Flying Humanitarians: The UN Humanitarian Air Service[*]

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Though the United Nations is often and rightly criticised for a lack of coordination and cooperation among the disparate family of UN agencies, the United Nations Humanitarian Air Service (UNHAS) provides a strong counter-example. It serves not only the World Food Programme (WFP), the Rome-based organization which originally created it, but also a large number of UN agencies and a plethora of non-governmental organizations (NGOs). UNHAS has achieved a positive reputation, though it is not without its critics, within the global humanitarian community. However, it is little known and understood outside its immediate users. By most accounts it performs remarkably well, perhaps explaining why so little attention is paid to it in the media and the wider public literature. The academic literature suffers a lacuna on the functions and operations of UNHAS; this introductory article is meant to help fill that vacuum.[1]

Services and Mechanisms

UNHAS is the world's main transporter of humanitarian personnel and aid during natural disasters and complex emergencies (that is, those involving human conflict). It provides aviation logistics to the fringes of the world, in places and situations where normal air carriers refuse to fly. UNHAS can thus be considered the "airliner for humanitarians", often going to places unreachable, for all practical purposes, by timely ground or sea routes. UNHAS' mandate is to provide "safe, efficient, responsive and cost-effective" air transport.[2] It provides its services to the global humanitarian community via a common pooling of aircraft, flying thousands of aid workers, relief specialists, doctors and critical supplies into locations "where no one else goes".[3] Originally established by the WFP in the 1980s as the WFP/Air Service, to carry its food and non-food items, the first operations opened humanitarian air corridors in Ethiopia, Somalia, Angola, and Sudan. Over the years, UNHAS gradually came to serve the wider community. Waste and numerous inefficiencies became readily apparent among humanitarian and development agencies in trouble spots as they competed for limited airstrips and logistics facilities while working towards the common goal of sustaining lives and alleviating human suffering. In Somalia in 1996 the WFP was assigned to lead the first "UN Common Air Service".[4] Given this successful initiative, in 2003, the United Nations High Level Committee on Management – part of the United Nations Development Group, a group designed to oversee the family of UN agencies – mandated the WFP to "manage aviation services for all UN agencies, non-governmental organizations and implementing partners".[5] With this official directive, UNHAS was born.[6] But since peacekeeping operations continued to have such a large and long-standing air component, they remain serviced by the UN Secretariat departments in New York, instead of the Rome-based UNHAS. Rather than owning aircraft, UNHAS contracts over 50 aircraft of many sizes and types. For example, Figure 6.1 shows a large Ilyushin Il-76

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airdropping WFP food bags and Figure 6.2 shows the Mi-8P, the workhorse of helicopter humanitarian delivery.[7] Both are Russian-built. UNHAS uses an online bidding process for a shortlisted pool of contractors. It provides the bulk of the humanitarian community's air transport into the world's hot spots. For instance, at the end of 2012, UNHAS operated in Afghanistan, Chad, the Central African Republic, Côte d'Ivoire, the Democratic Republic of the Congo, Ethiopia, Mauritania, Niger, Somalia, South Sudan, Sudan, Uganda, and Yemen.[8] The aviation service covers several broad areas: air support for WFP, including emergency airlifts and food drops; common air services for the humanitarian community; strategic airlifts, that is, ad hoc cargo flights for UN agencies, NGOs, donors, etc.; medical and security evacuations on request from the UN's Department of Safety and Security; and third party services "as able or required".[9] The service is often the *only* air carrier available for humanitarian operations, as commercial airlines are unable to tolerate the physical security risks of operating in violent and unstable conditions – precisely those areas where the humanitarian need is greatest. So it can be dangerous work. For example, in November 2010, three UNHAS crewmembers were abducted in the Darfur region of Sudan and were held for over a month.[10] In 2010, nearly 200 of the 240 UNHAS destinations were considered no-fly zones by commercial airlines.[11] The aircraft of UNHAS fly into and out of, for example, dangerous airfields in Mogadishu, Somalia, and Faizabad in Afghanistan; austere airstrips such as Pweto in the Democratic Republic of the Congo; remote locations in Sudan with no runways, where airdrops are necessary; and severely damaged areas like Haiti following the 2010 earthquake.

Figure 6.1 A World Food Programme/UN Humanitarian Air Service food drop in Upper Nile State, Sudan
Source: UN Photos 161581 and 161582, F. Noy, 14 November 2007.

