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STANDARDIZED PROCEDURE FOR SYSTEM SAFETY INPUT TO THE
DEFENSE TECHNICAL INFORMATION CENTER (DTIC)(U) NAVAL
SAFETY CENTER NORFOLK VA R P KINZEY ET AL. JAN 87

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AD-A178 246

JSSC TR-1
JANUARY 1987

JOINT SERVICES SAFETY CONFERENCE
SYSTEM SAFETY PANEL

STANDARDIZED PROCEDURE
FOR SYSTEM SAFETY INPUT TO THE
DEFENSE TECHNICAL INFORMATION CENTER (DTIC)

By:
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For The Joint Services Safety Conference (JSSC)

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SUMMARY

Considerable system safety safety hazard analysis reports are developed under USA, USN, and USAF contracts and project orders. These reports are not always being submitted to DTIC. System safety reports in DTIC are not easy to retrieve using system safety engineering and management terminology. The purpose of this guide is to provide standard procedures and terminology for submitting system safety reports to DTIC for subsequent data retrievals.



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1. Introduction: Currently, there are no standardized key words for system safety reports being submitted to the Defense Technical Information Center (DTIC). Retrieval of this data without key words requires DTIC to conduct extensive text searches to locate specific hazard analyses or other system safety reports. This procedure creates considerable time delays in obtaining historical data and generates excessive costs. To reduce costs and time, this technical report has been prepared to standardize key words and phrases for inputting system safety related data to DTIC.

2. System Safety: System Safety is defined by MIL-STD-882B, System Safety Program Requirements, as the application of engineering and management principles, criteria, and techniques to optimize safety within the constraints of operational effectiveness, time, and cost throughout all phases of the system life cycle.

A system is a composite, at any level of complexity, of personnel, procedures, materials, tools, equipment, facilities, and software. The elements of this composite entity are used together in the intended operational or support environment to perform a given task or achieve a specific production, support, or mission requirement.

3. DTIC System:

a. General. The Defense Technical Information Center (formerly Defense Documentation Center) is a component for the DoD scientific and technical information program. DTIC contributes to the management and conduct of Defense research and development efforts by providing access to, and transfer of, scientific and technical information for DoD personnel, DoD contractors and potential contractors, and other U.S. Government agency personnel and their contractors.

The DTIC provides access to planned, ongoing, and completed research activities through the following four data bases:

(1) The Program Summary (PS) Data Base consists of projects which forecast and propose future research efforts.

(2) The Research and Technology Work Unit Information Center (WUIS) Data Base contains research projects on work unit level that are currently being performed by DoD and NASA or under DoD contract.

(3) The Technical Report (TR) Data Base consists of bibliographic citations to documents that convey progress or results of Defense sponsored Research, Development, Test, and Evaluation (RDT&E) efforts.

(4) The Independent Research and Development (IR&D) Data Base contains descriptions of research projects currently in progress in industry which may have future applications to -- and compete for -- DoD contracts. IR&D records are generally considered proprietary information.

Currently, DTIC holdings include well over one million technical reports under computer control and an additional 300,000 documents available for manual searching. Because of the immense size of the data base, it is important that system safety personnel have a systematic method for inputting and retrieving data. A standardized set of key words, phrases, and procedures will provide that systematic method.

b. Data Input. DTIC Handbook for Users of the Defense Technical Information Center, DLAH 4185.8, provides a good guide on how to use the system and input data. In summary, reports are prepared in accordance with MIL-STD-847B format requirements. Fill out a DD Form 1473, Report Documentation Page (sample in Figure 1), and submit this form and two copies (follow appropriate security guidelines) of the report to:

Defense Technical Information Center
ATTN: DTIC-FDAC
Cameron Station
Alexandria, VA 22304-6145

Obtain MIL-STD-847B and DD Forms 1473 from:

- Contract or project officers
- Technical libraries (normally)
- Focal points for military offices:

Air Force AF Publications Distribution Center
 2800 Eastern Boulevard
 Baltimore, MD 21220-2898

Army Army publications channels

Navy Naval Publications & Forms Center
 5801 Tabor Avenue
 Philadelphia, PA 19120-5002

If you wish to be informed of the AD number assigned to the report, forward a completed DTIC Form 50, DTIC Accessions Notice (Figure 2), along with the DD 1473.

3. Standardized Procedure:

a. Terminology. To correct the current problem involving submittal, identification, and retrieval of system safety related data from the Defense Technical Information Center, use the following procedure for filling out DD Form 1473 (detailed instructions are on the back of the form):

Blocks 1a - 7b - Self-explanatory

Block 8a - as appropriate, unless prepared for the JSSC System Safety Panel. If so, use "Joint Services Safety Conference."

