

FATIGUE COUNTERMEASURES

PREVENTIVE – The following items are meant to be used before duty and during rest periods. They are designed to minimize sleep loss and reduce the disruption to circadian cycles. These will help prevent fatigue.

Minimize Sleep Loss – The effect of sleep loss is cumulative and reduction of this loss is critical to safe and efficient operation.

Loss of sleep is referred to as sleep deprivation, or sleep debt.

- Working days – attempt to get normal amounts of sleep as practical (minimize sleep debt).
- Utilize rest periods effectively to catch up on sleep (eliminate sleep debt).
- If normal sleep cannot be attained, utilize more than one sleep period to attain normal hours of sleep (naps).

Effective Use of Naps – Naps can actually improve alertness. The length of the nap is dictated by external and personal conditions.

Use the following guidelines:

- Short Nap (30-45 minutes or less) – should be used just before duty or during breaks. This minimizes the chances of entering a deep sleep. Interruption during deep sleep is counterproductive and may increase the onset of fatigue.
- Long Nap (2 hours or more) – Allows completion of one full sleep cycle that includes deep sleep. This can be beneficial before a period of night duty or when sleep debt is high.

Good Sleep Habits – The best way to combat fatigue is to utilize good sleep habits. Eating a big meal before bed, utilizing caffeine, alcohol and nicotine plus adverse environmental conditions all interfere with good sleep patterns. Rest periods must be given a priority and should be kept free from other commitments and activities. Attaining normal hours of regular sleep is crucial to avoiding the onset of fatigue.

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OPERATIONAL – The following items are meant to enhance alertness and performance. They are designed to combat fatigue and are effective for only a short time.

- Inform other crewmember(s) you are fatigued for heightened awareness and increased vigilance.
- Physical activity – do stretching and isometric exercises.
- Chew gum or mints.
- Write down pertinent operational information to help keep your mind alert.
- Engage in conversation (as appropriate).
Conversation must be in an active mode.
- Utilize brighter lighting (as appropriate and relevant to current safety issues).
- Reduce or increase temperature and use directed airflow across face and upper body.
- Strategic caffeine use – generally takes effect 15-45 minutes after ingestion.
CAUTION: caffeine is also a diuretic and dehydration can lead to other problems.
Anxiety, irritability and insomnia are also side effects of caffeine use.

There is no single solution to counteracting the onset of fatigue. These countermeasures and good Crew Resource Management (CRM) skills can help to minimize errors and enhance safety under all reduced human performance conditions. Adhering to the Preventive Countermeasures is the best way to combat fatigue long term.