Figure 6.2 A UN Humanitarian Air Service Mi-8P helicopter in El Geneina, West Darfur, Sudan

Source: Wikimedia commons, July 2007.[12]

The United Nations divides its aviation resources between those for peacekeeping (an immense undertaking) and those for other purposes. Aviation in support of ongoing UN peacekeeping operations is the responsibility of the Air Transport Section within the Department of Field Support (DFS) – see Chapter 16 in this volume. Aviation responsibility for "humanitarian and other" purposes lies mainly with UNHAS. The reason for this separation is primarily for political independence. Typically, aid agencies do not want to be associated with military operations of any kind, including UN peace operations. As one WFP aviation official put it: "keeping humanitarian and peacekeeping operations separate (along with minimizing reliance on aircraft supplied by host governments, especially in places experiencing civil conflict) is vital to maintaining credibility and independence".[13] Of course, these two sets of operations often need to be closely coordinated by the United Nations (see the last section of this chapter for a description of the difficulties).

Within the broader international humanitarian community there is a division of responsibilities into a series of "clusters", each of which is led by a specific agency, for example, the United Nations High Commissioner for Refugees (UNHCR) for emergency shelter, and UNICEF for water/hygiene, nutrition and education. Within each cluster humanitarian agencies work together (in theory, harmoniously), including the United Nations itself and its operations or agencies (such as the Food and Agriculture Organization, the UN Population Fund, UNHCR, and the World Health Organization), and major international NGOs, such as the International Committee of the Red Cross, and Médecins Sans Frontières. For example, when a major operation is required to supply refugee camps and internally displaced persons camps, an effort is made in concert with the UNHCR and the International Organization for Migration, as well as any peacekeeping operations in the area. The cluster attempts to prioritize the needs. Additionally, donor nations and their development agencies may also use UNHAS to deliver goods and services. For the entire effort, the United
Nations Office for the Coordination of Humanitarian Affairs (OCHA) is tasked to provide central coordination.[14]

Above and beyond air transport, WFP was designated the global lead organization within the international humanitarian community for logistics.[15] As air operations are a key component aspect of humanitarian logistics – moving people, critical supplies, life-saving equipment, and specialized goods in a timely manner – WFP was given wider responsibilities. UNHAS operations are usually launched upon a request to WFP from the humanitarian country team or the humanitarian coordinator to set up and manage a common air service in a specific country on behalf of the larger humanitarian community.[16]

When a peacekeeping mission also operates in the area, UNHAS aviation activities must be coordinated, often using common landing strips, air traffic controllers, and ground storage facilities. In most of the regions of the world where UNHAS operates, civil aviation authority is non-existent or lacks capacity or oversight abilities. To help ensure the safety of UN air movements, DFS, UNHAS and WFP's Aviation Safety Unit work with the International Civil Aviation Organization (ICAO). UN aviation standards were developed in conjunction with ICAO. The Montreal-based organization became a member of the WFP-led Logistics Cluster to help create a culture of safety with system-wide operational standards:

> These standards range from checking that licences, insurance and civil aviation credentials are current to whether potential operators have a good track record on safety and are not supporting illicit activities in between UN flights. This partnership has, over time, spawned additional collaborations, ranging from projects to rebuild airstrips in Sudan ... to planning how to maintain operations in the event of pandemic illness.[17]

Aircraft safety can be challenging in many areas where UNHAS flies because of politically unstable environments, sub-standard airfields (which are often unprepared gravel airstrips), lack of air traffic control, and limited or no weather forecasts. Through the monitoring and auditing done by WFP's Air Safety Unit, UNHAS seeks to achieve a basic standard of "fully equipped" aircraft.[18] This includes aircraft with traffic collision avoidance systems, enhanced ground proximity warning systems, and Global Positioning System (GPS) tracking alongside a host of cutting-edge communications technologies. The latter include automatic indicators of location and aircraft conditions in cases of crashes, and the flight data recorder or black box.[19] Likewise, in recent years coordination has increased globally on humanitarian air safety, with conferences held annually.[20] UNHAS has been able to maintain an enviable safety record in some of the most conflict-riddled countries in the world. It has been credited for raising the awareness of the aviation risks in the areas where it operates – notably in Africa where safety standards and culture as well as regulatory environments are generally weak.

Two brief cases of UNHAS operations help illustrate the service in action.

