

## Self-assessment of Performance under the Influence of Fatigue and Alcohol

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A sleep deprivation study was conducted at the German Aerospace Center (DLR) to examine the effects of sleepiness and alcohol on cognitive performance and self-assessment of performance. A total number of 46 subjects (mean age 26.5 years; 20 female) stayed for twelve consecutive days and nights in the AMSAN sleep laboratory in Cologne. According to the experimental protocol subjects were deprived of sleep totally and partially for two single nights during their stay. In addition, on one evening they consumed a moderate amount of alcohol. Every three hours during the time awake a computerized cognitive test-battery of pilot and air-traffic controller aptitudes was administered to the subjects including spatial orientation, perceptual speed, attention control and psychomotor precision. Additionally subjective levels of fatigue were measured periodically. Prior to and subsequent to each testing subjects were asked to assess their current level of performance for each of the aptitude areas. The accuracy of the self-assessments was analyzed in relation to the different cognitive areas under baseline conditions as well as under treatment conditions. The paper focusses on the comparison of prospective and retrospective accuracy of the self-assessments in relation to conditions of sleep restriction, alcohol consumption and subjective levels of fatigue.

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