

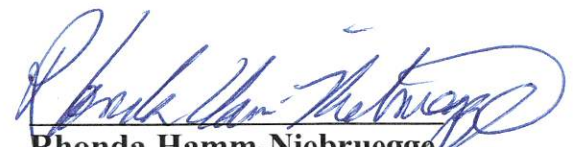


AIRPORT CERTIFICATION MANUAL

St. Louis Lambert International Airport

July 2026

MTN – 2276, Terminal 1
St. Louis Lambert International Airport
St. Louis, MO 63145


Rhonda Hamm-Niebruegge
Director of Airports

INTRODUCTION

The purpose of this document is to provide an Airport Certification Manual clearly defining objectives, structures, and functions as well as ensuring maximum assignment and utilization of personnel in order to achieve the highest degree of operational efficiency and safety in compliance with the requirements of Part 139 of the Federal Aviation Regulations at St. Louis Lambert International Airport in St. Louis, Missouri.

AIRPORT CERTIFICATION MANUAL DISTRIBUTION LIST

DISTRIBUTION OF ACM IS AS FOLLOWS:

- A. Distribution “1” Entire ACM to include – **Bomb Threat and Sabotage/Hijacking**
- B. Distribution “2” Entire ACM **EXCEPT** – **Bomb Threat and Sabotage/Hijacking**

Distribution “1”

Director of Airports
Deputy Director of Operations & Maintenance
Deputy Director of Finance & Administration
Deputy Director of Planning & Development
Assistant Director of Air Service & Business Development
Assistant Director of Finance & Accounting
Assistant Director of Engineering & Construction
Assistant Director of Operations & Maintenance
Construction & Maintenance Manager
Airport Properties Division Manager
Public Information Manager
Airport Operations
Airport Police Chief
Battalion Fire Chief
Environmental Regulatory Compliance & Safety Manager
Airfield Maintenance Supervisor
Airport Fleet Maintenance Manager
Airport Power Plant Manager
Electrical Supervisor
Airport Building Maintenance Supervisor
General Counsel
FAA, Regional Office
FAA, Air Traffic Control Tower
FAA, Flight Standards District Office
Transportation Security Administration
Boeing
Landscaping Supervisor
Emergency Preparedness Coordinator
Station Managers
Ground Handler Manager
Airport Security Manager

Distribution “2”

All Airport Personnel
USDA
Rescue Vehicle
Volunteers
All tenants involved in refueling and ground operations
Human Resource Manager
Housekeeping Manager
Distribution to individual employees, where applicable

Each manual holder shall be responsible for keeping his/her manual current at all times, and shall insert revised pages immediately upon receipt.

All correspondence related to this manual, suggestions for revisions or improvements, and information regarding corrections or updating should be address to:

**Rhonda Hamm-Niebruegge
Director of Airports
St. Louis Lambert International Airport
P.O. Box 10212
St. Louis, Missouri 63145**

RECORD OF AMENDMENTS

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
August 2005	I	Not Applicable	Entire ACM	Entire ACM
March 2006	II	Not Applicable	Title Page	Title Page
March 2006	II	Index	Entire Section	Entire Section
March 2006	II	ACM	Entire Section	Entire Section
March 2006	II	139.201	Entire Section	Entire Section
March 2006	II	139.205	Entire Section	Entire Section
March 2006	II	139.303	Entire Section	Entire Section
March 2006	II	139.305	305-2	305-2
March 2006	II	139.309	309-1, 309-2	309-1, 309-2
March 2006	II	139.311	Entire Section	Entire Section
March 2006	II	139.313	313-2	313-2
March 2006	II	139.317	Entire Section	Entire Section
March 2006	II	139.319	319-1, 319-2, 319-4	319-1, 319-2, 319-4, 319-7
March 2006	II	139.321	Entire Section	Entire Section
March 2006	II	139.323	Entire Section	Entire Section
March 2006	II	139.325	325-2 thru 7, 325-9, 325-18, 325-37, 325-38, 325-42, 325-44, 325-52, 325-63 thru 148, 325- 157 thru 291	325-2 thru 7, 325-9, 325-18, 325-37, 325-38, 325-42, 325-44, 325-52, 325-63 thru 148, 325- 157 thru 298
March 2006	II	139.327	327-1	327-1
March 2006	II	139.329	329-1, 329-2, 329-5	329-1, 329-2, 329-5
March 2006	II	139.331	Entire Section	Entire Section
March 2006	II	139.337	337-2, 337-3, 337-6	337-2, 337-3, 337-6
March 2006	II	139.339	Entire Section	Entire Section
March 2006	II	139.341	341-1	341-1
March 2006	II	139.343	Entire Section	Entire Section
March 2006	II	Appendix A	Entire Section	Entire Section
March 2006	II	Appendix B	Entire Section	Entire Section
March 2006	II	Appendix C	Entire Section	Entire Section

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
October 2006	III	Not Applicable	Title Page	Title Page
October 2006	III	Index	i thru x	i thru x
October 2006	III	ACM	ACM-6 thru ACM-10	ACM-6 thru ACM-13
October 2006	III	139.303	303-3 thru 303- 15	303-3 thru 303- 15
October 2006	III	139.313	313-1	313-1
October 2006	III	139.317	Entire Section	Entire Section
October 2006	III	139.319	319-2	319-2
October 2006	III	139.321	Entire Section	Entire Section
October 2006	III	139.325	Entire Section	Entire Section
October 2006	III	Appendix A	AA-1, AA-1a, AA-4	AA-1, AA-1A, AA-4
October 2006	III	Appendix B	Entire Section	Entire Section
October 2006	III	Appendix C	Entire Section	Entire Section
January 2007	IV	Not Applicable	Title Page	Title Page
January 2007	IV	Index	ii	ii
January 2007	IV	ACM	ACM-6 thru ACM-13	ACM-6 thru ACM-14
January 2007	IV	139.311	Entire Section	Entire Section
December 2007	V	Not Applicable	Title Page	Title Page
December 2007	V	Index	Entire Section	Entire Section
December 2007	V	ACM	ACM-2, ACM- 3, ACM-7 thru ACM-14	ACM-2, ACM- 3, ACM-7 thru ACM-15
December 2007	V	139.201	201-1	201-1
December 2007	V	139.205	205-1	205-1
December 2007	V	139.303	3-15	3-15
December 2007	V	139.305	305-2	305-2
December 2007	V	139.309	309-2, 309-3	309-2, 309-3
December 2007	V	139.311	311-1, 311-4 thru 311-6	311-1, 311-4 thru 311-6
December 2007	V	139.313	313-1 thru 313- 4, 313-6, 313-7	313-1 thru 313- 4, 313-6, 313-7
December 2007	V	139.317	317-2	317-2
December 2007	V	139.321	321-1, 321-2, 321-4, 321-14 thru 321-18	321-1, 321-2, 321-4, 321-14 thru 321-18
December 2007	V	139.325	Entire Section	Entire Section

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
December 2007	V	139.325	Entire Section	Entire Section
December 2007	V	139.327	327-1, 327-2	327-1, 327-2
December 2007	V	139.329	329-4	329-4
December 2007	V	139.331	Entire Section	Entire Section
December 2007	V	139.333	333-1	333-1
December 2007	V	139.335	335-1	335-1
December 2007	V	139.337	Entire Section	Entire Section
December 2007	V	139.339	339-1	339-1
December 2007	V	139.341	Entire Section	Entire Section
December 2007	V	Appendix A	AA-12, AA-13, AA-26 thru AA- 42	AA-12, AA-13, AA-26 thru AA- 33
December 2007	V	Appendix B	Entire Section	Entire Section
December 2007	V	Appendix C	AC-2	AC-2
November 2008	VI	Index	Entire Section	Entire Section
November 2008	VI	ACM	ACM-9 thru ACM-15	ACM-9 thru ACM-19
November 2008	VI	139.201	201-1	201-1
November 2008	VI	139.303	303-3 thru 303- 15	303-3 thru 303- 16
November 2008	VI	139.311	311-1 thru 311-7	311-1 thru 311-6
November 2008	VI	139.319	319-1	319-1
November 2008	VI	139.321	321-4 thru 321- 6, 321-9	321-4 thru 321- 6, 321-9
November 2008	VI	139.325	Entire Section	Entire Section
November 2008	VI	139.327	327-2	327-2
November 2008	VI	139.337	337-5	337-5
November 2008	VI	139.339	339-2	339-2
November 2008	VI	139.341	341-1	341-1
November 2008	VI	Appendix A	AA-2 thru AA- 7, AA-9, AA-21 thru AA-33	AA-2 thru AA- 7, AA-9, AA-21 thru AA-31
November 2008	VI	Appendix B	AB-3 thru AB- 4C, AB-7A thru AB-8K	AB-3 thru AB- 4C, AB-7 thru AB-8K
November 2008	VI	Appendix C	AC-2	AC-2
April 2009	VII	Appendix A	AA-12, AA-13	AA-12, AA-13

