



U.S. AIR FORCE

HQ AIR FORCE CIVIL ENGINEER SUPPORT AGENCY

Technical Order 00-105E-9 Presentation

Aerospace Emergency Rescue and Mishap Response Information (Emergency Services)



USAF Fire and Emergency Services Division

FEBRUARY 2006

Integrity - Service - Excellence

TO 00-105E-9

AEROSPACE

EMERGENCY RESCUE AND
MISHAP RESPONSE INFORMATION
(EMERGENCY SERVICES)



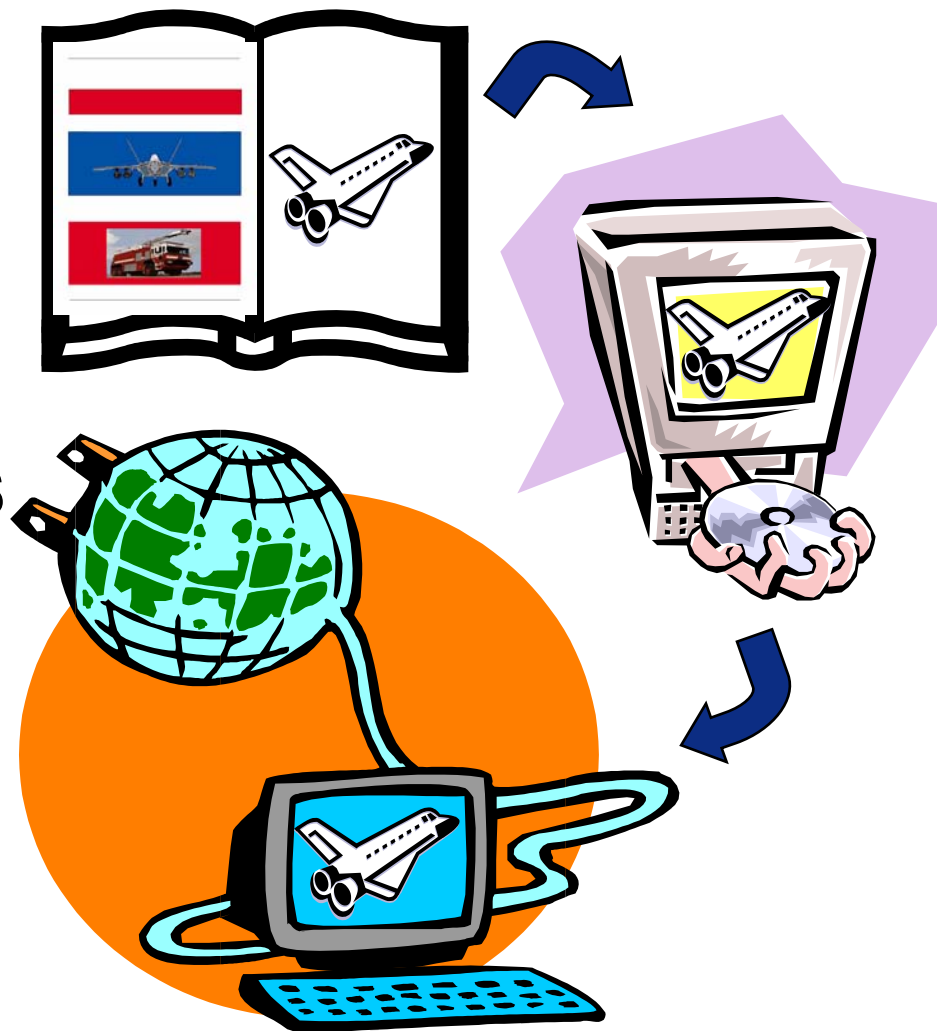
1 FEBRUARY 2006



U.S. AIR FORCE

Overview

- **USER INFORMATION**
- **00-105E-9 HISTORY**
- **CURRENT STATUS**
- **CHAPTER 3 - CRITICAL INFO FOR RESPONDERS**
- **FUTURE REVISIONS**
- **WEB SITES**
- **QUESTIONS?**
- **CONTACT OUR OFFICE**





■ **DISCLOSURE STATEMENT:**

- **This Technical Order (TO) is a Security Assistance Technical Order Data System (SATODS) used for the management of TOs. It is used by foreign governments or international organizations and is cleared to share this information with the general global public. This TO is also designated as the NATO Crash Firefighting Rescue (CFR) Standardization Agreement (STANAG) 3896 with same title.**

