Improvised Explosives Manual

Explosives and Blasting Procedures Manual *DOD Contractors' Safety Manual for Ammunition, Explosives and Related Dangerous Material* Manual of Explosives A Manual on Explosives *Lectures on Explosives* U.S. Army Explosives and Demolitions Handbook *Blasters' Handbook* A Manual on Explosives *National Park Service Handbook for the Storage, Transportation, and Use of Explosives* Rock Blasting and Explosives Engineering The Preparatory Manual of Explosives Blasters' Handbook *A Soldiers Handbook, Volume 1: Explosives Operations* Weapon System Safety Guidelines Handbook: Hazard control for explosive ordnance production Lectures on Explosives The Preparatory Manual of Explosives Fourth Edition Volume 1 The Preparatory Manual of Explosives U.S. Army Guide to Boobytraps *The Preparatory Manual of Explosives A Handbook on Modern Explosives* The Preparatory Manual of Explosives Manual of Tests and Criteria Improvised Munitions Handbook – Learn How to Make Explosive Devices & Weapons from Scratch (Warfare Skills Series) *The Preparatory Manual of Explosives Fourth Edition Volume 2 Introduction to the Technology of Explosives* Explosives U.S. Army Improvised Munitions Handbook Military Explosives U.S. Army Improvised Munitions Handbook *Explosives and Blasting Procedures Manual* Department of Defense Manual - DoD Ammunition and Explosives Safety Standards: Criteria for Unexploded Ordinance, Munitions Response, Waste Military Munitions, and Material Potentially Presenting an Explosive Hazard Encyclopedia of Explosives and Related Items Need for Uniform Security Measures in Transporting Arms, Ammunition, and Explosives Handbook of Japanese Explosive Ordnance Monthly Catalogue, United States Public Documents Detection of Liquid Explosives and Flammable Agents in Connection with Terrorism *Explosive Effects and Applications* Dod Contractor's Safety Manual for Ammunition and Explosives Explosives and Blasting Technique *Weapons of Mass Destruction: Nuclear weapons*

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We meet the expense of you this proper as without difficulty as easy pretentiousness to get those all. We meet the expense of Improvised Explosives Manual and numerous book collections from fictions to scientific research in any way. among them is this Improvised Explosives Manual that can be your partner.

U.S. Army Improvised Munitions Handbook May 31 2020 A guide to creating munitions from seemingly harmless materials that can be found in drug stores, paint stores, junk piles, and military stocks. You don't need to be a trained soldier to fully appreciate this edition of the U.S. Army Improvised Munitions Handbook. Originally created for soldiers in guerilla warfare situations, this handbook demonstrates the techniques for constructing weapons that are highly effective in the most harrowing of circumstances. Straightforward and incredibly user-friendly, it provides insightful information and step-by-step instructions on how to assemble weapons and explosives from common and readily available materials. Over 600 illustrations complement elaborate explanations of how to improvise any number of munitions from easily accessible resources. Whether you're a highly trained solider or simply a civilian looking to be prepared, the U.S. Army Improvised Munitions Handbook is an invaluable addition to your library.
***The Preparatory Manual of Explosives Fourth Edition Volume 2* Nov 05 2020 The Preparatory Manual of Explosives Fourth Edition is a massive upgrade from the third edition, and has been completely re-written. The material has been completely re-done, with more emphases on detailed preparatory methods, safety and hazard info, molecular information and data, structures and equations, and new chapters. The fourth edition includes numerous illustrations and data charts and tables, and includes improved procedures, processes, and information written with professional standards, but given a new improved bases so that the general student can read and understand the context far better then seen in the third edition. As well, the fourth edition includes valuable toxicity and physical properties data, and**

