INDEX OF GOVERNMENT STANDARDS ON HUMAN ENGINEERING DESIGN CRITERIA, PROCESSES, AND PROCEDURES

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HUMAN FACTORS STANDARDIZATION SubTAG

DEPARTMENT OF DEFENSE
HUMAN FACTORS ENGINEERING
TECHNICAL ADVISORY GROUP

Index of Government Standards on Human Engineering Design Criteria, Processes, and Procedures

Background

In October 2002 the Human Factors Standardization and Technical Society/Industry SubTAGs of the Department of Defense Human Factors Engineering Technical Advisory Group (DoD HFE TAG) jointly produced Version 3 of an *Index of Non-Government Standards*. It was decided that there might be benefit in producing an *Index of Government Standards*. This initial version is the result of that effort.

Is the listing current? The listing is reasonably current as of March 2004, and is as accurate as the various indexes, data bases, and websites that were used as sources.

Is the listing complete? The listing is as complete as possible. Document selection is a function of how one defines "human engineering," "human factors," "ergonomics," and "standard." Moreover, titles may not disclose the human factors nature of a document's content.

Were the documents carefully reviewed and evaluated prior to listing? No.

Content and Format

While documents clearly identified as standards are included in the list, some standards-like documents may also be included. Some are titled as guides, preferred practices, or similar; however, they are written in the manner of standards, i.e., they contain provisions with traditional action verbs (shall/should/may) and bear a standard identifier number. The focus of this *Index* is U.S. government standards (though Appendix A contains a listing of British Defence Standards), and is also limited to documents designated by numbered identifiers. Because of their shear volume, technical reports related to human factors have purposely been omitted.

Listing of Documents

The listing of documents is presented as a five-column table that contains the document number, title, date, scope, and a web site source. (Note that the listing for the Code of Federal Regulations only contains four columns.)

1. Document Number.

This column provides the document number as assigned by the agency. Documents are listed by government agency. Within each agency, documents are group by type (e.g., standard, handbook, data item description) and presented numerically. Only the latest version of the document is provided.

2. Title.

This column provides the document title as it is shown on the document.

3. Date.

This column provides the date of the basic document. It is possible that amendments or notice changes may show a later date.

4. Scope.

This column provides the scope taken directly from the document. The purpose is to give the reader some information regarding the document's contents.

5. Web Site Source.

This column provides a website link where the document can be obtained. Note that this is only one source; other sources may exist.

Code of Federal Regulations

Document Number	Title	Scope	Source
29 CFR 1910	Occupational Safety and Health Standards Subpart A – General Subpart B – Adoption and Extension of Established Federal Standards Subpart D – Walking-Working Surfaces Subpart E – Means of Egress Subpart F – Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms Subpart G – Occupational Health and Environmental Control Subpart H – Hazardous Materials Subpart I – Personal Protective Equipment Subpart J – General Environmental Controls Subpart K – Medical and First Aid Subpart L – Fire Protection Subpart M – Compressed Gas and Compressed Air Equipment Subpart N – Materials Handling and Storage Subpart O – Machinery and Machine Guarding Subpart P – Hand and Portable Powered Tools and Other Hand-Held Equipment Subpart Q – Welding, Cutting, and Brazing Subpart R – Special Industries Subpart S – Electrical Subpart T – Commercial Diving Operations Subpart Z – Toxic and Hazardous Substances	This document contains occupational safety and health standards which have been found to be national consensus standards or established Federal standards.	http://gpoaccess.gov/cfr/index.html