■ **DISTRIBUTION STATEMENT A:**

- **Approved for public release; distribution is unlimited. Questions concerning technical content and distribution should be directed to HQ AFCESA/CEXF Attention: Air Force Fire and Emergency Services - Egress Manager, 139 Barnes Drive Suite 1, Tyndall AFB, FL 32403-5319.**



TO 00-105E-9 History

U.S. AIR FORCE

- **1970 : TO converted from existing crash charts**
- **Paper media from 1970 to 1996**
- **Circa 1970 : Aircraft Egress Technician to manage publication, required to have knowledge and experience with escape systems**
- **1 JULY 1970 : Technical Order Contents**
 - **USAF, US Army, and Civil Reserve Air Fleet aircraft**
- **1 May 1989 : Firefighter Multimedia Training System - Interactive Aircraft Familiarization Courseware SME, use TO as basic information for courses**
 - **19 Courses : F/A-22 distributed in May 2005**
 - **F-15, F-16, C-5, C-17, C-130 updated in 2006 & web based**
- **25 JULY 1990 : Added Skin Penetration Points - new data requirement**



TO 00-105E-9 History

U.S. AIR FORCE

- **12 MAY 1994 : Added Airframe Materials and Composites - new data requirement**
- **2 JANUARY 1995 : Military position ends/Contract position starts**
- **30 MAY 1996 : Paper Media Printing Funding Ends**
 - **Secretary of the AF informs TO ALC Managers to develop a “paperless environment” for TOs**
 - **ASC/WMO @ Eglin AFB, FL funded electronic media conversion**
 - **Realized Savings of \$300K (paper media) vs. \$30K electronic media**
- **3 OCTOBER 1997 : Digitization Process Starts**
 - **Original TO took 18 Months to convert for USAF, US Army and CRAF aircraft**



TO 00-105E-9 History

U.S. AIR FORCE

- **1 NOVEMBER 1998 : HQ AF/IL determines TO for Hazardous Aerospace Material Mishap Emergency Response (HAMMER) IPT guidance**
 - **Directed to add US Navy and NATO aircraft**
 - **NATO approves of publication consolidation and ends 15 years of Allied Engineering Publication – 11 “Illustrated Information On Fire Hazards And Rescue Features For NATO Aircraft” (Mobilization Kit Requirement) and complies with STANAG 3896**
- **21 JANUARY 1999 : CD-ROM Published**
 - **AF TO System changed with civilian account tracking problems (Legacy vs. JCALS)**
 - **Decision to go to web based pub instead of JCALS**



TO 00-105E-9 History

U.S. AIR FORCE

- **8 OCTOBER 1999 : Web Site established @ Robins AFB, GA for public and restricted sites**
 - **Added US Navy aircraft (AF/LE task c/w)**
 - **Started digitizing NATO aircraft**
- **8 NOVEMBER 1999 : Posted Revision 6. HQ AFCESA Fire Protection web page posts Safety Supplements – linked from main site**
- **28 MAY 2000 : Briefed NATO & Partners for Peace Nations at the 11th CFR Working Group in Brussels, BE June 26, 27 2000 for WG approval (50% of NATO aircraft added)**
 - **29 June 2000 : Briefed RAF, Fire/ Rescue, Safety, Civil Aviation Authority, BAA Gatwick Fire Service, Air Accidents Investigation, and Environmental Sciences Groups at DERA Haslar meeting in Gosport,UK**



TO 00-105E-9 History

U.S. AIR FORCE

- **15 DECEMBER 2000 : Finished Revision 7 and sent to web master at Robins AFB GA for managerial review, posting, and editorial changes to web page**
 - **NATO aircraft complete, sent CDs to nations**
 - **15 January 2001: Posted Revision 7 to web site**
 - **1 MAY 2001 : Briefed the Air National Guard Aircraft Mishap Recovery Working Group about use of TO for mishaps and secondary response teams**
 - **29 OCTOBER 2001 : Provided NATO/PfP Nations at the 12th CFR Working Group at Texas A&M on pub status**
 - **15 DECEMBER 2001 : Provided Charleston AFB SC briefing and use of pub for their Mishap Recovery Teams in preparation for a possible C-17A incident with composite fires**
-