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
November 2009	VIII	Not Applicable	Title Page	Title Page
November 2009	VIII	Index	i, iv thru x	i, iv thru x
November 2009	VIII	ACM	ACM-10 thru ACM-20	ACM-10 thru ACM-20
November 2009	VIII	139.105	105-1	105-1
November 2009	VIII	139.201	201-1, 201-2	201-1, 201-2
November 2009	VIII	139.205	205-1	205-1
November 2009	VIII	139.303	303-3 thru 303-16	303-3 thru 303-16
November 2009	VIII	139.305	305-1	305-1
November 2009	VIII	139.309	309-1, 309-2	309-1, 309-2
November 2009	VIII	139.311	311-4	311-4
November 2009	VIII	139.313	Entire Section	Entire Section
November 2009	VIII	139.319	319-3, 319-4	319-3, 319-4
November 2009	VIII	139.321	321-4	321-4
November 2009	VIII	139.325	Entire Section	Entire Section
November 2009	VIII	139.327	327-1, 327-3 thru 327-5	327-1, 327-3 thru 327-5
November 2009	VIII	139.329	329-1, 329-5 thru 329-8	329-1, 329-5 thru 329-8
November 2009	VIII	139.331	331-1	331-1
November 2009	VIII	139.333	333-1	333-1
November 2009	VIII	139.335	335-1	335-1
November 2009	VIII	139.337	337-2 thru 337-6	337-2 thru 337-6
November 2009	VIII	139.339	339-1, 339-2	339-1, 339-2
November 2009	VIII	139.343	343-1	343-1
November 2009	VIII	Appendix A	AA-1A, AA-2, AA-4	AA-1A, AA-2, AA-4
November 2009	VIII	Appendix B	Entire Section	Entire Section
November 2009	VIII	Appendix C	AC-2	AC-2
July 2010	IX	Index	Entire Section	Entire Section
July 2010	IX	ACM	ACM-2, ACM- 3, ACM-11 thru ACM-20	ACM-2, ACM- 3, ACM-11 thru ACM-25
July 2010	IX	139.303	303-3 thru 303- 16	303-3 thru 303- 18

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
July 2010	IX	139.313	313-1, 313-2, 313-6	313-1, 313-2, 313-6
July 2010	IX	139.317	317-4	
July 2010	IX	139.319	319-4	319-4
July 2010	IX	139.325	325-1 thru 325-7, 325-9 thru 325-55 thru 325-61, 325- 65 thru 325-68, 325-71, 325-72, 325-77, 325-80, 325-86 thru 325- 89, 325-93, 325- 97 thru 325-105, 325-109 thru 325- 114, 325-116, 325-118 thru 325- 131, 325-133, 325-135 thru 325- 180, 325-191 thru 325-197, 325-199, 325-201 thru 325- 203, 325-206 thru 325-211, 325-223 thru 325-231, 325-236 thru 325- 259, 325-262 thru 325-265, 325-271, 325-272, 325-274 thru 325-276, 325-279 thru 325- 291, 325-295, 325-297, 325-299 thru 325-301, 325-304, 325-311, 325-322, 325-327, 325-335, 325-338, 325-340, 325-347	325-1 thru 325-7, 325-9 thru 325-55 thru 325-61, 325- 65 thru 325-68, 325-71, 325-72, 325-77, 325-80, 325-86 thru 325- 89, 325-93, 325- 97 thru 325-105, 325-109 thru 325- 114, 325-116, 325-118 thru 325- 131, 325-133, 325-135 thru 325- 180, 325-191 thru 325-197, 325-199, 325-201 thru 325- 203, 325-206 thru 325-211, 325-223 thru 325-231, 325-236 thru 325- 259, 325-262 thru 325-265, 325-271, 325-272, 325-274 thru 325-276, 325-279 thru 325- 291, 325-295, 325-297, 325-299 thru 325-301, 325-304, 325-311, 325-322, 325-327, 325-335, 325-338, 325-340, 325-347
July 2010	IX	139.329	329-1, 329-4	329-1, 329-4
July 2010	IX	139.331	331-1	331-1
July 2010	IX	139.335	335-2	335-2
July 2010	IX	139.337	Entire Section	Entire Section
July 2010	IX	139.339	339-1	339-1

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
July 2010	IX	139.341	341-1	341-1
July 2010	IX	139.343	343-1	343-1
July 2010	IX	Appendix A	AA-9	AA-9
July 2010	IX	Appendix B	AB-1A, AB-4A, AB-4B, AB-4C, AB-6, AB-7A, AB-7C, AB-8D, AB-8F, AB-8G	AB-1A, AB-4A, AB-4B, AB-4C, AB-6, AB-7A, AB-7C, AB-8D, AB-8F, AB-8G
July 2010	IX	Appendix C	AC-2	AC-2
October 2011	X	139.303	303-3, 4, 303-6, 7, 303-9 thru 303-16	303-3, 4, 303-6, 7, 303-9 thru 303-16
October 2011	X	139.321	321-20, 21	321-20, 21
October 2011	X	139.325	Entire Section	Entire Section
October 2011	X	139.337	337-1 thru 337- 3, 337-6	337-1 thru 337- 3, 337-6
October 2011	X	Appendix A	AA-26 thru AA- 30	AA-26 thru AA- 30, AA-32 thru AA-35
August 2012	XI	ACM	ACM-14, 15, 21, 22, 27, 29	ACM-14, 15, 21, 22, 27, 29
August 2012	XI	139.105	105-1	105-1
August 2012	XI	139.303	Entire Section	Entire Section
August 2012	XI	139.309	309-1	309-1
August 2012	XI	139.311	311-3, 4	311-3, 4
August 2012	XI	139.313	313-1, 4	313-1, 4
August 2012	XI	139.317	317-2	317-2
August 2012	XI	139.319	319-1	319-1
August 2012	XI	139.321	321-3 thru 321- 25	321-3 thru 321- 25
August 2012	XI	139.325	325-1, 325-13, 325- 34, 325-43, 325-49, 325-52, 325-61, 325- 73, 325-76, 325-78, 325-117, 325-162 thru 325-169, 325- 173, 325-209 thru 325-211, 325-354, 325- 355, 325-45, 325-68, 325-72, 325- 86, 325-93, 325-101, 325-133	325-1, 325-13, 325- 34, 325-43, 325-49, 325-52, 325-61, 325- 73, 325-76, 325-78, 325-117, 325-162 thru 325-169, 325- 173, 325-209 thru 325-211, 325-354, 325- 355, 325-45, 325-68, 325-72, 325- 86, 325-93, 325-101, 325-133

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
August 2012	XI	139.337	Entire Section	Entire Section
August 2012	XI	139.341	341-2	341-2
August 2012	XI	Appendix B	Entire Section	Entire Section
August 2013	XII	Index	Entire Section	Entire Section
August 2013	XII	ACM	ACM-15, 16, 23, 28, 29	ACM-15, 16, 23, 28, 29
August 2013	XII	139.115	Entire Section	Entire Section
August 2013	XII	139.303	303-1, 303-3 thru 303-17	303-1, 303-3 thru 303-17
August 2013	XII	139.313	313-3, 313-5, 313-6	313-3, 313-5, 313-6
August 2013	XII	139.317	317-2, 317-3	317-2, 317-3
August 2013	XII	139.319	319-1	319-1
August 2013	XII	139.319	319-1	319-1
August 2013	XII	139.325	Entire Section	Entire Section
August 2013	XII	139.329	329-1, 329-2 329-4	329-1, 329-2 329-4
August 2013	XII	139.337	337-6, 337-7	337-6, 337-7
August 2013	XII	Appendix B	AB-3 thru AB- 3J	AB-3 thru AB- 3J
August 2013	XIII	ACM	Entire Section	Entire Section
June 2014	XIII	Index	Entire Section	Entire Section
June 2014	XIII	139.313	4,5,7	4,5,7
June 2014	XIII	139.325	Entire Section	Entire Section
June 2014	XIII	139.341	341-1	341-1
January 2015	XIV	ACM	Entire Section	Entire Section
January 2015	XIV	Index	Entire Section	Entire Section
January 2015	XIV	139.205	Entire Section	Entire Section
January 2015	XIV	139.301	Entire Section	Entire Section
January 2015	XIV	139.303	Entire Section	Entire Section
January 2015	XIV	139.305	Entire Section	Entire Section
January 2015	XIV	139.309	Entire Section	Entire Section
January 2015	XIV	139.311	Entire Section	Entire Section
January 2015	XIV	139.313	Entire Section	Entire Section
January 2015	XIV	139.317	Entire Section	Entire Section
January 2015	XIV	139.319	Entire Section	Entire Section
January 2015	XIV	139.329	Entire Section	Entire Section
January 2015	XIV	139.331	Entire Section	Entire Section
January 2015	XIV	139.333	Entire Section	Entire Section

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
January 2015	XIV	139.335	Entire Section	Entire Section
January 2015	XIV	139.339	Entire Section	Entire Section
January 2015	XIV	139.341	Entire Section	Entire Section
January 2015	XIV	Appendix C	Entire Section	Entire Section
January 2016	XV	ACM	ACM 2, ACM 18, ACM 26, ACM 32	ACM 2, ACM 18, ACM 26, ACM 32
January 2016	XV	Index	ii, iii, ix thru xii	ii, iii, ix thru xii
January 2016	XV	139.313	Entire Section	Entire Section
January 2016	XV	139.317	317-2	317-2
January 2016	XV	139.325	325-1, 325-11, 325-76	325-1, 325-11, 325-76
January 2016	XV	139.327	Entire Section	Entire Section
January 2016	XV	139.337	337-3, 337-4, 337-6 thru 337-12	337-3, 337-4, 337-6 thru 337-13
January 2016	XV	Appendix A	AA-1, AA-1A, AA-4 thru AA-7	AA-1, AA-1A thru AA-1C, AA-4 thru AA-7
January 2016	XV	Appendix B	AB-3 thru AB-3J, AB-8 thru AB-8Q, AB-9 thru AB-9E	AB3 thru AB-3J, AB-8 thru AB-8E
January 2016	XV	Appendix C	Entire Section	Entire Section
August 2016	XVI	ACM	ACM 19 – ACM 35	ACM 19 – ACM 38
August 2016	XVI	Index	i, iv, x, xi, xii	i, iv, x, xi, xii
August 2016	XVI	139.313	313-1 thru 313.3, 313.7 thru 313.10	313-1 thru 313.3, 313.7 thru 313.10
August 2016	XVI	139.317	317-2	317-2
August 2016	XVI	139.321	321-29, 321-30	321-29 thru 321 - 31
August 2016	XVI	139.337	337-6 thru 337-13	337-6 thru 337-10
August 2016	XVI	139.339	339.1	339.1
August 2016	XVI	Appendix A	AA-1A, AA-1C, AA-4 thru AA-7	AA-1A, AA-1C thru AA-1F, AA-4 thru AA-7

