EASA
European Union Aviation Safety Agency

OPINION

OPINION Nº 767-19-0002 (R) on implementation of a derogating IFTSS[1] approved to the operator DHL Air Limited.

This Opinion is issued by virtue of Article 76(7) of Regulation (EU) No 2018/1139[2].

<u>The Opinion is</u>: Positive with conditions

A) BACKGROUND

1. DHL Air Limited's individual flight time specification scheme, derogating from ORO.FTL.235(d) of Annex III (Part-ORO) to Regulation (EU) No 965/2012[3], was approved by the competent authority of the United Kingdom ('UK CAA') in 2016, following a positive EASA recommendation (No 2016/009/UK) originally issued under Article 14(6) of Regulation (EC) No 216/2008[4].

2. The derogation (hereafter 'Long Block Roster' Derogation) allows DHL Air Limited (hereafter the operator) to apply 192 hours maximum time between two consecutive extended recovery rest periods (ERRPs), subject to the following conditions:

    1) *The extended recovery rest period immediately prior to each rotation includes 3 local nights and the extended recovery rest period immediately after the rotation includes 6 local nights.*
    2) *A rotation has a maximum planned duration of 180 hours with the latest planned finish of 04:00 local time on the 9th day at the home base.*
    3) *Within a rotation a rest period of 34 hours duration including 1 local night shall be achieved, following no more than a maximum of 5 consecutive night duties.*
    4) *The planned FDP on the first day of rotation shall have a maximum duration of 9h 15m and shall be limited to 2 sectors. Subsequent FDPs within the rotation shall be limited to 4 sectors.*
    5) *A maximum of 4 FDPs which exceed 10.00 hours shall be planned within a rotation.*
    6) *A duty period, which includes a standby duty followed by an FDP may be extended by that standby duty period to a maximum duty period of 13h 15m.*
    7) *Cumulative duty in seven (7) days including positioning is limited to 55 hours.*
    8) *Cumulative duty in twenty-eight (28) days is limited to 120 hours.*
    9) *Cumulative flying hours in twenty-eight (28) days is limited to 80 hours.*
    10) *The maximum FDP with the Commanders discretion is 12 hours.*
    11) *The number of days off in 28 days from when this variation is used will be 8, but when the variation trips are scheduled consecutively there will be a minimum of 10 Days off.*
    12) *Crew members rostered in accordance with this variation shall be exclusively on night time duties and shall not be assigned to duties not rostered in accordance with this variation during a rotation*.

[1] Individual Flight Time Specification Scheme

[2] Regulation (EU) No 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, OJ L 212, 22.8.2018, p.1

[3] Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council

[4] Article 14(6) of Regulation (EC) No 216/2008 has been transposed in Article 71(3) of Regulation (EU) No 2018/1139.

a) The DHL Air EASA Night Variation shall only be applicable to crew members based at Leipzig (LEJ) airport or East Midlands (EMA) airport.

b) The UK CAA shall ensure that the effectiveness of the proposed mitigating measures is continuously monitored by the operator's Fatigue Risk Management (FRM) in accordance with ORO.FTL.120.

c) The UK CAA shall monitor the effectiveness of the operator's commuting policy which is part of the operator's FRM and includes the following conditions:

- *If crew members use a DHL flight to commute on day one of a DHL Air EASA Night Variation duty block, the maximum 09:15 FDP shall start 90 minutes after the scheduled reporting time for the commuting flight.*
- *If the chosen commuting flight and the planned flights as an operating crew member do not fit into the maximum 09:15h FDP for day one, the crew member shall take their minimum rest period prior to the first FDP at the home base airport location.*

d) The UK CAA shall monitor performance indicators on roster stability. Performance thresholds and changes thereto shall be approved by UK CAA.

e) The UK CAA shall ensure that the operator provides evidence that long duty periods on day one do not lead to an increase of fatigue on the following days.

f) The UK CAA shall ensure that the effectiveness of the 34-hour break during a long block roster is revalidated by scientific research. Any future research shall be carried out with a view of ensuring that crew member samples shall be representative of the crew population exposed to the DHL Air EASA Night Variation. The operator shall take the appropriate steps to encourage as many crew members as possible to volunteer for objective and subjective fatigue and performance data collection. The operator shall include flight data monitoring (FDM) event trend monitoring as a trigger for further investigation in its reactive FRM processes.