Case: Libya Operations

When the "Arab Spring" spread to Libya in mid-February2011, it quickly evolved from civil protests to violent conflict. Within a month the UN Security Council passed Resolutions 1970 and 1973 (2011), the latter establishing a no-fly zone over Libya and authorizing enforcement of an arms embargo (see Chapter 15 in this volume). It also demanded that the Libyan authorities "ensure the rapid and unimpeded passage of humanitarian assistance".[21] As the situation escalated, UNHAS was activated in May 2011 as commercial operators halted their operations in the face of the no-fly zone and regional insecurity.[22] Though commercial service was halted, the demand from humanitarian workers remained and UNHAS began to move relief workers into Libya and neighbouring countries.[23] Over a period of eight months, UNHAS moved passengers from 150-odd UN agencies, NGOs, and donor organizations. From its operational base in Malta, it routed aircraft through Cairo, Benghazi, Tripoli and Djerba (in

Tunisia). UNHAS also transported many international reporters so they could report on the humanitarian situation.[24] The editor of BBC World News later commented:

> It's no exaggeration to say that we couldn't have run our operations in Libya without the [UNHAS] assistance ... Many of my colleagues were spared the ordeal of long, often dangerous, journeys thanks to the UNHAS flights.[25]

On return trips, UNHAS aircraft took evacuees out of Libya, primarily labourers from nations lacking the capacity to evacuate their own citizens.[26]

As Libyan airspace was controlled by the North Atlantic Treaty Organization (NATO), which was enforcing the no-fly zone shortly after the adoption of Resolution 1973 (2011), UNHAS flew in NATO-controlled approach corridors.[27] Within NATO's Libya operation headquarters, the WFP-led logistics cluster was given observer status, which helped it ensure interagency coordination with an eye to the evolving military and political situation.[28] UNHAS operations ran from May to November 2011, ending at the same time as the NATO operation. In its six-month Libya operation, UNHAS moved some 4,700 passengers.[29]

Case: Haiti Post-earthquake

Immediately following the 12 January 2010 earthquake in Haiti, UNHAS launched an operation to facilitate transport of humanitarian personnel, food, medicines and other relief items to areas inaccessible by surface transport.[30] This occurred alongside intensive international efforts, led by the United States and its air force – see Chapter 5 in this volume. WFP coordinated the "logistics cluster" for the humanitarian community, and UNHAS not only transported emergency material but also made damage assessment flights to determine the areas most needing assistance.[31]

The service coordinated its work out of the Santo Domingo airport in the capital of the neighbouring Dominican Republic, specifically to reduce the burden on the collapsed Port-au-Prince airport. This helped keep non-essential logistics personnel outside the disaster zone so they would not encumber the on-site effort. This emergency operations centre in Santo Domingo became the coordination unit for humanitarian air services, as a large number of humanitarian logistics personnel were moved into the Caribbean nation.[32] Given the immense international attention focused on the disaster, at the initial stages funding was less of an immediate concern, allowing UNHAS to provide cost-free services to humanitarian personnel.[33]

While some in the humanitarian community and media were critical of the American "control" of the Haitian air relief operations, the flight logs indicated that this claim can hardly be supported by the available evidence.[34] Sir John Holmes, Under-Secretary-General for Humanitarian Affairs and the Emergency Relief Coordinator, publicly commended the American effort:

> The Americans taking over the Port-au-Prince airport was absolutely crucial; ... clearly there were some glitches. But I don't think there was any intention to favor military flights over humanitarian flights. It was simply quite difficult to set up a system that included genuine real-time priorities.[35]

The close interaction between senior UNHAS personnel and US Air Force controllers suggests that there was mutual respect in the emergency, hardly an example of American "imperialism". One of the most senior WFP aviation logistics managers was placed at the Tyndall Air Force base (Florida), which housed the Haiti Flight Operations Coordination Center. The goal was to integrate the military response efforts and the humanitarian response efforts at a senior level.[36] Civilian aviation management personnel provided guidance to the US military. They were specially tasked to apportion airspace so that priority humanitarian needs, as identified by the humanitarian leadership in Haiti, could be met.[37] Granted, the integration of these two distinct communities (military and civilian) was a challenge, but coordination was essential to save lives. As one of the WFP deployed officials noted, "humanitarian relief is and should remain a predominantly civilian function; however foreign military assets can play a valuable role in natural disaster relief".[38] The US military could bring to bear an unsurpassed capacity for mass airlift. A civil– military aviation framework, with protocols and guidelines, was developed to ensure that both civilian and military flights were "properly prioritised, synchronised, and executed".[39] WFP's Haiti Logistics Cluster reports show that approximately 10 days after the disaster, the US military was "assisting with clearance of relief cargo, the ferrying of goods for airlift and loading of organisation's trucks as required".[40] The Logistics Cluster placed a civil/military liaison officer in Miami with United States Southern Command, the lead military command for the US military response to the Haitian disaster. UNHAS' Chief Air Transport Officer also worked in Miami for five crucial days to prioritize flights and establish the "slot mechanism" with Southern Command.[41]