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
August 2016	XVI	Appendix B	AB-1, AB-2, AB-3E, AB-3F, AB-3H, AB-3I, AB-4A thru AB- 4C, AB-5, AB-6, AB-7E, AB-7F, AB-7H, AB-7I	AB-1, AB-2, AB-3E, AB-3F, AB-3H, AB-3I, AB-4, AB-4A, AB-5, AB-6, AB-7E, AB-7F, AB-7H, AB-7I
August 2016	XVI	Appendix C	5556-4, 5557-3, 5457-1	5556-4, 5557-3, 5457-1
June 2018	XX	Not Applicable	Title Page	Title Page
June 2018	XX	Index	Entire Section	Entire Section
June 2018	XX	ACM	Entire Section	Entire Section
June 2018	XX	139.105	105-1	105-1
June 2018	XX	139.201	Entire Section	Entire Section
June 2018	XX	139.303	Entire Section	Entire Section
June 2018	XX	139.305	Entire Section	Entire Section
June 2018	XX	139.311	Entire Section	Entire Section
June 2018	XX	139.313	Entire Section	Entire Section
June 2018	XX	139.315	Entire Section	Entire Section
June 2018	XX	139.317	Entire Section	Entire Section
June 2018	XX	139.319	Entire Section	Entire Section
June 2018	XX	139.321	Entire Section	Entire Section
June 2018	XX	139.329	Entire Section	Entire Section
June 2018	XX	139.335	Entire Section	Entire Section
June 2018	XX	139.337	Entire Section	Entire Section
June 2018	XX	139.339	Entire Section	Entire Section
June 2018	XX	139.341	Entire Section	Entire Section
June 2018	XX	139.343	Entire Section	Entire Section
June 2018	XX	Appendix A	Entire Section	Entire Section
June 2018	XX	Appendix B	Entire Section	Entire Section
June 2018	XX	Appendix C	Entire Section	Entire Section
November 2018	XXI	Index	ii, iii, xi, xii	ii, iii, xi, xii
November 2018	XXI	ACM	Entire Section	Entire Section
November 2018	XXI	139.313	Entire Section	Entire Section
November 2018	XXI	139.321	321-35 thru 321- 37	321-35 thru 321- 37

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
November 2018	XXI	Appendix A	AA-1 thru AA-1F; AA-2 thru AA- 2G, AA-10F	AA-1 thru AA-1F; AA-2 thru AA- 2G, AA-10, AA- 10F
November 2018	XXI	Appendix B	Entire Section	Entire Section
November 2018	XXI	Appendix C	Entire Section	Entire Section
June 2019	XXII	Not Applicable	Title Page	Title Page
June 2019	XXII	Index	Entire Section	Entire Section
June 2019	XXII	ACM	Entire Section	Entire Section
June 2019	XXII	139.101		Entire Section
June 2019	XXII	139.105	Entire Section	Entire Section
June 2019	XXII	139.111	Entire Section	Entire Section
June 2019	XXII	139.113	Entire Section	Entire Section
June 2019	XXII	139.115	Entire Section	Entire Section
June 2019	XXII	139.201	Entire Section	Entire Section
June 2019	XXII	139.205	Entire Section	Entire Section
June 2019	XXII	139.301	Entire Section	Entire Section
June 2019	XXII	139.303	Entire Section	Entire Section
June 2019	XXII	139.305	Entire Section	Entire Section
June 2019	XXII	139.309	Entire Section	Entire Section
June 2019	XXII	139.311	Entire Section	Entire Section
June 2019	XXII	139.313	Entire Section	Entire Section
June 2019	XXII	139.315	Entire Section	Entire Section
June 2019	XXII	139.317	Entire Section	Entire Section
June 2019	XXII	139.319	Entire Section	Entire Section
June 2019	XXII	139.321	Entire Section	Entire Section
June 2019	XXII	139.323	Entire Section	Entire Section
June 2019	XXII	139.325	Entire Section	325-1
June 2019	XXII	139.327	Entire Section	Entire Section
June 2019	XXII	139.329	Entire Section	Entire Section
June 2019	XXII	139.331	Entire Section	Entire Section
June 2019	XXII	139.333	Entire Section	Entire Section
June 2019	XXII	139.335	Entire Section	Entire Section
June 2019	XXII	139.337	Entire Section	Entire Section
June 2019	XXII	139.341	Entire Section	Entire Section
June 2019	XXII	139.343	Entire Section	Entire Section
June 2019	XXII	Appendix A	Entire Section	Entire Section
June 2019	XXII	Appendix B	Entire Section	Entire Section
June 2019	XXII	Appendix C	Entire Section	Entire Section

DISTRIBUTION 1

DATE	AMENDMENT NUMBER	SECTION NUMBER	DELETE PAGES	ADD PAGES
August 2019	XXIII	Not Applicable	Title Page	Title Page
August 2019	XXIII	Index	I, VI	I, VI
August 2019	XXIII	ACM	Entire Section	Entire Section
August 2019	XXIII	139.325	Separate Cover: Delete All Pages	Separate Cover: Add All Pages
August 2019	XXIII	139.337	337-1 thru 337-5	337-1 thru 337-5
August 2019	XXIII	Appendix A	AA-2A thru AA-2G	AA-2A thru AA-2E
August 2019	XXIII	Appendix C	AC-7, AC-10, AC-13	AC-7, AC-10, AC-13
September 2019	XXIV	Not Applicable	Title Page	Title Page
September 2019	XXIV	ACM	ACM-14, ACM-20	ACM-14, ACM-20
September 2019	XXIV	139.313	313-1	313-1
October 2019	XXV	Not Applicable	Title Page	Title Page
October 2019	XXV	Index	I	I
October 2019	XXV	ACM	ACM-14 thru ACM-24	ACM-14 thru ACM-25
October 2019	XXV	139.325	Separate Cover: 325-1, 325-11, 325-209, 325-210	Separate Cover: 325-1, 325-11, 325-209, 325-210
October 2019	XXV	139.341	341-1 thru 341-2	341-1 thru 341-2
October 2019	XXV	Appendix A	AA-1, AA-1A, AA-1C thru 1F, AA-2D, AA-3B, AA-3C	AA-1, AA-1A, AA-1C thru 1F, AA-2D, AA-3B, AA-3C
October 2019	XXV	Appendix B	Entire Section	Entire Section
October 2019	XXV	Appendix C	AC-7, AC-10, AC-13, AC-14, AC-18	AC-7, AC-10, AC-13, AC-14, AC-18

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December 2019	XXVI	139.313	Separate Cover: Delete All Pages	Separate Cover: Add All Pages
December 2019	XXVI	Appendix A	AA-4A thru AA- 12B	AA-4A thru AA- 11B
December 2019	XXVI	Appendix A	AA-4A thru AA- 12B	AA-4A thru AA- 11B
April 2020	XXVII	Not Applicable	Title Page	Title Page
April 2020	XXVII	ACM	ACM-15, ACM- 22 thru ACM-26	ACM-15, ACM- 22 thru ACM-26
April 2020	XXVII	Entire ACM	Submitted Electronic Copy of ACM for Approval	
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April 2022	XXIX	139.205	205-1	205-1
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April 2022	XXIX	139.321	321-1 thru 321-3, 321-30 thru 33	321-1 thru 321-3, 321-30 thru 33
April 2022	XXIX	139.337	Entire Section	Entire Section
April 2022	XXIX	Appendix A		AA-12A thru AA-12E
April 2022	XXIX	Appendix C	5555-4, 5456-2	5555-4, 5456-2
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April 2022	XXIX	ACM Title Page	ACM-15, ACM- 22 thru ACM -23, ACM-24 thru ACM- 26	ACM-15, ACM- 22 thru ACM-23
August 2022	XXX	ACM Title Page	ACM- 15 thru ACM-23	ACM- 15 thru ACM-23