Department of Defense

Document Number	Title	Date	Scope	Source
MIL-STD-882D	Standard Practice for System Safety	February 10, 2000	This document outlines a standard practice for conducting system safety.	http://assist.daps.dla.mil/docimages/0001/95/78/std882d.pd8
MIL-STD-1472F	Human Engineering	August 23, 1999	This standard establishes general human engineering design criteria for military systems, subsystems, equipment and facilities.	http://assist.daps.dla.mil/docimages/0001/87/31/milstd14.pd1
MIL-STD-1474D	Noise Limits	February 12, 1997	This standard establishes acoustical noise limits and prescribes testing requirements and measurement techniques for determining conformance to the noise limits specified herein.	http://assist.daps.dla.mil/docimages/0000/31/59/1474d.pd1
MIL-STD-1477C	Symbols for Army Systems Displays	September 30, 1996	This standard prescribes the physical characteristics of ground and air track symbols, units/installation symbols, control measure symbols, equipment symbols, and associated alphanumeric information for U.S. Army Combined Arms system displays which are generated by electronic, optic, or infrared technology and presents information in real time or near-real time.	http://assist.daps.dla.mil/docimages/0000/42/03/69268.pd9
MIL-STD-1787C	Aircraft Display Symbology	January 5, 2001	This standard defines the symbology requirements for a primary flight reference and describes some fundamental relationships between symbol motion and aircraft system states. It describes symbols, symbol formats, and information content for electro-optical displays that provide aircrew members with information for takeoff, navigation, terrain following and terrain avoidance, weapon delivery, and landing. It also provides (in appendixes) non-binding information on symbol geometry, fonts, recommended dimensions, and mechanizations.	This is a controlled distribution document.

Department of Defense (cont)

Document Number	Title	Date	Scope	Source
DOD-HDBK-743A	Anthropometry of U.S. Military Personnel	February 13, 1991	This handbook presents body size information on the military personnel of the United States in the form of anthropometric data. These data are suitable for human factors engineering applications in the design and development of military systems, equipment, and materiel and in the design and sizing of military clothing and personal equipment.	http://assist.daps.dla.mil/docimages/0000/40/29/54083.pd0
MIL-HDBK-759C	Human Engineering Design Guidelines	July 31, 1995	This handbook provides human engineering design guidelines and reference data for design of military systems, equipment, and facilities.	http://assist.daps.dla.mil/docimages/0000/40/04/mh759c.pd8
MIL-HDBK-767	Design Guidance for Interior Noise Reduction in Light-Armored Tracked Vehicles	September 17, 1993	Techniques available to reduce interior noise in light-armored tracked vehicles are discussed. Emphasis is on those sources that have their major effect on interior noise. Exterior noise is addressed only as a result of having reduced interior noise.	http://assist.daps.dla.mil/docimages/0000/13/24/767.pd1
MIL-HDBK-1473A	Color and Marking of Army Materiel	August 29, 1997	This handbook provides general guidelines for color and marking of Army materiel. It does not cover finishes, surface preparations, related treatments for preservation and coating, or special requirements specified by Army design activities.	http://assist.daps.dla.mil/docimages/0000/85/40/hdbk1473.pd6
MIL-HDBK-1908B	Definitions of Human Factors Terms	August 16, 1999	This handbook defines terms frequently used in human factors standardization documents by providing common meanings of such terms to ensure that they will be interpreted consistently and in the manner intended.	http://assist.daps.dla.mil/docimages/0001/81/33/1908hdbk.pd9

Department of Defense (cont)

Document Number	Title	Date	Scope	Source
MIL-HDBK-46855A	Human Engineering Program Process and Procedures	May 17, 1999	This handbook provides human engineering (HE) program tasks, procedures and preferred practices, and methods for application to system acquisition. The program tasks outline the work to be accomplished by a contractor or subcontractor in conducting an HE effort integrated with the total system engineering and development effort. They serve as a basis for offerors to provide HE program information during the solicitation process.	http://assist.daps.dla.mil/docimages/0001/83/06/46855a.pd6
DI-HFAC-80742B	Human Engineering Simulation Concept	July 8, 1998	This data item description (DID) describes the contractor's intended use of mockups and simulators in support of human engineering analysis, design support, and test and evaluation.	http://assist.daps.dla.mil/docimages/0001/58/86/80742b.pd3
DI-HFAC-80746B	Human Engineering Design Approach Document - Operator	July 8, 1998	This data item description (DID) describes equipment which interfaces with operators. This document provides a source of data to evaluate the extent to which equipment having an interface with operators meets human performance requirements and human engineering criteria.	http://assist.daps.dla.mil/docimages/0003/35/84/80746.pd3
DI-HFAC-80747B	Human Engineering Design Approach Document - Maintainer	July 8, 1998	This data item description (DID) describes equipment which interfaces with maintainers. This document provides a source of data to evaluate the extent to which equipment having an interface with maintainers meets human performance requirements and human engineering criteria.	http://assist.daps.dla.mil/docimages/0001/70/26/80747b.pd7