Block 8b - 16 - As appropriate

Block 16 - (Supplementary Notation) - If prepared for the JSSC, use "prepared in cooperation with the Joint Services Safety Conference System Safety Panel." The JSSC is sponsored by the Service Safety Centers, U.S. Coast Guard Headquarters, and OASD (FM&P/S&OH).

Block 17 - (See procedure below)

Use the subject field and group structure listed in Figure 3. as appropriate. Leave the subgroup block blank.

For general use system safety engineering or management reports, use field 15 (military sciences) and group 05 (logistics, military facilities, and supplies). This field/group deals with logistics planning, procurement practices, and preventive measures. Therefore, it is appropriate for inclusion of general system safety engineering and management reports. Field 13 (mechanical, industrial, civil, and marine engineering) and Group 12 (safety engineering) should be specified as the second field and subgroup.

Block 18 - (Subject)

(1) Preface key words, phrases, and subphrases with the following phrase: "Please use the following posting terms in the order listed: System Safety, . . ."

(2) Use the Data Item Description (DID DD Form 1664) title as the key phrase; DI-SAFT-80101 (System Safety Hazard Analysis Report), DI-SAFT-80102 (Safety Assessment Report), and DI-SAFT-80106 (Occupational/Health Hazard Assessment Report).

(3) DI-SAFT-80101 should be broken down into the following phrases:

- (a) Preliminary Hazard Analysis (PHA) Report
- (b) Subsystem Hazard Analysis (SSHA) Report
- (c) System Hazard Analysis (SHA) Report
- (d) Operating and Support Hazard Analysis (O&SHA) Report

(4) For reports not covered by a Data Item Description (DID), use accepted system safety terminology.

Block 19 - (Abstract): Be sure to include the term(s) system safety, system safety engineering, or system safety management as part of the abstract.

Block 20 - 22 - Self-explanatory

4. DTIC Assistance: The Defense Technical Information Center (DTIC) is ready to offer assistance to anyone who needs and requests it. Call Data Base Input Division, Autovon: 284-7044 or Commercial: (202) 274-7044.

5. References:

DLAM 4185.18, Defense RDT&E Online System Dial-up Retrieval Self-Training Manual of Oct 86

DLAM 4185.16, Certification and Registration for Access to DOD Scientific and Technical Information of Oct 86

DTICH 4185.7, DTIC Retrieval and Indexing Terminology of Jan 87 (AD-A176 000)

DTIC/TR-86/16, Subject Categorization Guide for Defense Science and Technology of Oct 86 (AD-A172 650)

DLAH 4185.8, Handbook for Users of the Defense Technical Information Center of Dec 85

Instructions for Preparation of Report Documentation Page (Part of DD Form 1473)

MIL-STD-847B, Format Requirements for Scientific and Technical Reports Prepared by or For the Department of Defense

MIL-STD-882B, System Safety Program Requirements and associated Data Item Descriptions (DIDs)

REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION UNCLASSIFIED		1b RESTRICTIVE MARKINGS	
2a SECURITY CLASSIFICATION AUTHORITY		3 DISTRIBUTION AVAILABILITY OF REPORT	
2b DECLASSIFICATION/DOWNGRADING SCHEDULE			
4 PERFORMING ORGANIZATION REPORT NUMBER(S)		5 MONITORING ORGANIZATION REPORT NUMBER(S)	
6a NAME OF PERFORMING ORGANIZATION NAVAL SAFETY CENTER	6b OFFICE SYMBOL (If applicable)	7a NAME OF MONITORING ORGANIZATION	
6c ADDRESS (City, State, and ZIP Code) Naval Air Station Norfolk, VA 23511-5796		7b ADDRESS (City, State, and ZIP Code)	
8a NAME OF FUNDING/SPONSORING ORGANIZATION Joint Services Safety Conference	8b OFFICE SYMBOL (If applicable) JSSC	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c ADDRESS (City, State, and ZIP Code)		10. SOURCE OF FUNDING NUMBERS	
		PROGRAM ELEMENT NO.	PROJECT NO.
		TASK NO.	WORK UNIT ACCESSION NO.
11 TITLE (Include Security Classification) Standardized procedure for system safety input to the Defense Technical Information Center (DTIC).			
12. PERSONAL AUTHOR(S) Kinzey, R. Paul/Kniepp, Norbert			
13a. TYPE OF REPORT Final	13b. TIME COVERED FROM _____ TO _____	14. DATE OF REPORT (Year, Month, Day) 870227	15. PAGE COUNT 6
16 SUPPLEMENTARY NOTATION Prepared in cooperation with the Joint Services Safety Conference System Safety Panel. Sponsored by the Service Safety Centers and OASD (EM&P/S&OH).			
17 COSATI CODES		18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	
15	05		
13	12		
19 ABSTRACT (Continue on reverse if necessary and identify by block number) Considerable system safety hazard analysis reports are developed under USA, USN, and USAF contracts and project orders. These reports are not always being submitted to DTIC. System safety reports in DTIC are not easy to retrieve using system safety engineering and management terminology. The purpose of this guide is to provide standard procedures and terminology for submitting system safety reports to DTIC for subsequent data retrievals.			
20 DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION	
22a NAME OF RESPONSIBLE INDIVIDUAL P. P. Kinzey		22b TELEPHONE (Include Area Code) (804) 444-7926	22c. OFFICE SYMBOL 90B