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August 2022	XXX	Appendix C	5555-4, 5556-3	5555-4, 5556-3
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October 2022	XXXI	ACM Title Page	ACM- 16 thru ACM-24	ACM- 16 thru ACM-24
October 2022	XXXI	139.313	Entire Section	Entire Section
August 2023	XXXII	ACM Index	ACM-16, ACM-24	ACM-16, ACM-24
August 2023	XXXII	Appendix A	AA-1A, AA-1C, AA-2A thru AA- 2E, AA-3A thru AA-3D, AA-9 thru AA-9F, AA-12A thru AA-12E	AA-1A, AA-1C, AA-2A thru AA- 2E, AA-3A thru AA-3D, AA-9 thru AA-9F, AA-12A thru AA-12E
August 2023	XXXII	Appendix B	Entire Section	Entire Section
August 2023	XXXII	Appendix C	Entire Section	Entire Section
August 2023	XXXII	139.317	317-2 thru 317-7	317.2 thru 317-7
October 2024	XXXIII	Appendix C	Entire Section	Entire Section
October 2024	XXXIII	139.311	311-1 thru 311-3	311-1 thru 311-3
October 2024	XXXIII	139.301	301-1 thru 301-2	301-1 thru 301-2
October 2024	XXXIII	139.401	Entire Section	Entire Section
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October 2024	XXXIII	ACM Title Page	ACM-16 thru 17, ACM-25 thru 26	ACM-16 thru 17, ACM-25 thru 26
October 2024	XXXIII	ACM Index	I, III, VI, VII	I, III, VI, VII
October 2024	XXXIII	Appendix A	Entire Section	Entire Section

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November 2025	XXXVI	139.337	337-5 thru 337-18, 337-21	337-5 thru 337-18, 337-21
November 2025	XXXVI	139.313	313-68, 313-69, 313-71	313-68, 313-69, 313-71
November 2025	XXXVI	139.321	Entire Section	Entire Section
February 2026	XXXVII	139.115/Part 3 Subpart D	Entire Section	Entire Section
February 2026	XXXVII	139.317	317-6 and 317-7	317-6 and 317-7

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August 2005	I	139.329	Entire Section	Entire Section
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March 2006	II	ACM	Entire Section	Entire Section
March 2006	II	139.313	313-2	313-2
March 2006	II	139.321	Entire Section	Entire Section
March 2006	II	139.325	325-2 thru 7, 325-9, 325-18, 325-37, 325-38, 325-42, 325-44, 325-52, 325-63 thru 148, 325- 157 thru 291	325-2 thru 7, 325-9, 325-18, 325-37, 325-38, 325-42, 325-44, 325-52, 325-63 thru 148, 325- 157 thru 298
March 2006	II	139.329	329-1, 329-2, 329-5	329-1, 329-2, 329-5
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March 2006	II	Appendix C	Entire Section	Entire Section
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October 2006	III	139.313	313-1	313-1
October 2006	III	139.321	Entire Section	Entire Section
October 2006	III	139.325	Entire Section	Entire Section
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October 2006	III	Appendix C	Entire Section	Entire Section
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December 2007	V	139.313	313-1 thru 313- 4, 313-6, 313-7	313-1 thru 313- 4, 313-6, 313-7

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December 2007	V	139.325	Entire Section	Entire Section
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December 2007	V	Appendix B	Entire Section	Entire Section
December 2007	V	Appendix C	AC-2	AC-2
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November 2008	VI	ACM	ACM-9 thru ACM-15	ACM-9 thru ACM-19
November 2008	VI	139.321	321-4 thru 321- 6, 321-9	321-4 thru 321- 6, 321-9
November 2008	VI	139.325	Entire Section	Entire Section
November 2008	VI	Appendix B	AB-3 thru AB- 4C, AB-7A thru AB-8K	AB-3 thru AB- 4C, AB-7 thru AB-8K
November 2008	VI	Appendix C	AC-2	AC-2
November 2009	VIII	139.313	Entire Section	Entire Section
November 2009	VIII	139.321	321-4	321-4
November 2009	VIII	139.325	Entire Section	Entire Section
November 2009	VIII	139.329	329-1, 329-5 thru 329-8	329-1, 329-5 thru 329-8
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November 2009	VIII	Appendix C	AC-2	AC-2
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July 2010	IX	139.313	313-2 & 313-6	313-2 & 313-6

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October 2011	X	139.325	Entire Section	Entire Section

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August 2012	XI	139.321	321-3 thru 321-25	321-3 thru 321-25
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August 2013	XII	139.321	321-29, 321-30	321-29, 321-30
August 2013	XII	139.325	Entire Section	Entire Section
August 2013	XII	139.329	329-1, 329-2, 329-4	329-1, 329-2, 329-4
August 2013	XII	Appendix B	Ab-3 thru Ab-3j	Ab-3 thru Ab-3j
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June 2014	XIII	139.313	4,5,7	4,5,7
June 2014	XIII	139.325	Entire Section	Entire Section
January 2015	XIV	ACM	Entire Section	Entire Section
January 2015	XIV	Index	Entire Section	Entire Section
January 2015	XIV	139.313	Entire Section	Entire Section
January 2015	XIV	139.329	Entire Section	Entire Section

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January 2016	XV	Index	ii, iii, ix thru xii	ii, iii, ix thru xii
January 2016	XV	139.313	Entire Section	Entire Section
January 2016	XV	139.325	325-1, 325-11, 325-76	325-1, 325-11, 325-76
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August 2016	XVI	139.313	313-1 thru 313.3, 313.7 thru 313.10	313-1 thru 313.3, 313.7 thru 313.10
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August 2016	XVI	Appendix C	5556-4, 5557-3, 5457-1	5556-4, 5557-3, 5457-1
June 2018	XX	Not Applicable	Title Page	Title Page
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June 2018	XX	ACM	Entire Section	Entire Section
June 2018	XX	139.313	Entire Section	Entire Section
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June 2018	XX	139.329	Entire Section	Entire Section
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November 2018	XXI	139.313	Entire Section	Entire Section
November 2018	XXI	139.321	321-35 thru 321-37	321-35 thru 321-37
November 2018	XXI	Appendix B	Entire Section	Entire Section
November 2018	XXI	Appendix C	Entire Section	Entire Section
June 2019	XXII	Not Applicable	Title Page	Title Page
June 2019	XXII	Index	Entire Section	Entire Section
June 2019	XXII	ACM	Entire Section	Entire Section
June 2019	XXII	139.313	Entire Section	Entire Section
June 2019	XXII	139.321	Entire Section	Entire Section
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June 2019	XXII	139.329	Entire Section	Entire Section
June 2019	XXII	Appendix B	Entire Section	Entire Section
June 2019	XXII	Appendix C	Entire Section	Entire Section
August 2019	XXIII	Not Applicable	Title Page	Title Page
August 2019	XXIII	Index	I, VI	I, VI
August 2019	XXIII	ACM	Entire Section	Entire Section
August 2019	XXIII	139.325	Separate Cover: Delete All Pages	Separate Cover: Add All Pages
August 2019	XXIII	139.337	337-1 thru 337-5	337-1 thru 337-5
August 2019	XXIII	Appendix A	AA-2A thru AA-2G	AA-2A thru AA-2E
August 2019	XXIII	Appendix C	AC-7, AC-10, AC-13	AC-7, AC-10, AC-13
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September 2019	XXIV	ACM	ACM-14, ACM-20	ACM-14, ACM-20
September 2019	XXIV	139.313	313-1	313-1

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October 2019	XXV	139.325	Separate Cover: 325-1, 325-11, 325-209, 325- 210	Separate Cover: 325-1, 325-11, 325-209, 325- 210
October 2019	XXV	139.341	341-1 thru 341-2	341-1 thru 341-2
October 2019	XXV	Appendix A	AA-1, AA-1A, AA-1C thru 1F, AA-2D, AA-3B, AA-3C	AA-1, AA-1A, AA-1C thru 1F, AA-2D, AA-3B, AA-3C
October 2019	XXV	Appendix B	Entire Section	Entire Section
October 2019	XXV	Appendix C	AC-7, AC-10, AC-13, AC-14, AC-18	AC-7, AC-10, AC-13, AC-14, AC-18
December 2019	XXVI	Not Applicable	Title Page	Title Page
December 2019	XXVI	Index	I, VI	I, VI
December 2019	XXVI	ACM	ACM-15 thru ACM-25	ACM-15 thru ACM-26
December 2019	XXVI	139.313	Separate Cover: Delete All Pages	Separate Cover: Add All Pages
December 2019	XXVI	Appendix A	AA-4A thru AA- 12B	AA-4A thru AA- 11B
April 2020	XXVII	Not Applicable	Title Page	Title Page
April 2020	XXVII	ACM	ACM-15, ACM- 22 thru ACM-26	ACM-15, ACM- 22 thru ACM-26
April 2020	XXVII	Entire ACM	Submitted Electronic Copy of ACM for Approval	
October 2020	XXVIII	Entire ACM	Submitted Electronic Copy of ACM for Approval	
April 2022	XXIX	139.205	205-1	205-1
April 2022	XXIX	139.311	Entire Section	Entire Section
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April 2022	XXIX	139.321	321-1 thru 321-3, 321-30 thru 33	321-1 thru 321-3, 321-30 thru 33

