

## **IPA Policy Paper - Desired Changes to FAR to Combat Fatigue**

1. Reduction of allowable duty time to thirteen (13) hours maximum, non-extendable
2. Maximum allowable extension beyond scheduled duty period, once on duty, of three (3) hours for scheduled duty periods less than six (6) hours and two (2) hours for all others (not to exceed 13 hours total)
3. Decrease in allowable flight time based on number of segments scheduled/actually flown during duty period
4. Creation of Window of Circadian Low (WoCL) protection to protect backside of clock operations
5. Recognition of time zone crossings on allowable duty (circadian dysrhythmia)
6. Protection against rolling clock duty periods over several days (anchor duty start time – shift work protection)
7. All required work (on duty time, flight time, reserve, company required positioning, training, office work...) be recorded and counted towards duty time limits (line or management pilot) for domestic and international operations
8. Requirement for air carriers to create and implement non-punitive fatigue policy
9. Prohibition for FAA to issue special waivers to air carriers that exceed sound, safe scientifically based FT/DT limits
10. Requirement that augmented crews work together as crew for entire pairing
11. Augmented crews limited to two (2) segments in a duty period and can only be used for international operations, one segment cannot be longer than four (4) hours block
12. Heavy crews limited to one (1) segment in a duty period and comprised of two (2) Captains minimum

Items 1, 2, 3, 4, 5, 7 and the intent of 11 can be addressed by implementing regulations aligned with the British CAP 371 standards. Starting prior to 1975 the CAA based the creation of CAP 371 on numerous studies on aircrew fatigue. From the NTSB Aircraft Accident Report (AAR) 06/01, Collision with Trees and Crash Short of the Runway...Kirksville, Missouri October 19, 2004 pp.36-37:

“According to FAA regulations, a two-person flight crew engaged in scheduled, domestic operations (such as the accident flight crew) would be limited to 8 flight hours between required rest periods (see section 1.5). However, these regulations do not take into consideration the starting time of day, the length of the duty day, the number of flight segments, weather conditions, equipment on board (for example, an autopilot), or other factors that might affect a pilot’s workload, and thus, a pilot’s fatigue. The aviation regulatory authorities of Great Britain have adopted flight and duty time regulations that reflect information from fatigue and sleep-related research. These British regulations take into consideration a pilot’s starting time and number of flight legs, as well as the total duty time.<sup>86</sup> The relevant British flight and duty time regulations for two or more flight crewmembers are summarized in Table 4.”

<sup>86</sup> See Civil Aviation Authority of Great Britain, *The Avoidance of Fatigue in Aircrews: Guide to Requirements*. CAP 371, Section B (2004): 9.

Table 4. British duty time regulations in hours (hrs) for flight crewmembers, in number of hours permitted.

Local start time	Number of Flight Legs							
	1 flight leg	2 flight legs	3 flight legs	4 flight legs	5 flight legs	6 flight legs	7 flight legs	8 flight legs
0600-0759	13 hrs	12.25 hrs	11.5 hrs	10.75 hrs	10 hrs	9.5 hrs	9 hrs	9 hrs
0800-1259	14 hrs	13.25 hrs	12.5 hrs	11.75 hrs	11 hrs	10.5 hrs	10 hrs	9.5 hrs
1300-1759	13 hrs	12.25 hrs	11.5 hrs	10.75 hrs	10 hrs	9.5 hrs	9 hrs	9 hrs
1800-2159	12 hrs	11.25 hrs	10.5 hrs	9.75 hrs	9 hrs	9 hrs	9 hrs	9 hrs
2200-0559	11 hrs	10.25 hrs	9.5 hrs	9 hrs	9 hrs	9 hrs	9 hrs	9 hrs

1

<sup>1</sup> NTSB, Corporate Airlines Flight 5966 Kirksville, Missouri, October 19, 2004 AAR-06/01, pp. 36-37.

