1.5.10 VIP Transportation

As with rotary-wing operations, this is the movement of Very Important Persons (VIPs) on fixed-wing UN aircraft. VIP movement includes support to persons of high rank such as the SRSG, Deputy SRSG, Director or Chief of Mission Support, Force Commander, Deputy Force Commander, national heads of state or government as well as others identified by UN Headquarters. Aircraft will be provided and dedicated by the Mission Air Operations Center (MAOC) for VIP use until mission completion.

- **Planning Considerations**

- Authorization in accordance with Mission operating procedures.
- Aircraft capabilities (VIP configuration).
- Crew capabilities and training standards, including required security clearances.
- Area of operations, weather conditions and safety altitude.
- Aeronautical information (AIP, NOTAM, airspace).
- General security situation/threat analysis.
- Filing of flight plan and necessary UN and host nation clearances.

1.5.11 Aerial Patrol

Aerial patrols are provided over an objective area, critical portion of the area of operations, or other UN area of responsibility for the purpose of observing and gathering important early warning information.

- **Planning Considerations**

- Aircraft capabilities (including self-protection, design and equipment to perform the mission).
- Crew capabilities and training standards.
- Area of operations, terrain, obstacles, weather conditions and safety altitude.
- Aeronautical information (AIP, NOTAM, airspace).
- General security situation/threat analysis.
- Filing of flight plan and necessary UN and host nation clearances.
- Support planning for maximum flight range and endurance.
- Close air support.
- Battlespace air interdiction.



Chapter 2

Capabilities and Tasks of the UN Military Aviation Unit

2.1 Introduction

2.1.1 This chapter explains the types, roles, capabilities and tasks of UN military aviation units. Aviation services are an essential part of United Nations peacekeeping operations. Flying day and night, seven days a week, military aviation may involve operations into hostile areas, locations where ground support is nonexistent or places where airfield security cannot be guaranteed. Given these demands, a UN military aviation unit must be organized, equipped and capable of dealing with countless eventualities. Unlike a standard infantry battalion, the organization and capabilities of a military aviation unit are highly dependent on the unique requirements of each field mission, its Force concept, desired end state and UN mandate. The specifics of equipment, organization, tasks and capabilities discussed in this manual are meant only as guidelines.

2.1.2 The military aviation operational capabilities and tasks described herein are divided according to the broad categories of rotary- and fixed-wing airframes, offering a quick comparison based on the different airframe characteristics. Within each airframe type are listed the most common capabilities and tasks performed by that particular military aviation asset. For a more extensive discussion of how these tasks are performed, see Chapter 1, Employment Concept for UN Military Aviation, and Annexes B and C.



2.2 Types of Military Aviation Units

UN military aviation units consist of two types (see Annex A for a comparison):

- **Rotary-Wing**
 - Light Utility Helicopter Unit
 - Medium Utility Helicopter Unit
 - Heavy Cargo Helicopter Unit
 - Attack /Armed Helicopter Unit



- **Fixed-Wing**
 - Light Air Reconnaissance Unit
 - Transport/Tactical Airlift Unit



2.3 Rotary-Wing Unit Capabilities and Tasks

2.3.1 Light Utility Helicopter Unit



- **Role of the Light Utility Helicopter Unit.** The Light Utility Helicopter unit is a Force asset operating day and night in support of UN Mission operations. Its role is primarily operational, with a limited logistical role for UN operations in hostile areas where there is no ground support, or where airfield security cannot be guaranteed. The light utility helicopter unit will normally be based at sector headquarters, but 25-30% of helicopters from the unit may be detached for up to 30 days on the Force Commander's authority in support of operations in other parts of the area of operations. The unit must be able to sustain its personnel and equipment while maintaining a capacity for 24/7 operations.
- **Capabilities of the Light Utility Helicopter Unit.** The light utility helicopter unit should have the capability to:
 - Fly under day/night instrument rules.
 - Sling load pallets.
 - Fly a range of 248 nm (400 km) carrying load requirements.
 - Provide 24/7 reaction response under visual meteorological conditions (VMC).
 - Conduct Air Assault operations, both day and night, in conjunction with specially trained troops or infantry.
 - Establish its own forward operating landing zone (LZ) by day and night.
 - Refuel in the forward area from barrels, and/or forward area refueling points, if required.
 - Provide a response time to take off within 2 hours of warning, except when designated as the Quick Reaction Force (QRF). The Force Commander will define the required QRF response time according to operational needs and unit capacities.

- Transport fuel from the forward area refueling point for other helicopters.
 - Activate automatic direction finder (ADF) equipment to guide aircraft to an emergency locator transmitter (ELT-406 MHz).
 - Mount one machine gun on each helicopter for self-protection.
 - Evacuate four lying and six sitting casualties.
 - Mount and employ a winch sufficient to lift two persons with a 40 meter cable.
 - Achieve a flight altitude up to 14000 ft above mean sea level (AMSL).
 - Provide (if possible) basic Forward Looking Infrared Radar (FLIR) for LZ surveillance.
- **Tasks of the Light Utility Helicopter Unit.** The light utility helicopter unit has the following tasks:
 - Reconnaissance and surveillance.
 - Passenger transportation.
 - Limited cargo transportation (internal and sling).
 - Air assault/quick reaction operations.
 - Casualty evacuation.
 - Search and rescue operations.
 - VIP transportation.
 - Helicopter landing site reconnaissance operations.
 - Joint operations.
- **Aircraft of the Light Utility Helicopter Unit.** This unit consists of helicopters with a maximum takeoff weight of less than 4000 kilograms. Typical aircraft would include the B 206, B 407, B 222, B 230, AS 350, AS 355, MD 500, MD 520, MD 600, R 22, Gazelle, BO 105, EC 135, Bell-412, Bell-212 and other light observation helicopters like the Alouette and Lama. Each unit will have at least 3-4 helicopters, or more depending upon Mission requirements and the LOA.
- **Minimum Equipment Requirements of the Light Utility Helicopter Unit.** Light utility helicopters should be equipped with:
 - Global Positioning System (GPS).
 - Flight data recorder.
 - Satellite tracking system.
 - Satellite phone.
 - VHF / AM and HF communication equipment compatible with Mission communications.
 - Headset/intercom system to enable one passenger to communicate with the flight crew during a reconnaissance flight.
 - Auxiliary fuel pump, filter and approved fuel drums for refueling.
 - Fire extinguishers and first aid kits.
 - Radar altimeter.
 - Transponder.
 - Automatic Direction Finder (ADF).

- Survival kits appropriate to the Mission area with emergency locator transmitters (ELT-406 MHZ).
 - Hearing protection for each passenger.
 - Operate a search light of approximately 30 million candlepower.
 - Night vision devices.
 - Image intensification devices, e.g., binoculars.
- **Maintenance Requirements of the Light Utility Helicopter Unit.** The light utility helicopter unit must include a fully independent maintenance component capable of conducting all necessary scheduled maintenance and repairs. This component must include all required equipment, tools, maintenance manuals and specialist documentation for maintaining the:
 - Engine.
 - Gearbox/transmission.
 - Hydraulics.
 - Electrical system.
 - Instruments, including a “clean room” if necessary.
 - Avionics, including a “clean room” if necessary.
 - Ground equipment:
 - Non-Destructive Testing (NDT) and Analysis.
 - Engineering Records.
 - Spare parts storage.
 - POL storage.

2.3.2 Medium Utility Helicopter Unit



- **Role of the Medium Utility Helicopter Unit.** The medium utility helicopter unit's primary role is the projection of force across the Mission area, particularly the rapid deployment of specialized troops. The unit's secondary role is logistical support and support to the Mission's various monitoring responsibilities that contribute to situational awareness and decision making. The medium utility helicopter unit is a Force asset, sometimes assigned to the brigade/sector level, providing, day and night, tactical and logistical support. The unit is normally based at sector headquarters but, on the authority of the Force Commander, 25–30% of its helicopters may be detached to another part of the area of operations for up to 30 days, or as specified in the LOA. The unit must be able to sustain its personnel and equipment for 24/7 operations.
- **Capabilities of the Medium Utility Helicopter Unit.** The medium utility helicopter unit should have the capability to:
 - Fly under day/night instrument flying rules.
 - Fly a range of at least 378 nm (700 km) carrying load requirements.
 - Provide 24/7 reaction response under VMC.
 - Be fully operational in tropical climates and dusty conditions.

- Lift a minimum of 18 troops with individual and crew equipment (full battle order).
 - Provide (if possible) basic FLIR for LZ surveillance.
 - Secure and lift internal cargo with proper cargo straps and tie downs for up to 3000 kg at 1500 ft AMSL.
 - Carry sling load pallets and light vehicles (up to at least 3000 kg) complete with hooks, slings, spiders, straps and nets.
 - Pre-position at forward locations for up to four weeks.
 - Refuel in the forward area from barrels, if required.
 - Provide a response time to take off within 2 hrs of warning, except when designated as the Quick Reaction Force (QRF). The Force Commander will define the required QRF response time according to operational needs and unit capacities.
 - Transport fuel from the forward area refueling point for other helicopters.
 - Land on unprepared terrain using Visual Flight Rules (VFR), by day and night without assistance from the troops on the ground.
 - Activate direction finding (ADF) equipment to guide the aircraft to an emergency locator transmitter (ELT-406 MHz).
 - Mount two machine guns on each helicopter for self-protection and support of other helicopters when flying in formation.
 - Evacuate 5-6 lying or 10 sitting casualties with at least 2 medical attendants.
 - Mount and employ a winch sufficient to lift two persons with a 40-meter cable.
 - Conduct Search and Rescue by single helicopter.
 - Operate a search light of approximately 30 million candlepower.
 - Attach additional fuel tanks for extended range.
 - Deploy/insert troops by fast rope/rappelling.
 - Provide an on-board intercom system with at least six plug-in stations for communication during air patrols and mobile monitoring.
- **Tasks of the Medium Utility Helicopter Unit.** The medium utility helicopter unit has the following tasks:
 - Surveillance and reconnaissance.
 - Force projection.
 - Air patrols.
 - Air assault/quick reaction operations.
 - Helicopter landing site reconnaissance operations.
 - Joint operations.
 - Search and rescue operations.
 - Troop insertion and extraction.
 - CASEVAC/MEDEVAC.
 - VIP transportation.
 - Passenger transportation.
 - Emergency evacuation / relocation.
 - Radio relay.
 - Observation and monitoring tasks.
 - Operational logistical support.
 - Cargo transportation (internal and sling).

- **Aircraft of the Medium Utility Helicopter Unit.** Medium utility helicopter units consist of helicopters with a maximum takeoff weight of more than 4000 kilograms and a capacity of at least 10 passengers. Aircraft in this category include the Puma, Oryx, MI-8, MI-17, B 205, B 212, B 214, B 412, B 430, BK 117, S 58 and S 76. Each unit will typically have 4-6 helicopters, or more depending upon LOA arrangements.
- **Minimum Equipment Requirements of the Medium Utility Helicopter Unit.** Medium utility helicopters must be equipped with:
 - Global Positioning System (GPS).
 - Flight data recorder/cockpit voice recorder.
 - Satellite tracking system.
 - Satellite phone.
 - VHF/AM and HF communication equipment compatible with Mission communications.
 - Headset/intercom system to enable one passenger to communicate with the flight crew during reconnaissance flights.
 - Auxiliary fuel pump, filter and approved fuel drums for refueling.
 - Fire extinguishers and first aid kits.
 - Radar altimeter.
 - Transponder.
 - Weather radar.
 - Automatic Direction Finder (ADF).
 - Survival kits appropriate to the Mission area with emergency locator transmitters (ELT-406 MHZ).
 - Hearing protection for each passenger.
 - Winch for two persons with 40-meter cable.
 - Search light of approximately 30 million candlepower.
 - Night vision devices.
 - Image intensification devices, e.g., binoculars.
- **Maintenance Requirements of the Medium Utility Helicopter Unit.** The number and qualifications of maintenance personnel for the medium utility helicopter unit must be sufficient to meet all requirements for day and night operations, 24/7 for up to 45 flight hours/month/helicopter or as specified in the SUR. The maintenance capabilities remain the same as for the light utility helicopter unit.

2.3.3 Heavy Cargo Helicopter Unit



- **Role of the Heavy Cargo Helicopter Unit.** The heavy cargo helicopter unit is a Force asset. It operates day and night in support of Mission operations. This unit has a primarily logistical role, with some operational tasks to support UN operations. The unit is normally based at sector headquarters but, on the authority of the Force Commander, 25–30% of its helicopters may be detached to another part of the area of operations for up to 30 days, or as specified in the LOA. The unit must be able to sustain its personnel and equipment for 24/7 operations.
- **Capabilities of the Heavy Cargo Helicopter Unit.** The heavy cargo helicopter unit must have the capability to:
 - Fly using day/night instrument flying rules.
 - Achieve a minimum range of 378 nm (700 km) carrying load requirements.
 - Provide 24/7 reaction response under VMC.
 - Lift at least 20 troops (depending on the type of helicopter) with individual and crew equipment (in full battle order).
 - Pre-position at forward locations for up to four weeks. This capability will be coordinated and agreed upon during the LOA negotiations depending on the military requirements for any specific Mission.
 - Refuel at forward areas from barrels, if required.

- Provide a response time to take off within 2 hrs of warning, except when designated as the Quick Reaction Force (QRF). The Force Commander will define the required QRF response time according to operational needs and unit capacities.
 - Transport fuel from forward area refueling points for other helicopters.
 - Land on unprepared terrain using VFR by day and night without assistance from troops on the ground.
 - Activate automatic direction finding (ADF) equipment to guide aircraft to an emergency locator transmitter (ELT-406 MHz).
 - Mount two machine guns on each helicopter for self-protection and support of other helicopters when flying in formation.
 - Evacuate 8-10 lying or 14-18 sitting casualties with at least 2 medical attendants.
 - Provide and mount a winch capable of lifting two persons with a 40-meter cable.
 - Carry sling pallets and light vehicles (up to 3500 kg) complete with hooks, slings, spiders and nets.
- **Tasks of the Heavy Cargo/ Utility Helicopter Unit.** The heavy cargo/utility helicopter unit has the following tasks:
 - Operational logistical support.
 - Medium/heavy cargo transportation (internal and sling).
 - Surveillance and reconnaissance.
 - Passenger transportation.
 - Air Assault/Quick Reaction operations.
 - CASEVAC/MEDEVAC.
 - Search and rescue operations.
 - VIP transportation.
 - Helicopter landing site reconnaissance operations.
- **Aircraft of the Heavy Cargo Helicopter Unit.** Heavy cargo helicopter units consist of helicopters with a maximum takeoff weight of more than 9000 kilograms. Helicopters in this category include the Chinook, MI-26, EH 101 and S 61. Each unit typically has 3-4 helicopters, or more depending upon LOA specifications.
- **Minimum Equipment Requirements of the Heavy Cargo Helicopter Unit.** Heavy cargo helicopters must be equipped with:
 - Global Positioning System (GPS).
 - Flight data recorder/cockpit voice recorder.
 - Satellite tracking system.
 - Satellite phone.
 - VHF/AM and HF communications equipment compatible with Mission communications.
 - Headset/intercom system for one passenger to communicate with the flight crew during a reconnaissance flight.
 - Auxiliary fuel pump, filter and approved drums for refueling.
 - Fire extinguishers and first aid kits.

- Radar altimeter.
 - Transponder.
 - Weather radar.
 - Automatic Direction Finder (ADF).
 - Survival kits appropriate to the Mission area with emergency locator transmitters (ELT-406 MHZ).
 - Hearing protection for each passenger.
 - Winch capable of lifting 2 persons with a 40-meter cable.
 - Search light of approximately 30 million candlepower.
 - Auxiliary fuel tanks for extended flights.
 - Night vision devices.
 - Image intensification devices, e.g., binoculars.
- **Maintenance Requirements of the Heavy Cargo Helicopter Unit.** The number and qualifications of unit maintenance personnel must be sufficient for day and night operations, 24/7, and for up to the minimum average flight hours/month/helicopter, in compliance with applicable standards. The maintenance capability requirements for the heavy cargo helicopter unit are the same as those for light and medium utility helicopter units.

2.3.4 Attack/Armed Helicopter Unit



- **Role of the Attack/Armed Helicopter Unit.** The attack/armed military aviation unit is a Force asset and operates day and night in support of operations. It has a primarily defensive and deterrent role, especially in the protection of civilians (POC) and must be able to sustain its personnel and equipment. The aircraft must possess forward arming and refueling capability, as well as capacity for 24/7 operations.
- **Capabilities of the Attack/Armed Helicopter Unit.** The attack helicopter unit must have the following capabilities:
 - Guns, rockets and (if possible) anti-tank missile capability.
 - Day/night VFR/IFR capabilities.
 - Range of 320 nm (600 km) carrying full armament. Possibility to use additional fuel tanks.

- Minimum cruise speed of 100-120 knots.
 - 24/7 reaction response with 45 minute take-off time.
 - Establish own forward operating LZ.
 - Refuel from barrels at forward area.
 - Communicate and liaise with coordinating agencies supporting operations.
 - If possible, capability to operate with Night Vision Goggles.
- **Tasks of the Attack/Armed Helicopter Unit.** The attack helicopter unit has the following tasks:

Primary Tasks

- Fire support to UN ground forces.
- Show of force.
- Interdiction/neutralization of hostile elements or weapons, particularly as part of protection of civilians.
- Area surveillance and reconnaissance.
- Armed escort.
- Fire support to search and rescue operations.
- Insertion/extraction operations.

Secondary Tasks

- Observation, monitoring and surveillance by helicopter crew.
 - Patrol with up to eight soldiers carrying small arms.
 - Rappelling/fast roping.
 - CASEVAC.
 - Search and rescue.
- **Aircraft of the Attack/Armed Helicopter Unit.** This unit consists of attack helicopters like the Apache, MI-24 / MI-35, MI-28, Cobra and Rooivalk. Each unit will typically have 3-4 attack helicopters, or more depending upon the LOA agreement.
 - **Minimum Equipment Requirements of the Attack/Armed Helicopter Unit.** The helicopters must be equipped with:
 - Automatic Direction Finding (ADF) equipment.
 - Emergency Locator Transmitters (ELT-406 MHz).
 - Global Positioning System.
 - Fire extinguishers and first aid kits.
 - Flight data recorder (FDR) and cockpit voice recorder (CVR).
 - Radio altimeter.
 - Survival kits appropriate to Mission area with emergency locator transmitters (ELT-406 MHz).
 - Winch for two persons.
 - Search light of approximately 30 million candlepower.

- Night vision devices.
- Image intensification, e.g., binoculars.
- Desirable:
 - Forward Looking Infra-Red Radar capability for surveillance and Search and Rescue.
 - Transponder.
 - Weather radar.
 - Anti-heat seeking weapons countermeasures.
 - Additional fuel tanks.
- **Maintenance Requirements of the Attack/Armed Helicopter Unit.** Capability remains the same as for other helicopter units except for the additional need for ammunition handling/weapons experts.

2.4 Fixed-Wing Unit Capabilities and Tasks

2.4.1 Light Aerial Reconnaissance Unit



- **Role of the Light Aerial Reconnaissance Unit.** The light aerial reconnaissance unit is a Force asset. It operates day and night in support of Mission operations. Its primary function is reconnaissance but can perform a limited transportation role. The unit must be able to sustain its personnel and equipment as well as have a 24/7 operational capacity on airfields where night landing and takeoff facilities are available.
- **Capabilities of the Light Aerial Reconnaissance Unit.** The light aerial reconnaissance unit must be:
 - Properly certified for day/night VFR/IFR operations.
 - Overwater certifiable, in accordance with Federal Aviation Regulation (FAR), Part 25 (ditching requirements).
 - Capable of using JP-8 or Jet-A fuel.