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April 2022	XXIX	ACM Index	I,II, III, V, & VI	II, III, V, VI, & VII
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October 2022	XXXI	139.321	Entire Section	Entire Section
October 2022	XXXI	ACM Index	Page III, 139.321	Page III, 139.321
October 2022	XXXI	ACM Title Page	ACM- 16 thru ACM-24	ACM- 16 thru ACM-24
October 2022	XXXI	139.313	Entire Section	Entire Section
August 2023	XXXII	ACM Index	ACM-16, ACM-24	ACM-16, ACM-24
August 2023	XXXII	Appendix A	AA-1A, AA-1C, AA-2A thru AA-2E, AA-3A thru AA-3D, AA-9 thru AA-9F, AA-12A thru AA-12E	AA-1A, AA-1C, AA-2A thru AA-2E, AA-3A thru AA-3D, AA-9 thru AA-9F, AA-12A thru AA-12E
August 2023	XXXII	Appendix B	Entire Section	Entire Section
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August 2023	XXXII	137.317	317-2 thru 317-7	317-2 thru 317-7
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October 2024	XXXIII	139.321	Entire Section	Entire Section
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December 2024	XXXIV	Index	V	V
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June 2025	XXXV	Title Page	ACM-17, ACM-26, ACM-27	ACM-17, ACM-26, ACM-27
June 2025	XXXV	Index	V, VI	VI, VI
June 2025	XXXV	139.325	Separate Cover: Entire Section	Separate Cover: Entire Section
June 2025	XXXV	139.337	337-10 thru 337- 18	337-10 thru 337.18
November 2025	XXXVI	Title Page	ACM-17, ACM- 26, ACM-27	ACM-17, ACM- 26, ACM-27

November 2025	XXXVI	Index	I, III, V, VI	I, III, V, VI
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February 2026	XXXVII	139.317	317-6 and 317-7	317-6 and 317-7
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139.101 GENERAL REQUIREMENTS

1. Purpose

This manual provides direction and lines of responsibility in the day-to-day operation of the St. Louis Lambert International Airport. It details operating procedures to be followed for both routine matters and unusual circumstances or emergencies that may arise. The content of this manual will comply with the Federal Aviation Administration rules and regulations Title 14 CFR Part 139, effective June 9, 2004.

2. Airport Information

Under this regulation, St. Louis Lambert International Airport operates as a **Class I** airport with scheduled air carrier service with over 30 passenger seats, unscheduled passenger operations of large air carrier aircraft, and scheduled operations of small air carrier. St. Louis Lambert International Airport is owned by the City of St. Louis and it is operated by the City of St. Louis Airport Authority as directed by the City of St. Louis Airport Commission.

3. Mailing Address:

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
10701 Lambert International Boulevard, Room MTN 2276
P.O. Box 10212, Lambert Station
St. Louis, MO, 63145
Office Hours: 08:30 A.M. to 05:00 P.M., Monday – Friday
Phone: 314-426-8000 / Fax: 314-426-5733
www.flystl.com

4. Location

St. Louis Lambert International Airport is located approximately 10 miles Northwest of Downtown St. Louis.

139.105 INSPECTION AUTHORITY

The Director of Airports, or his/her designee, shall allow properly identified FAA personnel to conduct such inspections or tests, announced or unannounced, as necessary to ensure compliance of St. Louis Lambert International Airport with the requirements set forth in FAR Part 139, and those set forth in this Certification Manual for Airport Certification.

139.111 EXEMPTIONS FROM CERTIFICATION

At this time, there are no exemptions to FAR Part 139 relative to this Airport Certification Manual.

139.113 DEVIATIONS TO PART 139 REQUIREMENTS

1. Deviations:

In emergency conditions requiring immediate action for the protection of life or property, the certificate holder may deviate from any requirement of Subpart D of this part, or the Airport Certification Manual, to the extent required to meet that emergency.

2. Reporting:

Each certificate holder who deviates from a requirement under this section must, within 14 days after the emergency, notify the Regional Airports Division Manager of the nature, extent, and duration of the deviation. When requested by the Regional Airports Division Manager, the certificate holder must provide this notification in writing.

14 CFR Part 3, Subpart D- FALSIFICATION, REPRODUCTION, ALTERATIONS,
OMISSION OR INCORRECT STATEMENTS

Falsification Prohibitions:

In accordance with 14 CFR Part 3, Subpart D, *Falsification, Reproduction, Alteration, Omission, or Incorrect Statements*, St. Louis Lambert International Airport will comply with falsification requirements that prohibit persons from intentionally making false statements, reproducing or altering, or omitting information in documents provided to the FAA.

In complying with Part 3 falsification requirements, it is understood the term “person” includes both the certificate holder and individuals. Further, the term “document” means any document in any format (electronic or physical) and other tangible items consisting of, or related to, any FAA acceptance, determination, approval, or authorization. This includes any document in any format that is kept, made, or used to show compliance with Part 139.

A. Fraudulent or intentionally false statements.

No person may make or cause to be made any fraudulent or intentionally false statement in:

- (1) Any document in any format submitted under any provision referenced in Part 3.401, consisting of or related to any acceptance, application, approval, authorization, certificate, rating, declaration, designation, qualification, record, report, request for reconsideration, or similar; or
- (2) Any document in any format that is kept, made, or used to show compliance with any requirement under the provisions referenced in Part 3.401.

B. Production, reproduction, or alteration for fraudulent purpose.

No person may make or cause to be made any production, reproduction, or alteration for fraudulent purpose of:

- (1) Any document in any format, submitted or granted under any provision referenced in Part 3.401, consisting of or related to any acceptance, application, approval, authorization, certificate, rating, declaration, designation, qualification, record, report, request for reconsideration, or similar; or
- (2) Any document in any format that is kept, made, or used to show compliance with any requirement under the provisions referenced in Part 3.401.

C. Knowingly omit, or cause to be omitted, a material fact.

No person may knowingly omit, or cause to be omitted, a material fact in:

- (1) Any document in any format submitted under any provision referenced in Part 3.401, consisting of or related to any acceptance, application, approval, authorization, certificate, rating, declaration, designation, qualification, record, report, request for reconsideration, or similar; or
- (2) Any document in any format that is kept, made, or used to show compliance with any requirement under the provisions referenced in Part 3.401.

139.201 GENERAL REQUIREMENTS

The Airport will:

1. Keep the Airport Certification Manual (ACM) current at all times. The Deputy Director of Operations & Maintenance or designee is responsible for maintaining the ACM.
2. Maintain at least one complete and current copy of the approved ACM on the Airport, which will be available for inspection by the FAA. This copy will be maintained in the Airport Director's Office and the Airport Operations Center.
3. Furnish the applicable portions of the FAA approved ACM to airport personnel responsible for its implementation (see Distribution List).
4. Ensure that the FAA Regional Airports Division is provided a complete copy of the most current ACM including any approved amendments.

139.205 AMENDMENT OF AIRPORT CERTIFICATION MANUAL

The following procedure is in effect for amendments to the ACM:

1. One copy of the revisions will be submitted to the Regional Airports Division electronically.
2. Amendments to the ACM will be submitted at least 30 days prior to the proposed effective date. They will be submitted as needed to maintain currency.
3. The ACM Page Amendment Log will be completed and submitted with each amendment.
4. Each page of the amendment, including the Page Amendment Log, will have the date of the amendment and the original approval date of the ACM.
5. Upon FAA approval, copies of the approved amendment will be made and distributed to the holders of the Airport Certification Manual on the Distribution List.

Original Date _____
Revision Date _____

FAA Approved

A. Edgar

Date: Apr 25 2022

139.301 Records

1. Furnish Records

Upon request by the Administrator, the airport will furnish records listed under this part.

2. List of Required Records

The airport will maintain the following records:

- A. *Personnel Training*. Twenty-four consecutive calendar months for personnel training records, as required under Part 139.303, 139.327, and 139.402(d). Records are kept via AAAE Computers.
- B. *Emergency Personnel Training*. Twenty-four consecutive calendar months for ARFF and emergency medical service personnel training records, as required under 139.319. Records are kept by ARFF via hardcopies.
- C. *Airport Fueling Agent Inspection*. Twelve consecutive calendar months for records of inspection of airport fueling agents, as required under 139.321. Records are kept by ARFF via hardcopies.
- D. *Fueling Personnel Training*. Twelve consecutive calendar months for training records of fueling personnel, as required under 139.321. Records are maintained by Fueling agencies, but Airport Ops provide hardcopies for the FAA Annual Inspection.
- E. *Self-Inspection*. Twelve consecutive calendar months for self-inspection records, as required under 139.327. Records are maintained electronically.
- F. *Movement Areas and Safety Areas Training*. Twenty-four consecutive calendar months for records of training given to pedestrians and ground vehicle operators with access to movement areas and safety areas, as required under 139.329. Initial driver records are maintain via hardcopies, and recurrent training via AAAE Computers.
- G. *Accident and Incident*. Twelve consecutive calendar months for each accident or incident in movement areas and safety areas involving an air carrier aircraft and/or ground vehicle, as required under 139.329. Records are maintained electronically.
- H. *Airport Condition*. Twelve consecutive calendar months for records of airport condition information dissemination, as required under 139.339. Records are maintained electronically.

Original Date _____
Revision Date _____

- I. *Safety Risk Management* The longer of thirty-six consecutive calendar months after risk analysis of identified hazards under 139.402(b)(2) has been completed, or twelve consecutive calendar months after mitigations required under 139.402(b)(2)(v) have been completed.
- J. *Safety Communications* Twelve consecutive calendar months for safety communications, as required under 139.402(d)

3. Additional Records

The Airport will make and maintain any additional records required by the Administrator.

Original Date _____
Revision Date _____

139.303 PERSONNEL

1. Personnel Requirements

The Airport Authority at St. Louis Lambert International Airport shall maintain sufficient, qualified personnel at all times to meet the requirements of both this ACM and the requirements of FAR Part 139.

The Airport Authority shall equip personnel with sufficient resources needed to comply with the requirements of FAR Part 139.

2. List of Key Personnel

The Organization Charts, as shown on the following pages of this section, list the key personnel of the Airport Authority at St. Louis Lambert International Airport.

