

Extended workdays: Effects on performance and ratings of fatigue and alertness

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The present investigation provided a laboratory test of long workdays and served as an initial step in developing a field-test battery that is sensitive to fatigue. Six subjects worked both a 12-h/4-day workweek and an 8-h/6-day week at a data-entry job simulation. Before and after the first and last days of each week, they completed a battery of brief tests measuring cognitive, perceptual-motor, task-sharing, motor, and sensory capacities, as well as subjective feelings. Results suggest that the 12-h/4-day week was more fatiguing than the 8-h/6-day week. In the data-entry job, it was easier to improve performance across the 8-h/6-day week. This result suggested that the fatigue of the 12-h days slowed the rate of improvement across the week. With respect to the test battery, two cognitive tasks (grammatical reasoning and digit addition) and several self-report scales also reflected greater fatigue in the 12-h/4-day week. Performance efficiency decreased and reports of drowsiness and lack of concentration increased from the beginning to the end of the final 12-h workday. On the basis of these results, it was concluded that the test battery has utility for the assessment of the potential fatigue effects of long workdays in actual work settings.

Employee demands for increased "usable" leisure time and evolving industrial needs for longer work shifts have stimulated interest in alternatives to the common 8-h/5-day workweek (e.g., Hedges, 1971). Alternative schedules often include work shifts longer than 8 h because the 5-day week is "compressed" into 4 days or fewer or because overtime is required. The increased use of longer workdays under such schedules has led to concerns about reduced job efficiency and related problems involving safety and health hazards attributable to cumulative fatigue. The literature on work scheduling (see Alluisi & Morgan, 1982, for a review) provides only a few clues about the effects of long workdays on performance efficiency or individual well-being.

Studies examining the effects of the compressed workweek have reported inconsistent changes (i.e., increases in some cases and decreases in others) in absenteeism (e.g., Campbell, 1980), worker satisfaction (e.g., Nord

& Costigan, 1973), and productivity (Ivancevich, 1974; Ivancevich & Lyon, 1977). Furthermore, it has been suggested that, in situations in which production levels have been maintained following conversion to a compressed schedule, this may have been at the expense of increased fatigue as reported by workers (Hodge & Tellier, 1975). In addition, there are few data on how the workers' subjective reports related to actual behavioral measures of work efficiency or safety. There are some reports (e.g., Ellingstad & Heimstra, 1970; Grandjean, Wotzka, Schaad, & Gilgen, 1971) of demonstrated declines in performance across a work shift of 8 or more hours, but these studies have not systematically compared different work schedules in terms of days worked or hours worked per day. Other researchers (see Alluisi & Morgan, 1982, for a review) have compared performance during various work schedules requiring 12 or 16 h of work per day. However, these studies usually have involved atypical work-rest cycles, such as 4 h on duty/4 h off duty, 4 h on/2 h off, or 6 h on/2 h off, which were designed to simulate military operations. The alteration of the normal sleep routine during such short work-rest schedules makes it difficult to apply the results of these studies to the long work-rest cycles, such as 10 h on/14 h off, common in some civilian occupations.

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Effects Of Extended Workdays

TD Snyder



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The Effects of Extended Workdays Edith J. C. Josten,2002 *Extended Workdays in Mining and Other Industries* J. C. Duchon,Thomas Jay Smith,1994 **Improving Safety at Small Underground Mines** ,1994 **Encyclopaedia of Occupational Health and Safety: Hazards** Jeanne Mager Stellman,1998 **Patient Safety and Quality: sect.IV: Working conditions and environment** Ronda Hughes,2008 The Impacts of the Department of Transportation's Commercial Driver Hours-of-service Regulations United States. Congress. House. Committee on Transportation and Infrastructure. Subcommittee on Highways and Transit,2013 The Handbook of Operator Fatigue Gerald Matthews,P.A. Hancock,2017-11-01 Fatigue is a recognized problem in many facets of the human enterprise It is not confined to any one area of activity but enters all situations in which humans have to perform for extended intervals of time Most problematic are the circumstances in which obligatory action is continuous and the results of failure are evidently serious or even catastrophic Therefore the modern media especially highlights fatigue related failures in industries such as transportation materials processing and healthcare It can be and indeed is no coincidence that most of the spectacular failures in process control that have resulted in the world s largest industrial accidents have occurred in the small hours of the morning when the circadian rhythm is lowest and operator fatigue itself peaks While there have been legislative efforts made at state federal and international levels to regulate working hours of employees the appropriate implementation of such legislation is still a long way off The Handbook of Operator Fatigue provides a comprehensive account of the subject to serve as the definitive reference work for researchers students and practitioners alike The volume features 30 chapters written by experts from around the world to address each important facet of fatigue including the scale of the fatigue problem Section I the nature of fatigue Section II how to assess fatigue Section III the impact of fatigue on health Section IV fatigue in the workplace Section V the neurological basis of fatigue VI sleep disorders VII and the design of countermeasures to fatigue VIII