- Able to carry a minimum of 2-6 passengers, plus crew.
 - Able to take off and land with a minimum of 1800 lbs total of passengers and cargo from unimproved, austere landing surfaces such as dirt, grass, gravel, etc.
 - In possession of aircraft using cargo doors that allow loading/unloading of 36-inch warehouse skids and loading/unloading of litter patients.
 - In possession of aircraft able to operate from austere bases without any ground support other than fuel being available for re-fueling operations.
 - Capable of a 900 nm range without using ferry tank(s). Additionally, the aircraft must be capable of internal ferry tank operations.
 - Using aircraft with dual pilot duty stations, but certified for single pilot operation.
- **Tasks of the Light Aerial Reconnaissance Unit.** The light aerial reconnaissance unit has the following tasks:
 - Area surveillance and reconnaissance with day and night electro-optical sensor capability.
 - Visual observation and monitoring.
 - Tactical air patrol.
 - Visual observation in support of search and rescue operations.
 - Limited passenger and cargo transportation.
 - Casualty evacuation.
 - VIP transportation.
- **Aircraft of the Light Aerial Reconnaissance Unit.** The unit consists of light air reconnaissance/utility aircraft like the DA-42, B 200, DO 120, DO 128, N 22, N 24, L 410, L 420, MU 2, PA 28, PA 31 and CESSNA Caravan. Each unit will have 2-3 aircraft depending on LOA arrangements.
- **Minimum Equipment Requirements of the Light Aerial Reconnaissance Unit.** The aircraft must have the following equipment:
 - Pod for digital imagery with electro-optical cameras for day and night operations.
 - Cameras with vertical and standoff capability with focal planes of more than 150 mm.
 - Category 1 Instrument Flight Rules (IFR) approach capable.
 - Dual Azimuth Automatic Direction Finding (ADF).
 - Dual Very High Frequency (VHF) Omni-directional Range (VOR)/Distance Measuring Equipment (DME).
 - Global Positioning System (GPS).
 - Transponder.
 - Weather radar, transponder that permits full utilization of the aircraft's on-board IFR flight capabilities to include Instrument Meteorological Conditions/Instrument Landing System (IMC/ILS) landings.
 - Communications suite that consists of an internal crew intercom and the ability to communicate with Air Traffic Control (ATC) facilities and operational agencies, both line of sight (LOS) and beyond line of sight (BLOS) via voice on dual VHF Voice, High Frequency (HF), and Ultra High Frequency (UHF) desired.

- Operational radius of 800 km, with drop tanks if required.
- Survival kits appropriate to Mission area with emergency locator transmitters (ELT-406 MHZ).

- **Maintenance Requirements of the Light Aerial Reconnaissance Unit**

- The light air reconnaissance unit must have an independent maintenance component, capable of routinely carrying out all necessary scheduled maintenance and repairs. This component must include all required equipment, tools, maintenance manuals and specialist documentation to conduct all maintenance activities related to aircraft engine, instruments, airframe, hydraulics, electrical, fuel, reconnaissance systems, etc.
- The number and qualifications of maintenance personnel must be sufficient to ensure that all maintenance requirements are met for day and night operations, 24/7, and for up to the average minimum flight hours/month /unit, in compliance with applicable standards.

2.4.2 Tactical Air Transport Unit



- **Role of the Tactical Air Transport Unit.** The transport / tactical airlift unit is a Force asset operating day and night in support of Mission operations. Its primary function is cargo and passenger transportation, and it can be used for freight carrying and parachute/air drops in its secondary role. The unit must be able to sustain its personnel and equipment, as well as sustain 24/7 operations on airfields where night landing and takeoff facilities are available.
- **Capabilities of the Tactical Air Transport Unit.** The transport / tactical airlift unit must have the following aircraft capabilities:

Operational Capability

- Operate in a hostile environment or in the absence of flight handling facilities.
- Operate from main operating bases, dislocated operating bases and field operating sites.
- Pre-position independently at forward locations for up to 30 days.
- Conduct self-defense by passive defense equipment, laser warning receivers and chaff/flare dispensers, including add-on armored plates for the aircrew.

- Aircraft may be required at any time, day/night, for both VFR and IFR flights on a 24/7 basis, given a response time of 4 hours and crew rest. Adequate flight crews (numbers vary depending on aircraft type) are required to maintain this capability.
- Aircraft must be capable operating on airfields of 1000 meters in length, including both paved and unpaved surfaces.

Transport / tactical airlift capability:

- Lift a minimum of 90 troops with full equipment.
 - Internal cargo capacity, complete with proper cargo straps and tie-downs, for a minimum 15000 kg and dimensions of 7.65 m x 2.90 m x 2.35 m (e.g., sufficient to carry an armoured personnel carrier).
 - Removable paratrooper seats for up to 54 passengers complete with 9G rated seat belts for each seat. Seat belt buckles are to have metal-to-metal couplings, which operate in a snap and lock manner that do not allow slippage.
 - Aircraft must be capable of 1800 nm with an extended range of 2200 nm, for a minimum of 10 hours duration at a normal cruising speed of 280 knots.
 - Able to airdrop freight and deploy paratroopers with an opened rear ramp.
 - The cargo area must be a roller deck capable of accepting standard size pallets loaded to a height of at least 1.7 meters.
 - CASEVAC capable with removable litter kits for casualty or medical evacuation flights for a minimum of 50 litter cases.
- **Tasks of the Tactical Air Transport Unit.** The tactical air transport unit has the following tasks:
 - Primary Task: Provide support for the Force operational reserves and Special Forces task force units (when present).
 - Secondary Tasks:
 - CASEVAC/MEDEVAC capabilities augmentation.
 - Command, control and communications platform.
 - General logistic capabilities augmentation, including VIP and liaison.
 - Passenger transportation.
 - Cargo transportation.
 - **Aircraft of the Tactical Air Transport Unit.** The unit consists of fixed-wing transport aircraft like the IL-76, C-130, C-160, AN 12, AN 32, AN 22, and AN 124. Each unit will typically have 1-2 aircraft depending upon the LOA.
 - **Minimum Equipment Requirements of the Tactical Air Transport Unit.** The aircraft must have the following equipment:
 - 1 x Global Positioning System (GPS).
 - 2 x self-activated Emergency Locator Transmitters (ELT-406 MHZ).
 - Dual VHF/AM (118.00-135.975 MHZ), VHF/AM low band (33.00- 158.95 MHZ).

- Dual HF communications equipment compatible with Mission communications equipment HF (1 - 29 MHz).
 - UHF FM (military frequencies).
 - Traffic Collision Avoidance System (TCAS).
 - Automatic Emergency Locator Transmitter (ELT-406 MHz).
 - Transponder.
 - Weather radar.
 - Passenger briefing cards in English.
 - Posted “No-Smoking” signs prohibiting smoking on the aircraft in English.
 - Fire extinguishers and first aid kits.
 - Survival kits appropriate to the Mission area.
 - Radar altimeter.
 - Navigational systems such as ILS/VHF Omnidirectional Range (VOR), Distance Measuring Equipment (DME) and ADF.
 - Tracking system.
 - A flotation device (life jacket) for each passenger when conducting flights over water.
 - Cargo nets and straps.
 - Satellite phone.
 - Air defense systems.
- **Maintenance Requirements of the Tactical Air Transport Unit.** The unit must have an independent maintenance component capable of routinely carrying out all necessary scheduled maintenance and repair. This component must include all required equipment, tools, maintenance manuals and specialist documentation to conduct all maintenance activities related to the aircraft engine, instruments, airframe, hydraulics, electrical system, fuel, cargo loading systems, etc. The number and qualifications of maintenance personnel must be sufficient to ensure that all requirements are met for day and night operations as specified in the LOA.

Chapter 3

Organization of the UN Military Aviation Unit

3.1 Introduction

3.1.1 As the chapters on Capabilities, Employment Concept and Tasks have demonstrated, the UN military aviation unit must be organized, equipped and capable of dealing with an abundance of requirements. The organization and resulting capabilities of each military aviation unit are necessarily dependent on the unique requirements of each UN field Mission and mandate. The specifics of capabilities, employment concept, tasks, organization and equipment discussed in this manual are meant only as a starting point for planning and negotiation between the troop contributing countries and UN Headquarters. Prior to deployment, the troop contributing country will discuss and finalize with UN authorities details such as the number of sections, personnel, helicopters and aircraft as part of the Memorandum of Understanding (MOU) or Letter of Assist (LOA) process.

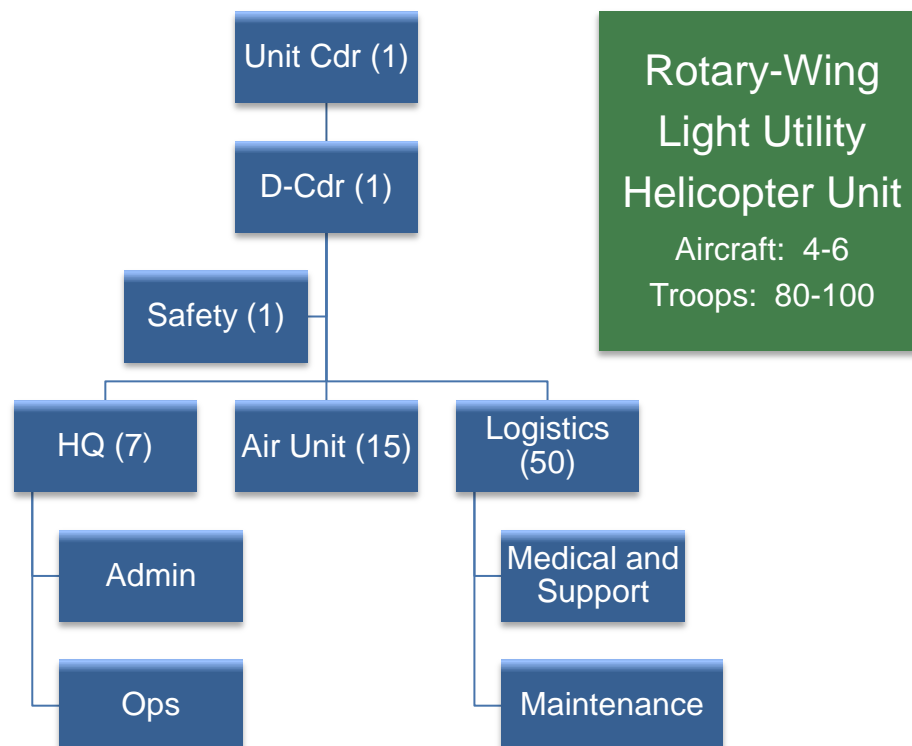
3.1.2 The organizational charts and accompanying text on the following pages describe each of the military aviation units in terms of generic structure, personnel strength and numbers of aircraft. Required internal unit functions and responsibilities upon which an aviation unit should be organized include, but are not limited to:

- Flight safety
- Mission planning
- Maintenance
- Duty operations
- Medical
- Liaison
- Logistics/administration
- Ground security if not provided by the military aviation unit
- Meteorology

3.2 Rotary-Wing Unit Organization

- **Light Utility Helicopter Units**

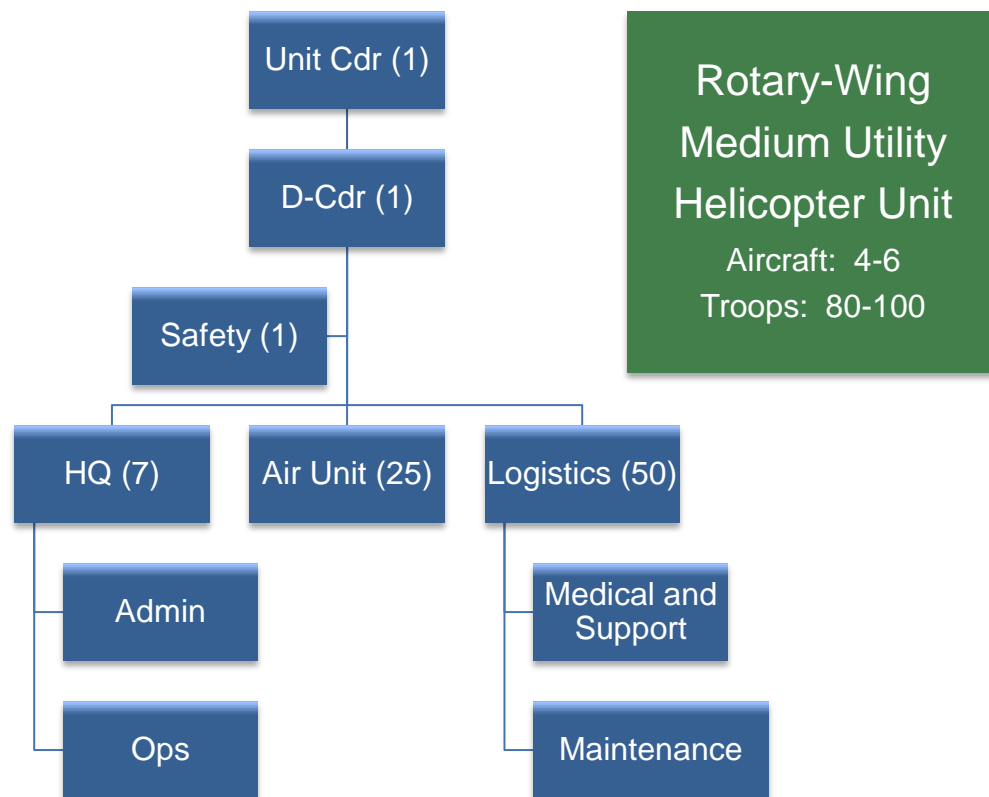
As illustrated in the chart below, the light utility helicopter unit consists of 80 to 100 personnel including pilots, maintenance staff, staff officers, security and administrative personnel and 4 to 6 light utility helicopters. Actual strength, composition and deployment locations are subject to troop contributing country negotiations with the UN. The unit must conduct 24/7 flying operations in low, medium or high threat environments and have the requisite personnel and equipment to support operations and maintenance for up to an average of 60 flight hours/aircraft/month, or as otherwise stipulated in the Statement of Unit Requirements (SUR). The unit is required to maintain at least 75% of its helicopters in serviceable condition at all times, or again, as otherwise stated in troop contributing country agreements with the UN.



** Note: The actual number of aircraft and troop strength will depend on the specific types and number of aircraft required for a particular UN Mission, all subject to UN-troop contributing country negotiation.*

- **Medium Utility Helicopter Units**

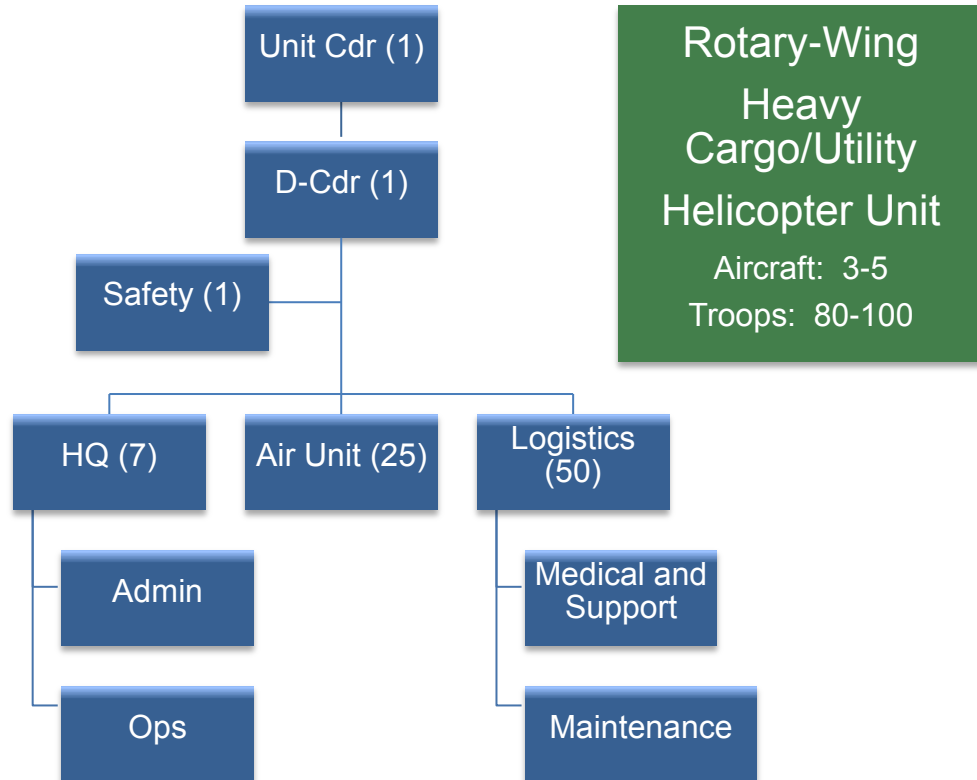
The medium utility helicopter (see chart below) unit typically consists of 80-100 personnel including pilots, maintenance staff, staff officers, security and administrative personnel and 4 medium utility helicopters. Actual strength, composition and deployment locations are subject to troop contributing country negotiations with the UN. The unit must be able to conduct 24/7 flight operations in low, medium or high threat environments, and have the requisite personnel and equipment to support operations and maintenance for up to an average of 40-45 flight hours/aircraft/month or as stipulated in the SUR. The unit is required to maintain at least 75% of its helicopters in serviceable condition at all times, or as otherwise stated in the LOA.



** Note: The actual number of aircraft and troop strength will depend on the specific types and number of aircraft required for a particular UN Mission, all subject to UN-troop contributing country negotiation.*

- **Heavy Cargo/Utility Helicopter Units**

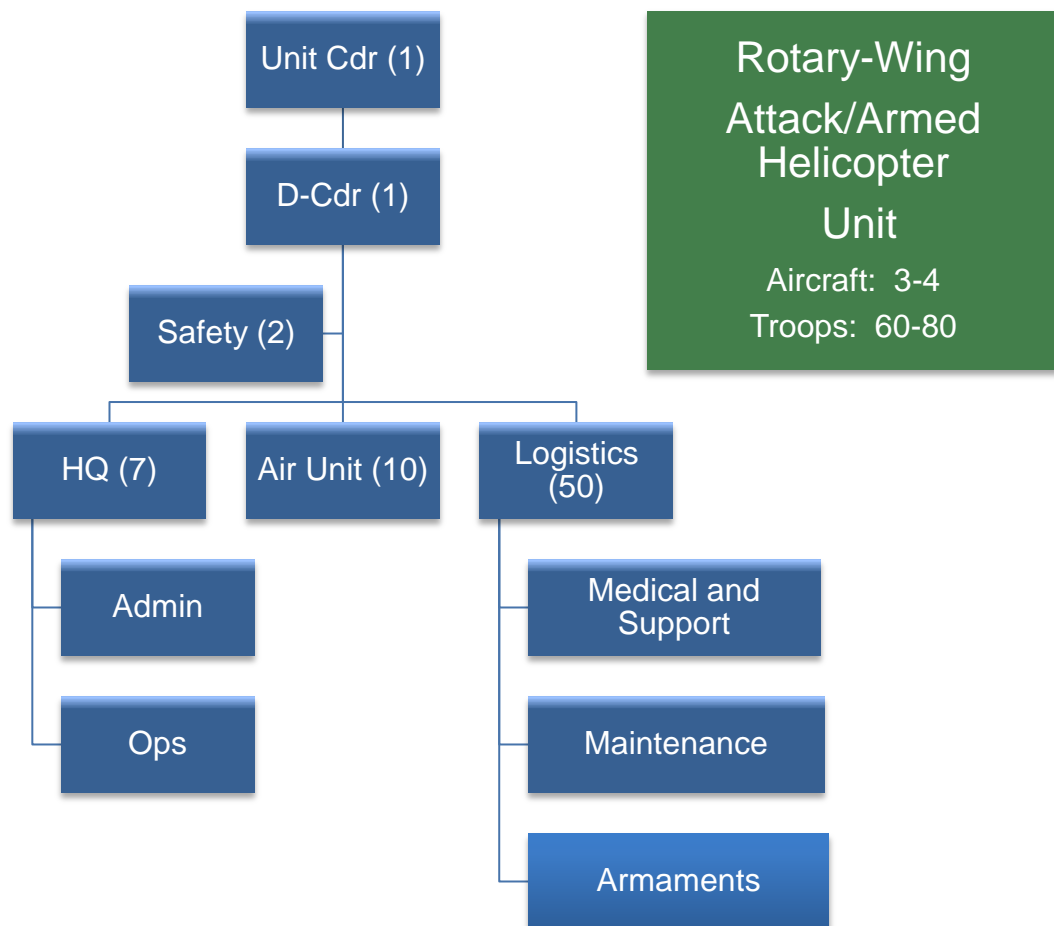
The heavy cargo/utility helicopter unit typically consists of 80–100 personnel including pilots, maintenance personnel, staff officers, administrative and security personnel and 3-5 heavy cargo helicopters. Actual strength, composition and deployment locations are subject to troop contributing country negotiations with the UN. The heavy cargo helicopter unit conducts 24/7 flying operations in low, medium or high threat environments. It has the requisite personnel and equipment to support operations and maintenance up to an average of 50 flight hours/aircraft/month (or as specified in the SUR). The unit must have a minimum of 75 % helicopters serviceable at all times, unless stated otherwise in the LOA.