3. In accordance with ORO.FTL.125 (d) of Regulation (EU) No 965/2012, within two years of the implementation of Long Block Roster derogation, the operator provided to the UK CAA a report detailing their collection of data, using scientific principles to assess the effects of the Long Block Roster derogation on aircrew fatigue.

4. As required by ARO.OPS.235 (d) of Regulation (EU) No 965/2012, the UK Civil Aviation Authority (UK CAA) has assessed the operator's report and found that:
   - the operator has a well-established fatigue risk management system (FRMS) whereby FSAG meetings are being held every three months and attended by union representatives, pilot representatives, crewing staff, an external sleep research organisation, crew members and UK CAA representatives;
   - the operator provides monthly roster metrics on Long Block Roster data and use of commander's discretion;
   - the Long Block Roster derogation has been subject to four sleep studies, as the last has been conducted between September 2016 and September 2017.

5. On 04.07.2019, the UK CAA notified EASA that they were satisfied with the operator's compliance with the conditions of the Long Block Roster derogation and intended to confirm the derogation into the future. In their submission to EASA, UK CAA also included the operator's report and all supporting evidence provided by the operator.

6. EASA assessed the operator's report, assisted by a panel of independent experts (IFTSS Panel), in order to determine whether the Long Block Roster derogation can be confirmed or amended. Discussions were held during a WebEx meeting on 17.09.2019. As the available data and

information regarding the implementation of the derogation did not allow the IFTSS Panel to make the necessary determination, the Panel asked the operator and UK CAA for additional clarifications on a number of issues. The UK CAA and the operator provided further data and information on 30.10.2019, 19.11.2019 and 06.12.2019.

B) LEGAL FRAMEWORK

7. ARO.OPS.235 (d) of Regulation (EU) No 965/2012 reads as follows:
   '*Approved deviations or derogations shall be subject, after being applied, to an assessment to determine whether such deviations or derogations should be confirmed or amended. The competent authority and the Agency shall conduct an independent assessment based on information provided by the operator. The assessment shall be proportionate, transparent and based on scientific principles and knowledge*.'

8. ORO.FTL.125 (d) of Regulation (EU) No 965/2012 reads as follows:
   'For the purpose of point ARO.OPS.235 (d), within 2 years of the implementation of a deviation or derogation, the operator shall collect data concerning the granted deviation or derogation and analyse that data using scientific principles with a view to assessing the effects of the deviation or derogation on aircrew fatigue. Such analysis shall be provided in the form of a report to the competent authority.'

9. The Long Block Roster derogation refers to ORO.FTL.235 (d) of Annex-III (Part-ORO)which reads:
   'Recurrent extended recovery rest periods
   Flight time specification schemes shall specify recurrent extended recovery rest periods to compensate for cumulative fatigue. The minimum recurrent extended recovery rest period shall be 36 hours, including 2 local nights, and in any case the time between the end of one recurrent extended recovery rest period and the start of the next extended recovery rest period shall not be more than 168 hours. The recurrent extended recovery rest period shall be increased to 2 local days twice every month."

C) EVALUATION

The following results from the examination of the operator's report along with additional data and information provided:

a) The roster samples included in Appendix 2 of the 2017 Study 'Assessment of the Long Block Roster and the Associated Fatigue Risk for DHL Air' (hereinafter referred to as 'the Study') indicate that conditions (1), (2), (3) and (4) of the Long Block Roster derogation are being fulfilled, in the planning stage and in actual operations.