AD NUMBER	DATE	DTIC ACCESSION NOTICE
1. REPORT IDENTIFYING INFORMATION		
A. ORIGINATING AGENCY		REQUESTER: <i>1. Put your mailing address on reverse of form</i> <i>2. Complete items 1 and 2</i> <i>3. Attach form to reports mailed to DTIC</i> <i>4. Use unclassified information only</i>
B. REPORT TITLE AND OR NUMBER		
C. MONITOR REPORT NUMBER		
D. PREPARED UNDER CONTRACT NUMBER		
2. DISTRIBUTION STATEMENT		
		DTIC: <i>1. Assign AD Number</i> <i>2. Return to requester.</i>

DTIC FORM 50
DEC 80

PREVIOUS EDITIONS ARE OBSOLETE

(Front Only)

FIGURE 2

SUBJECT FIELD AND GROUP STRUCTURE	
01 AVIATION TECHNOLOGY 01 Aerodynamics 02 Military Aircraft Operations 03 Helicopters 03 01 Bombers 03 02 Attack and Fighter Aircraft 03 03 Patrol and Reconnaissance Aircraft 03 04 Transport Aircraft 03 05 Training Aircraft 03 06 V/SION 03 07 Gliders and Parachutes 03 08 Civilian Aircraft 03 09 Planes Aircraft 03 10 Lighter-than-Air Aircraft 03 11 Research and Experimental Aircraft 03 12 High Control and Instrumentation 04 Terminal Flight Facilities 05 Commercial and General Aviation 06	07 CHEMISTRY 01 Industrial Chemistry and Chemical Processing 02 Inorganic Chemistry 03 Organic Chemistry 04 Physical Chemistry 05 Radiation and Nuclear Chemistry 06 Polymer Chemistry 08 EARTH SCIENCES AND OCEANOGRAPHY 01 Biological Oceanography 02 Cartography and Aerial Photography 03 Physical and Dynamic Oceanography 04 Geomagnetism 05 Geodesy 06 Geography, Geochemistry and Mineralogy 07 Geology, Limnology and Potamology 08 Mining Engineering 09 Soil Mechanics 10 Sedimentology 11 Snow, Ice and Permafrost 09 ELECTROTECHNOLOGY AND FLUIDICS 01 Electrical and Electronic Equipment 02 Fluidics and Fluorics 03 Lasers and Masers 04 Line, Surface and Bulk Acoustic Wave Devices 05 Electrooptical and Optoelectronic Devices 06 Acousto-optic and Optoacoustic Devices 07 Electromagnetic Shielding
02 AGRICULTURE 01 Agricultural Chemistry 02 Agricultural Economics 03 Agricultural Engineering 04 Agronomy, Horticulture and Aquaculture 05 Animal Husbandry and Veterinary Medicine 06 Forestry	10 POWER PROPULSION AND ENERGY CONVERSION (Nonpropulsive) 01 Non-Electrical Energy Conversion 02 Electric Power Production and Distribution 03 Electrochemical Energy Storage 04 Energy Storage 11 MATERIALS 01 Adhesives, Seals and Binders 02 Ceramics, Refractories and Glass 03 Refractory Fibers 04 Coatings, Colorants and Finishes 05 Laminates and Composite Materials 06 Textiles 07 Metallurgy and Metallography 08 Properties of Metals and Alloys 09 Fabrication Metallurgy 10 Miscellaneous Materials 11 Lubricants and Hydraulic Fluids 12 Plastics 13 Elastomers and Rubber 14 Solvents, Cleaners and Abrasives 15 Wood, Paper and Related Forestry Products
03 ASTRONOMY AND ASTROPHYSICS 01 Astronomy 02 Astrophysics 03 Celestial Mechanics	12 MATHEMATICAL AND COMPUTER SCIENCES 01 Numerical Mathematics 02 Theoretical Mathematics 03 Statistics and Probability
04 ATMOSPHERIC SCIENCES 01 Atmospheric Physics 02 Meteorology	13 MECHANICAL, INDUSTRIAL, CIVIL AND MARINE ENGINEERING 01 Air Conditioning, Heating, Lighting and Ventilating 02 Civil Engineering 03 Construction Equipment, Materials and Supplies 04 Containers and Packaging 05 Couplers, Fasteners and Joints 06 Surface Transportation and Equipment 06 01 Surface Effect Vehicles and Amphibious Vehicles 07 Hydraulic and Pneumatic Equipment 08 Manufacturing and Industrial Engineering and Control of Production Systems 09 Machine Engineering 10 Marine Engineering 10 01 Pumps, Filters, Pipes, Tubing, Fittings and Valves 11 Submarine Engineering 12 Safety Engineering 13 Structural Engineering and Building Technology