** Note: The actual number of aircraft and troop strength will depend on the specific types and number of aircraft required for a particular UN Mission, all subject to UN-troop contributing country negotiation.*

- **Attack or Armed Helicopter Units**

As shown in the following chart, the attack or armed helicopter unit may consist of 80-100 personnel including pilots, maintenance personnel, armament experts, staff officers, administrative and security personnel, and 3-4 attack helicopters. Actual strength, composition and deployment locations are subject to troop contributing country negotiations with DPKO. The unit must be staffed and equipped to conduct fire support, information gathering, armed surveillance, tactical escort, insertion and extraction of troops, logistical resupply and search and rescue missions. The unit must conduct 24/7 flight operations in low, medium or high threat environments and have the requisite personnel and equipment to support operations and maintenance for up to an average of 50 flight hours/aircraft/month (or as stated in the SUR), with a minimum of 75 % (or as per LOA) of its helicopters serviceable at all times. The helicopters must be able to operate independently, or in formation with other helicopters of other units depending on operational/tactical requirements. The unit must be capable of deploying helicopters as a single machine or in pairs to separate locations for limited periods of time, depending on operational requirements.

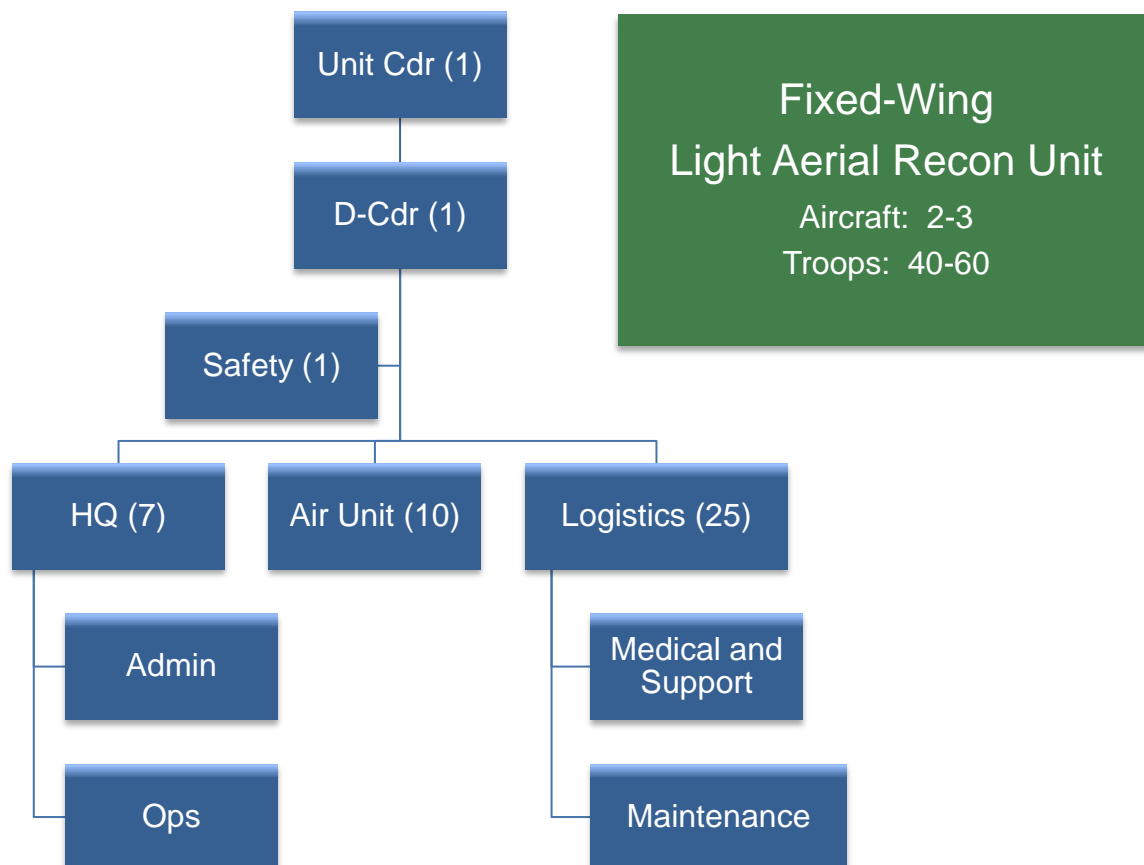


** Note: The actual number of aircraft and troop strength will depend on the specific types and number of aircraft required for a particular UN Mission, all subject to UN-troop contributing country negotiation.*

3.3 Fixed-Wing Unit Organization

- **Light Aerial Reconnaissance Units**

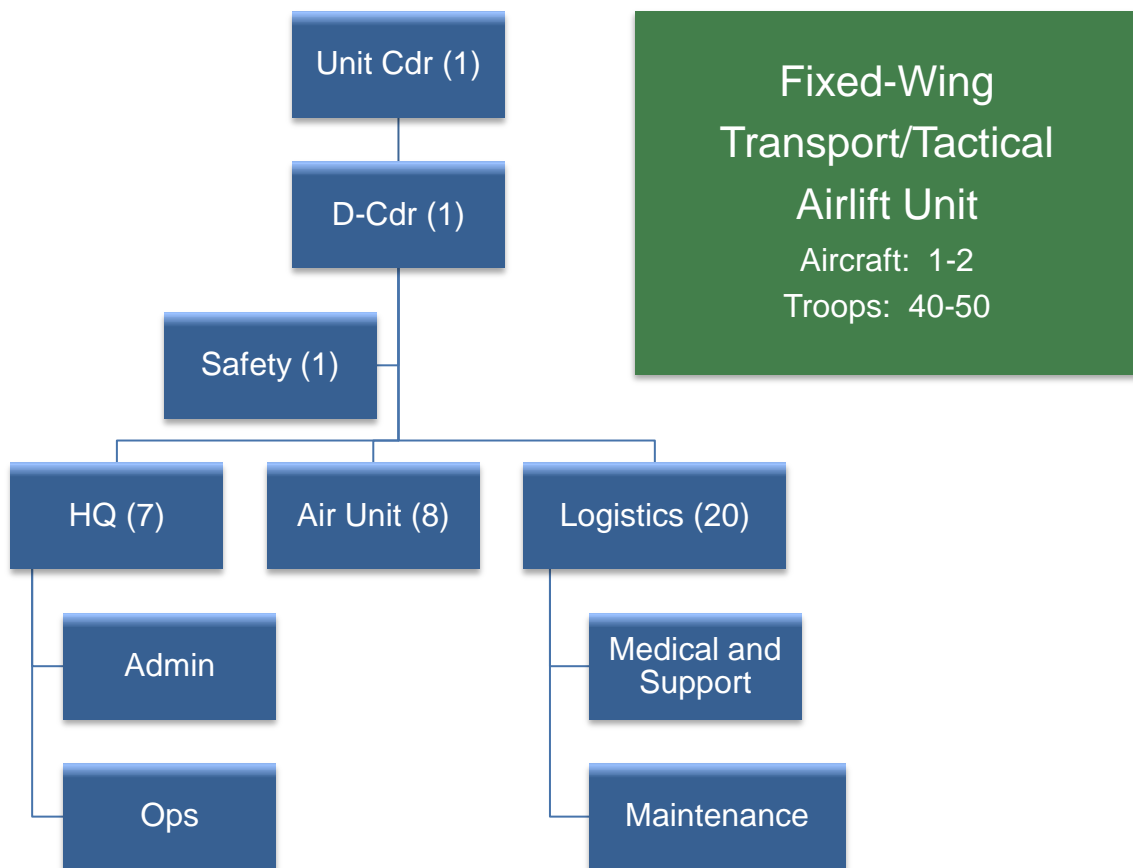
The fixed-wing light aerial reconnaissance unit shown below typically consists of up to 60 personnel including pilots, maintenance personnel, staff officers, administrative and security personnel and 2-3 light aerial reconnaissance aircraft. Actual strength, composition and deployment locations are subject to troop contributing country negotiations with the UN. The unit must conduct 24/7 flight operations at airfields where night landing and takeoff facilities are available. The light aerial reconnaissance unit must also have the requisite personnel and equipment to support operations and maintenance for up to an average of 80 flight hours/aircraft/month (or as specified in the SUR), with a minimum of 75% (or as stated in the LOA) aircraft serviceable at all times.



** Note: The actual number of aircraft and troop strength will depend on the specific types and number of aircraft required for a particular UN Mission, all subject to UN-troop contributing country negotiation.*

- **Transport/Tactical Airlift Units**

The transport/tactical airlift unit typically consists of 40-50 personnel including pilots, maintenance personnel, staff officers, administrative and security personnel and 1-2 transport aircraft. Actual strength, composition and deployment locations are subject to troop contributing country negotiations with DPKO. The unit must conduct 24/7 flight operations at airfields where night landing and takeoff facilities are available, and have the requisite personnel and equipment to support its operations and maintenance.



** Note: The actual number of aircraft and troop strength will depend on the specific types and number of aircraft required for a particular UN Mission, all subject to UN-troop contributing country negotiation.*

Chapter 4

UN Military Aviation Unit Support

4.1 The UN Mission Logistical Framework

Logistics support, including Combat Service Support (CSS), in a UN Mission is provided by the Director or Chief of Mission Support (DMS/CMS). The DMS/CMS is assisted by a senior military logistician. The Mission Support Plan is published under the authority of the DMS/CMS. The Mission Support Plan is the authoritative basis for the planning and management of logistics support in the UN Mission.

4.2 Combat Service Support in UN Military Aviation

4.2.1 UN military aviation units generally operate in hostile and austere environments, deploying deep into the AOR, potentially in isolation from other UN Forces and far from any logistical base.

4.2.2 A specialized combat service support (CSS) arrangement is therefore essential to support military aviation and should include specific CSS capabilities and procedures. The CSS arrangement must be well prepared and planned during the early stages of mission planning, and for each type of military aviation unit once deployed. Under CSS from Mission engineers, the aviation unit may expect and be specific about the following (if required):

- Accommodations specific to their tasking and equipment, including specific storage requirements to protect against temperature and the environment.
- Specific/additional electrical/power requirements.
- Additional water scaling.
- Waste treatments plants to cater for the additional quantity and/or type of scaling.
- Roads, tracks, runways, airstrips and heliports as per requirement, including their upkeep and maintenance.
- Specific road, airfield, airstrip and heliport requirements at the reception area, or to ensure connectivity and onward movement of forces or forward staging.
- Any specific training infrastructure.

4.2.3 UN support to military aviation units includes logistics, rations and fuel, strategic deployment movement of Contingent-Owned Equipment (COE) and personnel from the home

country to the Mission area, as well as support to in-theater movement of medical capabilities beyond Level I, including alternate CASEVAC capabilities involving other assets.

4.3 UN Support Process: From Pre-Deployment to the Mission Area

4.3.1 The role of DFS in supporting UN military units is encompassed in the Mission Support Concept. See also the UN Infantry Battalion Manual (UNIBAM)³ for further discussion of unit-level support structures, categories of support capabilities, engineering support, Contingent Owned Equipment (COE) and the Memorandum of Understanding (MOU), National Support Elements (NSE), the Letter of Assist (LOA), administrative policies and the critical issue of COE and personnel movement.

4.3.2 As with any military unit in UN peacekeeping, UN military aviation must take advantage of the various opportunities existing prior to deployment to ensure the best possible preparation of personnel and units. The troop contributing country reconnaissance site survey (the UN authorized field visit for key commanders and staff prior to unit deployment) and the subsequent Pre-Deployment Visit (PDV) by UN peacekeeping experts to the troop contributing country, both serve to assist and advise in deployment preparation and support.

- **Pre-Deployment Reconnaissance and Site Survey**

As early as possible, a survey team of troop contributing country personnel should visit the UN Mission area of responsibility. The UN will provide the troop contributing country sufficient time to plan the deployment well in advance of the expected deployment date. If the threat level permits, the site survey team should visit all or most of the airfields the UN plans to use during the mission. The site survey team's assessment should, at minimum, include notes on terrain, runway, landing zones, obstacles, fuel availability, ground electrical power, firefighting and approach landing systems. This information ensures adequate planning and preparation for troop contributing country contingent selection and deployment. The survey team should also analyze the Mission's logistical support facilities so that plans can be made for any additional requirements.

- **Personnel and Aircraft Transportation Pre- and Post-Deployment**

Arrangements and contracts for transportation of personnel and assets must be finalized with clear instructions for transportation of personnel, helicopters, allied equipment and large fixed-wing assets from the troop contributing country's home country to the Mission. Arrangements for settling any claims for damages during transportation require special attention. Specific aircraft asset preparations must be in accordance with UN standards (e.g., installation of essential equipment, aircraft colorings and markings, etc.) and their inspections conducted by a UN team in the troop

³ See also the UN Infantry Battalion Manual.

contributing country contingent's home country before the equipment is declared fit for transportation to the Mission country.

- **Repatriation of Flying Assets**

Arrangements for final repatriation of helicopters and aircraft by means of aerial transportation, ship or under their own power will be decided by the UN and troop contributing country before deployment. In the case of heavy, fixed-wing passenger or cargo planes, the issue of fuel and reimbursement for flying and transit handling charges must be clarified in advance to avoid any unnecessary delays at any of the transit airports.

4.3.3 Unique Equipment, Self-Sustainment and Reimbursement for COE

- If not in the COE Manual, major equipment will be treated as “special case” equipment, if the situation requires. If the equipment is under wet lease, maintenance of this equipment is a troop/police contributor responsibility. In accordance with the COE Manual, any special minor equipment or consumables not covered by the standard self-sustainment rates can be handled as “unique equipment.” These items will be handled through bilateral, special case arrangements between the troop/police contributor and the UN. Military aviation unit unique equipment requirements may include aircraft parking facilities, navigation aids, air traffic control, airfield lighting, aircraft shelters/hangars, airfield crash/rescue/fire facilities, aircraft battle damage repair capabilities, airfield protection and any aviation-specific security provisions.
- While most COE items and scales would be as covered in the COE Manual⁴, aviation operational requirements vary significantly in certain aspects, such as the scale of issue of night vision devices and High Frequency communications (see Annex B). The additional costs to the troop contributing country for these extraordinary requirements may be reimbursed as negotiated with UNHQ.

4.3.4 The UN Mission and Contingent-Owned Communications and Information Technology Systems

- A military aviation-specific communication and information technology system is deployed by the military aviation unit headquarters down to each aviation sub-element to ensure adequate security and communications as required for aviation operations. The military aviation unit's internal communications and information systems are provided by each troop contributing country.
- Nevertheless, equipment for communications between the Mission headquarters and the military aviation unit headquarters, as well as between the military aviation unit headquarters and its subordinate units, is also provided as UN-Owned Equipment (UNOE). UNOE ensures that aviation unit has integral secure military grade communications within the Mission communications network.

⁴ COE Manual 2011

4.4 CASEVAC and Medical Support

For comprehensive guidance on medical operational, logistical and administrative guidelines for Member States, UN Headquarters and field Missions, consult the Medical Support Manual for United Nations Peacekeeping Operations will be available at:

http://ppdb.un.org/Nav%20Pages/PolicyFramework_Default.aspx

In addition to a host of other essential information, the Medical Support Manual provides information on the command and control structure for integrating medical support in field Missions, CASEVAC/MEDEVAC procedures, pre-deployment medical screening requirements, entitlements to medical care in field Missions and certification requirements for field Mission medical professionals.

4.4.1 Military Aviation Unit Casualty Evacuation (CASEVAC): Military aviation units often operate deep into hostile-held territory conducting Casualty Evacuation (CASEVAC) operations. To mitigate the inherent challenges, CASEVAC operations are prepared by detailed planning and training, pre-arranging for dedicated evacuation resources and coordinating for the required medical capability.

4.4.2 Detailed CASEVAC Planning and Training: During the planning phase of each operation, special attention is given to CASEVAC capabilities, procedures and timing with the UN Mission MEDEVAC/ CASEVAC assets and Level 2/3 hospitals that will provide specific medical support and training for the Mission's military aviation unit. MEDEVAC/ CASEVAC training is aimed at interoperability between air assets and other components such as the Quick Reaction Force.

4.4.3 Dedicated CASEVAC Resources: When dedicated MEDEVAC/CASEVAC military aviation resources are required, they must be planned for and obtained in advance. Aviation support capacities include peacekeeping military air units with tactical fixed-wing aircraft as well as utility, observation and attack helicopters. Aviation support can be provided by the transportation cell in the Field Operations Support unit managing Mission aviation (including military transport helicopters), movement control and MEDEVAC/CASEVAC. Under this arrangement, aviation support is placed under the authority of the Director/ Chief of Mission Support (DMS/CMS).

4.5 Troop Contributing Country Support

Logistical support for military aviation units is the responsibility of the troop contributing country, except where otherwise provided by the UN Mission or host nation. As military aviation units are normally nationally formed, each military aviation unit must include a logistics and support element, primarily dealing with national support, integrating support from other sources such as the UN Mission or host nation. If several TCCs are providing aviation assets to the same Mission, they may wish to coordinate their aviation support effort to achieve synergy and efficiency.

4.6 UN Mission Support

4.6.1 Overall logistical support for military aviation units is coordinated through the Force Headquarters. The military aviation cells in the Force Headquarters must liaise with both the logistical structure (DCOS Operations Support, U-4 LOG, U-1 PER) and the Mission Support Centre⁵ under the office of the DMS/CMS.

4.6.2 Operations and logistics planning will determine the specific logistics requirements and the associated logistics command and control structures for each operation when military aviation units are committed. Resupply of deployed military aviation units in remote areas is planned and executed as an operational task. Generally, it requires specialized equipment and procedures to ensure refueling and POL capability.