By the end of 2010, UNHAS had moved some 20,000 passengers, alongside 2,600 tons of cargo for 162 agencies in its Haitian response. This included aviation transport throughout the country on a scheduled basis, utilizing small airfields and helicopter landing zones and "piggy-backing" onto the logistics and infrastructure of the United Nations Stabilization Mission in Haiti, which had been established in 2004. UNHAS provided regular air-transport schedules and mission-specific services, such as airborne damage assessments and, in conjunction with the emergency humanitarian telecommunications team, it supported the establishment of radio networks for the humanitarian community.[42] Although UNHAS concluded its own operations in Haiti at the end of March 2011, its Logistics Cluster continued to explore the "options for air transport, including commercial companies, which can be offered to Logistics Cluster participants as an alternative" to UNHAS services.[43]

UN Humanitarian Air Service Accomplishments and Challenges

The scope of UNHAS operations is impressive: in 2011 alone, for example, UNHAS moved over 350,000 people between 350 destinations, as well as about 3,500 tons of humanitarian cargo. A total of 870 specific agencies and organizations were served: the majority (54 percent) of the users were NGOs, 40 percent were UN agencies, and 6 percent were donor (national) missions and the media. Overall, UNHAS provides some 80 percent of global humanitarian aviation. Figure 6.3 provides the approximate number of passengers by agency and NGO moved by UNHAS. UNHAS also helped capacity-building by providing training for flight dispatchers and crew.

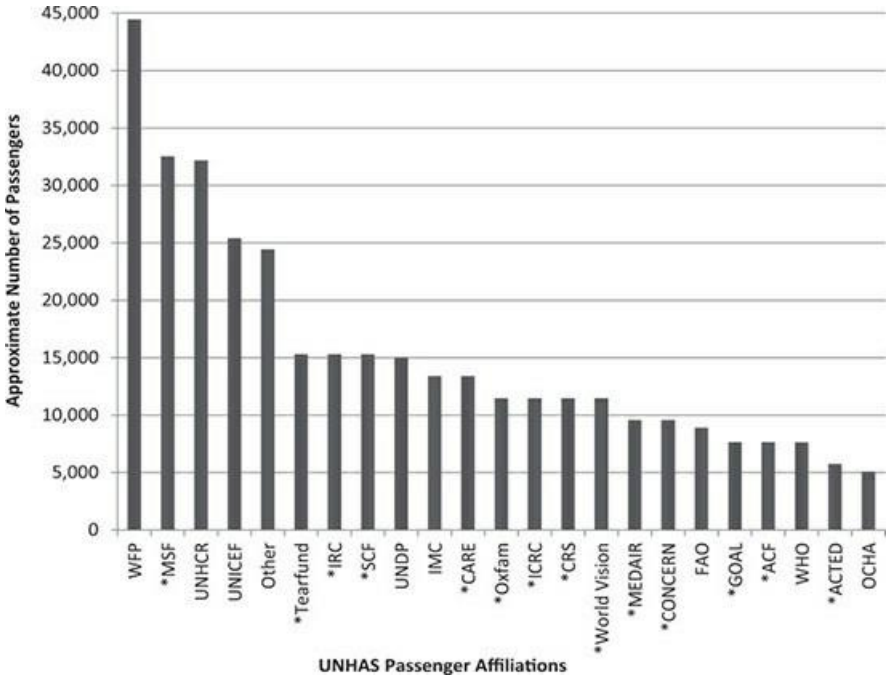

Figure 6.3 UN Humanitarian Air Service passenger numbers by UN agency and non-governmental organization (NGO), 2011
Note: NGOs marked with *
Sources: World Food Programme reports.[44]