05 BEHAVIORAL AND SOCIAL SCIENCES 01 Administration and Management 02 Information Science 03 Economics and Cost Analysis 04 Government and Political Science 05 Sociology and Law 06 Humanities and History 07 Linguistics 08 Psychology 09 Personnel Management and Labor Relations	14 TEST EQUIPMENT, RESEARCH FACILITIES AND REPROGRAPHY 01 Holography 02 Test Facilities, Equipment and Methods 03 Recording and Playback Devices 04 Photography 05 Printing and Graphic Arts 15 MILITARY SCIENCES 01 Military Forces and Organizations 02 Civil Defense 03 Defense Systems 03 01 Air-Surface Defense Systems 03 02 Anti-Aircraft Defense Systems 03 03 Antisubmarine Defense Systems 04 Military Intelligence 05 Logistics, Military Facilities and Supplies 06 Military Operations, Strategy and Tactics 06 01 Naval Surface Warfare 06 02 Undersea and Antisubmarine Warfare 06 03 Chemical, Biological and Radiological Warfare 06 04 Nuclear Warfare 06 05 Space Warfare 06 06 Land Mine Warfare 06 07 Unconventional Warfare
06 BIOLOGICAL AND MEDICAL SCIENCES 01 Biochemistry 02 Genetic Engineering and Molecular Biology 03 Biology 04 Anatomy and Physiology 05 Medicine and Medical Research 06 Ecology 07 Radiobiology 08 Food, Food Service and Nutrition 09 Hygiene and Sanitation 10 Stress Physiology 11 Toxicology 12 Medical Facilities, Equipment and Supplies 13 Microbiology 14 Weapons Effects (Biological) 15 Pharmacology	16 GUIDED MISSILE TECHNOLOGY (Continued) 04 Guided Missiles 04 01 Air- and Space-Launched Guided Missiles 04 02 Surface-Launched Guided Missiles 04 03 Underwater-Launched Guided Missiles 05 Guided Inhabitable Recovery Vehicles 17 NAVIGATION, DETECTION AND COUNTERMEASURES 01 Acoustic Detection and Detectors 02 Non-Acoustic and Non-Magnetic Submarine Detection 03 Direction Finding 04 Countermeasures 04 01 Radio Countermeasures 04 02 Acoustic Countermeasures 04 03 Radar Countermeasures 04 04 Optical Countermeasures 05 01 Infrared Detection and Detectors 05 02 Ultraviolet Detection and Detectors 06 Magnetic and Electric Field Detection and Guidance 07 Navigation and Guidance 07 01 Land and Riverine Navigation and Guidance 07 02 Underwater and Marine Navigation and Guidance 07 03 Air Navigation and Guidance 07 04 Space Navigation and Guidance 08 Miscellaneous Detection and Detectors 09 Active and Passive Radar Detection and Equipment 10 Seismic Detection and Detectors 11 Target Direction, Range and Position Finding
08 AGRICULTURE 01 Agricultural Chemistry 02 Agricultural Economics 03 Agricultural Engineering 04 Agronomy, Horticulture and Aquaculture 05 Animal Husbandry and Veterinary Medicine 06 Forestry	18 NUCLEAR SCIENCE AND TECHNOLOGY 01 Fusion Devices (Thermonuclear) 02 Isotopes 03 Nuclear Explosions and Devices 04 Non-Military Nuclear Power Plants and Fission Reactor Engineering 05 01 Nuclear Fission Reactors (Power) 05 02 Nuclear Fusion Reactors (Non-Power) 06 Nuclear Radiation Shielding, Protection and Safety 07 Radioactivity, Radioactive Wastes and Fission Products 08 SNAP (Systems for Nuclear Auxiliary Power) Technology 09 Fission Reactor Physics 10 Fission Reactor Materials 19 ORDNANCE 01 Ammunition and Explosives 01 01 Pyrotechnics 02 Aerial Bombs 03 Combat Vehicles 04 Armor 05 Fire Control and Bombing Systems 06 Guns 07 Rockets 08 Underwater Ordnance 09 Torpedoes 10 Explosives 11 Ballistics 12 Nuclear Weapons 13 Directed Energy Weapons 14 Guided Munitions