4.7 What to Expect: Typical Logistical Support for Military Aviation Units in a UN Mission

4.7.1 **General:** The following discussion of logistical support for military aviation units is for illustrative purposes only. However, this discussion reflects real-world examples providing a realistic understanding of the logistical support an aviation contingent is expected to bring to, and that which it can expect from, a UN Mission. Actual logistical support requirements are articulated in the Statement of Unit or Force Requirements and the troop contributing country MOU. Arrangements for logistical support are provided in the UN's *Generic Guidelines for TCCs Deploying Military Units to the UN Peacekeeping Mission*, and in the UN's *COE Manual*. Subject to the terms of troop contributing country MOU negotiations, the military aviation unit contingent is required to be self-sustainable with integral support and maintenance elements, and to sustain its operations at the permanent and temporary deployment locations. A full description of the requirements and standards for all self-sustainment categories are contained in the *COE Manual*. At a minimum, the contingent must be self-sustaining in the following areas:

4.7.2 Accommodations

- **Initial Accommodations:** The UN Mission will prepare green field sites under austere conditions at the deployment location. The contingent must deploy with sufficient tentage for all accommodations, storage, offices, ablutions and workshop needs. Water sources will be arranged by the UN Mission. The contingent must deploy sufficient water purification units to produce and consume its own purified water. The Mission will provide Field Defense Stores (FDS) and additional FDS kits for use in mobile operations.
- **Permanent Accommodations:** The UN Mission will strive to provide hard wall accommodations after the initial six-month period in COE tentage; failing which the UN Mission will pay a penalty rate of reimbursement until prefabricated accommodations can be provided.

⁵ The Mission Support Centre was formerly known as the Joint Logistics Operations Centre (JLOC).

- **Deployable Accommodations:** The contingent must deploy with a sufficient quantity of tentage necessary for short term operational and tactical deployments.
- **Tentage Structure:** Tentage must include flooring and the ability to heat and cool as appropriate, as well as netting at doors, windows and inner/outer fly of tents. Double layered tents with metal pipe frames are recommended due to field conditions. It is also recommended to mount the tents on cement or wooden foundations to ensure their stability. Deployable accommodations noted in the paragraph above are excluded from this requirement.

4.7.3 Ablutions: The Mission will strive to provide ready-to-use field ablutions with running water and waste management at the initial campsite. The contingent must be prepared to deploy with its own field ablutions (field latrines and showers) to use for subsequent operational/tactical deployments.

4.7.4 Catering: The contingent must be self-sustainable in catering. Upon deployment, the Mission *may not* provide a hard wall structure for the kitchen and consequently, the contingent must be prepared to deploy with a fully mobile kitchen (e.g., kitchen trailers). The contingent must have cooks, clean and healthy kitchen facilities and equipment to include, but not limited to, deep freeze storage capacity for up to fourteen days, cold food storage capacity for seven days, dry food storage, hot dishwashing capability, mobile cold storage devices, dishes and cutlery. The contingent must be able to support all its organic units and personnel (including augmented personnel) with deployable kitchen equipment whilst operating in the field.

4.7.5 Communications: The contingent must provide its own mobile and secure communications down to the independent unit, section or team level and be able to communicate 24 hours a day, 7 days a week with the Brigade, Sector or Force headquarters in the Mission language, typically either French or English.

- **High Frequency (HF)** communications are mandatory and must have a minimum range of 250 km. The contingent must install its own HF base stations and antennae with at least 2 sets of HF radios (as primary and backup) manned by its own qualified operators for effective radio communications with the Brigade HQ, other contingents and its own elements operating outside the Very High Frequency (VHF) and/or the Ultra High Frequency (UHF) area of coverage. The capability to communicate from the equivalent of platoon to Company to Battalion to Brigade HQ must exist for all military aviation unit elements.
- **VHF/UHF:** VHF/UHF Communications (air-to-air to ground) is mandatory and must have a range of at least 30 to 35 kilometers to facilitate CASEVAC.
- **Telephone:** The contingent must provide, install and operate its own switchboard and telephone network down to its sections within the AOR.

4.7.6 Office Support

- **Office Space:** Office workspace must be inside tentage, but when and where possible, hard-wall structure may be provided for Brigade and Battalion headquarters equivalents.

- **Office Furniture and Equipment:** The contingent must be self-sustainable to meet all its needs in terms of office furniture, equipment, supplies and computers (including electronic data processing, reproduction equipment and required software).

4.7.7 **Electrical:** The contingent must be self-sustainable electrically, and must supply a stable power supply down to section level, including observation posts and other elements.

4.7.8 **Light Engineering:** The contingent must have light utility and general engineering support capability in order to enhance the contingent's infrastructure. The contingent must be self-sustainable and have, at minimum, the capacity to handle the following tasks:

- Field-defensive construction for the contingent
- Limited construction of light structures
- Minor electrical repair and replacement
- Minor repair to plumbing and water systems
- Maintenance of all necessary tools, supplies and workshop equipment
- Deliver the aforementioned capacities by means of mobile support throughout the AOR

4.7.9 **Laundry and Dry Cleaning:** The contingent must have a cleaning unit with sufficient laundry facilities for all military and personal clothing, including dry cleaning of operationally required specialist clothing. All laundry and dry cleaning equipment must be kept hygienic and in good repair with ample spare parts.

4.7.10 **Fire Detection and Alarm:** The contingent must have automatic fire detection and alarm equipment.

4.7.11 **Basic Fire Fighting:** The contingent must have the capability to conduct basic firefighting in both accommodations and work areas.

4.7.12 **Field Defense Stores:** The UN will provide identification and Field Defense Stores. There is typically no need for Nuclear, Biological and Chemical (NBC) protection.

4.7.13 **Observation:**

- **General Observation:** The contingent must have the capacity to observe 24 hours a day, 7 days a week with section-level handheld binoculars and magnifying night vision equipment.
- **Night Observation:** Night vision systems, such as night vision goggles (NVG) and Forward-Looking Infrared Radar (FLIR), must be capable of passive and/or active infrared (IR), thermal or image night time line of sight observation. Night vision systems must be capable of detecting human-size objects within a range of 1,000 meters.

- **Global Positioning System:** The contingent must have the capacity to acquire an accurate geographic fix on its own locations with Global Positioning System (GPS) equipment and laser range finders.

4.7.14 **Explosive Ordnance Disposal (EOD) Capabilities:** For the contingent's own safety, an EOD capability must be provided to all deploying elements.

4.7.15 **Miscellaneous General Stores:** At a minimum, the contingent must be self-sustainable in terms of bedding, furniture, morale and welfare equipment and amenities.

- **Bedding:** The contingent must provide bed linens, blankets and/or sleeping bags, mattress covers, pillows and towels to all personnel.
- **Furniture:** The contingent must provide a bed, mattress, nightstand, table light and a locker to all personnel.
- **Morale and Welfare:** The contingent must provide TVs, DVD players, music systems, satellite TV systems, a library, games, exercise equipment and internet cafe(s) with 5-10 personal computers (for a company-sized unit) for the morale and welfare of its personnel. So as not to interfere with the Mission's official computer and internet network, the contingent must contract with a civilian internet service provider for its own dedicated morale and welfare network.

4.7.16 **Initial Provisioning and Self Sufficiency**

- **Water:** The contingent must deploy with bottled water for a length of time agreed upon during MOU negotiations. Within the first seven days, the contingent is expected to install its own water purification plant to produce bulk-treated water from a UN-provided water source.
- **Rations:** The contingent must deploy with rations for a length of time agreed upon during MOU negotiations. The UN Mission will provide rations thereafter. The contingent must have the capacity of establishing storage such as reefer trucks and containers for fourteen days of rations and fourteen days of combat ration packets, or for a duration agreed upon during MOU negotiations.
- **Supply:** The contingent is required to deploy with fully self-sufficient stocks of supply items and spare parts for maintenance of its major and minor equipment. The contingent must be fully self-sufficient for all other supply categories (except fuel) for the first 90 days after deployment, and must maintain stock levels of at least 45 days of repair parts for all types of supplies at any given time during its operations. Resupply of consumables and spare parts is a contingent responsibility.
- **Petroleum, Oil and Lubricants (POL):** In the majority of UN Missions, the contingent must be prepared to employ only diesel-fuelled vehicles, equipment and machines as diesel is normally the only type of fuel available. The UN will deliver fuel to the existing fuel distribution points from the first day after the contingent's arrival in the Mission area. The contingent is required to collect its POL from the distribution points. Beyond

the fuel distribution points, the contingent must provide self-delivery. The contingent must have the capacity to establish bulk storage facilities for fourteen supply days of diesel. The contingent should also have the capacity to distribute diesel to its vehicles and generators.

- **Medical:** The contingent must be prepared to deploy with one Medical Level I Hospital. Contingent personnel must be trained in administering basic immediate first aid and have the appropriate medical equipment. Additionally, higher level medical facilities will be deployed in the Mission area of responsibility to provide levels II and III care. Level IV medical care will also be available, sometimes outside the Mission area.

Chapter 5

UN Military Aviation Unit Training

5.1 Introduction

5.1.1 Military peacekeeper training is primarily a national responsibility. What is more, training, regardless of subject, is a command responsibility at every organizational level. Military commanders and supervisors at each level have a legal and moral obligation to ensure their personnel and units are properly trained to accomplish their missions.

5.1.2 Military aviation units are normally regular (single troop contributing country) or composite units (multiple TCCs) trained by their national training programs. National training is ideally within the parameters set by the UN in consultation with member states. Therefore, peacekeeping training is administered to a unit that is expected to be already capable of undertaking the full range of required tasks. For the sake of interoperability, that deploying unit will probably need some emphasis on gaining a UN-orientation and familiarity with its operating obligations under the Mission's Director or Chief of Mission Support-controlled Service Delivery system.

5.1.3 This chapter is designed to assist military commanders and supervisors in their professional obligation to maintain the training and operational readiness of the personnel under their supervision. Briefly explained are the various tiers of training military personnel should experience prior to and during Mission deployment. Also provided is an overview of the suggested methodology for training a UN military aviation unit during the pre-deployment, induction and in-Mission/on-going phases noting the various recommended steps, timings and standards.

5.1.4 Generic training requirements discussed in this chapter are task-oriented and not necessarily UN peacekeeping unique. The intent is to provide a convenient reminder of important topics requiring the attention of commanders and supervisors. These topics will require greater levels of detail for self-evaluation, either through national training standards or those standards provided by the UN, where appropriate. To meet the need for greater detail in UN-appropriate training, specialized training materials (STMs) for this manual are being developed by the Department of Peacekeeping Operations to provide peacekeeping training standards for TCCs participating in UN operations.

5.2 Pre-Deployment Training

5.2.1 Each troop contributing country has its own national standards and training programs that develop and maintain current, qualified and proficient flight crews. Pre-deployment training is the foundation of any troop contributing country contribution and determines the contingent's level of success and safety throughout its deployment. Pre-deployment training maintains crew proficiency in basic flight tasks while preparing aircrews to conduct specialized missions. Specialized missions include those involving special mission equipment or training such as flying with night vision goggles or conducting hoist, fast rope or air assault operations. Special

mission training must be documented, reinforced and held to defined standards of execution. These specialized tasks must be integrated into pre-deployment training programs.

5.2.2 Pre-deployment training is critical as it is the troop contributing country's only opportunity to ensure its military aviation units and crews are proficient. Pre-deployment training must be Mission focused, relevant, and rigorous to prepare flight crews for the actual Mission environment and responsibilities they will assume. At a minimum, TCCs should conduct pre-deployment training similar to that described herein, augmented by in-mission or continuous training. TCCs should document their training to verify standards and readiness. The training examples provided in Annexes B and C of this manual illustrate the level of detail flight crews, ground crews and leaders need to cope with Mission demands. The lists and tasks are not all inclusive and troop contributing country's should prepare for the full range of aviation operations needed in the Mission.

5.3 Continuous or In-Mission Training

5.3.1 Continuous or in-mission training includes all Mission-specific and sustainment training of aircrew proficiency tasks. In-mission training augments skills developed during pre-induction and pre-deployment training including rules of engagement, the UN peacekeeping ethos, mandate and MOU. In-mission training also includes critical skills such as special mission equipment training on night vision systems, night flying, hoist operations, fast rope and air assault. Pre-deployment and mission-required special skills must be sustained and reinforced during deployment as part of in-mission training. In-mission training also covers nationally-required expertise to remain current and proficient in aviation skills and qualified on the aircraft type.

5.3.2 The most significant part of in-mission training is orientation or induction training. Induction training familiarizes aviation personnel with the physical and cultural environment, as well as the practicalities of operating in the Mission, particularly as it affects aircrew and aircraft performance. Military aviation unit commanders should accomplish in-mission training by combining air and ground crews in the same training, thus increasing each crew's skill, knowledge and interoperability. Military aviation unit commanders and staff can refer to the UN Infantry Battalion Manual (Chapter 10) for additional guidance and resources for developing training plans. Examples of aviation-specific in-mission training opportunities include:

- **On-The-Job Training:** A comprehensive aircrew training program covering job performance skills highlighted in pre-deployment training, but reinforced with the reality of daily in-mission requirements.
- **Mission Scheduling:** Military aviation unit commanders should take the opportunity to schedule experienced with less experienced personnel during routine operational missions. This combination of skill levels produces incidental training for those lacking experience.
- **Aircrew Briefings:** A vital part of continuous or in-mission aircrew training, briefings ensure adherence to desired training and capability standards for personnel and aircraft. Briefings can include academic subjects as well as pre- and post-mission briefs and reports. Suggested topics may include situational awareness, interpreting weather

reports, air traffic control requirements, special equipment requirements, the nature of aviation tasks, pilot ability skills, mission planning (including fuel and ammunition consumption rates), problems and recommended solutions and explanation of misconduct cases (if applicable).

- **SOPs and Pilot Orders:** SOPs and pilot orders help create safe and efficient operations. SOPs and pilot orders are usually based on the experience of previous military aviation units, as well as existing UN SOPs and guidelines issued by the mission's Air Operations Branch. SOPs include such vital subjects as guidelines for night flying procedures, night vision goggle operation, mountain flying, confined area operations, pinnacle operations and landing within built up and crowded areas. SOPs and pilot orders must be relevant to the specific military aviation unit type and the country in which the unit is deployed. New military aviation unit commanders and staff officers should consult Chapter 11, Section III of the UN Aviation Manual (2005 edition) for more information on SOP formulation.
- **Assessment Criteria.** The military aviation unit commander can use carefully crafted assessment criteria to help train aviation personnel, even as they are being evaluated on flying and special mission performance. Written tests and performance evaluations offer continuous training opportunities for each crewmember during their deployment.
- **Training Documentation.** A system of documenting individual performance is required to meet flight safety requirements and ensure aircrew operational fitness. Such documentation assists military aviation unit commanders as they select the appropriate crew for specific mission requirements, and provides the basis for identifying any additional training needed.

5.4 Aircrew Training

Aircrew training is a national responsibility and TCCs are expected to certify that their aircrews are fully qualified to perform the basic military aviation unit tasks as specified in the MOU/LOA and SUR. Aircrews are expected to conduct pre-deployment and continuous/in-mission training as described in this chapter and at Annexes B and C. The following chart describes the UN's qualification standards for aircrews:

UN Military Aviation Crew Requirements

Minimum Flight Hours Qualification		Total				On Type	IFR ²	Night (Including NVG/ NVS)	NVG/ NVS
		RW+FW (Including Simulator) ¹	If both experienced		PIC				
			RW	FW					
Rotary Wing	PIC	1000	800		500	250	Qualified	50	30
	CP	100	100			100 (Qualified)	Qualified	Qualified	30
Fixed Wing	PIC	1500		1000	750	500	Qualified	50	30
	CP	200		200		200 (Qualified)	Qualified	Qualified	30

Notes: 1. Counting simulator hours is limited to 100 for PIC and 10 for CP.
 2. IFR qualification is required for both PIC and CP, however, maintaining flight currency is desirable

Key:

PIC =pilot-in-command
 CP =co-pilot
 RW =rotary-wing
 FW =fixed-wing
 IFR =instrument flight rules
 NVG=night vision goggles
 NVS =night vision system

5.5 Ground Crew Training

5.5.1 Ground Crew Pre-Deployment Training

Proper training is especially important for the military aviation unit maintenance and support staff. Ground crew personnel require the highest level of skill and proficiency to ensure fleet health and asset serviceability. Refueling, rearmament and ground handling procedures must be handled professionally to avoid catastrophic mistakes. All requisite training for ground support personnel must be documented. Their training must be rigorous, and conducted to trade-specific standards prior to deployment. The following examples are not all-inclusive but do illustrate the tasks, activities and standards ground crew personnel must meet:

- **Maintenance Qualification Training.** TCCs and military aviation unit leadership are responsible for aircraft maintenance qualification training. That training identifies the best maintenance personnel with the appropriate quality standards and technical skills. In addition to being technically qualified, these maintenance personnel must be certified (if

required by the troop contributing country) and capable of deploying to the Mission area. These technicians, in collaboration with the flight crews, are directly responsible for aircraft readiness and the unit's ability to generate flight sorties. Each technical expert, working in any one of a variety of specialties (e.g., avionics, engine and transmission maintenance, electrical, sheet metal, etc.) must have the requisite training and equipment prior to and throughout deployment.

- **Mission-Specific Maintenance Training.** Ground maintenance personnel must be trained on the equipment they are required to operate. Mission specific training must be conducted when new equipment or procedures are introduced to meet specific mission requirements. For example, a new type of Mission radio may require pre-deployment or induction training. Mission-unique systems like lighting, generators, auxiliary power systems, and engine/aircraft wash equipment may be unfamiliar and require training. As another example, maintenance personnel may have to conduct the majority of their tasks at night or during times of limited visibility due to Mission requirements. Troop contributing country and aviation maintenance leaders must ensure that all tasks and activities are conducted by trained and properly resourced maintenance personnel.
- **Ground Support Equipment (GSE) Training.** A wide variety of GSE keeps the fleet functioning. GSE includes auxiliary and ground power units, electrical power generators, maintenance cranes and specialized maintenance workshop equipment. All personnel required to operate GSE must be certified (licensed) to operate and maintain their specific piece of equipment, regardless of whether it is unit or UN-provided.
- **Specialized Vehicles Drivers Training.** Special driver training may be required for ground maintenance staff and aircrew members. Specialized vehicles such as self-propelled cranes, aircraft handling vehicles, towing tractors, forklifts, etc. may be unfamiliar to Mission personnel. All personnel required to operate any vehicle must be trained, certified and supervised in the operation, maintenance and utilization of the vehicle. Maintenance personnel must understand the limits and constraints imposed on the use of the vehicle to avoid damaging the vehicle or aircraft.
- **Communications Equipment.** Military aviation unit commanders and supervisors must ensure their soldiers are prepared to use the communications equipment provided such as hand-held radios, satellite phones and ground-based communications systems. Aviation ground crew personnel must be trained in the correct use, maintenance and servicing of communications equipment. Unfamiliar radio communications procedures, poor information sharing and difficulty using a foreign language may endanger mission success.

5.5.2 Ground Crew Continuous / In-Mission Training

Training levels must be strengthened and sustained once unit personnel arrive in the Mission. Continuous, in-mission training hones existing skills and introduces new capabilities, particularly those related to unit readiness in the field mission. Quality control and assurance are vitally important for ground and maintenance crews in a deployed environment. Effective

military aviation unit commanders understand the importance of quality management and the direct effect it has on operational readiness. Examples of in-mission training for ground crews include:

- **On-The-Job Training:** A comprehensive ground crew training program covering job performance skills highlighted in pre-deployment training, but reinforced with the reality of daily in-mission requirements. Ground crews and units particularly benefit from the establishment of a strict quality control mechanism ensuring safe and efficient flight operations when the entire Mission needs it most.
- **Ground Crew Briefings:** A vital part of continuous or in-mission ground crew training, briefings ensure adherence to desired training and capability standards for personnel and aircraft. Briefings can include academic subjects as well as pre- and post-mission briefs and reports. Suggested topics may include quality control and assurance, unit readiness, situational awareness, special equipment requirements, the nature of aviation tasks, mission planning (including fuel and ammunition consumption rates), problems and recommended solutions and explanation of misconduct cases (if applicable).
- **SOPs and Guidelines:** Military aviation unit commanders are required to establish SOPs and guidelines for ground support operations including topics such as aircraft documentation, scheduled and other maintenance procedures in accordance with UN standards. The unit staff should also indicate the most important SOPs to provide guidelines for new military aviation unit commanders as they assume their responsibilities upon arrival in the Mission.

