

## An Ergonomic Evaluation Assessment Of The Workstation To

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.

This book covers how to analyze awkward working postures, particularly of the spine and lower limbs, in specific groups exposed. The methods covered suggests how to evaluate the postures correctly, taking account of the duration and sequence of the tasks involved, even in very complex scenarios where workers are involved with multiple tasks and work cycles varying from day to day. Excel spreadsheets located on the authors' website ([www.epmresearch.org](http://www.epmresearch.org)) have been developed to gather, condense, and automatically process the data. The tools serve to implement the strategy for calculating risk associated with exposure to awkward postures, i.e. the TACOS method. Included are 5 case studies which include physiotherapists, workers from construction, archaeological digs, vineyards, and kindergarten teachers. The analysis and implementation of effective human resources strategies creates opportunities for organizational success. By utilizing such intangible assets, businesses can gain competitive advantage and enhance productivity. Strategic Human Capital Development and Management in Emerging Economies is a comprehensive reference source for the latest scholarly research on the intersection of globalization, organizational behavior, and human capital management in the context of developing nations. Covering a range of business-oriented topics, such as job proficiency, corporate social responsibility, and burnout syndrome, this book is ideally designed for managers, researchers, academics, professionals, and graduate students interested in sustainable management of human behavior in modern organizations.

This book discusses the latest advances in people-centered design, operation, and management of broadly defined advanced manufacturing systems and processes. It reports on human factors issues related to various research areas such as intelligent manufacturing technologies, web-based manufacturing services, digital manufacturing worlds, and manufacturing knowledge support systems, as well as other contemporary manufacturing environments. The book covers an extensive range of applications of human factors in the manufacturing industry: from work design, supply chains, evaluation of work systems, and social and organization design, to manufacturing systems, simulation and visualization, automation in manufacturing, and many others. Special emphasis is given to computer aided manufacturing technologies supporting enterprises, both in general and in the manufacturing industry in particular, such as knowledge-based systems, virtual reality, artificial intelligence methods, and many more. Based on the AHFE 2016 International Conference on Human Aspects of Advanced Manufacturing, held on July 27-31, 2016, in Walt Disney World®, Florida, USA, the book provides readers with a timely snapshot of the enterprises of the future and a set of cutting-edge technologies and methods for building innovative, human-centered, and computer-integrated manufacturing systems. Ergonomic assessments in forest operations are performed in isolation due to the lack of an adequate methodology that correlates the ergonomic variables simultaneously. The objective was to propose new methodology for the ergonomic evaluation of forest machines, by the development of an Integrated Ergonomic Indicator (IEI), useful to relate ergonomic variables simultaneously. Vibration, noise, heat, luminosity, posture, repeatability, visibility and productivity data were obtained during the day and night periods of the feller buncher, harvester, forwarder, skidder and processor in the state of Paraná, Brazil. The values, normalized by their deviations from the mean, were subjected to factorial multivariate analysis determining the factors that would influence the IEI composition. The factor index was multiplied by the explained variance for each factor and the result was divided by the total variance explained, so that the values remained around 0 and the higher the result, the worse the ergonomic condition. The evaluation presented an R<sup>2</sup> of 0.9 and the variables that most influenced were vibration, noise and lateral visibility, relating to each other. The worst machine was the skidder, in both shifts, with IEI of 2.82 for the daytime period and 1.60 for the night shift, due to impacts and bumps in its displacement added to the high percentage of worker time with the rotated neck. The best were harvester B and forest processor at night, with IEI of -1.36 and -0.96, due to low vibration, low noise and low rotational deviation. The methodology proved to be useful in the integrated ergonomic evaluation.