exhaustively describes each process in a new format and style. Chapters in Volume 2 include: 1) Chapter 14: Explosives Preparation 6, The Preparation of Nitramine Salts; 2) Chapter 15: Explosives Preparation 7, The Preparation of Amino Nitro Benzenes; 3) Chapter 16: Explosives Preparation 8, The Preparation of Nitro Benzenes; 4) Chapter 17: Explosives Preparation 9, The Preparation of Poly Nitro Benzenes; 5) Chapter 18: Explosives Preparation 10, The Preparation of Nitrate Esters; 6) Chapter 19: Explosive Preparation 11, The Preparation of Polyhydric Nitrate Esters; 7) Chapter 20: Explosives Preparation 12, The Preparation of Nitrate Ester Nitramines; 8) Chapter 21: Explosives Preparation 13, The Preparation of Nitro Triazoles; 9) Chapter 22: Explosives Preparation 14, The Preparation of Nitro Tetrazoles; 10) Chapter 23: Explosives Preparations 15, The Preparation of Nitro Phenyls; 11) Chapter 24: Explosives Preparation 16, The Preparation of Nitro Phenyl Salts; 12) Chapter 25: Explosives Preparation 17, The Preparation of Nitrates, Chlorates, and Perchlorates; 13) Chapter 26: Explosives Preparation 18, The Preparation of Nitro Paraffin's and their Derivatives; 14) Chapter 27: Explosives Preparation 19, The Preparation of Miscellaneous Explosives. The fourth edition is the standard for explosives science and technology of the most used energetic compounds. The book is a perfect reference for students, government agencies, government contractors, and enthusiasts.

National Park Service Handbook for the Storage, Transportation, and Use of Explosives **Feb 20 2022**

The Preparatory Manual of Explosives **Apr 10 2021 The Preparatory Manual of Explosives, third edition is an invaluable reference manual covering the preparation and use of 166 of the most influential explosive compounds known to man. The book is also an excellent and powerful collection of over 175 years of explosives science. The Preparatory Manual of Explosives, third edition is a laboratory manual that has been broken down into "easy to understand" chapters starting with basic chemistry and laboratory techniques, then leading up to explosives dynamics and finally leading up to the preparation of the explosives themselves in detail. The Preparatory Manual of Explosives, third edition is an excellent reference book for anyone's book collection, and the book will enlighten the reader in the art of explosives chemistry and science.**

Handbook of Japanese Explosive Ordnance Dec 26 2019

U.S. Army Improvised Munitions Handbook Aug 02 2020 Like The Anarchist Cookbook if it were written by the U.S. Army!

Manual of Tests and Criteria Jan 07 2021 The Manual of Tests and Criteria contains criteria, test methods and procedures to be used for classification of dangerous goods according to the provisions of Parts 2 and 3 of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations, as well as of chemicals presenting physical hazards according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). As a consequence, it supplements also national or international regulations which are derived from the United Nations Recommendations on the Transport of Dangerous Goods or the GHS. At its ninth session (7 December 2018), the Committee adopted a set of amendments to the sixth revised edition of the Manual as amended by Amendment 1. This seventh revised edition takes account of these amendments. In addition, noting that the work to facilitate the use of the Manual in the context of the GHS had been completed, the Committee considered that the reference to the "Recommendations on the Transport of Dangerous Goods" in the title of the Manual was no longer appropriate, and decided that from now on, the Manual should be entitled "Manual of Tests and Criteria".

A Handbook on Modern Explosives **Mar 09 2021 This work has been selected by scholars as being culturally important and is part of the knowledge base of civilization as we know it. This work is in the public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. To ensure a quality reading experience, this work has been proofread and republished using a format that seamlessly blends the original graphical elements with text in an easy-to-read typeface. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant.**

Explosives and Blasting Technique Jul 21 2019 This work covers such topics as: EU directives and harmonization work; health, safety and environment; recent technical development - products and processes; shot hole development; and management of blasting operations.

