



Department of Defense Joint Human Systems Integration Steering Committee

Reference Manual of
Congressional Language Relevant to
Human Systems Integration

June 2020

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This reference manual provides supporting background and context to the mission of the Joint Human Systems Integration Steering Committee (JHSISC).

The Joint Human Systems Integration (HSI) Steering Group was combined with the HSI Task Force of the Defense Safety Oversight Council to create the JHSISC. The JHSISC provides a strategic focus for HSI and engages the major Department acquisition stakeholders in the practice of HSI.

Congressional direction was provided in the 2007 National Defense Authorization Act (NDAA), which tasked the Office of the Secretary of Defense (OSD) to name a senior official to oversee Joint HSI activities. At the time, the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD(AT&L)) was named to lead the Joint HSI activities starting in April 2008 with support from the Director of Defense Research and Engineering (DDR&E) and the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD(P&R)).

Additional language in both the 2005 and 2006 NDAA House Reports recommended increased Research and Development funding for HSI tools and methodologies for Major Defense Acquisition Programs. Subsequently, there have been updates from the 2019 NDAA to remove the statutory requirement for the senior official. Removing this requirement allows flexibility to the Services for improved management considerations to accomplish HSI, and the JHSISC remains influential and necessary for providing continued guidance and support to the Services.

This reference manual summarizes HSI references in recent authorizations and appropriations governing the purpose of the JHSISC. Within this document is a reverse chronological list of HSI and HSI-domain-related citations and references in congressional and public law authorizations, appropriations, and reports.

S.1790 - National Defense Authorization Act for Fiscal Year 2020. 116th Congress (2019-2020). 12/20/2019 Became Public Law No: 116-92. January 3, 2019. (Page 345.)

<https://www.congress.gov/bill/116th-congress/senate-bill/1790/text>
<https://www.congress.gov/116/bills/s1790/BILLS-116s1790enr.pdf>

SEC. 902. CLARIFYING THE ROLES AND RESPONSIBILITIES OF THE UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT AND THE UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING.

The laws of the United States are amended as follows:

(1) Section 129a(c)(3) of title 10, United States Code, is amended by striking “Under Secretary of Defense for Acquisition, Technology, and Logistics” and inserting “Under Secretary of Defense for Acquisition and Sustainment”.

H.R.5515 - John S. McCain National Defense Authorization Act for Fiscal Year 2019. 115th Congress (2017-2018). 08/13/2018 Became Public Law No: 115-232. January 3, 2018. (Pages 50, 52, 91.)

<https://www.congress.gov/bill/115th-congress/house-bill/5515/text/enr?r=1887>
<https://www.congress.gov/115/bills/hr5515/BILLS-115hr5515enr.pdf>

The following language has been deleted.

(f) REPEAL OF STATUTORY REQUIREMENT FOR DESIGNATION OF SENIOR OFFICIAL TO COORDINATE AND MANAGE HUMAN SYSTEMS INTEGRATION ACTIVITIES RELATED TO ACQUISITION PROGRAMS

Section 231 of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110-181; 122 Stat. 45; 10 U.S.C. 1701 note) is amended- (1) by striking "(a) IN GENERAL.-"; and (2) by striking subsections (b), (c), and (d).

The following language has been added to sections 226, 227, and 334.

SEC. 226. ACTIVITIES ON IDENTIFICATION AND DEVELOPMENT OF ENHANCED PERSONAL PROTECTIVE EQUIPMENT AGAINST BLAST INJURY. (Page 50.)

(a) ACTIVITIES REQUIRED.-During calendar year 2019, the Secretary of the Army shall, in consultation with the Director of Operational Test and Evaluation, carry out a set of activities to identify and develop personal equipment to provide enhanced protection against injuries caused by blasts in combat and training.

