

## Long-Distance Government Flights – A Peace Equivalent of Demanding Combat Sorties?

Col. Dr. Dušan Bartoš, PhD, Dr. Jiří Šulc, PhD

Institute of Aviation Medicine  
Generála Píky 1, 160 60 Prague 6  
CZECH REPUBLIC

[bartos@telecom.cz](mailto:bartos@telecom.cz)

### ABSTRACT

*The Czech Air Force Government Flying Service (CAFGFS) provides various forms of transport flights for senior governmental representatives. There is a lack of objective knowledge on actual workload of flight crews, mainly during long-haul flights. In some important characteristics these flights are essentially different from common long-haul flights, performed by civilian carriers, whereas in others they are drawing on toward field sorties. 5 demanding missions with crossing from five to eleven time zones were monitored by medical observers. The duty and flight time periods, flight time on partial legs, as well as the rest periods' duration are devoted entirely to the mission agenda and sometimes are over the edge of the principles of safety. Exceptionally demanding is the solving of unexpected circumstances of flight operations, as are the changes of operational flight plan or the handling of in-flight emergencies.*

**Key words:** Long-distance government flights; peaceful missions; psychological stress; medical check.

### 1.0 SUMMARY

As regards the knowledge of specific attributes of transport flights with superior governmental representatives no references were found in relevant literature. On account of determination of objective data on real workload of flight crews and the disallowance of unattested fictions medical observers monitored 5 long-haul government flights. The arrangement of mentioned flights is far-apart from the rules established in civil aviation. Everything is submitted to the time schedule of diplomatic protocol. While the changes of flight plan, induced by the superiors are assumed as natural, the consequences of sudden flight unsuitability, caused by technical defects, are downgraded. The flight crew finds itself in a strong psychological stress. In comparison with civil aviation the Air Force flight crews are not a subject of the training for acquisition of route and aerodrome competence. The use of augmented or double crew is rather an exception, than a rule. Captains are not replaced on the route at all. The observance of rest requirements after multiple time-zones crossing is generally embarrassed by the imperatives of delegation's time schedule. Common for government flight and combat sortie is the high level of responsibility for mission success, readiness for solving of emergent situations, readiness for improvisation and the postponement of physical and psychical recovery to total termination of the mission.

### 2.0 INTRODUCTION

The Czech Air Force Government Flying Service (CAFGFS) provides various forms of transport flights for senior governmental representatives since 1998. Until quite recently there was a lack of objective

Bartoš, D.; Šulc, J. (2005) Long-Distance Government Flights – A Peace Equivalent of Demanding Combat Sorties? In *Strategies to Maintain Combat Readiness during Extended Deployments – A Human Systems Approach* (pp. 39-1 – 39-4). Meeting Proceedings RTO-MP-HFM-124, Paper 39. Neuilly-sur-Seine, France: RTO. Available from: <http://www.rto.nato.int/abstracts.asp>.

knowledge on actual occupational load of flight crews. There are no specific rules and limits on hand to determine maximum duty periods, flight duty periods, flight periods, minimum rest requirements, including rest when crossing several time zones in order not to endanger flight operation, common in civil aviation industry. When planning and managing duties, usual social, personal and family interests of flight crew cannot be observed. The flight crews only gradually gain the experience with the route and aerodrome competence on far-distant destinations. Acquiring of those competencies in civil aviation is based on a specific training and line checks. As the specialists from the Institute of Aviation Medicine Prague (IAM) have a multiyear experience with monitoring of workload of commercial long-haul flights, the CAFGFS wing leader - after some anecdotal accounts of peculiarities of mentioned flights - has asked IAM for granting of medical observers as the additional crew members for all long-haul governmental flights.

### 3.0 METHODS

The CAFGFS on long-distance flights operates the TU-154 M and/or the Challenger carriers, respectively. The crew of TU 154 M consists of 5 people (captain, co-pilot, navigator, radiotelephone operator and flight engineer). The crew of Challenger carrier is composed of two pilots. All expeditions analyzed in this report were realized by TU-154 M airplane. Only once (Mission 2) the crew was augmented with one pilot; captains were obliged to fly entire route.

Medical observer has occupied free operator's seat in the cockpit, what enabled him to appreciate the actual psycho-physical state of the crew and to discuss informally all possible stressful affects. He remained with the crew all the time on ground stages of the route and enregistered signs of stress, fatigue, sleep disorders etc.

5 expeditions with crossing of 5 - 11 time-zones were chosen for check-up. Their main characteristics are given in Tab. 1

**Table 1: Main characteristics of long-haul governmental flights**

Exp.No.	Routing	Time/ days	Total length	Legs	Time zones	Total flight time
1.	Czech rep. - Canary Isl. - Brazil - Paraguay - Argentina - Brazil - Canary Isl. - Czech rep.	10	26 000 km	10	5	32
2.	Czech rep. - Kazakhstan - China - Philippines - Australia - New Zealand - Australia - Malaysia - India - Iran - Czech rep.	14	40 000 km	12	11	55
3.	Czech rep. - Kazakhstan - Eastern China - Hong-kong - Kazakhstan - Czech rep.	13	30 000 km	9	7	42
4.	Czech rep. - Russia - Japan - China - Kazakhstan - Czech rep.	9	34 500 km	8	6	26
5.	Czech rep. - Mauritania - Brazil - Colombia - Guatemala - Dominican rep. - Brazil - Paraguay - Argentina - Brazil - Senegal - Czech rep.	12	20 500 km	11	9	45

Medical observers could assess the physical and psychological state of the crews only on subjective impressions.

## **4.0 RESULTS**

With exception for Mission 1 the crews had enough time to recover for forthcoming task. Due to unexpected changes in operational planning the crew could not comply with the required scheme of vaccination. Captains were obliged to fly on entire routes, as there was no possibility to empower the basic crew with competent pilot. High workload manifested itself in all crewmembers in the mood and in objective signs of fatigue; not so in the course of flight as during the ground stay. With exception of Missions 2 and 3 there was no chance to comply with basic physiological rules for the adjustment of sleep, disorganized owing to the time-zones crossing. The subjective feeling of fatigue has grown especially in the final leg of the mission. In addition to the fatigue from the prolonged flight the crew in Mission 2 was exposed to extreme climatic variations. While in Kazakhstan's Astana the outer temperature fell below  $-20^{\circ}\text{C}$ , on Philippines the temperature crossed  $+30^{\circ}\text{C}$ .

Due to often protocol arrangement changes the crews had to change repeatedly their flight plans. The change of mission's regimen is the most powerful resource for reorganization of all flight crew's activities. At the same time it was the main source of psychological stress. Even stronger psychological strain appears, when the flight is complicated with some technical fault. From flight crews' own knowledge some VIPs are not agreeable to respect the flight safety norms, insist unyieldingly on the priority of their claims and force the crew to hazardous decisions (Expedition 5).

As medical observers were spending all time with the crews, they could give them an immediate advice how to manage with the fatigue, how to arrange their rest considering the quick climatic changes etc. In the course of pre-flight briefing all flight crew members were checked by flight surgeon considering their well-being.

Even when the physical and psychological load of CAFGFS flight crews on long-haul flights did not reach the degree of combat mission, they have some common attributes, viz. high level of responsibility for mission success, readiness for solving of emergent situations, readiness for improvisation and the postponement of physical and psychical recovery to total termination of the mission.