Lectures on Explosives **Jun 24 2022**

Explosives and Blasting Procedures Manual Oct 28 2022

Blasters' Handbook Nov 17 2021

The Preparatory Manual of Explosives Jun 12 2021 The Preparatory Manual of Explosives: Radical, Extreme, Experimental Explosives Chemistry Vol.1 is broken down into Section 1: a) Introduction; b) Dual bonding; c) The Element Nitrogen; d) The element oxygen; e) The element chlorine; f) Introduction to filtration; 1) Gravity filtration; a) Fluting Filter Paper for use in gravity filtration; 2) Vacuum Filtration (suction filtration); a) General Laboratory Techniques: Methods of heating; 1) Free flame; 2) Steam bath, or water bath; 3) Oil bath; 4) Electric Heating Mantles; 5) Hot Plates; a) Methods of Cooling; 1) Cold water bath; 2) Ice water bath; 3) Standard ice bath; 4) Salt/ice bath; 5) Dry ice/acetone bath; a) Cooling tricks of the trade; b) Recrystallization, and solid product recovery; c) Recrystallization; 1) General recrystallization utilizing heat only; a) Working example of recrystallization using heat only; 2) Recrystallization using seed crystals; 3) Recovering the product through low heat and vacuum; a) Washing liquids; b) Washing solids using non-vacuum techniques; c) Washing solids using vacuum techniques; d) Drying solids; e) Drying liquids to remove water; f) Laboratory safety; g) Laboratory glassware; h) Laboratory equipment; Section 2: Intermediates, Reagents, and Solvents; Section 3: Experimental Explosives Chemistry; Theoretical Preparation 1: 1,3,5-trinitrohexazinane; Azinane; Theoretical Preparation 2: trisodium hexazinane-1,3,5-triide; SOD; Theoretical Preparation 3: 3,3',3''-hexazinane-1,3,5-triyltris(triaza-1,2-dien-2-ium-1-ide); HEXAAZIDE; HTA; Theoretical Preparation 4: diammonium trioxidane-1,3-diide; diammonium trioxide; DATD; Theoretical Preparation 5: 3,3'-trioxidane-1,3-diylbis(triaza-1,2-dien-2-ium-1-ide); TDTD; Theoretical Preparation 6: benzene-1,3,5-triyltris(chlorane) nonaoxide; BTCN; Chlorane; Theoretical Preparation 7: 2,4,6-trinitro-1,3,5,2,4,6-trioxatriazinane; TNTOTA; oxatriazinane; Theoretical Preparation 8: (2,4,6-trinitrobenzene-1,3,5-triyl)tris(chlorane) nonaoxide; Chlorane; Theoretical Preparation 9: 1,3,5-triazido-2,4,6-trinitrobenzene; Nitrazide; TATNB; Theoretical Preparation 10: 1,3,5-trinitrohexasilinane; nitrosilane; 2-TNHS; Theoretical Preparation 11: 1,3,5-trinitro-1,3,5-tris(nitrooxy)hexasilinane-1,3,5-triium; TNNHS; Si-135; Theoretical Preparation 12: 1,3,5-trinitrohexaphosphinane; TNHP; High Explosive Phosphorus; Theoretical Preparation 13: pentanitro-l5-phosphane; 5-PNP; Theoretical Preparation 14: trinitroamine oxide; TNAOX; NITROXIDE; Theoretical Preparation 15: pentachloryl-l5-phosphane; Theoretical Preparation 16: Tetranitrodiborane; TNDB; Nitro Boron; Theoretical Preparation 17: 1,2,3,4,5,6-hexanitrocyclohexaborane; KNCHB; 6-Nitrocycloborane; Theoretical Preparation 18: N'-perchlorylperchloric hydrazide; N'PCPH, Perchloryl hydrazine; Theoretical Preparation 19: tetranitrohydrazine; TNH-X; Theoretical Preparation 20: hexaaza-1,2,4,5-tetraene-2,5-diium-1,6-diide; Hexazide; HTDD; Theoretical Preparation 21: hexaazidobenzene; HAAB; 6-Azide; Theoretical Preparation 22: 1,2,3,4,5,6-hexanitro-1l4,2l4,3l4,4l4,5l4,6l4-hexathiine; Nitro hexathiine; Gamma-HNH; Theoretical Preparation 23: pentakis(dioxidobromanyl)-l5-chlorane; Chlorane; pentabromate chloride; PDDBC; Theoretical Preparation 24: hexa-1,3,5-triyne-1,6-diyl dinitrate; HTDD; poly acetylene dinitrate; Theoretical Preparation 25: 1,2,3,4,5,6-hexanitrohexa-1,3,5-triene-1,6-diyl dinitrate; HNHTDD; Hexanitro-Triene; Triene dinitrate; Theoretical Preparation 26: (1Z,3E,5Z)-1,2,3,4,5,6-hexaazidohexa-1,3,5-triene-1,6-diyl dinitrate; EZ-Azido Triene; HAHTDN; Theoretical Preparation 27: 1,2,3,4,5,6-hexafluoro-1,2,3,4,5,6-hexaperchlorylhexane-1,6-diyl dinitrate; Fluoroperchlorylhexane; HFGPHDD; Theoretical Preparation 28: 3,3':4',3''-ter-1,2-dioxetane-4,4''-diyl dinitrate; Dioxetane; Dioxetane dinitrate; ter-DDD; Theoretical Preparation 29: 2H,3'H,3''H-2,2':3',2''-teraluminum-3,3''-diyl dinitrate; Aluminum-3H-dinitrate; Aluminum-3-3-dinitrate; 2H'3H'-Aluminum d

U.S. Army Explosives and Demolitions Handbook May 23 2022 The official army handbook, now available to everyone.

