



Case Report

Long-Distance, Nonstop Neonatal Transport From Shanghai, China, to Genoa, Italy



Carlo Bellini, MD, PhD ^{*1}, Simona Serveli, RN ¹, Luigi A ², Pietro M ², Daniele S ², Luca A. Ramenghi, MD, PhD ¹, Tiziana Cinti, RN ¹, Francesco Campone, MD ¹

¹ Neonatal Intensive Care Unit, Neonatal Emergency Transport Service, IRCCS Istituto Giannina Gaslini, Genoa, Italy

² The Italian Air Force

A B S T R A C T

The purpose of this article is to describe the long-distance, nonstop intercontinental transport of a severely ill, mechanically ventilated newborn from Shanghai, China, to Genoa, Italy focusing in particular on the clinical and planning difficulties. The aircraft equipment, the assessment and preparation for transport are discussed.

Copyright © 2018 Air Medical Journal Associates. Published by Elsevier Inc. All rights reserved.

The purpose of this article is to describe the long-distance, nonstop intercontinental transport of a severely ill, mechanically ventilated newborn from Shanghai, China, to Genoa, Italy (Fig. 1). In particular, we focus on the clinical and planning difficulties.^{1,2}

On July 20, 2016, the Italian Foreign Office, the Farnesina, contacted our neonatal emergency transport system (NETS) at the Gaslini Children's Hospital, Genoa, Italy, in regard to a possible, long-distance, neonatal transport from Shanghai, China, to Italy. A 10-day-old Italian newborn had been admitted to the Shanghai United Family Hospital because he had a sudden cardiac arrest at home. He successfully underwent cardiopulmonary resuscitation on the way to the referring hospital emergency room where he was intubated and placed on mechanical ventilation and supportive medical therapy upon arrival. The family requested the Italian Embassy in Beijing to contact the Italian diplomatic authorities to arrange transport of the newborn to Italy. The Farnesina set about coordinating the Italian consulates in Beijing and Shanghai; the Italian Air Force, in particular, the 31st Flight Formation, WING

(31° Stormo), based in Ciampino, Rome; and our NETS.

Planning the Flight

The Italian Air Force established the flight plan (Fig. 2). The estimated time of departure (ETD) from the Ciampino (Rome) (LIRA) base was 0500 Zulu on July 22, 2016, and the estimated time of arrival (ETA) in Genoa (LIMJ) to pick up the medical team was 0600 Zulu. The ETD from Genoa was 0630; the ETA to Tolmachevo (Novosibirsk, Siberia, Russia; Аэропорт Новосибирск-Толмачёво) (UNNT-УННТ) for refueling was 1300 Zulu, and the ETD was 1400 Zulu. The ETA to Pudong Shanghai (China) (ZSPD) was 1915 Zulu. For the return route, the ETD from Shanghai was 2230 Zulu, the ETA to Tolmachevo was 0400 Zulu on July 23, 2016, and the ETD was 05.00; the ETA to Genoa to conclude the medical mission was 1200 Zulu. The Italian Air Force then concluded the flight by flying back to the Ciampino base (Rome) ETA 14.00 Zulu. Altogether, 12,000 nautical miles (22,200 km) were flown during this transport. Based on the flight plan, it was decided that 2 flight crews would be needed to complete the mission; the first would have flown the Falcon to Shanghai where the second crew would be waiting to replace

the first and to fly back. The Italian Air Force assigned the Falcon F900 Easy aircraft, registered MM62245, to the mission. We chose the following en-route alternate aerodromes during the planning stage. One en-route alternate aerodrome was identified for every 400 nautical miles (ie, about 1 hour flying time); each scheduled aerodrome was an airport of entry. The list was prepared taking into account both the need for an alternate aerodrome where the Falcon would be able to land in the event of an engine shutdown or other abnormal or emergency event and the availability of level III neonatal intensive care units. The first choice list included ZBAA/PEK 北京首都國際機場, Běijīng Shǒudū Guójì Jīchǎng, International Airport, China; ZMUB/ULN Чингис хаан олон улсын нисэх буудал, International Airport Ulan-Bator Genghis Khan, Mongolia; UACC/TSE JSC International Astana Airport, Kazakhstan; UNOO/OMS Omsk Airport, Russia; USPP/PEE Bol'shoë Savino Аэропорт Пермь-Большое Савино, Perm Airport, Russia; UWGG/GOJ Meždunarodnyj Aeroport Nižnij Novgorod Airport, Russia; UJEE/SVO Международный Аэропорт Шереметьево, International Airport Šeremet'ëvo, Moscow, Russia; and EPWA/WAW Lotnisko Chopina w Warszawie, International Airport Warsaw, Poland.

* E-mail address: carlobellini@gaslini.org (C. Bellini).

A meteorological air report, a trend type forecast, and a terminal aerodrome forecast were used during the flight to inspect and update meteorologic data in real time thanks to the instruments that are available on the Falcon 900 Easy and that also provided assistance through a Notice to Airmen. Further assistance was also provided by the Flight Information Service, operating via satellite communications connecting to the 31st Flight Formation, Wing (31° Stormo) base in Ciampino, Rome, Italy.

The F900 Easy is a business jet that is usually operated by the Italian Air Force for governmental flights or humanitarian missions; the aircraft is already fully equipped for medical use, and, furthermore, it is possible to set the cabin pressurization pressure degree depending on the specific medical needs. Because of the unusual characteristics of this particular neonatal transport, we had to improve and adapt the equipment on board the aircraft.

Equipping the Aircraft

After a thorough evaluation of the patient's medical records in order to determine his history and conditions, it was clear that mechanical ventilation would have been needed throughout the entire flight; thus, it became evident that the first and foremost task was to establish a complete and befitting list of indispensable devices and medications, including the essential air and oxygen spares. In order to establish the right number of tanks that had to



Figure 1. A photographic chronicle of the long-distance transport. Panels 1-3: boarding operations on the Genoa runway in order to stow the equipment. Panel 4: the crew. Panel 5: ready to go. Panels 6-8: on the way to Shanghai, refueling stop at Novosibirsk, Siberia, Russia. Panel 9: Chinese colleagues at Shanghai airport ready to transfer the patient. The Chinese ground ambulance was used to transport the patient from Shanghai United Family Hospital to the international airport. Panel 10: taking delivery of the patient inside the Falcon aircraft; Italy-China cooperation. Panel 11: international medical crew. Panels 12-17: on the way back to Italy, with all equipment being used to assist the patient. Panels 18-19: on the Genoa runway, transferring the patient from the Falcon to the ground ambulance using manual ventilation. Panel 20: our NETS ground ambulance ready to leave for the last part of this long trip, crossing the city of Genoa to the Gaslini Children's Hospital.

Download English Version:

<https://daneshyari.com/en/article/8554831>

Download Persian Version:

<https://daneshyari.com/article/8554831>

[Daneshyari.com](https://daneshyari.com)