5.6 Tactical Training for Military Aviation Unit Commanders and Staff

5.6.1 Aviation operations in support of UN Missions are inherently dangerous and complex. Annexes B and C provide examples illustrating the tasks and responsibilities expected of military aviation unit commanders and staffs in the UN environment. Proper training of military aviation unit commanders and staff will help mitigate some of the challenges and complexities of UN Missions. Detailed descriptions of the tasks, conditions and standards of typical requirements are at Annex B, providing broad guidelines for training and preparing military aviation units for peacekeeping operations.

5.6.2 TCCs are responsible for providing a military aviation unit with capable, proficient and professional commanders and staff members. Those leaders, in turn, are responsible for developing the leadership and technical skills of their subordinates. Training in the tactical environment focuses everyone's efforts because lives depend on individual competence, personnel and equipment readiness and unit cohesion.

5.7 Training, Operational and Equipment Readiness, and Troop Contributing Country Reimbursement

5.7.1 Reimbursement in the UN system is based in part on a contingent's capability and performance, both directly related to training. A military aviation unit commander must ensure his unit's readiness as verified through Operational Readiness Inspections (ORI). Inspection checklists may be obtained from the concerned Mission and sector headquarters sections.

Inspection preparations are necessary to ensure timely and complete troop contributing country reimbursement.

5.7.2 Reimbursement in the UN system is also based, in part, on serviceability. In order to earn reimbursement under the terms of the LOA, military aviation units must provide the Mission minimum assured flying and serviceability support. Military aviation units and their National Support Elements should note that the UN reserves the right to deduct an appropriate amount from reimbursement if the minimum assured flying support is not provided due to insufficient serviceability. Serviceability is a function of the military aviation unit's total command climate, logistical competence, training, and operational and equipment readiness.



Chapter 6

Self-Evaluation of the UN Military Aviation Unit

6.1 Introduction

Self-evaluation plays a key role in achieving and maintaining operational readiness. In UN peacekeeping operations, TCCs conduct their own self-evaluations to assess and monitor the state of individual and collective training, and to check the maintenance and performance of equipment. By conducting self-evaluation, TCCs can authoritatively determine how well their personnel, units and equipment perform according to national standards, and consequently take troop contributing country-appropriate action to make any necessary improvements. In this way, troop contributing country self-evaluation contributes to higher states of operational readiness. This chapter provides the considerations, references, methodology, structure and key self-evaluation criteria military aviation units require to be fully mission-capable by:

- Providing guidelines to the troop contributing country and military aviation unit commander, including suggested self-evaluation considerations using measurable and quantifiable criteria and standards.
- Providing measures to be taken during pre-deployment and in-mission self-evaluation.
- Providing timely self-evaluation to enable appropriate mid-course corrective actions well ahead of deployment.
- Facilitating efficient planning and safe execution of air support for peacekeeping operations.

6.2 UN Assistance

6.2.1 UN DPKO and DFS Assistance. The UN's Departments of Peacekeeping Operations (DPKO) and Field Support (DFS) promote self-evaluation, operational readiness and commitment to UN standards by:

- Guiding, assisting, facilitating or supplementing troop contributing country evaluation efforts with a flexible and accommodative approach.
- Providing training assistance.
- Coordinating training and assistance through third party support, where required.
- Arranging pre-deployment visits (for initial deployment only) to check availability and quality of equipment and to ensure that Statement of Unit Requirement provisions are implemented.

- Providing Operational Advisory Teams from the Military Planning Service, Office of Military Affairs to guide and assist emerging and more experienced TCCs.
- Assisting in the assessment of operational readiness.

6.2.2 Assistance from the UN Mission. The Mission leadership provides the following assistance:

- Guides TCCs on the unit's expected performance objectives, pre-deployment preparation requirements and Mission-oriented training requirements.
- Coordinates pre-deployment reconnaissance.
- Organizes in-mission induction training; provides logistics support; provides operational tasks, roles and responsibilities for the military aviation unit.
- Conducts the unit's in-mission operational efficiency checks.

6.3 Self-Evaluation

6.3.1 Self-Evaluation Considerations

- **Operational Readiness.** A UN military aviation unit is expected to have high standards in basic training capabilities, core operational tasks for each type of military aviation unit and should have developed mission-oriented task-specific drills and procedures. Weakness in any one of these areas adversely affects operational readiness. Self-evaluation criteria should focus on revealing a unit's capability in these various elements of operational readiness.
- **Troop Contributing Country Support.** While the military aviation unit commander is responsible for training, preparing and maintaining operational readiness, the troop contributing country may support the unit by establishing a dedicated team to conduct training and self-evaluation.
- **Graduated Self-Evaluation.** Self-evaluation may be conducted in a graduated manner by grouping similar functions or separating individual from collective tasks.
- **Resources.** Adequate resources are required to conduct evaluations including time to train and conduct self-evaluation exercises, ammunition, fuel and spare parts. Proper resources enhance training and self-evaluation realism and must be secured in advance.
- **Self-Evaluation Means.** Checklists of self-evaluation criteria and standards, formal self-evaluation by means of flight operations checks and exercises and informal assessments are some of the suggested means of evaluations.

6.3.2 Self-Evaluation References

In addition to this manual and its aviation-related references (Annex F), the following UN peacekeeping documents also provide guidelines and standards for self-evaluation and operational readiness. A most useful link to access most if not all of these documents is: http://ppdb.un.org/Nav%20Pages/PolicyFramework_Default.aspx

- Troop contributing country-specific UN peacekeeping operations manuals, guidelines and SOPs.
- UN Aviation Standards for Peacekeeping and Humanitarian Air Transport Operations.
- DPKO and DFS Guidelines on Aviation Safety Manual.
- DPKO and DFS Policy Directive about Aviation Operational Risk Management (ORM).
- Mission Mandate, Memorandum of Understanding, Status of Forces Agreement and Rules of Engagement.
- Statement of Force/Unit Requirements issued by OMA.
- Command and control authority for aviation missions.
- Mission Concept of Operations, Operational Directives and Orders, Operational Plans, SOPs and mission-specific case studies.
- Generic Guidelines for Troop-Contributing Countries Deploying Military Units, the COE Manual and Guidelines on Peacekeeping Training.
- Lessons Learned and Best Practices of current and past peacekeeping missions.
- After-Flight Reports.

6.3.3 Pre-Deployment Self-Evaluation Preparation

Prior to UN DPKO's pre-deployment visit, a well-prepared military aviation unit may undertake the following activities:

- Raising and establishing a military aviation unit in accordance with the Statement of Unit Requirements.
- Training in accordance with UN military aviation unit tasks and operational demands.
- Developing mission-specific, task-oriented, individual and collective expertise and capabilities.
- Identifying shortcomings and instituting remedial measures to improve capabilities.

- Making timely adjustments and mid-course corrections.
- Utilizing experienced trainers from other military aviation units to train the new military aviation unit awaiting deployment.
- Final pre-deployment inspection and rehearsal of the military aviation unit by national peacekeeping experts under troop contributing country arrangements.

6.3.4 Methodology for In-Mission Self-Evaluation

The suggested methodology for maintaining operational readiness and carrying out self-evaluation includes:

- Induction training, local air navigation and terrain familiarization, and task-oriented rehearsals.
- Conducting the first in-mission self-evaluation in the second month of deployment. This self-evaluation is intended to validate and reaffirm the standards achieved prior to the deployment, and assess operational performance in the Mission with regard to tasks, roles and responsibilities. This self-evaluation can be followed by quarterly and or half yearly evaluations in accordance with Mission norms and the military aviation unit commander's judgment.
- Continuous and simultaneous monitoring and review of performance in-mission by the military aviation unit commander.
- Identifying potential weak areas and conducting periodic selective evaluations to assess and readjust corrective actions.
- Reassessing capabilities and skills when the Mission operational situation changes or when there is a gap between Mission requirements and performance.
- Validating key appointments in command and staff positions to match responsibilities with ability, and providing guidance and support where required.
- Monitoring and validating unit performance through inspection team visits consisting of military officials and peacekeeping experts from troop contributing country capitals.

6.3.5 Self-Evaluation Key Topics

To assess the operational readiness of a military aviation unit, the self-evaluation can be implemented based on distinct topics such as organizational structure, capability in maintaining a military aviation unit's core capabilities, operational tasks and capabilities, training requirements and desired standards, aviation safety requirements, aircraft serviceability, standard equipment, maintenance and logistic support capabilities. These self-evaluation topics will address different levels within the military aviation unit to include individuals, task-oriented groups, subordinate units, staff and military aviation unit commanders; and analyze task-oriented activities at the subordinate unit and unit headquarters.

6.3.6 Conclusion

Self-evaluation yields great benefits in terms of operational readiness and early identification of unit weaknesses. Early identification allows performance or equipment shortfalls to be addressed before they cause mission failure or the loss of life. TCCs that lack the financial or technical ability to support their deploying units with the resources needed for self-evaluation should discuss their needs with DPKO/DFS at UN Headquarters. Every effort will be made to assist the troop contributing country with its requirements, either by expert assistance from UN Headquarters or through third party support. See Annex C of this manual for sample self-evaluation checklists covering pre-deployment and in-mission requirements.

Annex A

Aircraft and Helicopter Categories

HELO / LIGHT (MTOW<4,000Kg)	HELO / MEDIUM (MTOW>4,000Kg or Pax≥10)	HELO / HEAVY (MTOW>9,000Kg)	UTILITY / LIGHT SINGLE ENGINE	UTILITY / LIGHT	UTILITY / MEDIUM
Alouette II&III Gazelle A 109* B-206&206L B-407 Twin Ranger* RZZ B-22*&230* EC IZO AS 350 AS 355* BO-105* EC-135* MD 500MD&520&Md600 MD Explorer* Mi-2* Ka-26*	Dauphin2 B-205&212&214&412 B-430 BK-117 Ka-32 Mi-8&8MTV&17 PZL W-3 S-58 S-76	Puma BV-107 CH-47(Chinook) EH-101 MI-26 (Extra Heavy) S-61 AH-64* AS-532* NH-90*	C-208&C-208B PC-6 PC-12	Be-200 Islander Trislander Do-28&128 N22&N24 Let L 410&420 MU-2 Commander&TurboComm Pa-28 & Pa-31	CN-235 Be-1900 An-26 An-74 C-212 DHC-4 DHC-6 DHC-7 DO-228 F-27 F-50 Arava Let L 610 Saab 340 Skyvan Shorts 330 &360
CARGO / MEDIUM (MPL<40,000Kg)	CARGO / HEAVY (MPL<100,000Kg)	CARGO / EXTRA / HEAVY (MPL>100,000Kg)	PAX / TURBO / LIGHT (Pax≤19)	PAX / TURBO / MEDIUM (20≤Pax≤89)	PAX / TURBO / HEAVY (20≤Pax≤89)
An-12 L-100&132&382 Belfast Il-18 An-72 An-32	An-22 Il-72	An-124	An-28	Jetstream ATR-42 / 72 An-24 BAe 748 CV-540&580&600&640 Dash-8 DO-328 Saab 2000	Il-18 Electra
EXECUTIVE	PAX / JET / LIGHT (Pax≤19)	PAX / JET / MEDIUM (20≤Pax≤199)	PAX / JET / HEAVY (200≤Pax≤299)	WIDEBODY (Pax≥300)	
Citation Falcon20&200&50&2000 Gulfstream Westwind Learjet HS125&800&1000 Avanti Sabreliner	CL-600&601&604 Falcon900 Yak-40	Bae 146 (Avro RJ70) A319 A320 A321 BAc 111 B-707 B-727 B-737 CRJ F70 F100 Il-62 DC-9 MD-80 Tu-134 Tu-154 Tu-204&224&234 Yak-42&142	A300B2&B4&600 A310 A330&200 B-757 B-767 Il-86 Il-96-300	A340&500&600 B-747 B-777 Il-96M Tristar DC-10 MD-11	

Key:

*

MTOW

MPL

PAX

Indicates Twin Engine

Maximum Takeoff Weight

Maximum Payload

Passengers

Aviation Training Examples Tasks, Conditions and Standards

Rotary-Wing Training

Task: Surveillance and Reconnaissance

Conditions. The military aviation unit receives a surveillance and reconnaissance mission with various objectives aimed at providing field commanders situational awareness for informed decision making. After a detailed assessment of tasks and requirements, the unit dispatches a suitably equipped helicopter and qualified crew to conduct the mission safely and efficiently.

Desired Standards. A military aviation unit should be able to perform a wide variety of tasks within this category of operation. Route, zone and area reconnaissance all provide information on trafficability, built-up areas, bridges, obstacle systems, troop deployments and movements. Surveillance and reconnaissance can be zone or area specific and can be terrain or force oriented. Flight crews should be able to perform aerial command and control tasks while on surveillance missions. Crews should be able to determine movement and maneuver conditions including strengths and weaknesses of static and moving forces. They should be able to provide information necessary to allow peacekeeping forces to maintain freedom of maneuver, and when necessary maneuver against hostile elements to minimize their ability to affect UN peacekeeping efforts.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (qualified and current on type)
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- Mission-specific training imparted
- Navigational preparations carried out

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation (from base to base)
- Threat assessment
- ROEs for aerial engagement

- Airspace limitations / restrictions
- Weather briefing / NOTAMs
- Minimum safe altitude
- Known hazards and conditions of the helicopter landing sites
- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures

Rotary-Wing Training

Task: Armed Reconnaissance

Conditions. The military aviation unit receives a mission for conducting armed reconnaissance to locate and engage targets of opportunity or planned targets within the rules of engagement defined by the Mission mandate. Armed reconnaissance can be both reactive and pro-active in nature. After fully comprehending the senior field commander's intent, the military aviation unit commander dispatches an appropriately armed helicopter and crew to ensure mission success.

Desired Standards. Upon receipt of the mission, the military aviation unit commander directs his staff to conduct a mission analysis for information critical to the mission's success. Specified and implied tasks are examined, along with flight routes, communications, and control measures. Military aviation unit commanders conduct map reconnaissance, mission rehearsals and other mission preparation. Flight crews must be able to engage hostile forces while adhering to the UN mandate and rules of engagement. Crews will simultaneously conduct reconnaissance, observing and reporting as required. These operations can be conducted for show-of-force missions, transition to defensive actions or transitions to deliberate and sustained attack on hostile forces as authorized. Flight crews must complete their mission safely and return to the airfield to prepare for the next mission.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (Qualified and current on type)
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum crew requirement for pilot-in-charge and co-pilot
- Mission-specific crew training
- Currency and proficiency of scanners and door gunners (if employed)

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation
- Threat assessment
- Type of munitions to be used
- Weather briefing / NOTAMs
- Safety altitude for engagement
- Low flying hazards
- Appropriate frequencies for both flight following and ground troops
- Communication failure procedures

Rotary-Wing Training

Task: Close Support

Conditions. The unit receives a mission to provide close support (CS) to UN personnel engaged in any one of a variety of operations (e.g., operations against hostile elements, escorting a convoy through unfriendly territory, escorting transport helicopters through hazardous airspace or destroying targets endangering the safety and security of UN personnel, assets or unarmed civilians). The military aviation unit is able to provide the required support with available assets and crews in the shortest possible timeframe ensuring safe mission accomplishment.

Desired Standards. The unit must be able to provide CS in both reactive and pro-active operations within the rules of engagement and UN mandate. Upon receipt of the mission, the military aviation unit commander directs his staff to conduct a mission analysis for information critical to the mission's success. Specified and implied tasks are examined, along with flight routes, communications, and control measures. Military aviation unit commanders conduct map reconnaissance, mission rehearsals and other mission preparation. Flight crews must be able to provide CS when rules of engagement allow and transition to proactive missions. Crews must be able to detect and deter any hostile or aggressive activities by negative elements while ensuring no collateral damage, and then return to base safely.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (qualified and current on type)
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- Mission-specific crew training
- Currency / proficiency of scanners and door gunners (if employed)

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation
- Threat assessment
- Type of munitions to be used
- Weather briefing/NOTAMs
- Safety altitude for engagement
- Low flying hazards
- Provide appropriate frequencies for both flight following and ground troops.
- Communication failure procedures

Rotary-Wing Training

Task: Passenger/VIP Transportation

Conditions. The military aviation unit receives a mission to move troops, personnel, VIPs or civilians to a known location by helicopter. After the necessary mission assessment, a suitably configured helicopter is made available along with a trained crew to ensure safe mission accomplishment.

Desired Standards. Upon receipt of the mission, the aviation staff conducts mission analysis for information critical to the mission's success. Specified and implied tasks are examined, along with flight routes, communications, and control measures. Military aviation unit commanders conduct map reconnaissance, mission rehearsals (if necessary) and other mission preparation. The crews conducting the air movement must observe, conduct reconnaissance, and report as required. The flight crew completes the mission safely and returns to the airfield to prepare for the next mission.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (Qualified and current on type)
- Appropriate and valid medical certification of the crew
- Meet the UN minimum crew requirement for pilot-in-command and co-pilot

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation
- Threat assessment
- Airspace limitations / restrictions
- Weather briefing / NOTAMs
- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures
- Navigational preparations for the route to be flown

Rotary-Wing Training

Task: Cargo Transportation (Also known as support missions)

Conditions. The military aviation unit receives a mission to move cargo, equipment or supplies by helicopter to a known location within the same theater of operations. After the necessary mission assessment, a suitably configured helicopter is made available along with a trained crew to ensure safe mission accomplishment.

Desired Standards. Upon receipt of the mission, the aviation staff conducts its mission analysis for information critical to the mission's success. Specified and implied tasks are examined, along with flight routes, communications, and control measures. Military aviation unit commanders conduct map reconnaissance, mission rehearsals (if necessary) and other mission preparation. The crews conducting the air movement must observe, conduct reconnaissance, and report as required. The flight crew completes the mission safely and returns to the airfield to prepare for the next mission.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (qualified and current on type)
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- Crew proficiency in handling specialized equipment

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation (from base to base)
- Threat assessment

- Airspace limitations / restrictions
- Weather briefing / NOTAMs
- Minimum safe altitude
- Known hazards and conditions of the landing destination
- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures
- Special briefing in case of dangerous goods
- The condition of helicopter landing site at the destination.

Rotary-Wing Training

Task: Casualty/Medical Evacuation (CASEVAC/MEDEVAC)

Conditions: The military aviation unit receives a mission to conduct CASEVAC / MEDEVAC. The military aviation unit coordinates with the mission-generating headquarters to ensure the appropriate resources are available. All coordination is completed and the flight crew is notified of its aerial MEDEVAC / CASEVAC mission.

Desired Standards. Upon receipt of this mission, the military aviation unit commander directs his staff to conduct its mission analysis to ensure that the helicopter is appropriately configured for the expected type and nature of casualties or patient(s) to be transported. The aviation staff conducts its mission analysis for information critical to the mission's success. Specified and implied tasks are examined, along with flight routes, communications, and control measures. Military aviation unit commanders conduct map reconnaissance, mission rehearsals (if necessary) and other mission preparation. The crews conducting the air movement must observe, conduct reconnaissance, and report as required. The flight crew completes the mission safely and returns to the airfield to prepare for the next mission.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (Qualified and current on type)
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- CASEVAC team / crew must be capable of dealing with the most severe injuries
- Personnel involved in the MEDEVAC must be trained to provide adequate resuscitation, stabilization and en route care so that the casualty's condition does not deteriorate because of the evacuation.