***Explosive Effects and Applications* Sep 22 2019 This is a broad-based text on the fundamentals of explosive behavior and the application of explosives in civil engineering, industrial processes, aerospace applications, and military uses.**

A Manual on Explosives Mar 21 2022

***Weapons of Mass Destruction: Nuclear weapons* Jun 19 2019**

Need for Uniform Security Measures in Transporting Arms, Ammunition, and Explosives Jan 27 2020

Lectures on Explosives Aug 14 2021

Department of Defense Manual - DoD Ammunition and Explosives Safety Standards: Criteria for Unexploded Ordinance, Munitions Response, Waste Military Munitions, and Material Potentially Presenting an Explosive Hazard Mar 29 2020 This Manual is composed of several volumes, each containing its own purpose, and administratively reissues DoD 6055.09-STD. The purpose of the overall

Manual, is to establish explosives safety standards for the Department of Defense. These standards are designed to manage risks associated with DoD-titles ammunition and explosives (AE) by providing protection criteria to minimize serious injury, loss of life and damage to property. This volume provides criteria for unexploded ordnance (UXO), munitions response, waste military munitions, and material potentially presenting an explosive hazard (MPPEH).

Rock Blasting and Explosives Engineering Jan 19 2022 Rock Blasting and Explosives Engineering covers the practical engineering aspects of many different kinds of rock blasting. It includes a thorough analysis of the cost of the entire process of tunneling by drilling and blasting in comparison with full-face boring. Also covered are the fundamental sciences of rock mass and material strength, the thermal decomposition, burning, shock initiation, and detonation behavior of commercial and military explosives, and systems for charging explosives into drillholes. Functional descriptions of all current detonators and initiation systems are provided. The book includes chapters on flyrock, toxic fumes, the safety of explosives, and even explosives applied in metal working as a fine art. Fundamental in its approach, the text is based on the practical industrial experience of its authors. It is supported by an abundance of tables, diagrams, and figures. This combined textbook and handbook provides students, practitioners, and researchers in mining, mechanical, building construction, geological, and petroleum engineering with a source from which to gain a thorough understanding of the constructive use of explosives.

The Preparatory Manual of Explosives Feb 08 2021 An invaluable reference manual providing quick answers to the preparation of 121 explosives, and dozens of corresponding explosives compositions. The manual is perfect for students, researchers, and truth gatherers. The manual also includes a comprehensive tutorial for laboratory techniques, and procedures including distillation, extraction, and recrystallization. This manual will help the reader better understand the art of explosives, and the chemistry there of.

Dod Contractor's Safety Manual for Ammunition and Explosives Aug 22 2019 This Manual is reissued under the authority of and in accordance with DoD Instruction 4145.26 (Reference (a)) and, accordingly, is applicable to all contractual actions entered into on or after the reissue date. The prior DoD 4145.26-M (Reference (b)), dated September 16, 1997, is hereby rescinded and superseded, yet will remain applicable and effective for contractual actions entered into on or after September 16, 1997 and before the reissue date. The Manual provides safety standards common to DoD and private industry ammunition and explosives (AE), operations, and facilities performing AE work or AE services under DoD contracts, subcontracts, purchase orders, or other procurement methods. DoD 6055.9-STD (Reference (c)) establishes these AE safety standards and serves as the primary source document for this Manual. The explosives safety requirements included in this Manual are consistent with Reference (c) so that AE safety standards for DoD Components and DoD contractors are equivalent.