Department of Defense (cont)

Document Number	Title	Date	Scope	Source
DI-HFAC-81399	Critical Task Analysis Report	May 26, 1994	This data item description (DID) describes the results of analyses of critical tasks performed by the contractor to provide a basis for evaluation of the design of the system, equipment, or facility.	
	Handbook of Perception and Human Performance Vol I – Sensory Processes and Perception Vol II – Cognitive Processes and Performance	1986	In December 1980, the Air Force Aerospace Medical Research Laboratory with major support by a consortium of DoD and NASA agencies initiated the Integrated Perceptual Information for Designers (IPID) project. The first phase, resulting in this handbook, provides a comprehensive though selective consolidation of data from a range of subject domains within experimental psychology.	This handbook is copyrighted by John Wiley & Sons. However, the U.S. Government has the right to reproduce material from the handbook for U.S. Government internal purposes.
	Engineering Data Compendium: Human Perception and Performance	June 1988	This Compendium is a second in a series of tools aimed at providing the data necessary for the human engineering design of crew systems. The first was the two-volume *Handbook of Perception and Human Performance*. The Handbook contains an extensive treatment of the basic data on perception and performance designed for use by the human engineering specialist. It can be considered the primary reference for the Compendium. Although necessarily limited in scope, the Compendium provides in-depth treatment of human perception and performance in terms of the variables that influence the human operator's ability to acquire and process information, and make effective decisions.	

Department of Energy

Document Number	Title	Date	Scope	Source
DOE-HDBK-1140-2001	Human Factors/Ergonomics Handbook for the Design for Ease of Maintenance	February 2001	This standard establishes system maintainability design criteria for DOE systems, subsystems, equipment and facilities.	http://tis.eh.doe.gov/techstds/standard/hdbk1140/hdbk11402001_part1.pdf (Note: This handbook is in 3 parts.)

Department of Transportation

Federal Aviation Administration

Document Number	Title	Date	Scope	Source
HF-STD-001	Human Factors Design Standard	May 2003	The purpose of this Human Factors Design Standard is to provide a single easy-to-use source of human factors design criteria oriented to the needs of the FAA mission and systems. An additional goal is to facilitate use of appropriate design criteria by organizing the document so that users can easily locate the needed information.	http://www.hf.faa.gov/docs/508/docs/wjhtc/hfds.zip
DOT-VNTSC-FAA-95-3	Human Factors in the Design and Evaluation of Air Traffic Control Systems	April 1995	This document presents human factors issues that should be considered in the design and evaluation of air traffic control systems and subsystems. It provides background material on the capabilities and limitations of humans as information processors.	http://www.hf.faa.gov/docs/volpehndk.zip
FAA-HF-001	Human Engineering Program Plan	August 15, 1999	The Human Engineering Program Plan is the single document which describes the contractor's entire human engineering program, identifies its elements, and explains how the elements will be managed.	http://www.hf.faa.gov/docs/did_001.htm
FAA-HF-002	Human Engineering Design Approach Document - Operator	August 15, 1999	The Human Engineering Design Approach Document – Operator provides a source of data to evaluate the extent to which equipment having an interface with operators meets human performance requirements and human engineering criteria.	http://www.hf.faa.gov/docs/did_002.htm

Department of Transportation (cont)

Federal Aviation Administration

Document Number	Title	Date	Scope	Source
FAA-HF-003	Human Engineering Design Approach Document - Maintainer	August 15, 1999	The Human Engineering Design Approach Document – Maintainer provides a source of data to evaluate the extent to which equipment having an interface with maintainers meets human performance requirements and human engineering criteria.	http://www.hf.faa.gov/docs/did_003.htm
FAA-HF-004	Critical Task Analysis Report	December 1, 2000	The Critical Task Analysis report describes the results of analyses of critical tasks performed to provide a basis for evaluation of the design of the system, equipment, or facility, verifying that human engineering technical risks have been minimized and solutions are in hand.	http://hfetag.dtic.mil/docs-hfs/faa-hf-004_critical_task_analysis_report.doc
FAA-HF-005	Human Engineering Simulation Concept	December 1, 2000	The Human Engineering Simulation Concept describes the contractor's intended use of mockups and simulators in support of human engineering analysis, design support, and test and evaluation.	http://hfetag.dtic.mil/docs-hfs/faa-hf-005_human-engineering_simulation.doc

