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AIR PILOTS - COMMERCIAL AIR TRANSPORT SAFETY BRIEFING NOTE 02

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CONTROLLED REST ON THE FLIGHT DECK

The Context

ICAO describes 'Controlled Rest' taken by operating crew in their seat on the flight deck as "an effective fatigue mitigation" to be used in conjunction with "unanticipated fatigue experienced during operations". It does not prescribe procedures for such 'Controlled Rest' and delegates the issue of any requirements and/or guidance in respect of such procedures to State Safety Regulators. Not all Regulators have chosen to define a scheme of this sort and even if they have, they have not all responded in the same way so the extent of their requirements and/or guidance given to aircraft operators varies. However, in all cases, it should be considered an exceptional rather than a routine strategy and be used only during low workload flight phases - essentially the cruise - and at a time when it does not interfere with required operational duties.

Given that use of in-seat rest has on occasion been associated with avoidable compromise to operational safety, it is considered that generalised guidance on 'Best Practice' learnt from industry experience of procedures may be useful to some aircraft operators and their pilots. It should be noted that in-seat rest is categorically not to be used as a means to extend crew duty periods. Rather, its correct use is as a means to enhance operational safety when unanticipated fatigue occurs. Where procedures exist, controlled rest should be used at the discretion of the aircraft commander as a way to reactively manage unexpected fatigue and to proactively reduce any risk of fatigue later in a flight when the workload will be higher. Where such procedures do not exist, this guidance may be of use to aircraft commanders who are not explicitly prevented by their operator from occasionally permitting in-seat rest by other members of their crew if they judge this to be the safest way to exceptionally resolve en route tiredness.

An example of inappropriate use of controlled rest

In January 2011, the First Officer of a Boeing 767-300 on an eastbound north Atlantic flight who had just been woken from an excessive period of in-seat rest by a radio transmission made by the Captain was then advised by him of opposite direction traffic 1000 feet below. The two aircraft then flashed their landing lights and the First Officer, who had erroneously perceived the traffic as being above and descending towards them thus creating an immediate collision risk immediately and suddenly pitched the aircraft down towards the traffic. The Captain intervened to recover the aircraft back to the cleared flight level but 16 passengers and cabin crew were injured as a result of the sudden changes in vertical acceleration which occurred. The Investigation¹ attributed the First Officer's intervention to 'sleep inertia'. It also noted that pilot awareness of the issues relevant to in-seat rest and in particular to the risk of sleep inertia was inadequate at the aircraft operator concerned.

The principles underlying appropriate use of controlled rest

The safety case for controlled rest requires that appropriate procedures are detailed for its use and that they are always followed. It is significant that in the case quoted above, applicable procedures had been specified by the aircraft operator but they were not followed. A fundamental requirement of any controlled rest procedure is that the absolute maximum time for a period of controlled rest must be limited to ensure that it does not extend sufficiently for the person taking it to be affected by "sleep inertia" when woken. Sleep Inertia is defined as "transient disorientation, grogginess and performance impairment that can occur after waking"². It is widely recognised that the

¹ <https://www.tsb.gc.ca/eng/rapports-reports/aviation/2011/a11f0012/A11F0012.pdf>

² Source: ICAO Doc 9966 Second Edition 2016

length and intensity of sleep inertia is greatest when the individual concerned has not had enough sleep and is then woken when they have been asleep long enough to have progressed from light sleep to the deeper level “slow wave” sleep. It is generally accepted that this threshold may occur anytime after an individual has been asleep for in excess of 40 minutes. It is also widely recognised that the severity of sleep inertia effects may be increased when being woken during an individual’s “window of circadian low” which occurs around the time of their daily minimum core body temperature which will vary according to the local time to which they are acclimatised.

The following remarks assume controlled rest is being used on two crew long haul flights. Whilst many of the remarks are equally applicable if it is used when augmenting pilots are carried or on short haul flights, such use may raise various other matters too. Apart from specifying a clearly-stated absolute maximum time for any period of controlled rest which removes the risk of sleep inertia, a procedure for it should include, but will not necessarily be limited to, the following requirements:

- The use of controlled rest is subject to the authority of the aircraft commander who may terminate it at any time if necessary and in the event that they take such rest themselves, they must ensure that the other pilot is aware of the criteria when their rest should be interrupted.
- A resting pilot must wear their harness and position their seat so that they are clear of the flight controls and the Autopilot should be serviceable and engaged.
- The non-resting pilot may not leave their seat for any reason when performing the duties of both Pilot Flying and Pilot Monitoring and must wear their headset with the volume set appropriately. They must follow operator procedures in respect of monitoring secondary frequencies and In the absence of such procedures, particularly for the monitoring of 121.5, this should be a matter for the Captain to determine subject to appropriate coverage of the potential implications during the pre-rest briefing.
- Unless an abnormal or emergency situation occurs, an adequate period of time must elapse before a just-woken resting pilot is given an operational briefing and resumes their duties. This is likely to be of the order of ten to fifteen minutes but, since individuals differ, the latter is preferable.
- Consecutive periods of controlled rest should not normally be needed unless exceptional circumstances prevail and must be separated by a suitable interval fully awake.
- The senior cabin crew or their deputy must be advised in advance of intended use of controlled rest, informed when it commences and have standard contact procedures to be used until advised it has been completed. It is in general preferable that contact calls at the agreed intervals are initiated by flight crew rather than cabin crew, but whatever arrangements are in place, it is imperative that the cabin crew are clear on what they are required to do if they do not receive an expected call from the flight deck or are unable to get a response from the flight deck after making any agreed call themselves.

Safety Recommendations

To Aircraft Operators

- Any aircraft operator who permits their pilots to use in-seat rest as a means to mitigate the effects of unanticipated fatigue must develop a corresponding procedure.
- Procedural compliance should be supported by ensuring that all eligible pilots and senior cabin crew who may be operating flights on which in-seat rest is permitted are provided with the justification for the details of the procedure.
- In seat rest is a means for tactical risk management despite realistic rostering. If reporting of its use is requested, then the level of detail required should be the minimum necessary to achieve documented oversight objectives and may therefore be as little as a completed tick box on the flight report indicating its use by one or more pilots.

To Pilots

- Any operator procedure permitting in-seat rest must be followed as prescribed.
- If there is no applicable operator scheme and in-seat rest has not been explicitly prohibited, any use of it should be a risk management response to relieve unanticipated significant tiredness. It should follow any guidance provided by your safety regulator or in its absence be at the Captain’s entire discretion, taking note of the information provided here. In the event of any use of in-seat rest where no operator scheme exists, consideration should be given to subsequently discussing the circumstances with flight operations management.