The Evolution of Employment, Working Time and Training in the Mining Industry ,2002 Examines trends from 1985 2001

Time in Organizational Research Robert A. Roe,Mary J. Waller,Stewart R. Clegg,2008-09-09 Pt 1 Managing time people and practices pt 2 Managed by time structures and regimes pt 3 Combining perspectives *The Innovation Ripple Effect: How One Invention Changed Multiple Industries* Ahmed Musa,2025-01-06 Some inventions are so impactful that they reshape entire industries The Innovation Ripple Effect explores how groundbreaking technologies like the steam engine the internet and 3D printing created ripple effects that transformed multiple fields This book examines the interconnectedness of innovation highlighting the unexpected ways progress in one area can spark advancements in others Perfect for innovators and curious minds The Innovation Ripple Effect demonstrates the far reaching power of a single great idea **New Publications from the MSHA Informational Service Library** Safety and Health Technology Center (Denver, Colo.). Informational Service Library,1990 **Patty's Toxicology, 6 Volume Set** Eula Bingham,Barbara Cohrssen,2012-07-31

Featuring the improved format used in the 5th edition this updated set presents in logical groupings comprehensive toxicological data for industrial compounds including CAS numbers physical and chemical properties exposure limits and biological tolerance values for occupational exposures making it essential for toxicologists and industrial hygienists This edition has about 40% new authors who have brought a new and international perspective to interpreting industrial toxicology and discusses new subjects such as nanotechnology flavorings and the food industry reactive chemical control to comprehensive chemical policy metalworking fluids and pharmaceuticals

Motorcoach Industry Hours of Service and Fatigue Management Techniques John F. Brock, 2005 TRB's Commercial Truck and Bus Safety Synthesis Program CTBSSP Synthesis 7 Motorcoach Industry Hours of Service and Fatigue Management Techniques identifies and documents the unique features of the extended workday that typifies motorcoach operations and identifies techniques that motorcoach managers front line employees and drivers use to reduce fatigue related incidents resulting from the irregular on duty conditions facing the motorcoach driver The synthesis also identifies current and emerging technologies that may be appropriate for motorcoach operations to offset the effects of the extended workday and fatigue inducing environment

Occupational Safety and Hygiene VI Pedro M. Arezes, João Santos Baptista, Monica P. Barroso, Paula Carneiro, Patrício Cordeiro, Nelson Costa, Rui B. Melo, A. Sergio Miguel, Gonçalo Perestrelo, 2018-03-14 Occupational Safety and Hygiene VI collects recent papers of selected authors from 21 countries in the domain of occupational safety and hygiene OSH The contributions cover a wide range of topics including Occupational safety Risk assessment Safety management Ergonomics Management systems Environmental ergonomics Physical environment Construction safety and Human factors Occupational Safety and Hygiene VI represents the state of the art on the above mentioned domains and is based on research carried out at universities and other research institutions Some contributions focus more on practical case studies developed by OSH practitioners within their own companies Hence the book provides practical tools and approaches currently used by OHS practitioners in a global context

The Impact of Regulation on U.S. Manufacturing United States. Congress. House. Committee on Government Reform. Subcommittee on Regulatory Affairs, 2005 Tigers discusses the life of tigers and profiles different types of tigers along with providing facts about habitat hunting practices diet and more Also includes records on tigers