UNHAS spent nearly US$200 million in 2011, with an average cost per flying passenger of roughly US$450. The UNHAS system is based on a cost-recovery scheme: it does not usually provide free service to its users, though it may subsidize the costs.[45] Chartering and operating aircraft is an expensive endeavour at the best of times, and often UNHAS works in poor, landlocked locations, with major changes in demand happening quickly and often, especially for its NGO "clients" with limited budgets. To survive, UNHAS must rely on voluntary donor (national) contributions, in addition to some funding from the United Nations itself. Cost recovery is increased by using flight management tools, working with partners to combine services, optimizing routes, reducing cargo load, and using the least expensive but still safe aircraft. Yet because UNHAS usually flies where commercial operations cannot or will not for security or economic reasons, so economies of scale may not apply and costs can be large.[46] A constant challenge, also typical of NGO operations, is to obtain long-term funding.[47] An external review found that UNHAS':

> weak fundraising capacity does it no favours. Better long-term planning, a common fund for common services combined with multi-agency support and better WFP/UNHAS fundraising approaches and materials, are required in order to provide a degree of much needed stability to the service.[48]

UNHAS has been described as a "shoe-string organisation that, out of necessity, places all emphasis for safety on the shoulders of the air carriers", that is, the commercial vendors hired by UNHAS.[49] This can be dangerous because these carriers, seeking to save costs and maximize

profits, often take short cuts that may not meet UN and ICAO standards. To prevent this, UNHAS seeks to vet carriers through visits to company headquarters prior to registration and to carry out UNHAS inspections during operations. But UNHAS' few staff and small operational footprint does:

> little to overcome the obvious risk of operating with some of the lowest cost operators (particularly freight carriers) in some of the most demanding areas with the least effective regulation.[50]

UNHAS is forced to give its contractors more freedom than do the UN peacekeeping departments (DFS/Department of Peacekeeping Operations (DPKO)). UNHAS officials have even balked at the greater regulation and quality assurance that are put in place by the United Nations in peace operations. This might mean UNHAS developing standard procedures such as the weighing of overly heavy carry-on baggage, imposing a maximum number of flying hours on crews, restricting flights when fire-service levels drop, or halting operations when no fire service is available. In another example of the more tolerant regime of UNHAS compared to DFS/DPKO, UNHAS has shown a greater willingness to use single-engine aircraft. Despite their good safety record, such aircraft are inherently more dangerous in cases of engine failure, especially in locations like Congolese jungles where safe crash-landing is almost impossible.
Since UNHAS does not have the capacity for major infrastructure projects, UNHAS culture has grown accustomed to living without it. It must fly to airports that are nothing more than rough landing strips. In emergency relief situations there is no time to resolve such things but later, once a routine service has been established, the situation should improve, though it often does not. Still, UNHAS does repair runways when necessary to fly, and does so "much faster and with much less fuss and bureaucracy than the United Nations".[51] It has gained a reputation as a "can do" service. UNHAS personnel get to the emergency zones first and "do what is needed to get the job done". The departure lounge might be a tree and the office might be a Toyota but this low-budget approach is familiar to (and often appreciated by) other aid workers. By contrast, the United Nations appears more regulated, more bureaucratic and prevented by its safety culture from taking higher risks, which is sometimes necessary during operations in combat zones with inadequate funding. Unlike UNHAS, the UN's DFS and DPKO can oblige UN member nations to pay for peacekeeping aviation and so can afford greater regulation, which improves its safety record. UNHAS, to its credit, does work with the UN's DFS and DPKO to ensure service delivery is appropriate, given the funding, political situations, and risk profiles. Sometimes UNHAS takes responsibility to fly certain routes, while DFS/DPKO flies others in a complementary fashion, though parallel services sometimes occur.[52]

Since DFS/DPKO usually do not charge aid workers, these persons typically prefer to fly on peacekeeping mission flights, even if they are not guaranteed a seat. Thus, UNHAS finds that some of its clientele is diverted to these aircraft, making passenger manifests and cost efficiencies less predictable.