b) Condition (5) requires that not more than four duties exceeding 10.00 hrs shall be planned and subsequently operated by an individual crew member within a duty block. Indeed, crew members concerned are assigned to no more than two three-sector duties and no more than two 10-hour FDPs in any duty block. If a deviation from these thresholds is found, the operator amends the roster in advance of operating. The Roster Metrics provided by the operator however do not provide any information as to how condition (5) applies to an individual crew member and what the fatigue-related impact is.

c) No specific information was provided in the report regarding conditions (6) and (11).

d) Cumulative duty and flying hours as per conditions (7), (8) and (9) are monitored by the Airline Information Management System (AIMS). Any exceedance of these limits is flagged and subsequently amended to ensure compliance.

e) To implement condition (10) the operator monitors separately the use of commander's discretion (CD) and the number of FDPs of more than 12hrs. However, some FDPs of more than 12 hrs have resulted from CD. The operator's Roster Metrics document shows that CD has been used as follows: 39 cases for the last three months of 2016; 35 for 2017; 43 for 2018; and 32 for the ten months of 2019. The operator claims that these CD cases have been mostly due to operational circumstances. The operator does not have a set threshold. CD trends are reviewed at every FSAG meeting. Until now, the use of CD is not considered to represent a negative trend.

f) In relation to conditions (12a&b), the individual crew member's exposure to the derogation cannot be immediately drawn from the scientific Study which is mainly focused on the 34h break period. The operator has clarified that due to the nature of their flying schedule, within the 9-day duty block, there may be a rest period (day) on the 1st or on the 9th day or on both days i.e. surrounding the duty days. Thus, the time between two ERRPs may be less than 180 hours i.e. less than the maximum of 192hrs allowed under the derogation. This however still does not demonstrate the level of exposure of an individual crew member to the limits increased by the derogation i.e. the time and frequency of exceedance of the 168hr limit between two ERRP's per crew member.

g) To meet conditions (12c&d) UK CAA monitors the effectiveness of the operator's commuting policy and roster stability through performance indicators. Operator's Roster Metrics document contains performance indicators on roster stability which are monitored and submitted to UK CAA monthly. Operator's commuting policy has demonstrated to be effective.

h) Operator's report does not provide evidence whether long duty periods on day one lead to an increase of fatigue on the following days, as per condition (12e). The operator claims that the limit on the maximum FDP on night one to 9:15 hours and to no more than 2 sectors mitigate the risk of increased fatigue on the subsequent days.

i) The effectiveness of the 34 h break per condition (12f) has been validated by the Study.

j) The Study provides information about the predicted and actual risk of each participant by evaluating the information from their worked roster and the actigraph sleep timings. The operator subsequently explained that the percentage of risk estimates the probability that fatigue will reach a value of 7 or higher on the Karolinska Sleepiness Scale (KSS). (A value of 7 or higher on the KSS is associated with intrusions of sleep and an increased risk of impaired performance, while a value of 5-6 on the Karolinska scale is generally acceptable.)

k) The Study concludes that some pilots have had good self-management of rest and, due to experience of working at night, have been able to sleep well around the roster and reduce the proportion of work time at or above KSS 7. In other cases, the roster has been re-designed in order to reduce the work risk score. The Study however does not demonstrate how the work risk (i.e. the risk of sleepiness and fatigue calculated on the basis of duty rosters), especially where it has increased compared to the predicted one, has impaired flight crew performance at critical phases of flight.

D) CONCLUSION

EASA concludes that the continuation of the derogation would ensure an equivalent level of protection, on the following conditions:

- The operator should pay specific attention to crew members who fall below the adequate sleep efficiency target of 85% and take measures to improve efficiency scores at company level and at individual level by e.g. providing training on personal sleep strategies and changing rosters design where needed.
- The operator should use appropriate roster metrics so as to monitor duties at an individual crew member level, in particular, fatigue exposure time and frequency per pilot with regard to exceedance of the 168hr between two ERRP's.
- The operator should monitor the use of commander's discretion and determine appropriate corrective action should an adverse trend be identified.
- The operator should conduct another study to evaluate among other things the effectiveness of currently applied mitigation towards pilots' performance measured by reaction time during a critical phase of flight.

Signed on 15.01.2020

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