TO 00-105E-9 History

U.S. AIR FORCE

- **30 SEPTEMBER 2002 : Revision 8 posted to web site**
 - **New title established widening scope of manual**
 - **Added the FAA/ICAO Aircraft Designations**
 - **C/W FAA Order 7110.65, Air Traffic Control (ATC)**
 - **Prevents confusion during emergency response**

- **31 March-1 April 2003: Briefed the 13th NATO CFR Working Group at Brussels, BE - 20 nations represented**
 - **Reviewed and updated current aircraft inventories, provided custodial reports on CFR Standardization Agreements and provide status of US action items**
 - **STANAGs are to be re-looked for Terrorism features**



TO 00-105E-9 History

U.S. AIR FORCE

- **22 – 24 June 2004: The Inaugural 1st NATO CFR Working Panel met at London, UK - 10 nations represented**
 - **Working Panel convenes for first time after NATO reorganization causes host nation meetings**
 - **Limited meeting space at NATO HQTS due to NATO expansion**
 - **Reviewed and updated current aircraft inventories, provided custodial reports on CFR Standardization Agreements and provided status of US action items**
 - **Provided a presentation for the new Revision 9 and advanced composite materials burn research**
 - **Requested aircraft information from ALL nations, especially former Eastern Block aircraft**
 - **Meeting declared a success by Air Board Secretary due to the amount of work accomplished and intense discussions for all working issues and current STANAGs**



U.S. AIR FORCE

TO 00-105E-9 History

- **1 JULY 2004 : Revision 9 posted to web site**
 - **Update affects 40 aircraft files**
 - **Added various US Gov't Agencies for first time: NOAA, USCG, US Forestry Service**

- **1 May 2005 : Revision 10 posted to web site**
 - **Update affects 30 aircraft files**
 - **Most files are NATO aircraft based on latest submission**
 - **List of Illustrations updated and new NATO 3 letter country designation added throughout manual**
 - **Manager's personal information deleted due to new security measures for information posted to public web sites**



TO 00-105E-9 History

U.S. AIR FORCE

- **21 – 23 June 2005: The 2nd NATO CFR Working Panel met at Ottawa, CA - 10 nations represented**
 - **Reviewed and updated current aircraft inventories, provided custodial reports on CFR Standardization Agreements and provided status of US action items**
 - **Provided custodial report and briefed the new Revision 10**
 - **USA arranged for three presentations: AFRL projects, advanced composites, and hazardous cargo**
 - **Requested aircraft information from ALL nations, especially former Eastern Block aircraft**
 - **Meeting declared a success by new Air Board Secretary due to the closing of action items, work accomplished, and a valid 5 Year Plan with more future STANAG development**



TO 00-105E-9 History

U.S. AIR FORCE

- **1 February 2006: Revision 11 posted to web site**
 - **Segments increase from 29 to 33**
 - **Reorganized Chapter 3 for a more logical flow while adding information from the AFCESA Bioengineer and AF Composite Office**
 - **Summary page added to Chapter 3 for F-22 Composite Materials burn testing in 2004-2005**
 - **Updated US Forestry Service aircraft and inventory**
 - **Updated shuttle recovery procedures – needed for future shuttle launches due to changes in NASA policies**
 - **Updated several aircraft files especially USAF Fighters and Cargo chapters**
 - **Rolled in all 9 Safety Supplements for Revision 10**



- **Safety Supplements: Critical Updates are posted at the Fire & Emergency Services web site (see web site slide)**
 - Only current Safety Supplements are posted
 - Out of date Supplements will be rescinded, but will remain listed to avoid confusion until next revision is posted
 - Supplements are listed on the AF TO Index

- **Assigned web site access only – paper and/or CD-ROM distribution terminated in November 1999**
 - Funding and facilities for hard copy reproduction and storage at Robins AFB, GA terminated in 1996
 - Free public access including foreign governments
 - There is no cost to any user customers anywhere