Planning is particularly difficult for long-term needs: the sudden requirements in Haiti from the unexpected 2010 earthquake could not be forecast, for example. Financial pressures often result in service drawdowns driven by financial, rather than humanitarian needs. Likewise, once commercial air services become established UNHAS usually ends its operations, making long-term planning dependent on the precarious commercial aviation sector.[53] The service is also open to other criticisms, such as being:

> perceived as UN-centric (the "One UN" approach blurs the lines among development, humanitarian and political actors); unclear governance and policy development mechanisms; non-standardised systems throughout its various operations; a high cost base; relatively limited cargo transport capacities; problems of staff motivation and grading; and, finally, a reluctance to engage in, or provide guidance for infrastructural rehabilitation, such as of airstrips.[54]

That said, the critics recognize that the service has built "a reputation for a strong safety and security ethos, based on internationally recognised, professional modalities" while operating in complex operational environments and often facing politically "constraining official requirements".[55]

Officialdom and bureaucratic administration are enablers and, at the same time, the bane of field workers, including UNHAS personnel. The humanitarians sometimes feel excruciating psychological pain as innocent people die during conflicts and natural disasters while administrative procedures hold up lifesaving deliveries. Still, those procedures make possible aid services such as UNHAS.

Two large policy issues could be debated in the future: (1) should the UN continue with a dual-track airlift program (peacekeeping and humanitarian) or consolidate the operations to reduce some of the administrative overlap and redundancy, possibly resulting in savings and better coordination?; (2) should UNHAS continue with its "pay-as-you-go" financial posture while attempting to get internally a more stable funding base from member states and users?[56]

In any case, UNHAS' wealth of aviation experience will remain a valuable reservoir of expertise to address a critical component of humanitarian action.[57] The WFP's UNHAS is currently filling a vital interagency role, having become not only the UN's common air service but also an important service provider for NGOs and the media. Because of its committed staff, with honed experience in multisector coordination, its wide mandate, and its economies of scale, it can attract contributions from nations, as well as the organizations it serves.[58] It complements the airlift for peacekeeping operations that is provided directly by the UN's DFS. By making the timely and cost-effective delivery of humanitarian goods its priority, UNHAS is putting into practice the UN's goal of saving lives and alleviating human suffering.

Endnotes

[1] Aside from publications of the United Nations, the World Food Programme and their employees, the authors could identify few academic publications on UNHAS, which typically focus on humanitarian logistics.
[2] World Food Programme. "United Nations Humanitarian Air Service" (WFP, 2012). Available at: http://www.wfp.org/content/united-nations-humanitarian-airservice-unhas [accessed 15 April 2013].
[3] Cole, A. "WFP Aviation: Meeting the Air Transport Needs of the Humanitarian Community", *ICAO Journal* 66(6) (2011), 18.
[4] Ibid. Given the UNHAS relationship with the WFP, plus the fact that the WFP runs some of its own aviation separate from UNHAS, there are several variations on the name given to aviation support coordinated by WFP: "WFP–Aviation"; "WFP–UNHAS"; "UNHAS" (the term used for this chapter); or "WFP–Aviation/UNHAS". While closely synonymous they are not identical in meaning. For the purposes of this chapter, however, the distinction between them is not made.
[5] Quinn, E. "Logistics for Food Assistance: Delivering Innovations in Complex Environments", in *Revolution: From Food Aid to Food Assistance – Innovations in Overcoming Hunger*, edited by Steven Were Omamo, Ugo Gentilini, and Susanna Sandström (Rome: World Food Programme, 2010), 311.
[6] Cole, "WFP Aviation", 19.
[7] Aircraft used by UNHAS include: jets like the Bombardier B1900D, and Dornier J-328; propeller aircraft like the Beechcraft B1900C, Cessna C208B (Caravan), de Havilland Canada Dash-8, Embraer 120, Let-410 (Kunovice), and Pacific Aerospace Pac 750XLV; and helicopters like the Bell 212 Twin Huey and Mil Mi-8T/8P/8MT. The cargo aircraft include: the Antonov An-12, An-24, An-26, and An-124; Boeing 747; Ilyushin Il-76; and McDonnell Douglas MD-11. At times, UNHAS has been called "UN Humanitarian Air Services" as can be seen from the wording on the side of the helicopter in Figure 6.2.
[8] World Food Programme. *WFP Aviation Review 2011* (Rome: World Food Programme, 2012).
[9] Maslyukov O. "WFP Aviation: The Global Leader in Humanitarian Air Support" (PowerPoint presentation at the 4th Global Humanitarian Aviation Conference, Dead Sea, 9 October 2012), 4. Available at: http://annualghac.com/wpcontent/uploads/2012/04/D1-S2-WFP-WFP-Aviation.pdf
[10] Abdelmoneim Abu Edries Ali. "Gunmen 'Kidnap Latvia Helicopter Crew' in Darfur". Agence France-Presse, 5 November 2010; United Nations News Service. "Three UN Air Service Crew Members Freed from Captivity in Darfur". United Nations News Centre. 8 December 2010. Available at: http://www.un.org/apps/news/story.asp?NewsID=36994 [accessed 7 May 2014].
[11] World Food Programme. *WFP Aviation Review 2010* (Rome: World Food Programme, 2011), 2.
[12] Image from Melting Tarmac Images. Available at: http://commons.wikimedia.org/wiki/File:UNHAS_(Heli_Air_S 8P_MTI-3.jpg [accessed 31