3. Lines of Succession

In addition to listing the key personnel, the Organizational Chart also shows the direct lines of succession from the Director of Airports down through the Director's Assistants and the department they head.

The departments listed under the responsibility of the Assistant Directors are headed by Managers or Department Supervisors who report directly to the Assistant Directors. Personnel in the various departments report to the department Supervisor or Manager.

4. Training

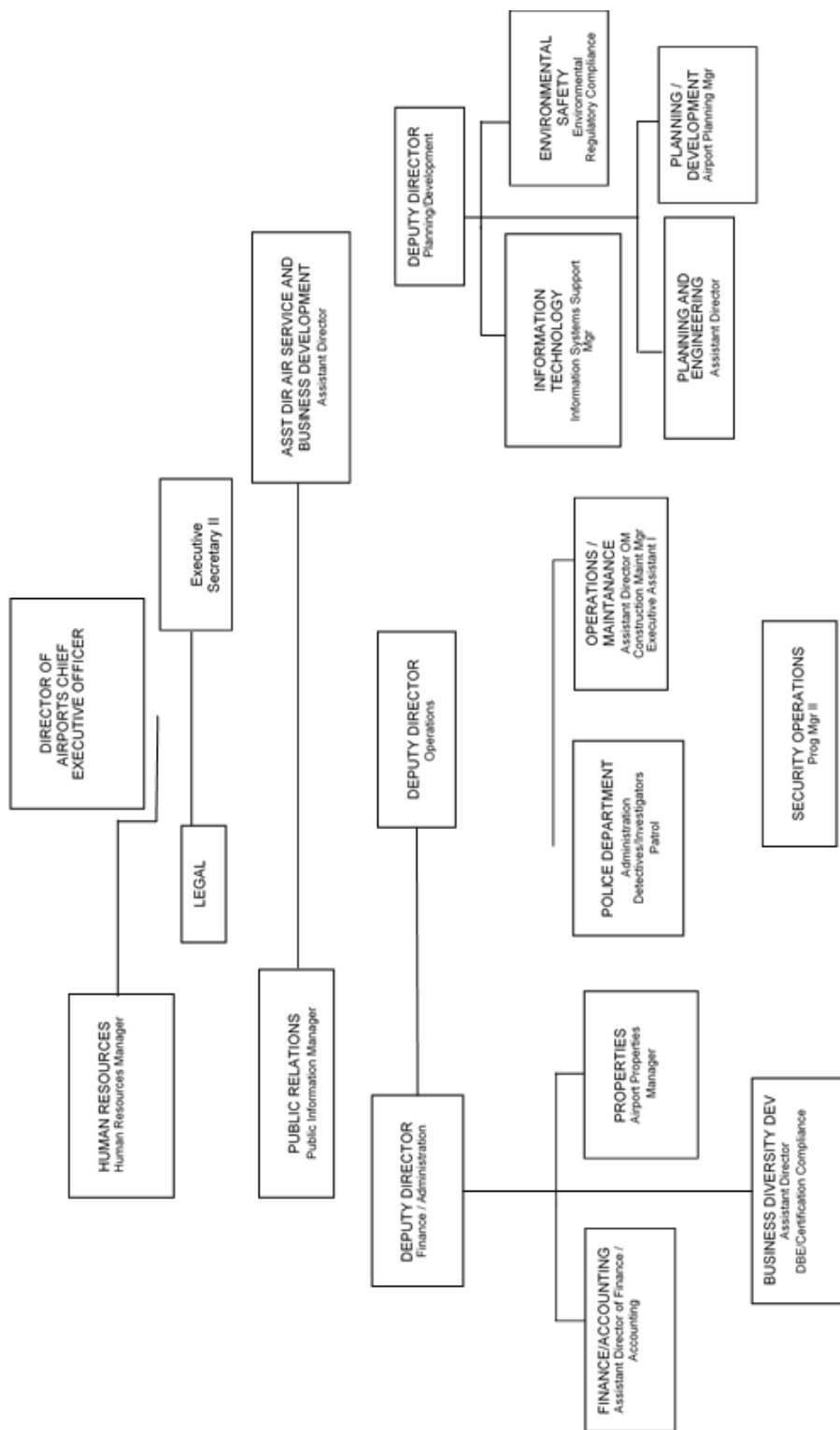
The Airport Operations Center shall train all personnel who access movement and safety areas and perform duties in compliance with the requirements of the ACM and Part 139. This training must be completed on the Interactive Employee Training (IET) computers through the airports' Safety & Operations Departments' computers before the initial performance of such duties, and at least once every twelve consecutive calendar months. The curriculum for initial and recurrent training must include at the least the following areas:

- A. Airport Familiarization, including airport markings, lightings, and sign systems.
 - B. Procedures for access to, and operations, in movement areas and safety areas, as specified in Part 139.
 - C. Airport communications, including radio communication between air traffic control tower and personnel.
 - D. Duties required under the Airport Certification Manual and the requirements of Part 139.
 - E. Any additional subject areas required under Part 139, Sections 319, 321, 325, 327, 329, 337, and 339, as appropriate.
-

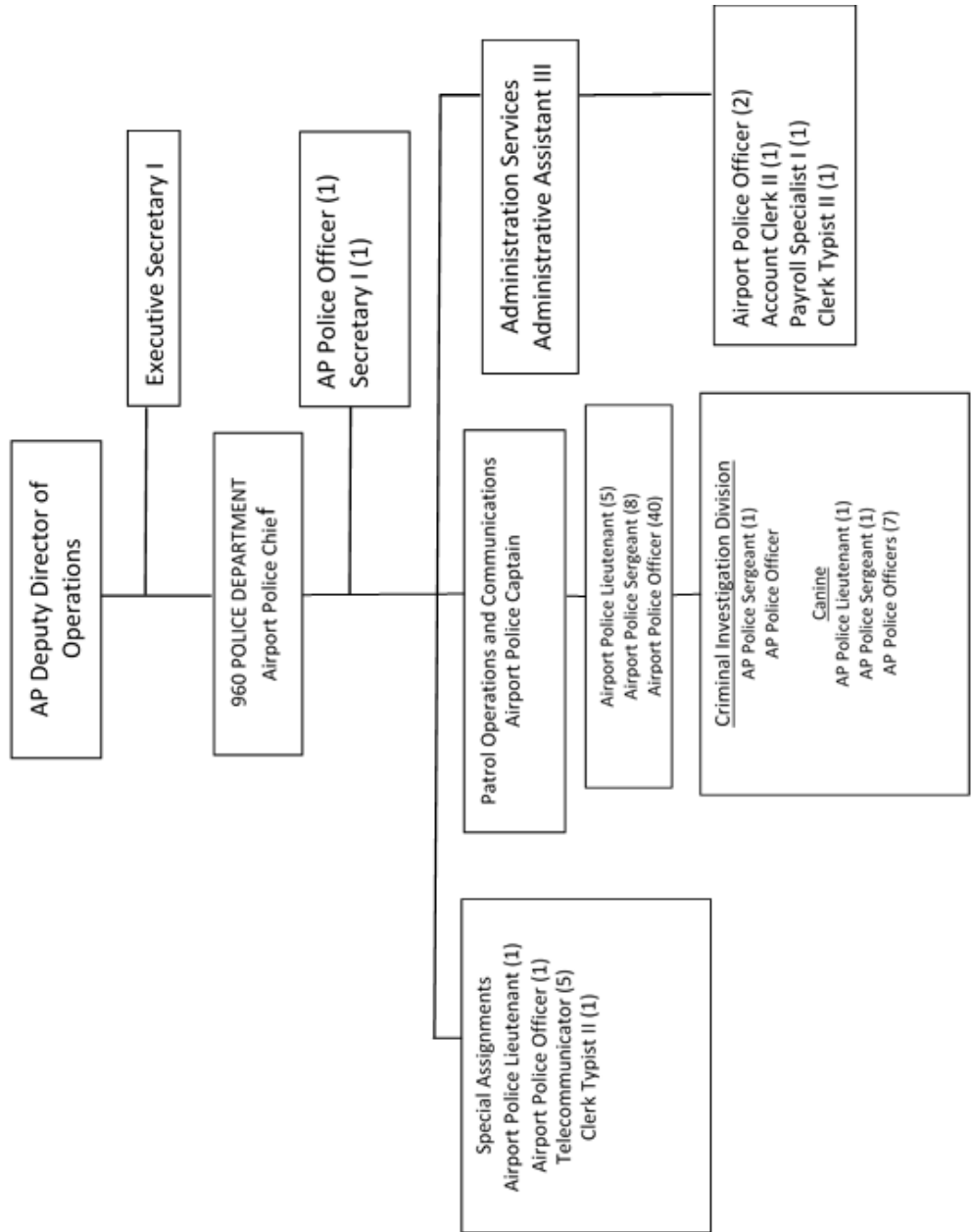
- F. All initial training will be done through the classroom training that is already established. All recurrent training will be done through the Interactive Employee Training computers.

Make a record of all training completed by each individual in compliance with this section that includes, at a minimum, a description and date of training received. Such records shall be maintained for twenty – four consecutive calendar months after completion of training.