U.S. AIR FORCE

Current Status

Revision 11

- **Segment 1: Title A,B,C Pages, List of Illustrations; Aircraft and NATO Ids, FAA/ICAO Designations, Chapters 1-3**
- **Segment 2: Chapter 4 USAF Attack**
- **Segment 3: Chapter 5 USAF Bomber**
- **Segment 4: Chapter 6 USAF Cargo Pt1 - C-5 thru C-12J**
- **Segment 5: Chapter 6 USAF Cargo Pt2 - C-17 thru C-20**
- **Segment 6: Chapter 6 USAF Cargo Pt3 - C-21 thru C-40**
- **Segment 7: Chapter 6 USAF Cargo Pt4 - C-130 thru WC-135W**
- **Segment 8: Chapter 6 USAF Cargo Pt5 - VC-137 thru KC-10 and chapter end**



U.S. AIR FORCE

Current Status Revision 11

- **Segment 9: Chapter 7 USAF Electronic Pt1 E-3 30/35 thru VC-25 (Air Force One)**
- **Segment 10: Chapter 7 USAF Electronic Pt2 YAL-1A to chapter end**
- **Segment 11: Chapter 8 USAF Fighter Pt1 QF-4 thru F-16**
- **Segment 12: Chapter 8 USAF Fighter Pt2 F-15 thru F-117A**
- **Segment 13: Chapters 9 USAF Helicopter**
- **Segment 14: Chapter 10 USAF Observation/Recon**
- **Segment 15: Chapters 11 & 12 USAF Trainer and Utility**
- **Segment 16: Chapters 13 thru 16 US Army Helicopter, Trainer, Utility, & V/STOL/Cargo/Transport/Paratroop**
- **Segment 17: Chapter 17 NASA Aerospace craft and Micro-gravity information**



U.S. AIR FORCE

Current Status Revision 11

- **Segment 18: Chapter 18 CRAF Pt1 DC-3 thru DC-10**
- **Segment 19: Chapter 18 CRAF Pt2 MD-11 thru L-1011-500**
- **Segment 20: Chapter 18 CRAF Pt3 707 thru 737**
- **Segment 21: Chapter 7 CRAF Pt4 747 thru 777 and chapter end (787 not included)**
- **Segment 22: Chapter 19 Various US Government agencies Pt1 USCG to NOAA**
- **Segment 23: Chapter 19 Various US Government agencies Pt2 US Forestry Service**
- **Segment 24: Chapters 20 thru 22 US Navy Attack, Fighter and Special Mission**
- **Segment 25: Chapters 23 thru 25 US Navy Transport, Trainer and Helicopter**



- **Segment 26: Chapters 26 thru 27 NATO Attack, Bomber/Maritime**
- **Segment 27: Chapter 28 Cargo**
- **Segment 28: Chapter 29 NATO Fighter**
- **Segment 29: Chapter 30 NATO Helicopter Pt1 A109 thru Lynx MK3**
- **Segment 30: Chapter 30 NATO Helicopter Pt2 Lynx MK7 thru Sea King HAS/ASW/6**
- **Segment 31: Chapter 30 NATO Helicopter Pt3 Sea King MK4 thru Wessex HC2/HC5C**
- **Segment 32: Chapters 31 thru 34 NATO Observation/Recon, Trainer, Tanker & Utility**
- **Segment 33: Chapters 35 to 36 NATO Small & Large Commercial**



U.S. AIR FORCE

Current Status

Revision 11

- **New Segments will be added as needed and will be re-configured as publication increases in size**
 - **Segments have a USAF imposed 10 MB limit**
 - **Added 4 Segments to accommodate new information**



U.S. AIR FORCE

Chapter 3 Details-Critical Information for all Responders

- **Chapter 3: “Hazardous Materials and Mishap Hazards”**
 - Updated and reorganized for better flow of information
 - Table of Contents better organized with page location
 - Composites information centralized
 - F-22 Composite Burn Test Summary added
- **Lists chemical and flammable liquids**
- **Initial response composite materials information in current ERG format**
- **Information for Hazardous Aerospace Materials, Radioactive, Composite, RAM and Conventional coatings**
- **Summary tables for the hazards per aircraft (DoD/ NATO)**
- **Hazardous situations found at aircraft mishap sites**



U.S. AIR FORCE

Chapter 3 Details-Critical Information for all Responders

- **Hazardous situations found at aircraft mishap sites**
- **Impact crater information to determine angle of approach**
- **Hazards information in the mishap response procedures for initial, follow-on, interim SIB, and secondary response**
- **Expanded information for advanced composites**
- **PPE considerations for BBP and composites**
- **PPE considerations for composites based on the work process**
- **Rapid response checklist**
- **Various hazards worksheets**
 - **Hazards analysis sketch and hazards assessment checklist**
- **Cordon information for various hazard scenarios**