December 2013]. Also available at: http://www.airliners.net/photo/United-Nations-(Heli/MilMi-8P/1297724/L/ [accessed 7 May 2014].

[13] Cole, "WFP Aviation", 19.

[14] United Nations Office for the Coordination of Humanitarian Affairs. "Cluster Coordination", OCHA, n.d. Available at: http://www.unocha.org/what-wedo/coordination-tools/cluster-coordination [accessed 7 May 2014]

[15] The WFP also manages and coordinates the cluster responsible for emergency telecommunications.

[16] World Food Programme Global Logistics Cluster. "Air Operations", *Global Logistics Operational Guide*, "Operational Environment", 2012. Available at: http://log.logcluster.org/operational-environment/airoperations/index.html [accessed 15 April 2014].

[17] Cole, "WFP Aviation", 19.

[18] Donoghue, J.A. "Safety on the Frontier", *AeroSafety World* 6(2) (March 2011), 27.

[19] "Pierre Carrasse: Helping Humanity from the Air", *Flight International* 180(5306), (30 August 2011), 67.

[20] See Global Humanitarian Aviation Conference. "Global Humanitarian Aviation Conference", n.d. Available at: http://annualghac.com

[21] United Nations Security Council Resolution 1973(2011). UN Doc. S/RES/1973 (2011), 17 March 2011, para.3.

[22] Global Logistics Cluster. *North Africa Crisis: Logistics Cluster Operations Report 2011* (April–December2011). (Rome: World Food Programme, 2012), 3. Available at: http://reliefweb.int/sites/reliefweb.int/files/resources/Full_Report_3363.pdf

[23] World Food Programme, *WFP Aviation Review 2011*, 22.

[24] Cole, "WFP Aviation", 20.

[25] Ibid.

[26] Ibid.

[27] World Food Programme, *WFP Aviation Review 2011*, 22.

[28] Cole, "WFP Aviation", 20.

[29] Global Logistics Cluster. *North Africa Crisis: Logistics Cluster Operations Report 2011* (April–December 2011), 3.

[30] World Food Programme. *WFP Aviation Review 2010*, 16.

[31] In general, for views on the humanitarian logistics response, see Whiting, M.C. "The Haiti Earthquake, January2010", *Logistics & Transport Focus* 12(4) (April 2010), 26–9; Heraty, M. "Haiti: The Logistics Response and Challenges", *Logistics & Transport Focus* 12(5) (June 2010), 42–5; Heraty, M. "Logistics Response and Needs in Haiti – a Field Perspective", *Logistics & Transport Focus* 12(5) (May 2010), 35–8.

[32] Whiting, "The Haiti Earthquake".

[33] Thompson, J. "The Santo Domingo Operations Center", World Food Programme Logistics Blog, 31 January 2010. Available at: http://www.wfp.org/logistics/blog/santodomingo-operations-center [accessed 15 April 2014]. Thompson, J. "Daily UNHAS Shuttle from Santo Domingo to Port-Au-Prince Runs Like a Well Oiled Machine", World Food Programme Logistics Blog, 28 January 2010. Available at: http://www.wfp.org/logistics/blog/daily-unhas-shuttlesanto-domingo-port-au-prince-runs-well-oiled-machine [accessed 15 April 2014].