***Explosives and Blasting Procedures Manual* Apr 29 2020 This Bureau of Mines report covers the latest technology in explosives and blasting procedures. It includes information and procedures developed by Bureau research, explosives manufacturers, and the mining industry. It is intended for use as a guide in developing training programs and also to provide experienced blasters an update on the latest state of technology in the broad field of explosives and blasting. Types of explosives and blasting agents and their key explosive and physical properties are discussed. Explosives selection criteria are described. The features of the traditional initiation systems - electrical, detonating cord, and cap and fuse - are pointed out, and the newer nonelectric initiation systems are discussed. Various blasthole priming techniques are described. Blasthole loading of various explosive types is covered. Blast design, including geologic considerations, for both surface and underground blasting is detailed. Environmental effects of blasting such as flyrock and air and ground vibrations are discussed along with techniques of measuring and alleviating these undesirable side effects. Blasting safety procedures are detailed in the chronological order of the blasting process. The various Federal blasting regulations are enumerated along with their Code of Federal Regulations citations. An extensive glossary of blasting related terms is included along with references to articles providing more detailed information on the aforementioned items. Emphasis in the report has been placed on practical considerations.**

The Preparatory Manual of Explosives Fourth Edition Volume 1 Jul 13 2021 The Preparatory Manual of Explosives Fourth Edition is a massive upgrade from the third edition, and has been completely re-written. The material has been completely re-done, with more emphases on detailed preparatory methods, safety and hazard info, molecular information and data, structures and equations, and new chapters. The fourth edition includes numerous illustrations and data charts and tables, and includes improved

procedures, processes, and information written with professional standards, but given a new improved bases so that the general student can read and understand the context far better then seen in the third edition. As well, the fourth edition includes valuable toxicity and physical properties data, and exhaustively describes each process in a new format and style. Chapters in Volume 1 include: 1) Chapter 1: Introduction to Chemistry: A quick lesson in general chemistry; 2) Chapter 2: Familiarization with Laboratory Techniques; 3) Chapter 3: Laboratory Apparatus; 4) Chapter 4: Chemistry Theory and Calculations; 5) Chapter 5: The dynamics of Explosives; 6) Chapter 6: Improvised Explosives, and Operations; 7) Chapter 7: Familiarization with explosive munitions; 8) Chapter 8: Intermediates, Reagents, and Solvents used in the preparation of Explosives; 9) Chapter 9: Explosives Preparation 1, The Preparation of Metal Azides, Fulminates, and Nitrides; 10) Chapter 10: Explosives Preparation 2, the preparation of Organic Azides and Azo-Nitros; 11) Chapter 11: Explosives Preparation 3, the Preparation of Aza/Oxa Nitramines; 12) Chapter 12: Explosives Preparation 4, The Preparation of cyclic Nitramines; 13) Chapter 13: Explosives preparation 5, The Preparation of Nitramines. The fourth edition is the standard for explosives science and technology of the most used energetic compounds. The book is a perfect reference for students, government agencies, government contractors, and enthusiasts.

A Manual on Explosives Jul 25 2022

Weapon System Safety Guidelines Handbook: Hazard control for explosive ordnance production Sep 15 2021

The Preparatory Manual of Explosives Dec 18 2021 The Preparatory Manual of Explosives Fourth Edition is a massive upgrade from the third edition, and has been completely re-written. The material has been completely re-done, with more emphases on detailed preparatory methods, safety and hazard info, molecular information and data, structures and equations, and new chapters. The fourth edition includes numerous illustrations and data charts and tables, and includes improved procedures, processes, and information written with professional standards, but given a new improved bases so that the general student can read and understand the context far better then seen in the third edition. As well, the fourth edition includes valuable toxicity and physical properties data, and exhaustively describes each process in a new format and style not seen in the third edition. The fourth edition will become the standard for explosives science and technology. The book is a perfect reference for students, government agencies, government contractors, and enthusiasts.

Explosives Sep 03 2020

U.S. Army Guide to Boobytraps May 11 2021 The official army guide to improvised explosive devices.