Knowledge-intensive product realization implies embedded intelligence; meaning that if both theoretical and practical knowledge and understanding of a subject is integrated into the design and production processes of products, this will significantly increase added value. This book presents papers accepted for the 9th Swedish Production Symposium (SPS2020), hosted by the School of Engineering, Jönköping University, Sweden, and held online on 7 & 8 October 2020 because of restrictions due to the Corona virus pandemic. The subtitle of the conference was Knowledge Intensive Product Realization in Co-Operation for Future Sustainable Competitiveness. The book contains the 57 papers accepted for presentation at the conference, and these are divided into nine sections which reflect the topics covered: resource efficient production; flexible production; virtual production development; humans in production systems; circular production systems and maintenance; integrated product and production development; advanced and optimized components, materials and manufacturing; digitalization for smart products and services; and responsive and efficient operations and supply chains. In addition, the book presents five special sessions from the symposium: development of changeable and reconfigurable production systems; smart production system design and development; supply chain relocation; management of manufacturing digitalization; and additive manufacturing in the production system. The book

will be of interest to all those working in the field of knowledge-intensive product realization.

Assessment of the Ergonomic Quality of Hand-held Tools and Computer Input Devices IOS Press

The first encyclopaedic source in this interdisciplinary field. This is a unique professional reference available in either three hardback volumes or CDROM.

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 second edition not only provides more information but makes it more accessible. Each volume narrows the focus while broadening the coverage, supplying immediate access to important information. One of the most comprehensive sources for ergonomic knowledge available, written by leading experts, providing both sound theory and practical examples, this book is a valuable resource for anyone in the field. Fundamental and Assessment Tools for Occupational Ergonomics merges the frontiers of ergonomics, workplace design, and management issues. The editors have brought together researchers from disciplines such as biomechanics, anthropometry, and cognitive science with pioneering practitioners in industry. They discuss tools of the trade, upper extremity analysis, backs, interventions, management issues, design for ergonomics, principles of product design, band-aid approaches, processing, distribution centers, and service systems. The handbook is a compendium of information authored by top-flight investigators who represent the cutting edge of opinion, research, and interest in the field.

As a consequence of the number of workers diagnosed with occupational diseases, this need arose to carry out this study that allowed to contrast and use the theories related to the evaluation of jobs considering the ergonomic approach, specifically related to the physical load, manual handling of loads, environmental conditions, chemical risks, among others. To determine the occupational risks, it was necessary to rely on various evaluation methods, which provide the necessary guidelines to correctly carry out the operation that each worker performs. From a practical point of view, this study made it possible to evaluate the jobs, in order to determine those that present disergonomic, physical and chemical risks in operations, so that the necessary actions can be taken in order to improve working conditions. Facilitating the adaptation of the workplace to the worker, thus complying with current laws and regulations on industrial hygiene and occupational safety; reducing or eliminating the risks that can generate diseases, injuries, discomfort, fatigue and other annoyances; that workers may feel when performing their tasks, which leads to a reduction in costs due to disabilities. Likewise, by achieving the adaptation of the workplace to workers, will help to perform the functions with greater safety and comfort, which will be reflected in the increase in the productivity.

"The International Ergonomics Association (IEA) is currently developing standards for Ergonomic Quality in Design (EQUID) which primarily intends to promote ergonomics principles and the adaptation of a process approach for the development of products, work systems and services. It is important to assess the ergonomic quality of products, hand-held tools and computer input devices through working processes that represent reality. Well-designed working tools can be expected to reduce or eliminate fatigue, discomfort, accidents and health problems and they can lead to improvements in productivity and quality. Furthermore, absenteeism, job turnover and training costs can positively be influenced by the working tools and the environment. Not all these short-term and long-term issues of working tools can be quantified in pragmatically oriented ergonomic research approaches. But multi-channel electromyography, which enables the measurement of the physiological costs of the muscles involved in handling tools during standardized working tests, and subjective assessments of experienced subjects enable a reliable insight in the essential ergonomic criteria of working tools and products. In this respect it is advantageous to provide a test procedure, in which working tests can be carried out alternating both with test objects and reference models."

Topics Include: applications of engineering anthropometry, postural strain and discomfort, industrial injury prevention, manual materials handling, and ergonomics of rehabilitation and healthcare systems.