Department of Transportation (cont)

Federal Highway Administration

Document Number	Title	Date	Scope	Source
FHWA-JPO-99-042	Preliminary Human Factors Guidelines for Traffic Management Centers	July 1999	This document provides human factors guidance for designers, owners, and planners engaged in the development and operation of traffic management centers. Specific guidance addresses several dimensions of the work environment that can affect operator and system performance.	http://plan2op.fhwa.dot.gov/pdfs/pdf2/edl10303.pdf
FHWA-RD-98-057	Human Factors Design Guidelines for Advanced Traveler Information Systems (ATIS) and Commercial Vehicle Operations (CVO)	March 1998	This document is aprt of a series of documents designed to develop precise, detailed human factors design guidelines for Advanced Traveler Information Systems (ATIS) and Commercial Vehicle Operations (CVO). This handbook summarizes human engineering data, guidelines, and principles for use by creative designers, engineers and human factors practitioners during the ATIS design process.	http://www.fhwa.dot.gov/tfhrc/safety/pubs/atis/index.html
FHWA-RD-01-051	Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians	May 2001	This document contains updated recommendations and information on how to apply the *Highway Design Handbook for Older Drivers and Pedestrians*.	http://www.tfhrc.gov/humanfac/01105/cover.htm
FHWA-RD-01-103	Highway Design Handbook for Older Drivers and Pedestrians	May 2001	This document updated, revised, and expanded the scope of the *Older Driver Highway Design Handbook*. The resulting document incorporates new research findings and technical developments; extensive feedback from state, county, and municipal engineers; and recommendations with supporting background material for aspects of modern roundabouts and highway-rail grade crossings. Recommendations geared to use of highway	http://www.tfhrc.gov/humanfac/01103/coverfront.htm

			facilities by pedestrians also receive greater emphasis.	

Multiple Departments

Document Number	Title	Date	Scope	Source
FED-STD-795	Uniform Federal Accessibility Standards	April 1, 1988	This document sets standards for facility accessibility by physically handicapped persons for Federal and federally-funded facilities.	http://assist.daps.dla.mil/docimages/0000/46/05/53835.pd5

National Aeronautics and Space Administration

Document Number	Title	Date	Scope	Source
NASA-STD-3000B	Man-Systems Integration Standards	July 1995	This document provides specific user information to ensure proper integration of the man-system interface requirements with those of other aerospace disciplines. These man-system interface requirements apply to launch, entry, on-orbit, and extraterrestrial space environments. This document is intended for use by design engineers, systems engineers, maintainability engineers, operations anaylsts, human factors specialists, and others engaged in the definition and development of manned space programs.	http://msis.jsc.nasa.gov

Nuclear Regulatory Commission

Document Number	Title	Date	Scope	Source
NUREG-0700 (Rev 2)	Human-System Interface Design Review Guidelines	May 2002	The U.S. Nuclear Regulatory Commission staff reviews the human factors engineering aspects of nuclear power plants. Detailed design review procedures are provided in NUREG-0711. As part of the review process, the interfaces between plant personnel and the plant's systems and components are evaluated for conformance with HFE guidelines. This document provides the guidelines necessary to perform this evaluation.	http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0700
NUREG-0711 (Rev 1)	Human Factors Engineering Program Review Model	May 2002	This document is used by the staff of the Nuclear Regulatory Commission to review the human factors engineering programs of applicants for construction permits, operating licenses, standard design certifications, combined operating licenses, and for license amendments.	http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0711