***Blasters' Handbook* Apr 22 2022**

Improvised Munitions Handbook – Learn How to Make Explosive Devices & Weapons from Scratch (Warfare Skills Series) Dec 06 2020 This manual provides detailed explanation of manufacturing munitions from seemingly innocuous locally available materials. As an official army manual, it was primarily intended to increase the potential of Special Forces and guerrilla troops, however, "Improvised Munitions Handbook" represents perfect reading for all arms enthusiasts, as well as civilians considering their safety. This edition offers simple instructions, enriched with a large number of illustrations, on various techniques for constructing many different weapons and devices made of materials that can be bought in a drug or hardware store or found in a junkyard. The instructions are presented in a way that even people normally not familiar with making and handling munitions can use them. Table of Contents: Explosives and Propellants Plastic Explosive Filler Improvised Black Powder Carbone Tet- Explosive Methyl Nitrate Dynamite Urea Nitrate Explosive Sodium Chlorate and Sugar or Aluminum Explosive… Mines and Grenades Nail Grenade Wine Bottle Cone Charge Coke Bottle Shaped Charge… Small Arms Weapons and Ammunitions Pipe Pistol for 9 mm Ammunition Shotgun (12 gauge) Carbine (7.62 mm Standard Rifle Ammunition) Rifle Cartridge… Mortars and Rockets Shotgun Grenade Launcher Fire Bottle Launcher 60 mm Mortar Projectile Launcher… Incendiary Devices Chemical Fire Bottle Gelled Flame Fuels Improvised White Flare Improvised White Smoke Munitions… Fuses, Detonators & Delay Mechanisms Electric Bulb Initiator Fuse Igniter from Book Matches Delay Igniter from Cigarette Watch Delay Timer Can-Liquid Time Delay Detonator… Miscellaneous Mousetrap Switch Knife Switch Rope Grenade Launching Technique Bicycle Generator Power Source Improvised Battery Armor Materials… Primary High Explosives Secondary High Explosives

***A Soldiers Handbook, Volume 1: Explosives Operations* Oct 16 2021 A Soldiers Handbook, Volume 1: Explosives Operations, is a compilation and collection of explosives data taken from numerous sources including The Preparatory Manual of Explosives, and US Army Field Manuals. The book is designed to aid**

the US soldier in the operations of various explosives systems used by the US military and other nations along with familiarization with explosives operations including demolitions, explosives dynamics, explosives chemistry, and explosives munitions. The book is a complete collection of explosives information and data and will help the reader understand how explosives are used and their effects.

Military Explosives Jul 01 2020

***Introduction to the Technology of Explosives* Oct 04 2020 Introduction to the Technology of Explosives Paul W. Cooper and Stanley R. Kurowski Introduction to the Technology of Explosives is a clear and concise survey of the technologies and physical processes involved in explosive phenomena. The book is intended to provide the worker new to the field with sufficient background to understand problems that may arise and to interact intelligently with specialists in the field. The book covers the fundamentals of the chemistry of explosives; the mechanics of burning; sound, shock, and detonation; initiation and initiators; scaling in design and analysis; and off-the-shelf explosive devices. It provides the basic calculational skills needed to solve simple, first-order engineering design problems, and emphasizes the crucial importance of safety considerations. The book contains a broad range of data on explosive materials, and their properties and behavior, along with extensive lists of useful references. Example problems with solutions are provided in each technical area, as are descriptions and analysis of a wide variety of explosive devices. The book concludes with a thorough and comprehensive description of regulatory requirements for the classification, transportation, and storage of explosives, and an extensive guide to explosives safety in plant and test facilities. This book will be of interest to explosives technicians and engineers, government regulators, crime and accident scene investigators, and instructors in military, police, and FBI bomb schools.**

Monthly Catalogue, United States Public Documents Nov 24 2019

Encyclopedia of Explosives and Related Items Feb 26 2020

***DOD Contractors' Safety Manual for Ammunition, Explosives and Related Dangerous Material* Sep 27 2022**

Detection of Liquid Explosives and Flammable Agents in Connection with Terrorism Oct 24 2019 The organization of an Advanced Research Workshop with the title "Detection and Disposal of Liquid Explosives and Flammable Agents in Connection with Terrorism" was motivated by international findings about activities in this field of application. This ARW followed a meeting about the "Detection of Disposal Improvised Explosives" (St. Petersburg, 2005). Both items show the logistic problems as one of the lessons, terrorists have to overcome. These problems are connected with the illegal supply and transport of explosives and fuels and as counter-measure the detection of these materials. The invention of liquid explosives goes back to the middle of the 19th century and was used for special purposes in the commercial field of application. Because of the high sensitivity of liquid explosives against mechanical shock, caused by adiabatic compression of air-bobbles producing "hot spots" as origin of initiation the commercial application was not very successful. Because of this high risk, liquid explosives are not used in military or commercial application with some exceptions. In the commercial field explosives as slurries or emulsions consisting of suitable salts (Ammoniumnitrate etc.) and water are used to a large extend because of their high insensitivity. In many cases these slurries or emulsions were unfit for terrorist actions, because of their low sensitivity, large critical diameter and using in confinement. In the military field liquid explosives are used in World War I and II as bomb-fillings.

Manual of Explosives Aug 26 2022