ST. LOUIS LAMBERT
INTERNATIONAL AIRPORT
ORGANIZATIONAL CHART
June 01, 2018
EXECUTIVE STAFF

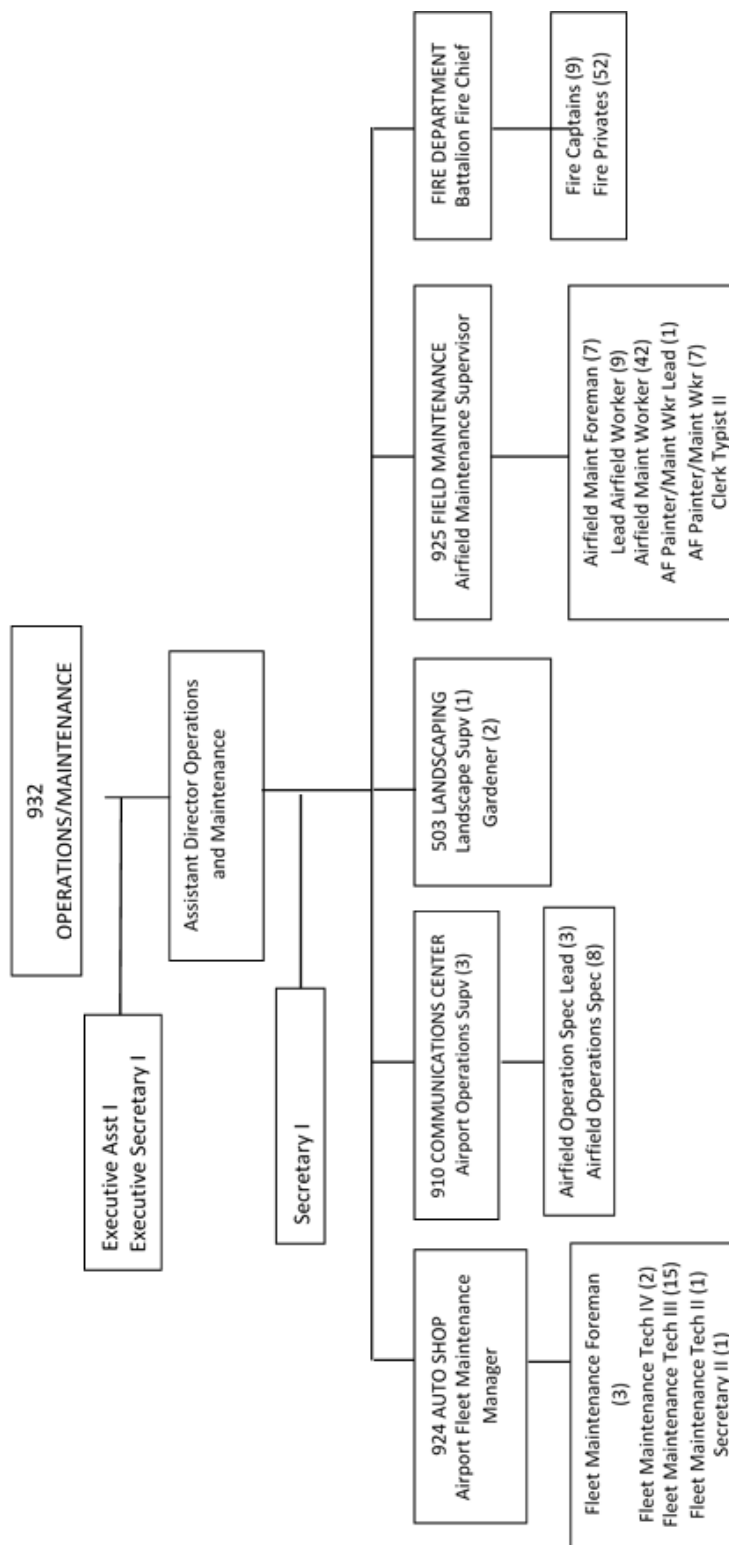


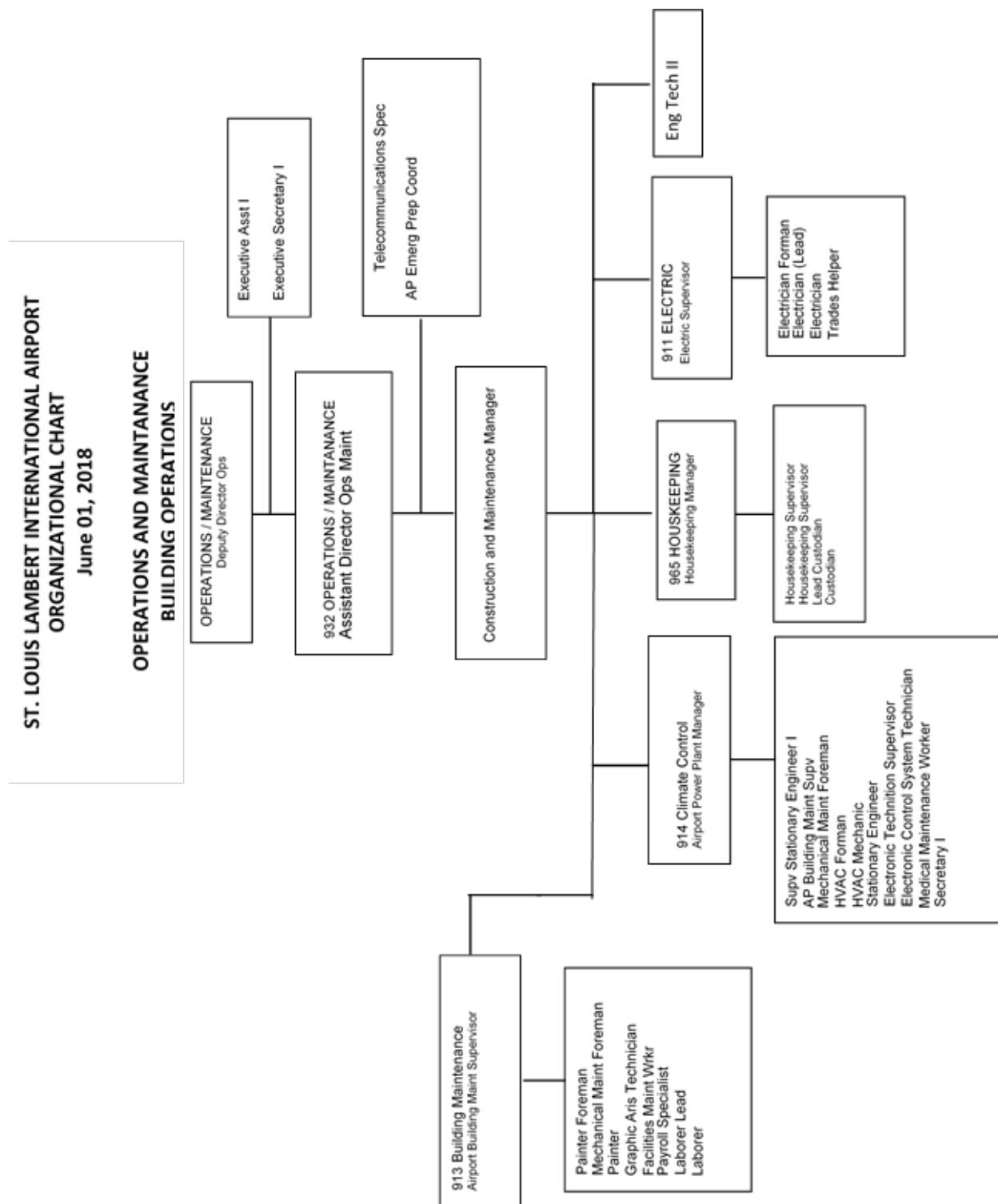
**ST. LOUIS LAMBERT INTERNATIONAL
AIRPORT
ORGANIZATIONAL CHART
JUNE 1, 2018
POLICE DEPARTMENT**



ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
ORGANIZATIONAL CHART
JUNE 1, 2018

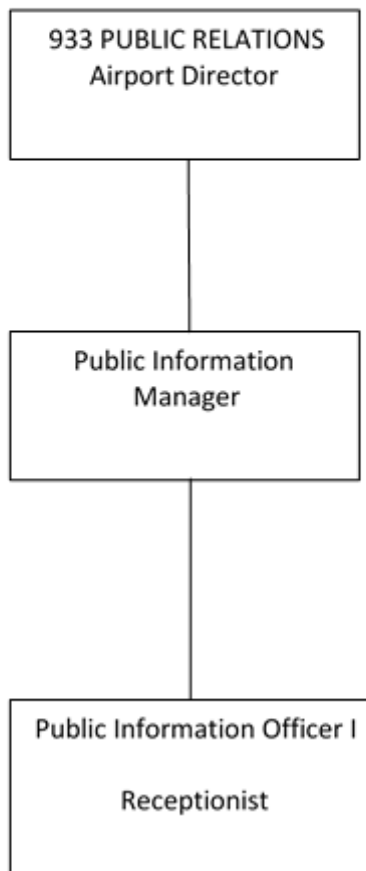
OPERATIONS AND MAINTENANCE – FIELD
OPERATIONS