09 ELECTROTECHNOLOGY AND FLUIDICS 01 Electrical and Electronic Equipment 02 Fluidics and Fluorics 03 Lasers and Masers 04 Line, Surface and Bulk Acoustic Wave Devices 05 Electrooptical and Optoelectronic Devices 06 Acousto-optic and Optoacoustic Devices 07 Electromagnetic Shielding	20 PHYSICS 01 Acoustics 02 Crystallography 03 Electricity and Magnetism 04 Fluid Mechanics 05 Atomic and Molecular Physics and Spectroscopy 06 Optics 06 01 Fiber Optics and Integrated Optics 06 02 Particle Accelerators 07 Nuclear Physics and Elementary Particle Physics 08 Plasma Physics and Magnetohydrodynamics 09 Quantum Theory and Relativity 10 Mechanics 11 Solid State Physics 12 Thermodynamics 13 Radiofrequency Wave Propagation 14 Electromagnetic Pulses 21 PROPULSION, ENGINES AND FUELS 01 Air Breathing Engines (Turbojet, Turbofan, Turbo-propeller) 02 Combustion and Ignition 03 Electric and Ion Propulsion 04 Fuels 05 Jet and Gas Turbine Engines 06 Nuclear Propulsion 07 Reciprocating and Rotating Engines 08 Rocket Engines 08 01 Liquid Propellant Rocket Engines 08 02 Solid Propellant Rocket Engines 09 Rocket Propellants 09 01 Solid Rocket Propellants 09 02 Solid Rocket Propellants
10 POWER PROPULSION AND ENERGY CONVERSION (Nonpropulsive) 01 Non-Electrical Energy Conversion 02 Electric Power Production and Distribution 03 Electrochemical Energy Storage 04 Energy Storage	22 SPACE TECHNOLOGY 01 Astronautics 02 Unmanned Spacecraft 03 Spacecraft Trajectories and Reentry 04 Ground Support Systems and Facilities for Space Vehicles 05 Manned Spacecraft
11 MATERIALS 01 Adhesives, Seals and Binders 02 Ceramics, Refractories and Glass 03 Refractory Fibers 04 Coatings, Colorants and Finishes 05 Laminates and Composite Materials 06 Textiles 07 Metallurgy and Metallography 08 Properties of Metals and Alloys 09 Fabrication Metallurgy 10 Miscellaneous Materials 11 Lubricants and Hydraulic Fluids 12 Plastics 13 Elastomers and Rubber 14 Solvents, Cleaners and Abrasives 15 Wood, Paper and Related Forestry Products	23 BIOTECHNOLOGY 01 Biomedical Instrumentation and Bioengineering 02 Human Factors Engineering and Man-Machine Systems 03 Biomics 04 Protective Equipment 05 Life Support Systems 06 Waste: Rescue and Survival
12 MATHEMATICAL AND COMPUTER SCIENCES 01 Numerical Mathematics 02 Theoretical Mathematics 03 Statistics and Probability	24 ENVIRONMENTAL POLLUTION AND CONTROL 01 Air Pollution and Control 02 Noise Pollution and Control 03 Solid Waste Pollution and Control 04 Water Pollution and Control 05 Radioactive Pollution and Control 06 Environmental Health and Safety
13 MECHANICAL, INDUSTRIAL, CIVIL AND MARINE ENGINEERING 01 Air Conditioning, Heating, Lighting and Ventilating 02 Civil Engineering 03 Construction Equipment, Materials and Supplies 04 Containers and Packaging 05 Couplers, Fasteners and Joints 06 Surface Transportation and Equipment 06 01 Surface Effect Vehicles and Amphibious Vehicles 07 Hydraulic and Pneumatic Equipment 08 Manufacturing and Industrial Engineering and Control of Production Systems 09 Machine Engineering 10 Marine Engineering 10 01 Pumps, Filters, Pipes, Tubing, Fittings and Valves 11 Submarine Engineering 12 Safety Engineering 13 Structural Engineering and Building Technology	25 COMMUNICATIONS 01 Radio 02 Radio Communications 03 Satellite Communications 04 Command, Control and Communications Systems

FIGURE 3

END

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DTIC