U.S. AIR FORCE

Chapter 3 Details-Critical Information for all Responders

- **Team brief topic checklist**
- **Summary of PPE choices to assist with selection**
- **Additional information for training needs of the mishap community**
 - **Depleted Uranium (DU)**
 - **Hazards Associated with Optical Elements Coated with Radioactive Material**
 - **Summary of USAF Mishap Response Phases**
 - **Mishap-Composites Awareness**
- **This information will be kept current as we learn more and aviation technology progresses**
 - **More Composite Burn Tests are forecasted**



Future Revisions

U.S. AIR FORCE

- **Add/update UAVs (unmanned aerial vehicles)**
- **Unclassified Weapons/Missiles/Bombs Hazardous Materials**
 - **Impact sites will present HAZMAT situations**
- **Next Generation aircraft entering inventories**
 - **JSF/F-35 procedures developed for Lockheed and distributed to testing and ferrying sites**
 - **NATO and European Union (EU) developments**
- **Russian built aircraft – NATO, EU and Partners for Peace inventories**
 - **Information is difficult to obtain and is requested at each NATO Crash Firefighting Rescue Working Panel**
- **Other nations closely aligned to US interests**



Future Revisions

U.S. AIR FORCE

- **Update US Navy aircraft based on recent changes to Navy pubs**
 - **NAVAIR 00-80R-14**
 - **NAVAIR 00-80R-14-1**
- **Assist the UK Air Accident Investigation Branch and International Civil Aviation Organization Occupational Safety Response Study**
- **Assist the Air National Guard Aircraft Recovery Working Group for Secondary Response and Recovery Methodology through continued research**
- **Assist the NASA Fire Safety Working Group for fire response in micro-gravity environments – new information included in Revision 11**



Future Revisions

U.S. AIR FORCE

- **NATO Crash Firefighting Rescue Working Panel (CFRWP) meets annually at host nation location – no change to the way we conduct our business practices or obtaining information for the Technical Order and standardization agreements (STANAGs)**
 - **Stimulates dialog and issues more proficiently among nations, review current STANAGs and establish new STANAGS based on firefighting trends and issues**
 - **NATO CFRWP annual meeting schedule:**
 - **London, UK in 2004 – c/w**
 - **Ottawa, Canada in 2005- c/w**
 - **Paris, France in 2006 (week of June 12)**
 - **Germany in 2007**
 - **Spain in 2008**
 - **Netherlands in 2009**



Web Sites

U.S. AIR FORCE

- **HQ AFCESA Web Site: (Public - limited access)**
<http://www.afcesa.af.mil>
 - **Learn about the Agency, Directorates, products and services**

- **TO 00-105E-9 Web Site: (Public – Global Access)**
<http://www.robins.af.mil/logistics/LGEDA/documents/to00-105e-9.htm>
 - **Linked to Safety Supplements**
 - **Use current Adobe Reader for reading and downloading**

- **Fire & Emergency Services and TO Safety Supplement Web Site:**
http://www.afcesa.af.mil/cex/cexf/cex_firemgmt.asp

- **NATO Crash Firefighting Rescue Working Panel Web Site:**
<http://nsa.nato.int9000/>
 - **request access to restricted site required**



U.S. AIR FORCE

Questions?





U.S. AIR FORCE

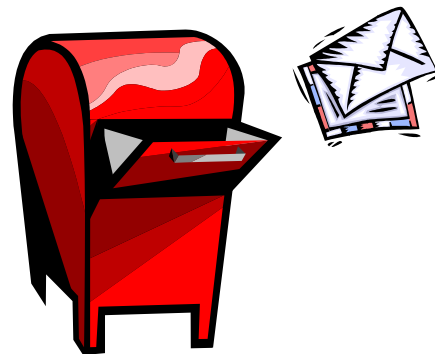
Contact Our Office

HQ AFCESA/CEXF

Attn: Egress Manager

139 Barnes Drive Suite 1

Tyndall AFB FL 32403-5319



Comm. 850.283.6150

DSN 523-6150

FAX 6383



Corporate Email Box

HQAFCESA.CEXF@tyndall.af.mil