Human Mental Workload: Models and Applications Luca Longo, Maria Chiara Leva, 2020-11-23 This book constitutes the refereed proceedings of the 4th International Symposium on Human Mental Workload Models and Applications H WORKLOAD 2020 held in Granda Spain in December 2020 The volume presents one keynote paper as well as 13 revised full papers which were carefully reviewed and selected from 22 submissions The papers are organized in two topical sections on models and applications The conference was held virtually due to the COVID 19 pandemic

Ergonomics Katrin Kroemer Elbert, Henrike B. Kroemer, Anne D. Kroemer Hoffman, 2018-10-04 Ergonomics How to Design for Ease and Efficiency Third Edition updates and expands this classic guide including the latest essential themes and regulations An

introductory section provides all of the physical and mental ergonomics theory engineers designers and managers need for a range of applications The following section provides authoritative advice on how to design for the human in a range of real world situations now including new content on subjects including the individual within an organization planning for space journeys taking back control from autonomous systems and design for aging Retaining its easy to use layout and jargon free style this book remains an invaluable source of models measures and advice for anyone who needs to understand ergonomics Updated throughout to address new research on themes including haptics autonomous vehicles and circadian rhythms Includes discussions of the physical anthropometric biomechanical and mental capacities of the human along with tables of reference data Provides both managerial and engineering recommendations covering aspects of ergonomics that are relevant across the project Physical and Biological Hazards of the Workplace Gregg M. Stave, Peter H. Wald, 2016-11-14

Completely updated version this classic reference covers both physical hazards and biological agents Provides updated information on protecting workers from proven and possible health risks from manual material handling extremes of temperature and pressure ionizing and non ionizing magnetic fields radiation shiftwork and more Details major changes in our understanding of biological hazards including Ebola Chikungunya Zika HIV Hepatitis C Lyme disease MERS CoV TB and much more All infectious diseases have been updated from an occupational health perspective Includes practical guidance on to how to set up medical surveillance for hazards and suggests preventive measures that can be used to reduce occupational diseases Interventions, Controls, and Applications in Occupational Ergonomics William S. Marras, Waldemar

Karwowski, 2006-02-02 Completely revised and updated taking the scientific rigor to a whole new level the second edition of the Occupational Ergonomics Handbook is now available in two volumes This new organization demonstrates the enormous amount of advances that have occurred in the field since the publication of the first edition The editors have brought together

The Twenty-four Hour Workday ,1981

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Table of Contents Effects Of Extended Workdays

1. Understanding the eBook Effects Of Extended Workdays
 - The Rise of Digital Reading Effects Of Extended Workdays
 - Advantages of eBooks Over Traditional Books
2. Identifying Effects Of Extended Workdays
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Effects Of Extended Workdays
 - User-Friendly Interface
4. Exploring eBook Recommendations from Effects Of Extended Workdays
 - Personalized Recommendations
 - Effects Of Extended Workdays User Reviews and Ratings
 - Effects Of Extended Workdays and Bestseller Lists

5. Accessing Effects Of Extended Workdays Free and Paid eBooks
 - Effects Of Extended Workdays Public Domain eBooks
 - Effects Of Extended Workdays eBook Subscription Services
 - Effects Of Extended Workdays Budget-Friendly Options
6. Navigating Effects Of Extended Workdays eBook Formats
 - ePub, PDF, MOBI, and More
 - Effects Of Extended Workdays Compatibility with Devices
 - Effects Of Extended Workdays Enhanced eBook Features
7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Effects Of Extended Workdays
 - Highlighting and Note-Taking Effects Of Extended Workdays
 - Interactive Elements Effects Of Extended Workdays
8. Staying Engaged with Effects Of Extended Workdays
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Effects Of Extended Workdays
9. Balancing eBooks and Physical Books Effects Of Extended Workdays
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Effects Of Extended Workdays
10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
11. Cultivating a Reading Routine Effects Of Extended Workdays
 - Setting Reading Goals Effects Of Extended Workdays
 - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Effects Of Extended Workdays
 - Fact-Checking eBook Content of Effects Of Extended Workdays
 - Distinguishing Credible Sources
13. Promoting Lifelong Learning

- Utilizing eBooks for Skill Development
- Exploring Educational eBooks

14. Embracing eBook Trends

- Integration of Multimedia Elements
- Interactive and Gamified eBooks

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