(b) ACTIVITIES.-

(1) CONTINUOUS EVALUATION PROCESS.-For purposes of the activities required by subsection (a), the Secretary shall establish a process to continuously solicit from government, industry, academia, and other appropriate entities personal protective equipment that is ready for testing and evaluation in order to identify and evaluate equipment or clothing that is more effective in protecting members of the Armed Forces from the harmful effects of blast injuries, including traumatic brain injuries, and would be suitable for expedited procurement and fielding.

(2) GOALS.-The goals of the activities shall include:

(A) Development of streamlined requirements for procurement of personal protective equipment.

(B) Appropriate testing of personal protective equipment prior to procurement and fielding.

(C) Development of expedited mechanisms for deployment of effective personal protective equipment.

(D) Identification of areas of research in which increased investment has the potential to improve the quality of personal protective equipment and the capability of the industrial base to produce such equipment.

(E) Such other goals as the Secretary considers appropriate.

(3) PARTNERSHIPS FOR CERTAIN ASSESSMENTS.-As part of the activities, the Secretary should continue to establish partnerships with appropriate academic institutions for purposes of assessing the following:

(A) The ability of various forms of personal protective equipment to protect against common blast injuries, including traumatic brain injuries.

(B) The value of real-time data analytics to track the effectiveness of various forms of personal protective equipment to protect against common blast injuries, including traumatic brain injuries.

(C) The availability of commercial-off the-shelf personal protective technology to protect against traumatic brain injury resulting from blasts.

(D) The extent to which the equipment determined through the assessment to be most effective to protect against common blast injuries is readily modifiable for different body types and to provide lightweight material options to enhance maneuverability.

(c) AUTHORITIES.-In carrying out activities under subsection

(a), the Secretary may use any authority as follows:

(1) Experimental procurement authority under section 2373 of title 10, United States Code.

(2) Other transactions authority under section 2371 and 2371b of title 10, United States Code.

(3) Authority to award technology prizes under section 2374a of title 10, United States Code.

(4) Authority under the Defense Acquisition Challenge Program under section 2359b of title 10, United States Code.

(5) Any other authority on acquisition, technology transfer, and personnel management that the Secretary considers appropriate.

(d) CERTAIN TREATMENT OF ACTIVITIES.-Any activities under this section shall be deemed to have been through the use of competitive procedures for the purposes of section 2304 of title 10, United States Code.

(e) ON-GOING ASSESSMENT FOLLOWING ACTIVITIES.-After the completion of activities under subsection (a), the Secretary shall, on an on-going basis, do the following:

(1) Evaluate the extent to which personal protective equipment identified through the activities would-

(A) enhance survivability of personnel from blasts in combat and training; and

(B) enhance prevention of brain damage, and reduction of any resultant chronic brain dysfunction, from blasts in combat and training.

(2) In the case of personal protective equipment so identified that would provide enhancements as described in paragraph (1), estimate the costs that would be incurred to procure such enhanced personal protective equipment, and develop a schedule for the procurement of such equipment.

(3) Estimate the potential health care cost savings that would occur from expanded use of personal protective equipment described in paragraph (2).

(f) REPORT.-Not later than December 1, 2019, the Secretary shall submit to the Committee on Armed Services of the Senate and the Committee on Armed Services of the House of Representatives a report on the activities under subsection (a) as of the date of the report.

(g) FUNDING.-Of the amount authorized to be appropriated for fiscal year 2019 by this Act for research, development, test, and evaluation, as specified in the funding tables in division D, \$10,000,000 may be used to carry out this section.

SEC. 227. HUMAN FACTORS MODELING AND SIMULATION ACTIVITIES. (Page 52.)

(a) ACTIVITIES REQUIRED.-The Secretary of Defense shall develop and provide for the carrying out of human factors modeling and simulation activities designed to do the following:

(1) Provide warfighters and civilians with personalized assessment, education, and training tools.

(2) Identify and implement effective ways to interface and team warfighters with machines.

(3) Result in the use of intelligent, adaptive augmentation to enhance decision making.