- All personnel involved in the operation must be trained in Basic Life Support and competent in basic first aid. Personnel must also observe basic barrier protection methods when dealing with human body fluids.

Crew Briefing Requirements: In addition to routine navigational, security and weather details, aircrews must be briefed on the:

- Number and priority of patients
- Type of special equipment required
- Number and type of litter or ambulatory patients

Rotary-Wing Training

Task: Air Assault/Quick Reaction Ops

Conditions. The military aviation unit receives a mission to transport infantry or designated quick reaction troops in a conflict zone to assault an objective or provide a quick reaction response. After a detailed operational risk assessment, an appropriate combination of helicopters and an experienced, well trained crew is dispatched for the mission.

Desired Standards. Upon receipt of this mission, the military aviation unit commander directs his staff to conduct a mission analysis to identify hazards and formulate the appropriate combination of utility and attack helicopters. The aviation staff conducts its mission analysis for information critical to the mission's success. Specified and implied tasks are examined, along with flight routes, communications, and control measures. Military aviation unit commanders conduct map reconnaissance, mission rehearsals (if necessary) and other mission preparation. The crews conducting the air movement must observe, conduct reconnaissance, and report as required. The flight crew completes the mission safely and returns to the airfield to prepare for the next mission.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (Qualified and current on type)
- Appropriate and valid medical certification of crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- Mission specific training for the crew

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation
- Threat assessment

- Weather briefing / NOTAMs
- ROEs for aerial engagement
- Known hazards and conditions of the landing destination
- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures

Rotary-Wing Training

Task: Search and Rescue Operations

Conditions. The unit receives a mission to conduct search and rescue operations in support of a missing or overdue aircraft, helicopter, ground troops or personnel trapped in any emergency. Search and Rescue operations can be conducted over a wide variety of inhospitable terrain, water bodies or disaster-hit areas requiring high performance in aircrews and machines. Search and Rescue missions require thorough planning and assessment to dispatch the appropriate crew and suitably-configured helicopters.

Desired Standards. Upon receipt of this mission, the military aviation unit commander directs his staff to conduct mission analysis, identifying any special equipment needed such as hoists, slings, winches, firefighting buckets, etc., along with the helicopters and special skills the crew may require. The aviation staff conducts its mission analysis for information critical to the mission's success. Specified and implied tasks are examined, along with flight routes, communications, and control measures. Military aviation unit commanders conduct map reconnaissance, mission rehearsals (if necessary) and other mission preparation. The flight crew must observe, conduct reconnaissance, and report as required. The flight crew completes the mission safely and returns to the airfield to prepare for the next mission.

Minimum Required Training Standards:

- Search and Rescue plans must be prepared and rehearsed in advance
- Appropriate category rating
- Appropriate class rating (qualified and current on special missions)
- Appropriate and valid medical certification of aircrew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot

Crew Briefing Requirements:

- Type of mission along with type of search to be conducted
- Area of operation
- Time of operation
- Threat assessment
- Weather briefing / NOTAMs

- Appropriate frequencies for both flight following and ground troops
- Communication failure procedures
- The condition of helicopter landing site or landing surface

Rotary-Wing Training

Task: Joint Operations

Conditions. The military aviation unit receives a mission to conduct joint operations: integrated operations with other UN components such as ground troops, maritime, Marines or UN Police. Joint operations can be conducted over open operational areas or in built up areas like cities and population centers. Joint operations require the highest degree of coordination between the participating components to ensure mission success. Thorough planning and assessment are required to dispatch the appropriate crew and suitably-configured helicopters for Joint operations.

Desired Standards. Upon receipt of this mission, the military aviation unit commander directs his staff to conduct mission analysis and thorough coordination with the supported troops. Coordination must include communication arrangements, recording the Forward Line of Own Troops and the extent of UN and hostile presence in the area of responsibility. Coordination must also include arrangements for pick up and drop off of troops (if required) and corresponding special skill requirements for the aircrew. The aviation staff conducts its mission analysis for information critical to the mission's success. Specified and implied tasks are examined, along with flight routes, communications, and control measures. Military aviation unit commanders conduct map reconnaissance, mission rehearsals (if necessary) and other mission preparation. The flight crew must observe, conduct reconnaissance, and report as required. The flight crew completes the mission safely and returns to the airfield to prepare for the next mission.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (qualified and current on special operations)
- Appropriate and valid medical certification of aircrew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- Mission-specific training imparted (if any)

Crew Briefing Requirements:

- Area of operation
- Time of operation
- Threat assessment
- Airspace limitations / restrictions
- Weather briefing/NOTAMs

- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures
- The condition of helicopter landing site or landing surface
- Special coordination measures required

Rotary-Wing Training

Task: Helicopter Landing Site Reconnaissance Operations

Conditions. The military aviation unit receives a mission to conduct reconnaissance to select a helicopter landing site in an unfamiliar area. The mission involves landing at a selected site without the normally required area information since details of its surface, obstacles and conditions are not known. Helicopter landing site operations are normally conducted across hostile terrain such as jungles, thus requiring a high degree of crew proficiency. Moreover, a prudent assessment is required to dispatch the appropriate crew and suitably-configured helicopter for the mission.

Desired Standards. Upon receipt of this mission, the military aviation unit commander directs his staff to conduct its mission analysis, highlighting as much as possible any details regarding the helicopter landing site, especially hazards, if any. The staff conducts its mission analysis to include information on altitude, weather, wind patterns, terrain and environmental details critical to safe mission accomplishment. The aviation staff conducts its mission analysis taking note of information critical to the mission's success. Specified and implied tasks are examined, along with flight routes, communications, and control measures. Military aviation unit commanders conduct map reconnaissance, mission rehearsals (if necessary) and other mission preparation. The flight crew must observe, conduct reconnaissance, and report as required. The flight crew completes the mission safely and returns to the airfield to prepare for the next mission.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (qualified and current on special operations)
- Appropriate and valid medical certification of aircrew
- Meeting the UN minimum crew requirement for pilot-in-charge and co-pilot
- Mission-specific training imparted (if any)

Crew Briefing Requirements:

- Area of operation
- Time of operation
- Threat assessment
- Airspace limitations/restrictions

- Weather briefing/NOTAMs
- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures
- The condition of helicopter landing site or landing surface
- Special training measures required (if any)

Fixed-Wing Training

Task: Passenger/VIP Transportation

Conditions. The unit receives a mission to move troops, personnel, VIPs, support personnel and liaison officers via air movement. The unit assesses the requirement, type and size of aircraft necessary and provides appropriate airframe and crew to accomplish the mission safely.

Desired Standards. A properly equipped and mission capable aircraft is prepared, flown and arrives at the designated pick-up point (passenger embarkation point) or area (airport, airstrip) within the time constraints and specifications of the requested support. All mission equipment is functional. All scheduled personnel are safely transported to the desired location at the desired time.

Minimum Required Training Standards:

- Appropriate pilot and crew qualifications for specific aircraft types
- Meeting the UN minimum crew requirement for pilot-in-command (PIC) and co-pilot
- Appropriate and valid medical certification of the crew
- Routine flying / special mission checks conducted
- Navigation preparations for the route carried out

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation (from base to base)
- Threat assessment
- Airspace limitations / restrictions
- Weather briefing / Notices to Airmen (NOTAM)
- Minimum safe altitude
- Known hazards and conditions of the landing destination
- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures
- The condition of the landing surface

Fixed-Wing Training

Task: Cargo Transportation

Conditions. The unit receives a mission to move materiel, equipment, ammunition, supplies, food, water, or any other approved materials via air movement. The unit assesses the requirement, type and size of aircraft necessary and provides appropriate airframe and crew to accomplish the mission safely.

Desired Standards. A properly equipped and mission capable aircraft is prepared, flown and arrives at the designated pick-up point (equipment / supplies loading / staging) or area (airport, airstrip) within the time constraints and specifications of the requested support. All mission equipment is functional. All equipment scheduled and coordinated for is safely transported to the desired location at the desired time.

Minimum Required Training Standards:

- Appropriate pilot and crew qualifications for specific aircraft types
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- Routine flying / special mission checks conducted
- Navigation preparations for the route carried out

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation (from base to base)
- Threat assessment
- Airspace limitations / restrictions
- Weather briefing / Notices to Airmen (NOTAM)
- Minimum safe altitude
- Known hazards and conditions of the landing destination
- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures
- Condition of landing surface

Fixed-Wing Training

Task: Surveillance and Reconnaissance

Conditions. The military aviation unit receives a mission to conduct aerial reconnaissance and / or surveillance operations. Aerial reconnaissance and surveillance operations can include zone, route, area reconnaissance and / or surveillance. This mission can be included in both troop and equipment movements. Flight crews should always conduct reconnaissance and surveillance of the route they fly and report any information deemed significant. Force Headquarters will process their information and determine its operational value.

Desired Standards. The military aviation unit conducts aerial reconnaissance and surveillance operations according to the tactical environment, mission requirements and military aviation unit commander's intent. The military aviation unit conducts the mission as briefed. The aircrew conducts the mission using the appropriate visual search techniques and accurately assesses the situation. The aircrew provides the required reports and information in a timely and professional manner without error.

Minimum Required Training Standards:

- Appropriate pilot and crew qualifications for specific aircraft types
- Appropriate and valid medical certification of the crew
- Meet the UN minimum crew requirement for pilot-in-command and co-pilot
- Routine flying / special mission checks conducted
- Navigation preparations for the route carried out

Minimum Survey Height. The minimum clearance height during aerial reconnaissance is 500 ft. If an aerial reconnaissance survey is to be flown at less than 159 m (500 ft) it should be flown after conducting a detailed risk analysis considering:

- Terrain relief and vegetation
- Aircraft type
- Aircrew flight and duty times
- Threat assessment

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation (from base to base)
- Threat assessment
- Airspace limitations / restrictions
- Weather briefing / NOTAMs

- Minimum safe altitude
- Known hazards and conditions of the landing destination
- Provide appropriate frequencies for both flight following (flight tracking) and ground troops
- Communication failure procedures

Fixed-Wing Training

Task: Transportation of Dangerous Goods (DGs)

Conditions. Once the requirement to transport DGs is received, the military aviation unit assesses the type and size of cargo, special handling and storage facilities required and provides a suitably equipped aircraft and crew to accomplish the mission safely.

Desired Standards. A suitably equipped and configured aircraft is made available along with the equipment and specially trained personnel required for loading and offloading DGs. All mission equipment and special storage facilities are serviceable and the necessary coordination accomplished for DG transportation to the desired location.

Minimum Required Training Standards:

- The troop contributing country should include DGs as part of the crew training program to increase cabin awareness of:
- The risks involved in carrying DGs by air.
- Handling DG incidents onboard the aircraft.
- Appropriate pilot and crew qualifications for specific aircraft types
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum qualification requirement for pilot-in-command and co-pilot
- Routine flying / special mission checks conducted
- Navigation preparations for the route carried out

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation (from base to base)
- Threat assessment
- Airspace limitations / restrictions
- Weather briefing / NOTAMs
- Minimum safe altitude
- Known hazards and conditions of the landing destination
- Appropriate frequencies for both flight following and ground troops

- Communication failure procedures
- The condition of landing surfaces
- Actions for handling DG emergencies in flight

Fixed-Wing Training

Task: Aerial Delivery System Operations

Conditions. The military aviation unit receives a mission to conduct a parachute drop of supplies and equipment in an operational or emergency-stricken area. After detailed assessment of the requirement, the unit prepares an appropriate aircraft suitably equipped to perform the task, and ensures availability of the crew required for the mission.

Desired Standards. A properly equipped aircraft is made available for loading cargo to be air dropped. The cargo has been prepared and packed by specially qualified parachute riggers. The aircraft is made available on time and is able to provide a safe drop accurately on the drop zone. The cargo arrives on the ground with minimum or no damage.

Minimum Required Training Standards/Self-Evaluation Criteria:

- Rigger Proficiency
- Appropriate category rating.
- Appropriate class rating (qualified and current on type).
- Appropriate and valid medical certification of crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot.
- Routine flying / special mission checks conducted
- Navigation preparations for the route carried out

Crew Briefing Requirements:

- Type of mission
- Area of operation / drop zone
- Time of operation (from base to base)
- Threat assessment
- Airspace limitations / restrictions
- Weather briefing / NOTAMs
- Minimum safe altitude
- Provide appropriate frequencies for both flight following and ground troops.
- Communication failure procedures

Fixed-Wing Training

Task: Casualty Evacuation (CASEVAC)

Conditions. The military aviation unit receives a mission to evacuate seriously injured personnel to the initial medical treatment facilities. After detailed mission assessment, the unit provides a suitably equipped aircraft and crew to accomplish the mission in the shortest possible timeframe.

Desired Standards. A properly configured aircraft is made available at the pickup point in the shortest possible timeframe to save life and limb, thereby raising the morale of all Mission personnel.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (qualified and current on type)
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- Routine flying / special mission checks conducted
- Navigation preparations for the route carried out

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation (from base to base)
- Threat assessment
- Airspace limitations / restrictions
- Weather briefing / NOTAMs
- Minimum safe altitude
- Known hazards and conditions of the landing destination
- Appropriate frequencies for both flight following and ground troops
- Communication failure procedures

Fixed-Wing Training

Task: Medical Evacuation (MEDEVAC)

Conditions. The military aviation unit receives a mission to transport seriously injured or ill personnel to an advanced medical treatment facility located far from the departure point. After detailed mission analysis, the unit provides an appropriate aircraft suitably equipped with medical facilities and air and medical crew to accomplish the mission safely.

Desired Standards. A properly configured aircraft is made available at a designated air field in the earliest possible timeframe. The aircraft has onboard medical personnel and treatment facilities and is prepared to travel over long distances.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (qualified and current on type)
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- Proficiency of on board medical staff
- Navigation preparations for the route carried out

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation (from base to base)
- Threat assessment
- Airspace limitations/restrictions
- Weather briefing/NOTAMs
- Minimum safe altitude
- Known hazards and conditions of the landing destination
- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures

Fixed-Wing Training

Task: Search Operations

Conditions. The military aviation unit receives a mission to use fixed-wing assets for gathering information and detecting any activity using visual and electronic means. After detailed mission analysis, the unit provides a suitably equipped and appropriate aircraft with crew to accomplish the mission safely and efficiently.

Desired Standards. A properly configured aircraft is made available for the assigned task ensuring availability of experienced crew and adequate air-to-ground communications to report useful information that can be converted into actionable intelligence for ground force commanders.

Minimum Required Training Standards:

- Appropriate category rating

- Appropriate class rating (Qualified and current on type)
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- Navigational preparations for the route and area to be searched

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation (from base to base)
- Threat assessment
- Airspace limitations / restrictions
- Weather briefing / NOTAMs
- Minimum safe altitude
- Known hazards and conditions of the landing destination
- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures

Fixed-Wing Training

Task: Air Patrols

Conditions. The military aviation unit receives a mission to use fixed-wing assets for patrolling over an objective or critical part of a peacekeeping area of responsibility with the purpose of gathering early warning of imminent activity using both visual and electronic means. After detailed mission analysis, the unit provides a suitably equipped aircraft and crew to accomplish the mission safely and efficiently.

Desired Standards. A suitably configured aircraft with extended range is made available along with an experienced crew and appropriate air-to-ground communications. The aircraft may be equipped to detect and provide early information about any development likely to affect UN mission personnel or those under the mission's protection.

Minimum Required Training Standards:

- Appropriate category rating
- Appropriate class rating (qualified and current on type)
- Appropriate and valid medical certification of the crew
- Meeting the UN minimum crew requirement for pilot-in-command and co-pilot
- Navigational preparations for the objective / critical area to be patrolled

Crew Briefing Requirements:

- Type of mission
- Area of operation
- Time of operation (from base to base)
- Threat assessment
- Airspace limitations / restrictions
- Weather briefing/NOTAMs
- Minimum safe altitude
- Known hazards and conditions of the landing destination
- Provide appropriate frequencies for both flight following and ground troops
- Communication failure procedures

Tactical Training for Military Aviation Unit Commanders and Staffs

Task: Mission Analysis

Conditions. The military aviation unit commander and staff must maintain situational awareness at all times. The operations section receives missions, information and requirements, which then must be analyzed and developed into missions. The staff works together to develop detailed analysis of the situation, taking into account the threat, terrain, troops, support available, time available, civil considerations, weather and rules of engagement. This analysis is a continuous process that results in deliberate planning or immediate planning to allow flight crews and ground support personnel to provide aviation assets where and when needed.

Desired Standards. The operations section plans aviation operations based on receipt of higher headquarters guidance and requirements:

- The operations section receives mission guidance. The operations and information / intelligence officers develop a plan for conducting mission analysis.
- When time permits, the operations section follows standard operating procedures (SOPs) and previously-issued command guidance to conduct mission analysis that leads to developing and publishing the plan.
- The operations section then provides their mission analysis to the military aviation unit commander for decision and guidance.

Tactical Training for Military Aviation Unit Commanders and Staffs

Task: Planning and Preparation

Conditions. The military aviation unit commander and staff have completed mission analysis and must develop and publish a plan that subordinate units can execute. The operations section is responsible for developing, producing and communicating the missions, information and requirements that then must be analyzed and developed into missions. The staff works together to develop a detailed analysis of the situation, taking into account the threat, terrain, troops, support available, time available, civil considerations, weather and rules of engagement. This analysis is a continuous process that results in deliberate planning, or immediate planning to allow flight crews and ground support personnel to provide aviation assets where and when needed.

Desired Standards. The operations section plans aviation operations based on receipt of higher headquarters guidance and requirements.

- The operations section receives mission guidance. The operations and information / intelligence officers develop a plan for conducting mission analysis.
- When time permits, the operations section follows standard operating procedures (SOPs) and previously-issued command guidance to conduct mission analysis that leads to developing and publishing the plan.
- The operations section then provides their mission analysis to the military aviation unit commander for decision and guidance.

Tactical Training for Military Aviation Unit Commanders and Staffs

Task: Establishment of Forward or Temporary Operating Base (FOB/TOB)

Conditions. The military aviation unit receives orders to detach a number of its assets to an FOB /TOB for a specific operation or number of days. The military aviation unit commander and his staff should be able to conduct a thorough analysis of the requirement along with the types of operations to be conducted from the FOB / TOB and the risks, hazards, administrative, maintenance and support issues of operations from the FOB / TOB.

Desired Standards. The staff, after a thorough reconnaissance (if possible) and analysis, put forward an assessment of the situation so that the military aviation unit commander can make an informed decision. Based on the staff's assessment, the military aviation unit commander deployed at the FOB / TOB must decide on the:

- Appropriate number and configuration of helicopters to be deployed.

- Appropriate crew assignments based on training for specific mission requirements.
- Requirement for specialized equipment, if any.
- Requirement for GSE, along with maintenance personnel.
- Special communications requirements.
- Logistical requirements including fuel, munitions, spares, etc.
- Administrative requirements, including crew accommodation for the subordinate unit.
- Security arrangements and requirements at the FOB / TOB.

Tactical Training for Military Aviation Unit Commanders and Staffs

Task: Unit Movement (Convoy Moves)

Conditions. The military aviation unit receives movement orders, or the tactical situation dictates the unit relocate. Higher headquarters provides the necessary information (time, routes, etc.) to the military aviation unit in preparation for the movement. Air and ground crews coordinate support requirements and departure times to ensure aircraft have all the necessary support required. Soldiers receive necessary information for the conduct of the convoy move.