[34] Mendoza, M. "Haiti Flight Logs Detail Early Chaos", Associated Press Newswire, 18 February 2010. Available at: http://www.utsandiego.com/news/2010/feb/18/ap-impacthaiti-flight-logs-detail-early-chaos [accessed 15 April 2014].
[35] Ibid.
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[37] Whiting, M.C. "Military and Humanitarian Cooperation in Haiti's Air Operations", News, Humanitarian Logistics Association, 2010. Available at: http://www.odihpn.org/humanitarian-exchange-magazine/issue-53/military-and-humanitarian-cooperation-inair-operations-in-haiti [accessed 7 May 2014].
[38] Ibid.
[39] Ibid.
[40] World Food Programme Haiti Logistics Cluster. "Logistics-Cluster Haiti: Consolidated Situation Report", Logistics Consolidated Situation Report (Port-au-Prince and Santo Domingo, 23 January 2010), sec. 3. Available at: http://logcluster.org/document/situation-report-consolidated23-january-2010 [accessed 7 May 2014].
[41] Ibid.
[42] Thompson, J. "WFP's UNHAS Transports Emergency Telecoms Team to the Remote Mountains of Ile de la Gonave, Haiti", World Food Programme Logistics Blog, 29 March 2010. Available at: http://www.wfp.org/logistics/blog/wfpsunhas-transports-emergency-telecommunications-teamremote-mountains-ile-de-la-gonave-haiti
[43] United Nations Office for the Coordination of Humanitarian Affairs. "Humanitarian Bulletin for 25 March – 10 April 2011", OCHA Weekly Haiti Humanitarian Bulletin (Port-au-Prince, 25 March 2011), 4. Available at: http://reliefweb.int/sites/reliefweb.int/files/resources/report_0.p [accessed 7 May 2014].
[44] World Food Programme. *Annual Report of the World Food Programme for 2011 to the Economic and Social Council and the Council of the Food and Agriculture Organization of the United Nations*, UN Doc. E/2012/14, 29 February 2012, para. 36; World Food Programme, *WFP Aviation Review 2011*, ii, 4.
[45] World Food Programme, *WFP Aviation Review 2011*, ii, 1–4; Channel Research, John Telford, and Robert Thomson. *Evaluation on the Provision of Air Transport in Support of Humanitarian Operations, Contract Report for the European Commission* (Ohain, Belgium: Channel Research, 29 March 2010). Available at: http://ec.europa.eu/echo/files/evaluation/2010/Air_Transport_E [accessed 15 April 2014].
[46] Cole, "WFP Aviation", 20.
[47] The following reviews of UNHAS capture some of these challenges: Channel Research, Telford, and Thomson. "Evaluation on the Provision of Air Transport in Support of Humanitarian Operations"; Channel Research, John Telford, and Robert Thomson. "Review on the Provision of Air Transport in Support of Humanitarian Operations", Contract Report for the European Commission (Ohain, Belgium: Channel Research, 29 March 2010). Available at: http://ec.europa.eu/echo/files/evaluation/2010/Air_Transport_R [accessed 15 April 2014]. Joint Inspection Unit of the United Nations System. Review of the United

Nations Humanitarian Air Service, UNJIU Report 2008-3 (Geneva: United Nations, 2008). Available at: https://www.unjiu.org/en/reportsnotes/archive/JIU_NOTE_2008_3_English.pdf [accessed 15 April 2014]. See also the annual *WFP Aviation Review* reports. Channel Research, 29 March 2010). Available at: http://ec.europa.eu/echo/files/evaluation/2010/Air_Transport_R [accessed 15 April 2014]. Joint Inspection Unit of the United Nations System. Review of the United Nations Humanitarian Air Service, UNJIU Report 2008-3 (Geneva: United Nations, 2008). Available at: https://www.unjiu.org/en/reportsnotes/archive/JIU_NOTE_2008_3_English.pdf [accessed 15 April 2014]. See also the annual *WFP Aviation Review* reports.

[48] Channel Research, Telford, and Thomson, Evaluation on the Provision of Air Transport in Support of Humanitarian Operations, 6.

[49] Conversations and emails from UN aviation officials with experience at headquarters and in the field, including an email of 30 April 2013.

[50] Ibid.

[51] Ibid.

[52] Ibid.

[53] World Food Programme, *WFP Aviation Review 2011*, 8.

[54] Channel Research, Telford, and Thomson, "Evaluation on the Provision of Air Transport in Support of Humanitarian Operations", 6.

[55] Ibid.

[56] The authors are indebted to Robert Owen for raising these overarching policy issues and for his more general review of the paper reproduced in this chapter.

[57] See, for example, Donoghue, "Safety on the Frontier", 25–7.

[58] Channel Research, Telford, and Thomson, "Evaluation on the Provision of Air Transport in Support of Humanitarian Operations", 6.