(4) Result in the development of techniques, technologies, and practices to mitigate critical stressors that impede warfighter and civilian protection, sustainment, and performance.

(b) PURPOSE.-The overall purpose of the activities shall be to accelerate research and development that enhances capabilities for human performance, human-systems integration, and training for the warfighter.

(c) PARTICIPANTS IN ACTIVITIES.-Participants in the activities may include the following:

(1) Elements of the Department of Defense engaged in science and technology activities.

(2) Program Executive Offices of the Department.

(3) Academia.

(4) The private sector.

(5) Such other participants as the Secretary considers appropriate.

Sec. 334. SURFACE WARFARE TRAINING IMPROVEMENT. (Page 91.)

(a) FINDINGS.—Congress makes the following findings:

(1) In 2017, there were three collisions and one grounding involving United States Navy ships in the Western Pacific. The two most recent mishaps involved separate incidents of a Japan-based United States Navy destroyer colliding with a commercial merchant vessel, resulting in the combined loss of 17 sailors.

(2) The causal factors in these four mishaps are linked directly to a failure to take sufficient action in accordance with the rules of good seamanship.

(3) Because risks are high in the maritime environment, there are widely accepted standards for safe seamanship and navigation. In the United States, the International Convention on Standards of Training, Certification and Watchkeeping (hereinafter in this section referred to as the “STCW”) for Seafarers, standardizes the skills and foundational knowledge a maritime professional must have in seamanship and navigation.

(4) Section 568 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328; 130 Stat. 2139) endorsed the STCW process and required the Secretary of Defense to maximize the extent to which Armed Forces service, training, and qualifications are creditable toward meeting merchant mariner licenses and certifications.

(5) The Surface Warfare Officer Course Curriculum is being modified to include ten individual Go/No Go Mariner Assessments/Competency Check Milestones to ensure standardization and quality of the surface warfare community.

(6) The Military-to-Mariner Transition report of September 2017 notes the Army maintains an extensive STCW qualifications program and that a similar Navy program does not exist.

(b) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the Secretary of the Navy should establish a comprehensive individual proficiency assessment process and include such tour assignments; and

(2) the Secretary of the Navy should significantly expand the STCW qualifications process to improve seamanship and navigation individual skills training for surface warfare candidates, surface warfare officers, quartermasters and operations specialists to include an increased set of courses that directly correspond to STCW standards.

(c) REPORT.—Not later than March 1, 2019, the Secretary of the Navy shall submit to the congressional defense committees a report that includes each of the following:

(1) A detailed description of the surface warfare officer assessments process.

(2) A list of programs that have been approved for credit toward merchant mariner credentials.

(3) A complete gap analysis of the existing surface warfare training curriculum and STCW.

(4) A complete gap analysis of the existing surface warfare training curriculum and the 3rd mate unlimited licensing requirement.

(5) An assessment of surface warfare options to complete the 3rd mate unlimited license and the STCW qualification

H.R.4986 - National Defense Authorization Act for Fiscal Year 2008. 110th Congress (2007-2008) Public Law No: 110-181. January 28, 2008. (Page 45.)

<https://www.congress.gov/bill/110th-congress/house-bill/4986?r=3>

<https://www.congress.gov/110/plaws/publ181/PLAW-110publ181.pdf>

Subtitle D—Other Matters (Page 45)

SEC. 231. COORDINATION OF HUMAN SYSTEMS INTEGRATION ACTIVITIES RELATED TO ACQUISITION PROGRAMS.

(a) IN GENERAL

.—The Secretary of Defense, acting through the Under Secretary of Defense for Acquisition, Technology, and Logistics, shall coordinate and manage human systems integration activities throughout the acquisition programs of the Department of Defense.

(b) ADMINISTRATION

.—In carrying out subsection (a), the Secretary shall designate a senior official to be responsible for the effort.