Desired Standards. Upon receipt of this mission, the military aviation unit commander directs his staff to conduct mission analysis to ensure subordinate leaders know what is expected.

- Military aviation unit commander provides the task and purpose.
- Staff conducts mission analysis to include intelligence and information critical to the success of the mission; gains specific mission tasks; provides primary and alternate ground convoy routes, flight routes, communications and control measures to convoy commander and flight crews.
- Military aviation unit commanders conduct rehearsals, do map reconnaissance and mission preparation activities:
- Convoy commander is responsible for conducting convoy briefings and rehearsals (if time permits) that include: rules of engagement, convoy speed, actions on contact, vehicle intervals, communications, primary and alternate routes, rally points, breakdown procedures, IED reaction procedures, etc.
- Convoy commander ensures vehicles are fueled, maintenance conducted, and configured for the convoy.

- Convoy commander ensures radio communication amongst vehicles and with headquarters.
- Convoy commander initiates and controls the convoy, reports all checkpoints and rest stops, ensures higher headquarters has situational awareness of the progress and status of the convoy.
- Ground convoy commander and aircrew coordinate with headquarters elements in sector if they transit through the area of operation.
- Conduct ground movement convoy and aerial movement while adhering to UN mandate and rules of engagement.
- As ground and aerial convoy and air movement operations are on-going, ground personnel and aircrews must observe, conduct reconnaissance and report as required.
- Ground personnel and flight crew complete their convoy and mission, return vehicles to ready status and safely complete ground and air movements.
- Military aviation unit begins preparation for providing aviation support to peacekeeping operations.

Tactical Training for Military Aviation Unit Commanders and Staffs

Task: Headquarters/Operations Center Establishment

Conditions. The military aviation unit has re-located and must establish a new location operations center, headquarters and campsite. Tactical convoy operations have concluded and all personnel and vehicles are accounted for. New operations site(s) have been selected and identified for the unit. Operating sites for unit administrative efforts, supply, operations, field sanitation and other functions have been selected and responsibilities for establishing them are communicated. New location is safe or security is in place to allow the establishment of the headquarters area, operations area and bivouac areas.

Desired Standards. Upon receipt of this mission, the military aviation unit commander directs his staff to conduct mission analysis to ensure subordinate leaders know what is expected.

- Military aviation unit commander provides task and purpose.
- Staff conducts mission analysis to include intelligence / information critical to the mission's success, gains specific mission tasks, and provides

primary and alternate locations for subordinate units to establish operations and bivouac sites.

- Military aviation unit commanders conduct rehearsals, do map reconnaissance and mission preparation activities:
 - Military aviation unit commander is responsible for establishing headquarters, operations and other functions in a timely and organized manner.
 - Military aviation unit commander conducts briefings and rehearsals and receives back briefs for the establishment of a new site.
 - Military aviation unit commander ensures radio communication is maintained throughout the re-establishment of functional headquarters, operations area and bivouac sites.
 - Military aviation unit commander ensures higher headquarters has situational awareness of the progress and status of the establishment of new site.
 - At new location, aviation support (maintenance, fuel, re-armament, etc.,) sites are established.
- Ground personnel and flight crew coordinate to ensure mission readiness and support of peacekeeping mission is not negatively impacted while the military aviation unit is relocating.
- Military aviation unit re-establishes headquarters, operations and bivouac sites and is prepared to provide aviation support to peacekeeping operations.

Self-Evaluation Sample Checklists For Pre-Deployment and In-Mission

Pre-Deployment

Serial	Pre-Deployment Self-Evaluation Determining Factors	Evaluation	Remarks
a	Generic Peacekeeping Skills. Are all personnel of the military aviation unit trained on and sensitized to the generic policy guidelines and directives of conducting peacekeeping operations? Do they demonstrate a clear understanding of these guidelines and directives?		
b	Basic Aviation Capabilities. Is the unit able to perform basic aviation capabilities based on the type of unit?		
c	Mission-Specific Capabilities. Is the unit able to perform mission-specific aviation capabilities based on the task and type of UN Mission?		
d	Operational Aviation Tasks. Is the unit already familiar with and capable of performing the different operational aviation tasks expected of it?		
e	Organization. Is the unit organized into task-oriented groups with the appropriate support structure for its type of UN operations?		
f	Leadership. Is the military aviation unit chain of command capable, responsive and made accountable to deliver in a peacekeeping environment?		
f	Staff. Is the military aviation unit staff integrated, trained and capable of planning, organizing, coordinating and directing the assigned tasks / operations in the peacekeeping environment?		
g	Training. Has the military aviation unit undertaken peacekeeping oriented and mission-specific training and achieved the requisite standards?		
h	Resources. Is the unit carrying or in possession of the required number of personnel and minimum essential equipment as per the SUR / MOU and Mission requirements?		
i	Maintenance Management. Is the military aviation unit capable of maintaining a minimum serviceability rate of 75 % and does it have the ability to perform preventive maintenance, recovery and repair in situ?		

Serial	Pre-Deployment Self-Evaluation Determining Factors	Evaluation	Remarks
j	Logistics. Are the subordinate units and flights configured for independent and self-sustained logistics capability (food, water, accommodation, hygiene and sanitation, transport, medical, etc.)?		
k	Medical. Do unit personnel meet the requisite physical and psychological medical standards and have they passed a periodic medical examination?		
l	Regulatory Understanding. Are unit personnel aware of applicable UN rules, regulations, and the code of conduct? Do they possess a high standard of professionalism and regulatory awareness?		
m	Morale and Motivation. Are unit personnel well motivated to operate in a complex, restrictive, multinational and multidimensional environment while maintaining high morale?		
n	Welfare. Does the unit maintain high standards of personnel welfare as per national standards and Mission requirements?		
o	Legal. Do unit personnel and military aviation unit commanders clearly understand the responsibility to adhere to, promote and protect the legal framework for UN Peacekeeping Operations with specific reference to SOFA, SOMA, ROE, Human Rights and Humanitarian Law, other relevant international legal statutes and host nation laws?		
p	Evaluation. Has the unit carried out a formal self-evaluation, have shortcomings been identified and rectified, and have the troop contributing country authorities certified the unit to be fit for deployment in the Mission as scheduled?		

In-Mission

Serial	In-Mission Self-Evaluation Determining Factors	Evaluation	Remarks
a	Performance. Does the unit perform its mission essential tasks effectively and safely as per peacekeeping norms and Mission SOPs?		
b	Shortcomings. Has the unit taken corrective actions on performance shortcomings observed by the unit, COE team or Mission leadership?		
c	Skills Refresher Training. Does the chain of command ensure that unit personnel skills are kept up to date based on their basic qualification standards?		
d	In-Mission Training. Is the unit carrying out periodic in-mission refresher, task oriented and Mission-specific training as per TCU guidelines?		
e	Flight Safety Plan. Does the unit ensure safety and standardization when conducting aviation operations, risk assessment, search and rescue planning and ground safety?		
f	Aircraft Serviceability. Is the unit carrying out periodic inspections and maintenance based on aircraft technical manuals?		
g	Conduct and Discipline. Does the unit continue to maintain the highest standards of conduct and discipline in accordance with the MoU?		

Aviation Safety

1. Introduction

This annex emphasizes the significance of aviation safety and should be read in conjunction with the DPKO-DFS Guidelines, Aviation Safety Manual 2012. Military aviation unit commanders are strongly advised to embrace accident prevention measures that protect their people, equipment and readiness. Safety programs promote mission success by preventing accidents and improving working conditions by, amongst other things, removing hazards, accelerating fault analysis and conducting preventative maintenance. Effective military aviation unit commanders are committed to safety programs that assure the continuous availability of aviation assets for Mission requirements.

2. Flight Safety

Flight safety is state of mind, an atmosphere that must become an integral part of individual and unit procedures. The International Civil Aviation Organization (ICAO) defines safety as, *“the final end state in which risks associated with aviation activity related to or in direct support of the operation of aircraft are reduced and controlled to an acceptable level.”* In other words, safety is a combination of required conditions so that a flight reaches its destination with maximum preservation of life and equipment and minimum risk of accident.

3. Safety Responsibilities

a. Military Aviation Unit Commander

Aviation safety and accident prevention is a command responsibility. Safety enhances mission effectiveness by protecting the people, skills and equipment that provide the Mission its aviation capability. Safety must be integrated into all aspects of unit activity including operational use, maintenance of aircraft and equipment, and flight and ground crew training. Military aviation unit commanders should emphasize the:

- Identification and correction of accident-producing conditions and practices.
- Self-Evaluation and prioritization of accident-producing problems.
- Development of accident prevention methods and programs.
- Encouragement of input from air and ground crews to identify and prevent safety hazards, thus promoting physical and psychological wellbeing, unit morale and efficiency.
- Delegation of specific authority and responsibilities to individuals in the overall safety program.
- Measurement and self-evaluation of the accident control system producing needed modifications for optimum results.
- Review of technological developments that can be applied to minimize accidents.
- Formulation of clearly defined and practical SOPs.

- Inclusion of safety considerations, standardization, proficiency standards and flight safety rules in all unit training activities and programs.
- Coordination with the Mission's aviation safety unit.

b. Flight Safety Officer

Another key person in unit safety is the Flight Safety Officer. He or she should preferably be a senior aviator and must be trained and committed to organizational safety. For standardization, Flight Safety Officer duties should include:

- Planning, organizing, implementing and supervising the unit's Flight Safety Program.
- Assisting and advising the military aviation unit commander on all flight safety matters.
- Reviewing, analyzing and developing flight safety policies, directives, regulations and SOPs.
- Conducting periodic flight safety surveys and making positive recommendations for correcting noted safety concerns.
- Participating and representing the military aviation unit on the periodic Mission Aviation Safety Council.
- Identifying and reporting any aircrew psychological problems that may affect their efficiency and safety.
- Maintaining records of unit aircraft accidents, incidents, near misses, forced landings, precautionary landings, operational and maintenance hazard reports, violations, recommendations and corrective actions taken in each case.
- Conducting preliminary investigations of all unit aircraft incidents.
- Organizing and recording the minutes of unit flight safety meetings on a monthly basis.
- Coordinating with the Mission aviation safety unit on aviation safety matters.
- Coordinating with operations, maintenance, training and medical staff to ensure that flight safety practices are part of all aviation activities.
- Monitoring all aviation training and performing spot checks of flying proficiency in coordination with the unit's standardization team.
- Establishing and maintaining a unit plan in the event of accidents, and conducting regular rehearsals to ensure its proficiency. This emergency response plan must be integrated into the Mission emergency response plan.
- Inspecting communications equipment, navigational and other electronic aids for aircraft and air traffic control to ensure required operational fitness.
- Inspecting airfield physical conditions for hazards, posting all known hazards and recommending hazard improvements.

4. Flight Safety Planning

The military aviation unit commander and flight safety officer must highlight actions that can assist in the establishment of an effective flight safety program. An effective safety program involves planning so that more time is spent on preventing safety hazards rather than reacting to accidents. The flight safety officer should spend a major portion of the day out in the field looking for situations that may lead to mishaps. The flight safety officer's job is to convey to the operators the rationale behind a safety directive, to identify and anticipate safety hazards and

advise operators on remedial measures before the accident occurs. Some means for effective communication and safety planning include:

- **Monthly Flight Safety Meetings.** The flight safety officer should organize a monthly Flight Safety Meeting chaired by the military aviation unit commander. This meeting highlights unit issues and summarizes the command's safety-related incidents. It is an opportunity for showing safety films or discussing safety-related trends from the previous month's performance. Representatives from subordinate units or sections can take advantage of the meeting to explain why safety issues persist and can request resources to correct problems.
- **Flight Safety Boards, Posters and Bulletins.** Safety-related key points that merit attention in a particular work area can be efficiently publicized by way of dedicated "Safety Boards," general bulletin boards and posters. New ideas or approved amendments concerning safe operation procedures may be posted. Periodic quizzes can also generate interest so that personnel can update their safety and workplace knowledge. Brief narratives with lessons learned can be added from time to time for the benefit of all personnel.
- **Flight Safety Literature.** Many interesting and relevant articles are available in flight safety magazines published by various flying organizations. The flight safety officer should circulate these articles to all concerned personnel with an introductory or concluding paragraph summarizing the article's message.
- **Daily Weather and Air Traffic Briefings.** The flight safety officer must ensure that operators, especially aircrews, are current on weather and air traffic conditions. Daily briefings on these subjects can be arranged allowing the aircrews and other operators to clarify their concerns about weather and traffic.
- **Flight Safety Hazard Reporting System.** The flight safety officer must initiate an effective and confidential hazard reporting system that encourages personnel to report any potential hazard, no matter how seemingly minor, that could develop into something far more serious if not checked and corrected.
- **Flight Safety Council.** The flight safety officer, in coordination with the military aviation unit commander, must establish a flight safety council. The council includes members from each subordinate branch and unit. The council monitors and ensures implementation of flight safety rules and regulations in the unit's daily routine.

5. Full Time Safety Organization

In the pursuit of accident prevention, a full time safety organization should exist to enforce, follow up, and manage accident prevention activities. Such organizations have certain characteristics and responsibilities including:

- **Leadership Support.** Safety is a leadership responsibility. The unit leadership should direct safety efforts by providing the required support in terms of command interest, decision making and providing resources to mitigate safety hazards.
- **Systematic Procedures.** The safety organization must have approved accident prevention plans, procedures and guidelines on which safety efforts are based. Without these plans and guidelines, safety officers will not be able to help the unit progress.
- **Creating and Maintaining Interest.** Pilots, technicians, air and ground support crews and other aviation personnel must be periodically reminded of the importance of accident prevention. The unit safety organization must be innovative and creative to gain and maintain operator interest in safety activities.
- **Striving for Better Working Conditions.** Working conditions play an all-important role in establishing and maintaining an organization's safety standards. Proper working conditions have a direct impact on the quality of maintenance, particularly given the many sensitive items of unit equipment. Units that neglect proper working conditions are risking parts contamination, technician fatigue and equipment failure.

6. Risk Assessment and Management

a. Introduction

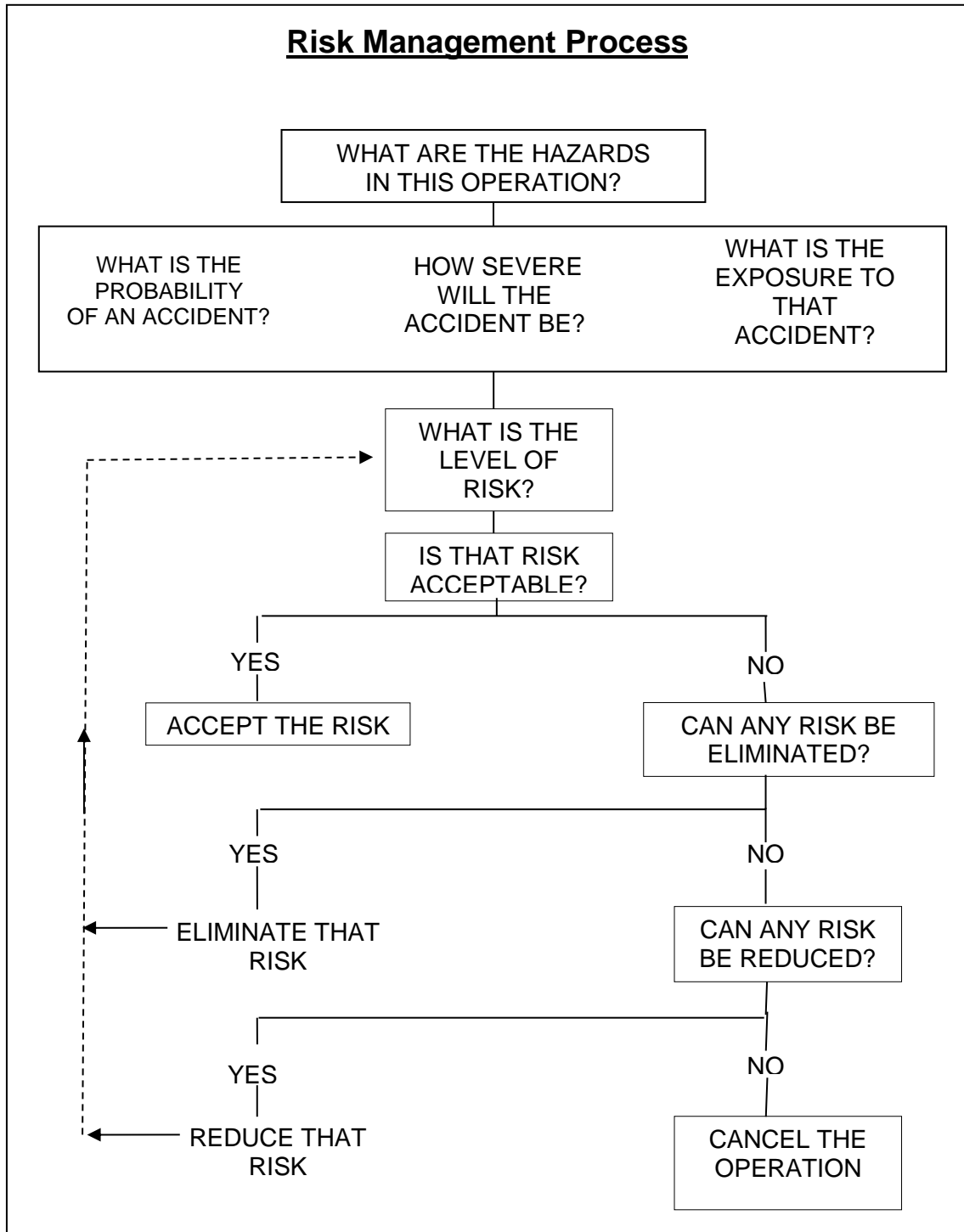
Safe mission accomplishment relies heavily on the integration of risk management into the planning and execution of flight operations. There are some risks in the operational environment over which the military aviation unit has control, some risks over which it has reduced control, and some risks over which the unit has no control. In each case, an assessment must be made to accept the risk, mitigate the risk, or cancel the mission if the risk is unacceptably high. The following discussion of risk management provides an introduction to what can be a highly technical analysis. The intent of this introduction is to familiarize the reader with the broader risk management considerations, not replace a more thorough methodology.

For an authoritative discussion of Risk Management, readers are strongly advised to consult the DPKO/DFS Policy on Aviation Risk Management dated 22 May 2014. That policy contains discussion and details on acceptable risk levels, decision-making structure, aviation risk management matrices, proper documentation of risk decisions above the acceptable risk level, documenting identified hazards and other risk assessment and management related topics. See the link on References in Annex F.

For the purposes of a simple *introduction* to the topic, what follows next is an abbreviated method for considering Risk Assessment and Management.

b. The Risk Assessment and Management Process

- **Hazard Identification.** In the following chart, the process begins by accurately assessing any hazards. This step is vital yet frequently done poorly or not at all. Consequently, the risk management decisions that follow are made with either inaccurate or inadequate information. Hazards are identified by military aviation unit commanders and staff based on pilot and crew observations, intelligence and reconnaissance reports of threatening activity, weather, geography, airfield/landing zone conditions and equipment readiness.