The three volumes IFIP AICT 438, 439, and 440 constitute the refereed proceedings of the International IFIP WG 5.7 Conference on Advances in Production Management Systems, APMS 2014, held in Ajaccio, France, in September 2014. The 233 revised full papers were carefully reviewed and selected from 271 submissions. They are organized in 6 parts: knowledge discovery and sharing; knowledge-based planning and scheduling; knowledge-based sustainability; knowledge-based services; knowledge-based performance improvement, and case studies.

Production ergonomics – the science and practice of designing industrial workplaces to optimize human well-being and system performance – is a complex challenge for a designer. Humans are a valuable and flexible resource in any system of creation, and as long as they stay healthy, alert and motivated, they perform well and also become more competent over time, which increases their value as a resource. However, if a system designer is not mindful or aware of the many threats to health and system performance that may emerge, the end result may include inefficiency, productivity losses, low working morale, injuries and sick-leave. To help budding system designers and production engineers tackle these design challenges holistically, this book offers a multi-faceted orientation in the prerequisites for healthy and effective human work. We will cover physical, cognitive and organizational aspects of ergonomics, and provide both the individual human perspective and that of groups and populations, ending up with a look at global challenges that require workplaces to become more socially and economically sustainable. This book is written to give you a warm welcome to the subject, and to provide a solid foundation for improving industrial workplaces to attract and retain healthy and productive staff in the long run.

Based on recent research, this book discusses physical ergonomics, which is concerned with human anatomical, anthropometric, physiological and biomechanical characteristics as they relate to physical activity. Topics include working postures, materials handling, repetitive movements, work-related musculoskeletal disorders, workplace layout, safety,

and health.

Even with today's mobile technology, most work is still undertaken in a physical workplace. Today's workplaces need to be healthy environments that minimize the risks of illnesses or injuries to occupants to compete in the marketplace. This necessitates the application of good ergonomics design principles to the creation of effective workplaces, and this is the focus of this book. This book will:

- Focus on ergonomic design for better health and ergonomic design for better productivity
- Presents environments that support new ways of working and alternative workplace strategies, as well as the impacts of new technologies
- Covers the role of ergonomics design in creating sustainable workplaces
- Includes ergonomics design for a wide variety of workplaces, from offices to hospitals, to hotels to vehicles, etc...
- Shows the design principles on how to design and create a healthy and productive workplace

The market lacks an ergonomics design book that covers the topics that this book will cover. This book summarizes design principles for practitioners, and applies them to the variety of workplace settings described in the book. No other book currently on the market does that. This workbook is designed to be used as part of the Developing an Ergonomics Process system. It can be used as a tool, helping the reader to implement strategies effectively, as the process of reducing workplace injuries and illnesses is outlined and effected.

Topics Include: industrial ergonomics, risk, accidents and accident prevention, safety and surveillance, posture perception, cognitive ergonomics, telerobotics, military occupational ergonomics, and international ergonomics. The approach to the book is analogous to a toolkit. The user will open the book and locate the tool that best fits the ergonomic assessment task he/she is performing. The chapters of the book progress from the concept of ergonomics, through the various assessment techniques, and into the more complex techniques. In addition to discussing the techniques, this book presents them in a form that the readers can readily adapt to their particular situation. Each chapter, where applicable, presents the technique discussed in that chapter and demonstrates how it is used. The supporting material at the end of each chapter contains exercises, case studies and review questions. The case study section of the book presents how to use techniques to analyze a range of workplace scenarios. Topics include: The Basics of Ergonomics; Anthropometry; Office Ergonomics; Administrative Controls; Biomechanics; Hand Tools; Vibration; Workstation Design; Manual Material Handling; Job Requirements and Physical Demands Survey; Ergonomic Survey Tools; Work-related Musculoskeletal Disorders; How to Conduct an Ergonomics Assessment; and Case Studies