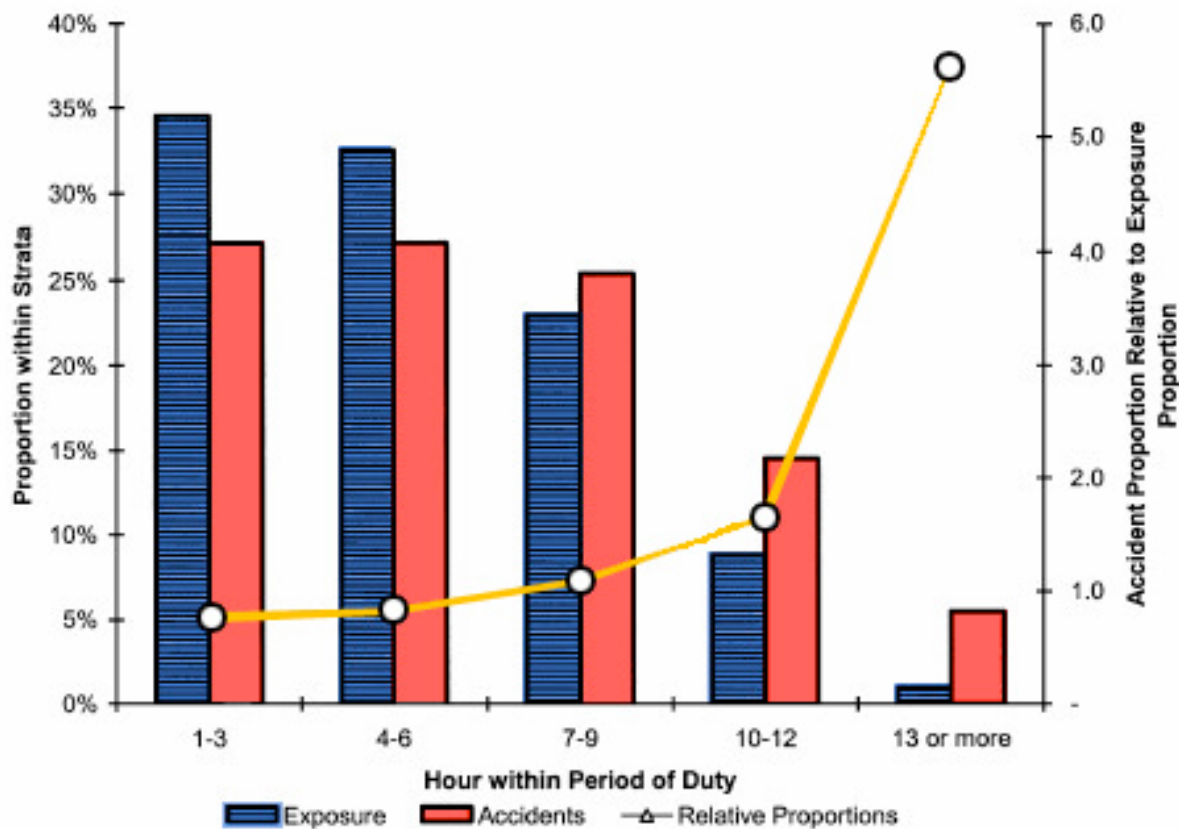


Fig. 1. Captains' duty hours and accidents by length of duty.

This study looked at 55 accidents involving commercial aircraft in the USA investigated by the NTSB from 1978 to 1999. It also analysed the duty periods of ten US Carriers for 1 month to determine exposure (it is not known if any of these carriers were cargo operations). This graph illustrates the proportion of accidents relative to exposure which is a measure of risk.

The blue lines are exposure, length of duty period and the red lines the number of accidents during specified duty period length. The risk is fairly flat up to 6 hours, and then starts to increase slightly for duties of up to 9 hours. It increases more for duties up to 12 hours. However, once past this point, the slope of the graph increases dramatically and you are more than 5 1/2 times more likely to have an accident when on duty 13 hours or more than you are when completing duties of 12 hours or less.<sup>2</sup>

<sup>2</sup> J.H. Goode, "Are Pilots at Risk of Accidents Due to Fatigue?," *Journal of Safety Research*, Vol. 34 (2003): 309-313.