(c) RESPONSIBILITIES

.—In carrying out this section, the senior official designated in subsection (b) shall—

- (1) coordinate the planning, management, and execution of such activities; and
- (2) identify and recommend, as appropriate, resource requirements for human systems integration activities.

(d) DESIGNATION

.—The designation required by subsection (b) shall be made not later than 60 days after the date of the enactment of this Act.

H.R.4986 - National Defense Authorization Act for Fiscal Year 2008. 110th Congress (2007-2008). 01/28/2008 Became Public Law No: 110-181. January 3, 2008. (Page 43.)

<https://www.congress.gov/bill/110th-congress/house-bill/4986/text/enr?r=2355>

<https://www.congress.gov/110/bills/hr4986/BILLS-110hr4986enr.pdf>

Same language as above.

H.R.1585 - National Defense Authorization Act for Fiscal Year 2008. 110th Congress (2007-2008). H. Rept. 110-477 (Conference Report). December 6, 2007. (Page 45.)

<https://www.congress.gov/congressional-report/110th-congress/house-report/477>

<https://www.congress.gov/110/crpt/hrpt477/CRPT-110hrpt477.pdf>

Same language as above.

H.R.2126 - Department of Defense Appropriations Act, 1996. 104th Congress (1995-1996). H. Rept. 104-208. July 27, 1995. (Page 140.)

<https://www.congress.gov/congressional-report/104th-congress/house-report/208>

<https://www.congress.gov/104/crpt/hrpt208/CRPT-104hrpt208.pdf>

HUMAN FACTORS ENGINEERING TECHNOLOGY

The Army requested \$12,534,000 for human factors engineering technology. The Committee recommends \$20,034,000, an increase of \$7,500,000 as explained in the medical research (title VI) section of this report.

H.R.2126 - Department of Defense Appropriations Act, 1996. 104th Congress (1995-1996). H. Rept. 104-261 - MAKING APPROPRIATIONS FOR THE DEPARTMENT OF DEFENSE FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1996, AND FOR OTHER PURPOSES. September 25, 1995. (Pages 102, 104.)

<https://www.congress.gov/congressional-report/104th-congress/house-report/261>
<https://www.congress.gov/104/crpt/hrpt261/CRPT-104hrpt261.pdf>

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, ARMY (Page 102)

The conference agreement is as follows:

[In thousands of dollars]

HUMAN FACTORS ENGINEERING TECHNOLOGY

Budget: 12,534

House: 20,034

Senate: 12,534

Conference: 16,034

EXPLANATION OF PROJECT LEVEL ADJUSTMENTS—Continued (Page 104)

[In thousands of dollars]

Human Factors Engineering Technology

Budget: 12,534

House: 20,034

Senate: 12,534

Conference: 16,034

Human Factors Engineering Technology: Medteams

House: +4,000

Human Factors Engineering Technology: Rural Health

House: +3,500

Conference: +3,500

H.R.2126 - Department of Defense Appropriations Act, 1996. 104th Congress (1995-1996). H. Rept. 104-344 - MAKING APPROPRIATIONS FOR THE DEPARTMENT OF DEFENSE FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1996, AND FOR OTHER PURPOSES. November 15, 1995. (Pages 100, 101.)

<https://www.congress.gov/congressional-report/104th-congress/house-report/344>
<https://www.congress.gov/104/crpt/hrpt344/CRPT-104hrpt344.pdf>

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, ARMY (Page 100)

The conference agreement is as follows:

[In thousands of dollars]

HUMAN FACTORS ENGINEERING TECHNOLOGY

Budget: 12,534

House: 20,034

Senate: 12,534

Conference: 16,034

EXPLANATION OF PROJECT LEVEL ADJUSTMENTS—Continued (Page 101)

[In thousands of dollars]

Human Factors Engineering Technology

Budget: 12,534

House: 20,034

Senate: 12,534

Conference: 16,034

Human Factors Engineering Technology: Medteams

House: +4,000

Human Factors Engineering Technology: Rural Health

House: +3,500

Conference: +3,500