The chapters in the book come from an international group of authors with diverse backgrounds including ergonomics, psychology, architecture, computer science, engineering, and sociology. Specific topics include biometric systems development, military command and control, cellular phone interface design, methodologies for workplace design, medical device design, cockpit display and decision tool design for pilots, driver visual and cognitive processes, and performance of inspection tasks in manufacturing operations; and extend to human-automation integration in future aviation systems, novel 3-D display technologies for enhancing information analysis, training methods for mental models, approaches to activity analysis, new research-oriented frameworks and paradigms in training, and the use of virtual reality for skill development and assessment. The book is divided into sections covering: I. Cultural Differences in Computing Systems Design II. Decision Making and Decision Support III. Desktop/Mobile Interface Design IV. Ergonomics in Design V. Ergonomics in Product Design VI. Human Factors in Aviation Systems VII. Human Factors in Driving VIII. Human Factors in Manufacturing IX. Human Factors in NextGen Operations X. Information Visualization for Situation Awareness XI. Mental Models XII. Perceptuo-Motor Skills & Psychophysical Assessment XIII. Task Analysis XIV. Training Technology XV. Virtual Reality for Behavior Assessment XVI. Virtual Reality for Psychomotor Training

The implications of all this work include design recommendations for complex systems and commercial products, new procedures for operator training and self-regulation as well as methods for accessibility to systems, and specification of ergonomic interventions at the user. It is expected that this book will be of special value to practitioners involved in design process development, design and prototyping of systems, products and services, as well as training process design for a broad range of applications and markets in various countries. Seven other titles in the Advances in Human Factors and Ergonomics Series are: Advances in Human Factors and Ergonomics in Healthcare Advances in Applied Digital Human Modeling Advances in Cross-Cultural Decision Making Advances in Occupational, Social and Organizational Ergonomics Advances in Human Factors, Ergonomics and Safety in Manufacturing and Service Industries Advances in Ergonomics Modeling & Usability Evaluation Advances in Neuroergonomics and Human Factors of Special Populations

Pedretti's Occupational Therapy: Practice Skills for Physical Dysfunction, 8th Edition prepares you for occupational therapy practice with adults who have physical disabilities. This cornerstone text provides a foundation for the development of clinical reasoning skills in a comprehensive, case-based learning approach to physical dysfunction. New full color photos and helpful pedagogy, including threaded case studies, OT Practice Notes, ethical considerations, and end-of-chapter review questions, reinforce learning, enhance retention, and prompt you to apply principles in a clinical setting. UNIQUE! Threaded case studies, woven throughout each chapter, help you apply concepts to real-life clinical practice. UNIQUE! Ethical Considerations boxes highlight the key ethical concerns of treatment options so you can practice ethically. UNIQUE! OT Practice Notes convey important considerations for professional practice. Focuses on the occupational therapist's role in health and wellness, which the OTA has identified as a key practice area in the 21st century. Information on prevention, rather than simply intervention or treatment, shows how OTs can take a proactive role in patient care. Evidence-based content included throughout, especially in regards to evaluation and intervention. Content on occupational therapy's commitment to considering cultural and ethnic diversity in every chapter. Key terms, chapter outlines, chapter objectives lay out the information you can expect to learn from each chapter.

Successful interaction with products, tools and technologies depends on usable designs and accommodating the needs of potential users without requiring costly training. In this context, this book is concerned with emerging ergonomics in design concepts, theories and

applications of human factors knowledge focusing on the discovery, design and understanding of human interaction and usability issues with products and systems for their improvement. This book will be of special value to a large variety of professionals, researchers and students in the broad field of human modeling and performance who are interested in feedback of devices' interfaces (visual and haptic), user-centered design, and design for special populations, particularly the elderly. We hope this book is informative, but even more - that it is thought provoking. We hope it inspires, leading the reader to contemplate other questions, applications, and potential solutions in creating good designs for all.

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 broad and developing scope of ergonomics, the application of scientific knowledge to improve people's interaction with products, systems and environments, has been illustrated over the past sixteen years by the books that make up the Contemporary Ergonomics series. Presenting the proceedings of the Ergonomics Society's Annual Conference, the series embraces the wide range of topics covered by ergonomics. Chapters provide an insight into the current practice, present new research findings and form an invaluable reference source. Among the most interesting topics covered in this volume are rail safety, the development and applications of virtual reality and hospital ergonomics. Contemporary Ergonomics 2002 will appeal to all those who have an interest in people's interactions with their working and leisure environment, including designers, manufacturing and production engineers, health and safety specialists, occupational, applied and industrial psychologists, and applied physiologists.

