BOEING

Commercial Aviation Services

SERVICE LETTER

SERVICE ENGINEERING • BOEING COMMERCIAL AIRPLANES • P.O. BOX 3707 • SEATTLE • WASHINGTON 98124-2207

707-SL-03-002	**777-SL-03-001**	**DC9-SL-03-101**
717-SL-03-101	**DC2-SL-03-101**	**DC10-SL-03-101**
727-SL-03-002	**DC3-SL-03-101**	**MD10-SL-03-101**
737-SL-03-004	**DC4-SL-03-101**	**MD11-SL-03-101**
747-SL-03-004	**DC6-SL-03-101**	**MD80-SL-03-101**
757-SL-03-003	**DC7-SL-03-101**	**MD90-SL-03-101**
767-SL-03-005	**DC8-SL-03-101**	

ATA: 0300-00
2620-00
16 August 2005

SUBJECT: AVOID USE OF DRY CHEMICAL FIRE EXTINGUISHERS ON AIRPLANES

MODEL: ALL

APPLICABILITY: ALL

REFERENCES:

a) D6-7829, Airplane Rescue and Fire Fighting Information, Revision 4, 1 May 2005
b) NFPA Code 75 “Standard for the Protection of Electronic Computer/Data Processing Equipment” (1999 edition) Section 6-3-2
c) NFPA Code 410 “Standard on Aircraft Maintenance” (2004 edition) Section A-7-3.1

SUMMARY:

This service letter advises personnel to avoid use and provisioning of dry chemical type fire extinguishers for airplane firefighting. Dry chemical extinguishers can cause extensive corrosion damage to airplane structure, electrical systems, and electronic equipment. Dry chemical extinguisher residue is difficult to clean up. Dry chemical fire extinguishers should only be used for airplane firefighting if there are no other extinguishers available and there is imminent danger to property or personnel.

BACKGROUND:

Boeing has received reports on the proliferation of dry chemical fire extinguishers at airports and airplane maintenance facilities where they could potentially be used for airplane firefighting. An operator reported seeing "an epidemic" of class A-B-C all-purpose fire extinguishers on airport ramps and airport service vehicles, including contractor tow tugs and fuel trucks. In two cases that were reported to Boeing, airport fire departments decreed that A-B-C extinguishers should be used for ramp fire protection, and in one case the airport fire department purchased and provided A-B-C wheeled extinguishers for gates at an international arrivals building, as well as equipping all of their fire trucks with A-B-C chemical extinguishers.

Dry chemical extinguishers are generally low cost and not subject to freezing in cold weather conditions which contributes to their popularity and widespread use. Dry chemical extinguishers are also popular because they do not present the environmental concerns poised by ozone depleting fire extinguishing agents such as Halon.

Dry chemical extinguishers use extinguishing agents such as monoamonium-phosphate, sodium bicarbonate, or potassium bicarbonate (commonly called Purple K). All of these dry chemical agents are corrosive and abrasive, and may cause moderate to severe damage to aluminum alloys and electrical/electronic equipment. Monoamonium-phosphate is used in A-B-C rated fire extinguishers (also called multi-purpose extinguishers) and is especially corrosive to aluminum alloy structures. Monoamonium-phosphate melts from the heat of a fire and flows into cracks, crevices and faying surfaces in structures making it difficult to remove before corrosion starts. Sodium bicarbonate or potassium bicarbonate chemicals are used in B-C rated fire extinguishers.

Disassembly of aluminum airplane structure may be necessary for cleanup and corrosion prevention after use of a dry chemical fire extinguisher. Electrical and electronic equipment may need to be scrapped after being contaminated with dry chemical extinguishing agent. The use of dry chemical extinguishers can potentially cause more damage to airplanes and airplane electrical/electronic systems than an actual fire. The U.S. National Fire Protection Association (NFPA) in Section 6-3-2 of reference b) specifically advises against use of dry chemical extinguishers for fires involving computers or other delicate electronic equipment due to the potential damage from residues. This advice is applicable to electronic and other electrical equipment on airplanes. Over-spray of dry chemical extinguishing agent used in fighting an electrical system fire may contaminate and damage adjacent airplane structure. The NFPA in Section A-7-3.1 of reference c) advises that all-purpose (ABC) dry chemical type extinguishers should not be used in situations where aluminum corrosion is a problem. This advice is applicable to airplanes with aluminum structures.

BOEING ACTION:

Boeing periodically receives inquires on the use of dry chemical extinguishers for airplane firefighting. To improve awareness of the potential damage that can be caused by the use of dry chemical extinguishers on airplanes, Boeing is releasing this service letter. Information on airplane fire fighting is provided in reference a) for airline, maintenance and airport personnel.

SUGGESTED OPERATOR ACTION:

Boeing recommends that operators and airplane maintenance providers take positive actions to prevent the use of dry chemical fire extinguishes in and around airplanes. This action should include airlines and maintenance providers coordinating with airport authorities, maintenance, fueling service providers, ground service providers, and airport fire services. Operator personnel, maintenance and service providers, airport authorities and airport fire service personnel should be advised through formal training programs or other appropriate means on the potential damage that can be caused by the use of dry chemical fire extinguishers on airplane fires. Steps should be taken to replace dry chemical extinguishers that are located near parked airplanes and installed on airplane ground service equipment. The dry chemical extinguishers should be replaced as appropriate with suitably rated water, carbon dioxide, aqueous film-forming foam (AFFF), and Halon or Halon replacement type fire extinguishers.

If a dry chemical extinguisher is used on an airplane, the airline should contact their assigned Boeing Field Service Representative for specific advice and information regarding the removal of dry chemical extinguishing agents from the affected area of the aircraft.

WARRANTY INFORMATION:

Warranty remedies are not available for the subjects discussed in this service letter.

SUPPLIER:

Copies of reference a) may be purchased from:

Boeing Commercial Airplanes
Data and Services Management (DSM)
PO Box 3707, Mail Stop 2H-65
Seattle, Washington 98124-2207, USA
Phone: 1-206-544-5000
Fax: 1-206-544-8899

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Copies of references b) and c) may be purchased from:

National Fire Protection Association
1 Batterymarch Park
Quincy, Massachusetts, USA 02169
Phone: 1-617-770-3000
Website: www.nfpa.org

Krijn deJonge
For Respective Fleet Support Chiefs

MGD:vgs