- **Hazard Assessment.** Once identified, each hazard is assessed in terms of its probability of occurrence, the severity of its impact on personnel and equipment should it happen, and the hazard's impact on the overall mission.
- **Hazard Prioritization.** Each hazard is then prioritized in terms of highest probability of occurrence, highest severity should it happen and highest negative affect on the mission.
- **Risk Assessment, Mitigation and the Military Aviation Unit Commander's Decision.** Next, decisions are made on what risks are acceptable without mitigation, what risks are acceptable with mitigation, and what risks are not acceptable and require mission cancellation if they are too likely to occur. A key part of this assessment is whether the military aviation unit can bring the necessary resources to bear in order to mitigate the risks in question.
- **Proactive Approach.** The point of risk management is to anticipate hazards and risks, assess their probability of occurring and take action to mitigate their affects, not react to them after they have already jeopardized the operation.
- **Command Responsibility.** The responsibility for decisions made with regard to risk management and flight authorization rest with the military aviation unit commander, who is held responsible for the lives of his personnel, the readiness of his equipment and everything his unit does or fails to do.

7. Search and Rescue Planning and SOPs

a. Search and Rescue planning is critical to flight safety and aviation support operations. All military aviation units are required to prepare standard operating procedures (SOPs) for Search and Rescue. Operators will be familiar with their national SOPs regarding Search and Rescue, but those national SOPs may not be completely applicable to the environment and topography of the UN Mission. Thus, once a particular military aviation unit is deployed to the UN Mission area, they must update their Search and Rescue plans to reflect the new environment and operating conditions. Search and Rescue plans and SOPs should take into consideration the:

- Plans prepared in the event of an accident.
- Accident alarm system.
- Actions for overdue aircraft.
- Local lost procedure.
- Actions for on base accident.
- Actions for off base accidents.
- Actions for medical emergency.
- Actions on forced landing.

b. The aforementioned plans each describe actions that must be practiced or simulated on a periodic basis to maintain the skills needed in an emergency. The military aviation unit commander, flight safety officer and ground safety officer (GO) will each take the necessary

steps to ensure that all concerned know their specific tasks and roles according to the plan and SOP.

8. Ground Safety

a. A Ground Safety program is essential to prevent personal injury and equipment damage on the ground. A good Ground Safety program ensures smooth operations, unit readiness and enhances flight safety. Ground safety considerations include:

- **Individual Training.** Safety training can be categorized as initial, specialized or recurring. Unsurprisingly, initial training is provided to personnel new to a particular function. This may include aviation safety training for new pilots and maintenance technicians, safety inspection training for management personnel, aviation safety specialist training and actions/response in the event of an accident training. Specialized training may include Hazardous Material (HAZMAT) handling training, first aid, use of fire extinguishers and cardiopulmonary resuscitation (CPR) for crewmembers and maintenance technicians. Finally, recurring aviation safety training is a review and update of initial and specialized training.

Equipment Maintenance. Proper equipment maintenance is another factor in ground safety. Periodic and other inspections of aircraft and ground equipment must be meticulously done to standard. Timely aircraft rotation to locations outside the Mission is a matter of flight safety. Catastrophic failures can be avoided by rotating aircraft to locations where advanced maintenance and repairs can be performed to offset the effects of prolonged operation in adverse and hazardous climatic conditions. LOA/MOU negotiators must ensure those documents contain clear language providing for the rotation of aircraft after completing a certain duration or number of flight hours in the Mission. Negotiations will determine the precise terms of aircraft rotation policy and responsibility for assuming the cost of rotation.

- **Stowage of Equipment and Stores.** The appropriate stowage of specialized equipment and stores, especially flammable materials, is extremely important and must be emphasized with all unit personnel.
- **Personal Safety and Tool Handling.** To ensure their personal safety, all personnel must be trained on using the different tools and materials within their area of expertise. All personnel must know their tools, machines, capabilities, strengths and weaknesses to minimize workplace hazards. The proper handling of sophisticated equipment and correct use of tools are fundamental safety requirements. All crews need to incorporate these practices into their daily job routine.
- **Protective Clothing.** Military aviation unit commanders should create a climate in which all personnel make routine use of protective clothing including helmets, goggles and ear plugs/hearing protection.

- **Fire Protection.** All personnel must be aware of potential fire hazards and trained in the proper use of fire extinguishers. Improper use of fire extinguishers and other firefighting techniques can create more equipment damage than the fire itself.
- **Medical Facilities/First Aid.** In the event of an emergency, all personnel should be familiar with the location of the nearest available medical facilities. Military aviation unit commanders should coordinate with medical staff for periodic unit first aid training.

b. **Ground Safety Officer**

Ground safety officers oversee a wide spectrum of unit activity:

- Aircraft towing and ground-running.
- Routine inspections and aircraft maintenance.
- Rectification of aircraft faults.
- Operation of test-benches, test equipment and facilities.
- Workshop procedures and techniques.
- Protection of ground personnel from injury during ground handling and maintenance operations.
- Technical orders and instructions.
- Use of ground support equipment and vehicles.
- Regulation of vehicular traffic in aircraft parking and maintenance areas.
- Investigation of aircraft incidents associated with weaknesses in proficiency of ground personnel.
- All other activities concerned with ground handling and maintenance of aircraft.
- Coordination with Mission aviation support unit for implementation of ground safety program.

c. **Ground Safety Board**

Every military aviation unit should have its own ground safety board or committee. Led by the ground safety officer and in coordination with the flight safety officer, the board should arrange ground safety meetings, conduct surveys and recommend improvements to the military aviation unit commander.

d. **Ground Safety Program**

A ground safety program has the following elements:

- **Accident Reporting Procedures.** Easy to understand and follow procedures for quick, accurate and detailed accident reporting.
- **Cause Analysis.** All personnel concerned, particularly ground and flight safety officers and engineers, should carefully examine accidents to determine their causes and corrective measures to prevent future accidents.

- **Fault Trend Analysis.** Supervisors and line managers should analyze trends in unit faults. By recording fault incidents and analyzing trends, systemic weakness will emerge that can then be addressed through remedial measures.
- **Fire Prevention Measures.** To protect unit readiness, all personnel must know fire prevention measures that apply to their specific tasks and work areas. Regularly scheduled fire prevention and evacuation training will save lives and equipment. Highly visible markings should indicate fire extinguisher locations. All personnel must know what to do and emergency contact procedures during a fire.
- **Equipment Damage.** Equipment damage must be immediately reported and the cause determined to prevent recurrence. Damaged equipment can lead to personal injury, catastrophic aircraft or vehicle failure and diminished unit readiness.
- **Tools and Equipment.** Frequent inspections of tools and equipment should be organized to replace defective tools.
- **Special Equipment Operation.** All drivers and operators must be proficient, or receive additional training in operating their vehicles and special equipment.
- **Special Clothing and Equipment.** Personnel must be familiar with the use and handling of special protective clothing and equipment.
- **Special Safety Precautions.** Many ground operations require special techniques and attention for safe performance. The associated tools also require special attention and personnel performing maintenance should be well trained to avoid physical injury to hearing, vision, hands and limbs, damage to equipment, tools, facilities and the environment.

9. Accident Investigations

In the event of an aircraft accident, the UN will carry out an Aviation Safety Technical Investigation (ASTI) and conduct a Board of Inquiry (BOI), which are both internal procedures of the United Nations. All aircraft accidents must be investigated thoroughly, regardless of how obvious the cause(s) may be. All contributing factors will be considered and remedial action taken to prevent further occurrences. Accident investigations are conducted professionally with a focus on accuracy to objectively establish the reason(s) for the accident.

Accidents involving military aircraft are normally investigated by the investigating authority of the state of occurrence in conjunction with the relevant investigating authorities of the government of the state to which the military aircraft belongs. As the hirer of the aircraft, the UN will be an accredited representative in such investigations. [Legal note: The intention to be an accredited representative will be filed by the UN Mission concerned in the accident report to the responsible investigative authority of the state of occurrence, and to the government of the state to which the military aircraft belongs.]

Aviation Safety Technical Investigations are formal in nature. However, the military aviation unit commander may task initially the flight safety officer to conduct a preliminary investigation to determine the accident's probable cause. The military aviation unit commander may forward the findings to the ASTI for in-depth analysis. For a more detailed discussion, see the chapter on investigations in the UN Aviation Safety Manual, (March 2012).

GLOSSARY

While not intended to be all-inclusive, the following definitions clarify the most commonly used terms in UN aviation. For those terms not covered here, the definitions contained in the annexes to the Convention on International Civil Aviation (also known as the Chicago Convention) apply.

1. **Absolute Ceiling.** The maximum altitude above mean sea level at which an aircraft can maintain horizontal flight under standard atmospheric conditions.
2. **Accountable Officer.** The UN official exercising overall responsibility and authority for management of air transport and aviation safety.
3. **Acceptance Checklist.** A document used to assist in checking the external appearance of dangerous goods packages and their associated documents to determine that all appropriate requirements have been met.
4. **Aerodrome.** A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.
5. **Aeronautical Product.** Any aircraft, aircraft engine, propeller, or sub-assembly, appliance, material, part, or component to be installed thereon.
6. **Aeroplane or Airplane.** A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces that remain fixed under given conditions of flight.
7. **Aircraft Category.** Classification of aircraft according to specified basic characteristics (e.g., aeroplane/airplane, helicopter, glider, free balloon).
8. **Aircraft (Type Of).** All aircraft of the same basic design including all modifications thereto except those modifications that result in a change in handling or flight characteristics.
9. **Airframe.** The fuselage, booms, nacelles, cowlings, fairings, airfoil surface (including rotors but excluding propellers and rotating airfoils of an engine), and landing gear of an aircraft and their accessories and controls.
10. **Air Navigation Facility.** Any facility used in, available for use in, or designed for use in aid of air navigation, including aerodromes, landing areas, lights, any apparatus or equipment for disseminating weather information, for signaling, for radio directional finding, or for radio or other electrical communication, and any other structure or mechanism having a similar purpose for guiding or controlling flight in the air or the landing and take-off of aircraft.

11. **Air Operator Certificate (AOC).** A certificate authorizing an operator to carry out specified air transport operations.
12. **AOC Holder.** A civil air transport operator in possession of a valid air operator certificate. “AOC holder” is used as an alternative to “operator” when referring to a civil air transport operator.
13. **Air Traffic Control (ATC).** A service provided for the purpose of expediting and maintaining an orderly flow of traffic by preventing collisions between aircraft and (on the maneuvering area) between aircraft and obstructions.
14. **Air Traffic Control Unit (ATU).** A generic term meaning variously, area control centre, approach control unit or aerodrome control tower.
15. **Appliance.** Any instrument, mechanism, equipment, part, apparatus, or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight, is installed in or attached to the aircraft, and is not part of an airframe, engine, or propeller.
16. **Approach Procedure with Vertical Guidance (APV).** An instrument approach procedure that utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.
17. **Approved Maintenance Organization (AMO).** An organization approved by a contracting state, in accordance with the requirements of ICAO Annex 6, Part 1, Chapter 8 – Aeroplane Maintenance, to perform maintenance of aircraft or parts thereof and operating under supervision approved by that state. An AMO may be part of an operator’s organization or it may be another organization to which the operator has sub-contracted maintenance tasks.
18. **Approved Maintenance Program.** A maintenance program by the state of registry.
19. **Approved Training.** Training conducted under special curricula and supervision approved by a contracting state that, in case of flight crew members, is conducted within an approved training organization.
20. **Authority.** The civil aviation authority of the operator’s (AOC holder’s) state.
21. **Calendar Day.** The period of elapsed time, using Co-ordinated Universal Time or local time that begins at midnight and ends 24 hours later at the next midnight.
22. **Certify as Airworthy.** To certify that an aircraft or parts thereof comply with current airworthiness requirements after maintenance has been performed on the aircraft or parts thereof.
23. **Certifying Staff.** Those personnel who are authorized by the approved maintenance organization in accordance with a procedure acceptable to the authority / state of registry to certify aircraft or aircraft components for release to service.

24. **Commercial Air Transport Operation.** An aircraft operation involving the transport of passengers, cargo, or mail for remuneration or hire.
25. **Continuing Airworthiness Information.** Any information necessary to ensure that an aircraft or aircraft components can be maintained in a condition such that airworthiness of the aircraft, or serviceability of operational and emergency equipment, as appropriate, is assured.
26. **Contracting States.** All states that are signatories to the Convention on International Civil Aviation (Chicago Convention).
27. **Controlled Flight.** Any flight that is subject to an air traffic control clearance.
28. **Co-Pilot.** A licensed pilot serving in any piloting capacity other than as pilot-in-command but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction.
29. **Crew Resource Management.** A program designed to improve the safety and efficiency of flight operations by optimizing error management, through the effective use of all available resources, by flight crew.
30. **Critical Engine.** The engine whose failure would most adversely affect the performance or handling qualities of an aircraft.
31. **Critical Phases of Flight.** Those portions of operations involving taxiing, takeoff and landing, and all flight operations below 10,000 feet, except cruise flight.
32. **Dual Instruction Time.** Flight time during which a person is receiving flight instruction from a properly authorized pilot on board the aircraft.
33. **Flight Crew Member.** A licensed crew member charged with duties essential to the operations of an aircraft during flight duty period.
34. **Flight Duty Period.** The total time from the moment a flight crew member commences duty, immediately subsequent to a rest period and prior to making a flight or series of flights, to the moment the flight crew member is relieved of all duties having completed such flight or series of flights.
35. **Flight Following.** The recording in real time of departure and arrival messages by operational personnel to ensure that a flight is operating and has arrived at the destination airport.
36. **Flight Monitoring.** In addition to requirements defined for flight following, flight monitoring includes the:
- a. Operational monitoring of flights by suitably qualified operational control personnel from the point of departure throughout all phases of flight.

- b. Communication of all available and relevant safety information between the operational control personnel on the ground and the flight crew.
- c. Provision of critical assistance to the flight crew in the event of an in-flight emergency or security issue or at the request of the flight crew.

37. **Flight Time (Aeroplanes/Airplanes).** The total time from the moment an aeroplane first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight. Flight time as here defined is synonymous with the term “block to block” or “check to check” time in general usage which is measured from the first time an aeroplane first moves for the purpose of taking off until it finally stops at the end of the flight).

38. **Flight Time (Helicopters).** The total time from the moment a helicopter’s rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped.

39. **Flight Watch.** In addition to all of the elements defined for flight following and flight monitoring, flight watch includes the active tracking of a flight by suitably qualified operational control personnel throughout all phases of the flight to ensure that it is following its prescribed route, without unplanned deviation, diversion or delay and in order to satisfy state requirements.

40. **Helicopter.** A heavier-than-air aircraft supported in flight chiefly by the reaction of the air on one or more power-driven rotors on a substantially vertical axis.

41. **Inspection.** The examination of an aircraft or aeronautical product to establish conformity with a standard approved by the appropriate authority. The inspection could be visual or by use of other means.

42. **Instrument Approach Procedure.** A series of predetermined maneuvers by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as Non-Precision Approach (NPA) Procedure and Approach Procedure with Vertical Guidance (APV).

43. **Instrument Flight Time.** Time during which a pilot is piloting an aircraft solely by reference to instruments and without external reference points.

44. **Instrument Training.** Training received from an authorized instructor under actual or simulated instrument meteorological conditions.

45. **Large Aeroplane/Airplane.** An aeroplane/airplane of a maximum certified take-off mass of over 5,700 kg.

46. **Maintenance.** The performance of tasks to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.
47. **Maintenance Control.** The operator's procedure necessary to ensure that all scheduled and unscheduled maintenance is performed on the operator's aircraft on time all in a controlled and satisfactory manner.
48. **Maintenance Release.** A release completed and signed to certify that the maintenance work performed has been completed satisfactorily and in accordance with approved data and the procedure described in the maintenance organization's procedures manual.
49. **Master Minimum Equipment List (MMEL).** A list established for a particular aircraft type by the organization responsible for the type design with the approval of the state of design containing items, one or more of which is permitted to be unserviceable at the commencement of a flight. The MMEL may be associated with special operating conditions, limitations or procedures.
50. **Minimum Equipment List (MEL).** A list which provides for the operation of aircraft, subject to specified conditions, with particular equipment inoperative (which is) prepared by an operator in conformity with, or more restrictive than, the MMEL established for the aircraft type.
51. **Night.** The hours between the end of evening civil twilight and the beginning of morning civil twilight or such periods between sunset and sunrise, as may be prescribed by the appropriate authority. Civil twilight ends in the evening when the centre of the sun's disc is 6 degrees below the horizon and begins in the morning when the centre of the sun's disc is 6 degrees below the horizon.
52. **Non-Precision Approach (NPA) Procedure.** An instrument approach procedure that utilizes lateral guidance but does not utilize vertical guidance.
53. **Operational Control.** The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of aircraft safety and flight regularity and efficiency.
54. **Operator.** A person, organization or enterprise engaged in or offering to engage in an aircraft operation. Under UN standards, the term "AOC holder" is used in place of "operator" to refer to a civil air transport operator.
55. **Precision Approach (PA) Procedure.** An instrument approach procedure using precision lateral and vertical guidance with minima as determined by the category of operation. Lateral and vertical guidance refers to the guidance provided by either ground-based navigation, or computer-generated navigation data.
56. **Pilot-in-Command (PiC).** The pilot designated by the operator as being in command and charged with the safe conduct of the flight.

57. **Powerplant.** An engine used or intended to be used for propelling an aircraft. It includes turbo superchargers, and accessories necessary for its functioning, but does not include propellers.
58. **Pre-Flight Inspection.** The inspection carried out before flight to insure that the aircraft is airworthy and fit for the intended flight.
59. **Rating.** An authorization entered on or associated with a license and forming part thereof, stating special conditions, privileges or limitations pertaining to such license.
60. **Release to Service.** Documentary evidence that all required maintenance work has been completed and the aircraft is airworthy and ready for flight.
61. **Repair.** The restoration of an aircraft / aeronautical product to a serviceable condition in conformity with an approved standard.
62. **Small Aeroplane/Airplane.** An aeroplane/airplane of a maximum certified take-off mass of 5,700 kg, or less.
63. **State of Registry.** The state on whose register the aircraft is entered.
64. **State of Operator.** The state in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.
65. **Technical Log.** A document carried on board an aircraft for recording defects and malfunctions discovered during operation and for recording details of all maintenance carried out whilst the aircraft is operating between scheduled visits to the base maintenance facility. It also contains operating information relevant to flight safety, including sectors operated, and maintenance data that the operating crew need to know.

REFERENCES

The following documents provide more in-depth discussion and guidance on the topics covered in this manual. The dates of publication have been omitted to allow for the publication of updated versions. These UN and other references may be obtained through:

http://ppdb.un.org/Nav%20Pages/PolicyFramework_Default.aspx

1. DPKO-DFS United Nations Peacekeeping Operations Principles and Guidelines.
2. SOP on Implementation of Amendments on Conduct and Discipline in the Model Memorandum of Understanding Between UN and TCCs.
3. Memorandum of Understanding between the United Nations and Troop Contributing Countries.
4. DPKO-DFS Policy on Authority, Command and Control in UN Peacekeeping Operations.
5. LCS/SUPPLY/GT Sourcing of UNOE Weapons and Ammunition in Peacekeeping Operations.
6. COE Manual.
7. Generic Guidelines for TCCs Deploying Military Units to UN Peacekeeping Missions.
8. Policy Directive on Contributing Country Reconnaissance Team Visits.
9. Policy Directive on Pre-Deployment Visits.
10. International Air Transport Association - Dangerous Goods Regulations.
11. DPKO guidelines on levels of ammunition for peacekeeping operations.
12. DPKO-DFS Guidelines, Aviation Safety Manual.
13. Aviation Risk Management Policy.

14. UN aviation standards for peacekeeping and humanitarian air transport operations.
15. UN Night Vision Imaging Systems (NVIS) Policy.
16. Transport of Dangerous Goods Manual for UN PKO.
17. DPKO-DFS Aviation Manual.
18. UN Infantry Battalion Manual (Volumes I and II).
19. UN Standby Arrangements (UNSAS) in the Service of Peace Tables of Organization and Equipment.