The 13th International Conference on Human-Computer Interaction, HCI International 2009, was held in San Diego, California, USA, July 19-24, 2009, jointly with the Symposium on Human Interface (Japan) 2009, the 8th International Conference on Engineering Psychology and Cognitive Ergonomics, the 5th International Conference on Universal Access in Human-Computer Interaction, the Third International Conference on Virtual and Mixed Reality, the Third International Conference on Internationalization, Design and Global Development, the Third International Conference on Online Communities and Social Computing, the 5th International Conference on Augmented Cognition, the Second International Conference on Digital Human Modeling, and the First International Conference on Human Centered Design. A total of 4,348 individuals from academia, research institutes, industry and governmental agencies from 73 countries submitted contributions, and 1,397 papers that were judged to be of high scientific quality were included in the program. These papers - dress the latest research and development efforts and highlight the human aspects of the design and use of computing systems. The papers accepted for presentation thoroughly cover the entire field of human-computer interaction, addressing major advances in knowledge and effective use of computers in a variety of application areas.

This book presents cutting-edge research on innovative system interfaces, highlighting both lifecycle development and human-technology interaction, especially in virtual, augmented and mixed reality systems. It describes advanced methodologies and tools for evaluating and improving interface usability, and discusses new models, case studies and good practices. The book addresses the human, hardware, and software factors in the process of developing interfaces for optimizing total system performance, while minimizing costs. It also highlights the forces currently shaping the nature of computing and systems, such as the importance of portability and technologies for reducing power requirements; the need for better assimilation of computation in the environment; and solutions to promote computer and system accessibility for people with special needs. Based on the AHFE 2020 Virtual Conference on Human Factors and Systems Interaction, held on July 16-20, 2020, the book offers a timely survey and a practice-oriented guide for systems interface users and developers alike.

The rapid introduction of sophisticated computers, services, telecommunications systems, and manufacturing systems has caused a major shift in the way people use and work with technology. It is not surprising that computer-aided modeling has emerged as a promising method for ensuring products meet the requirements of the consumer. The Handbook of Digital Human Modeling provides comprehensive coverage of the theory, tools, and methods to effectively achieve this objective. The 56 chapters in this book, written by 113 contributing authorities from Canada, China, France, Germany, the Netherlands, Poland, Sweden, Taiwan, UK, and the US, provide a wealth of international knowledge and guidelines. They cover applications in advanced manufacturing, aerospace, automotive, data visualization and simulation, defense and military systems, design for impaired mobility, healthcare and medicine, information systems, and product design. The text elucidates tools to help evaluate product and work design while reducing the need for physical prototyping. Additional software and demonstration materials on the CRC Press web site include a never-before-released 220-page step-by-step UGS-Siemens JackTM help manual developed at Purdue University. The current gap between capability to correctly predict outcomes and set expectation for new and existing products and processes affects human-system performance, market acceptance, product safety, and satisfaction at work. The handbook provides the fundamental concepts and tools for digital human modeling and simulation with a focus on its foundations in human factors and ergonomics. The tools identified and made available in this handbook help reduce the need for physical prototyping. They enable engineers to quantify acceptability and risk in design in terms of the human factors and ergonomics.