Appendix A

British Defence Standard

Document Number	Title	Date	Scope	Source
00-25 (Part 14)/Issue 1	Human Factors for Designers of Equipment, Part 14: Military Land Vehicle Design	August 25, 2000	This Part of the Defence Standard provides requirements for guidelines for human factors in military land vehicle design.	http://www.dstan.mod.uk/ data/00/025/14000100.pdf
00-25 (Part 15)/Issue 1	Human Factors for Designers of Systems, Part 15: Principles and Process	July 30, 2004	This part of the Defence Standard discusses system issues and the role of human factors within projects and provides a guide to tools and techniques to support the integration of human factors. This Part does not prescribe a specific process for implementing human factors integration, rather it provides reference to other comprehensive guidance.	http://www.dstan.mod.uk/ data/00/025/15000100.pdf
00-25 (Part 16)/Issue 1	Human Factors for Designers of Systems, Part 16: Introduction and Manpower Domain	July 30, 2004	This Part of the Defence Standard discusses the technical areas of complementing, team structures, command structures, verbal communications, non-verbal communications, job allocations, interactive behaviour, and workload.	http://www.dstan.mod.uk/ data/00/025/16000100.pdf
00-25 (Part 17)/Issue 1	Human Factors for Designers of Systems, Part 17: Personnel Domain	July 30, 2004	This Part of the Defence Standard discusses the technical areas of recruitment and selection, task analyses, physical characteristics, clothing increments, personal equipment envelope, fatigue, stressors, dexterity, gender issues, sensory characteristics, and psychological issues.	http://www.dstan.mod.uk/ data/00/025/17000100.pdf
00-25 (Part 18)/Issue 1	Human Factors for Designers of Systems, Part 18: Training Domain	July 30, 2004	This Part of the Defence Standard discusses the technical areas of training and performance, training needs analysis, nature of error, and training aids.	http://www.dstan.mod.uk/ data/00/025/18000100.pdf

British Defence Standard (cont)

Document Number	Title	Date	Scope	Source
00-25 (Part 19)/Issue 1	Human Factors for Designers of Systems, Part 19: Human Engineering Domain	July 30, 2004	This Part of the Defence Standard discusses the technical areas of system issues, general ergonomics, workspace design, lighting, human computer interface, controls and control types, labelling, information displays, maintenance and access ergonomics, and accommodation and habitability.	http://www.dstan.mod.uk/data/00/025/19000100.pdf
00-25 (Part 20)/Issue 1	Human Factors for Designers of Systems, Part 20: Health Hazard Assessment Domain	July 30, 2004	This Part of the Defence Standard discusses the technical areas of environmental tolerance issues, gravity and acceleration, electrical and electromagnetic, radiation, thermal, acoustic, vibration, toxicity, and hazard logs.	http://www.dstan.mod.uk/data/00/025/20000100.pdf
00-25 (Part 21)/Issue 1	Human Factors for Designers of Systems, Part 21: System Safety Domain	July 30, 2004	This Part of the Defence Standard discusses the technical areas of mitigation of safety risks, machinery, safety case formulation, and system safety analyses.	http://www.dstan.mod.uk/data/00/025/21000100.pdf
00-25 (Part 25)/Issue 1	Human Factors for Designers of Systems, Part 25: Supporting Information	July 30, 2004	This Part of the Defence Standard provides selected items of supporting information that underpin or inform the detailed guidance provided in Parts 15 to 21 of the standard. This information is provided for completeness and to provide traceability with earlier versions of the standard.	http://www.dstan.mod.uk/data/00/025/25000100.pdf

British Defence Standard (cont)

Document Number	Title	Date	Scope	Source
00-56 (Part 1)/Issue 2	Safety Management Requirements for Defence Systems, Part 1: Requirements	December 13, 1996	This part of the Defence Standard describes the requirements for safety management, including hazard analysis and safety assessment. It can be applied during the initiation, feasibility, project definition, full development and production phases of MOD projects embodying safety related components, and for in-service operation, maintenance and modification.	http://www.dstan.mod.uk/data/00/056/01000200.pdf
00-56 (Part 2)/Issue 2	Safety Management Requirements for Defence Systems, Part 2: Guidance	December 13, 1996	This Part of the Defence Standard provides information and guidance on the requirements for safety management, including hazard analysis and safety assessment, contained in Part 1. It may be applied during the initiation, feasibility, project definition, full development and production phases of MOD projects embodying safety related components, and for in-service operation, maintenance and modification.	http://www.dstan.mod.uk/data/00/056/02000200.pdf