Despite increasing levels of automation in modular residential construction, workers are frequently exposed to highly labour-intensive tasks involving prolonged standing, bending, stooping, and material handling; these activities increase the potential risk of work-related musculoskeletal disorders (WRMSDs), which may worsen over time, resulting in permanent disability and, consequently, the loss of ability to work. The research presented in this thesis comprises the development of several models, each addressing specific research sub-objectives, to suit the ergonomic assessment requirements of a wide range of typical daily residential construction tasks. The primary objective is to develop a comprehensive framework for assessing ergonomic risk factors, including physical and non-physical risk factors. Thus, the research framework includes two main sections, physical ergonomics and non-physical ergonomics, through which both identification and mitigation aspects of risks are addressed. In most workplaces, ergonomic principles are not adequately addressed by managers due to their demanding schedules and their lack of knowledge about possible ergonomic risks associated with specific tasks as well as the major body parts affected during a given task. The physical ergonomics aspect of this research encompasses the unsafe and risky jobsite conditions and task designs that may expose workers to a combination of physical risk factors. Considering the effectiveness of information visualization and limitations of existing ergonomic evaluation tools, the first section of the research aims at developing a system dynamics-based ergonomic assessment tool capable of visualizing the evaluation process. Such a tool can provide a graphical illustration of links between cause and effects, thereby increasing the knowledge of how ergonomic risk can develop while performing task cycles. As a result of conducting ergonomic assessment using the developed tool, the risk level or classification of risk associated with the task with respect to each body part exposed to the risk can be identified. Often, actions taken to control ergonomic risks at the company level are limited due to limited knowledge of the actions required to manage such risks. Since manual material handling (MMH) is reported to be the most common contributor to occupational fatigue and lower-back pain, the second part of physical ergonomics research presented in this thesis, aims at addressing the gap in the knowledge of mitigation practices, and thereby examines two different hypotheses from the physiological perspective for effective intervention during MMH tasks. To this end, surface electromyography (sEMG) is used to examine the effectiveness of proposed solutions. Overall, participants in this study performed a total of 1,410 cycles while wearing sEMG electrodes. The results provide an incentive strategy for managers and job designers that by raising the lifting height and applying work pressure, not only can a time savings be achieved due to faster pace of work, but also the muscle activity in the lower back area can be reduced, leading to lower risk of low back

pain and injury at work. Additionally, a microbreak stretching policy is introduced and its effectiveness is examined using the collected data. The results indicate that breaks, even for a brief period of one minute, combined with stretching exercises can effectively mitigate the risk of fatigue development in the lower-back muscles (multifidus) during an MMH construction task. The second main section of the present research focuses on the non-physical aspects of ergonomics, psychosocial risk factors. Despite the increase in research on psychosocial hazards, studies are unable to evaluate the inter-relationships among psychosocial risks from a risk network perspective, and their findings are usually limited to bivariate relationships between psychosocial risks and their adverse outcomes. Also, they are unable to draw the pathways by which psychosocial risks can affect the health of workers leading to impaired job performance. The present study performs a comprehensive literature review on the psychosocial risk-related research and provides an evidence-based list of major psychosocial factors. In addition, Social Network Analysis (SNA) is implemented for developing the psychosocial risk network for further evaluation of the interactions between variables leading to the identification of key psychosocial risks that play important roles in structuring the entire risk network. In the next step, an evidence-based System Dynamics (SD) model is developed to provide the mechanism underlying the development of MSDs and productivity loss due to exposure to psychosocial stressors. The method can be used by managers and job designers to evaluate the impact of implementing different policies and to understand the point at which workers are more likely to develop adverse effects.

The U.S. Bureau of Labor Statistics recently calculated nearly 60,000 musculoskeletal injuries to healthcare workers resulting from heavy lifting during attempts to move patients. Often the nurses, aides, orderlies, and attendants who suffered permanent injuries were forced out of the profession, straining an already inadequate pool of workers and

The discipline of human factors and ergonomics (HF/E) is concerned with the design of products, process, services, and work systems to assure their productive, safe and satisfying use by people. Physical ergonomics involves the design of working environments to fit human physical abilities. By understanding the constraints and capabilities of the human body and mind, we can design products, services and environments that are effective, reliable, safe and comfortable for everyday use. This book focuses on the advances in the physical HF/E, which are a critical aspect in the design of any human-centered technological system. The ideas and practical solutions described in the book are the outcome of dedicated research by academics and practitioners aiming to advance theory and practice in this dynamic and all-encompassing discipline. A thorough understanding of the physical characteristics of a wide range of people is essential in the development of consumer products and systems. Human performance data serve as valuable information to designers and help ensure that the final products will fit the targeted population of end users. Mastering physical ergonomics and safety engineering concepts is fundamental to the creation of products and systems that people are able to use, avoidance of stresses, and minimization of the risk for accidents.

The purpose of this study was to analyze the ergonomic-based risk factors which were present for workers using the wig-wag machine at Company XYZ and then to assess the factors' contributions to work-related musculoskeletal disorders (WMSDs). Several goals were developed to achieve the purpose of this research. Ergonomic risk assessment tools such as the Rapid Entire Body Assessment (REBA) and the ergonomic task analysis worksheet were utilized to assist in the identification of such risk factors. The evaluation of this study included an employee pain/discomfort symptom survey and a review of the company's OSHA 300 log to pinpoint areas of concern where MSDs may exist or develop. To promote the evaluation of this, anthropometric values/data examined to ensure an optimal fit between the workers and the wig-wag machine design. The results of the data collection in this study identify that various ergonomic-based risk factors are associated with the current wig-wag process including awkward postures, high repetition and excessive work durations which are of great concern in this case. Several engineering and administrative-based controls were offered which would help to eliminate/reduce the presence of the ergonomic-based risk factors and thus lower the potential of developing WMSDs among the wig-wag operators.

This book reports on the state of the art in physical ergonomics and is concerned with the design of products, process, services, and work systems to assure their productive, safe, and satisfying use by people. With focus on the human body's responses to physical and physiological work demands, repetitive strain injuries from repetition, vibration, force, and posture are the most common types of issues examined, along with their design implications. The book explores a wide range of topics in physical ergonomics, which includes the consequences of repetitive motion, materials handling, workplace safety, and usability in the use of portable devices, design, working postures, and the work environment. Mastering physical ergonomics and safety engineering concepts is fundamental to the creation of products and systems that people are able to use, as well as the avoidance of stresses and minimization of the risk of accidents. Based on the AHFE 2016 International Conference on Physical Ergonomics & Human Factors, held on July 27-31, 2016 in Walt Disney World®, Florida, USA, the book provides readers with a comprehensive view of the current challenges in Physical Ergonomics, which are a critical aspect in the design of any human-centered technological system, and factors influencing human performance.

This book discusses the latest advances in the broadly defined field of advanced manufacturing and process control. It reports on cutting-edge strategies for sustainable production and product life cycle management, and on a variety of people-centered issues in the design, operation and management of manufacturing systems and processes. Further, it presents digital modeling systems and additive manufacturing technologies, including advanced applications for different purposes, and discusses in detail the implementation of and challenges imposed by 3D printing technologies. Based on three AHFE 2020 Conferences (the AHFE 2020 Virtual Conference on Human Aspects of Advanced Manufacturing, the AHFE 2020 Virtual Conference on Advanced Production Management and Process Control and the AHFE 2020 Virtual Conference on Additive Manufacturing, Modeling Systems and 3D Prototyping, the book merges ergonomics research, design applications, and up-to-date analyses of various engineering processes. It brings together experimental studies, theoretical methods and best practices, highlights future trends and suggests directions for further technological developments and the improved integration of technologies and humans in the manufacturing industry.

Occupational Safety and Hygiene presents selected papers from the International Symposium on Occupational Safety and Hygiene SHO2013 (Guimar, Portugal, 14-15 February 2013), which was organized by the Portuguese Society for Occupational Safety and Hygiene (SPOSHO). The contributions from 15 different countries focus on:- Occupational safety- Ris

The Handbook of Evaluation Methods for Health Informatics provides a complete compendium of methods for evaluation of IT-based systems and solutions within healthcare. Emphasis is entirely on assessment of the IT-system within its organizational environment. The author provides a coherent and complete assessment of methods addressing interactions with and effects of technology at the organizational, psychological, and social levels. It offers an explanation of the terminology and theoretical foundations underlying the methodological analysis presented here. The author carefully guides the reader through the process of identifying relevant methods corresponding to specific information needs and conditions for carrying out the evaluation study. The Handbook takes a critical view by focusing on assumptions for application, tacit built-in perspectives of the methods as well as their perils and pitfalls. Collects a number of evaluation methods of medical informatics Addresses metrics and measures Includes an extensive list of anotated references, case studies, and a list of useful Web sites

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