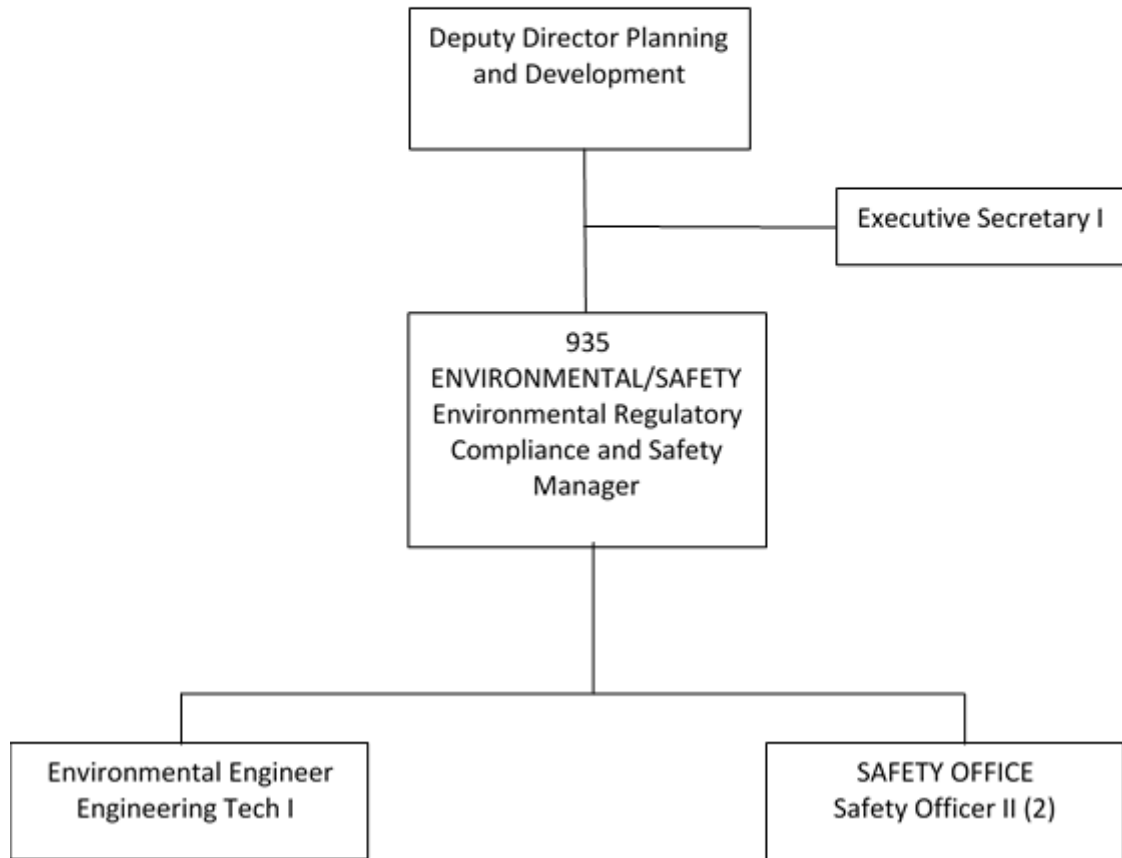
**ST. LOUIS LAMBERT INTERNATIONAL
AIRPORT
ORGANIZATIONAL CHART
JUNE 1, 2018**

PUBLIC RELATIONS



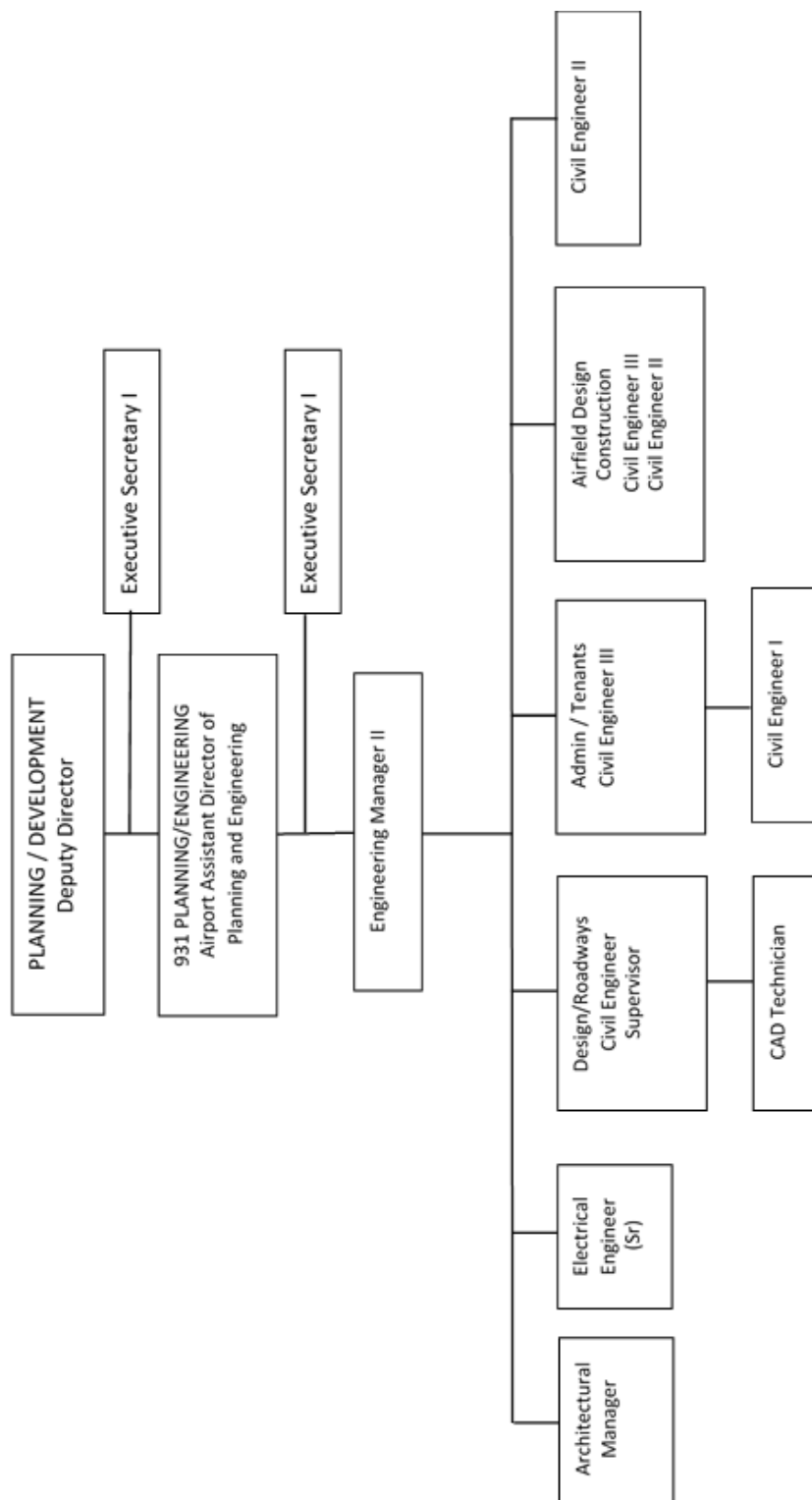
**ST. LOUIS LAMBERT INTERNATIONAL
AIRPORT
ORGANIZATIONAL CHART
JUNE 1, 2018

ENVIRONMENTAL / SAFETY**

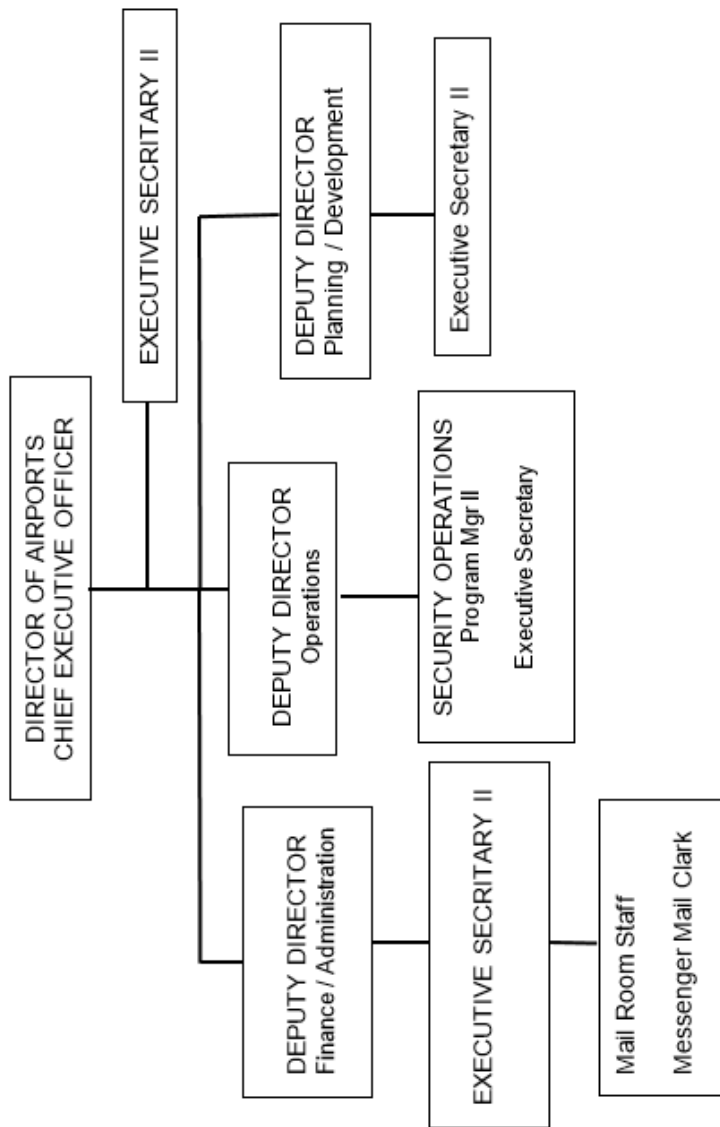


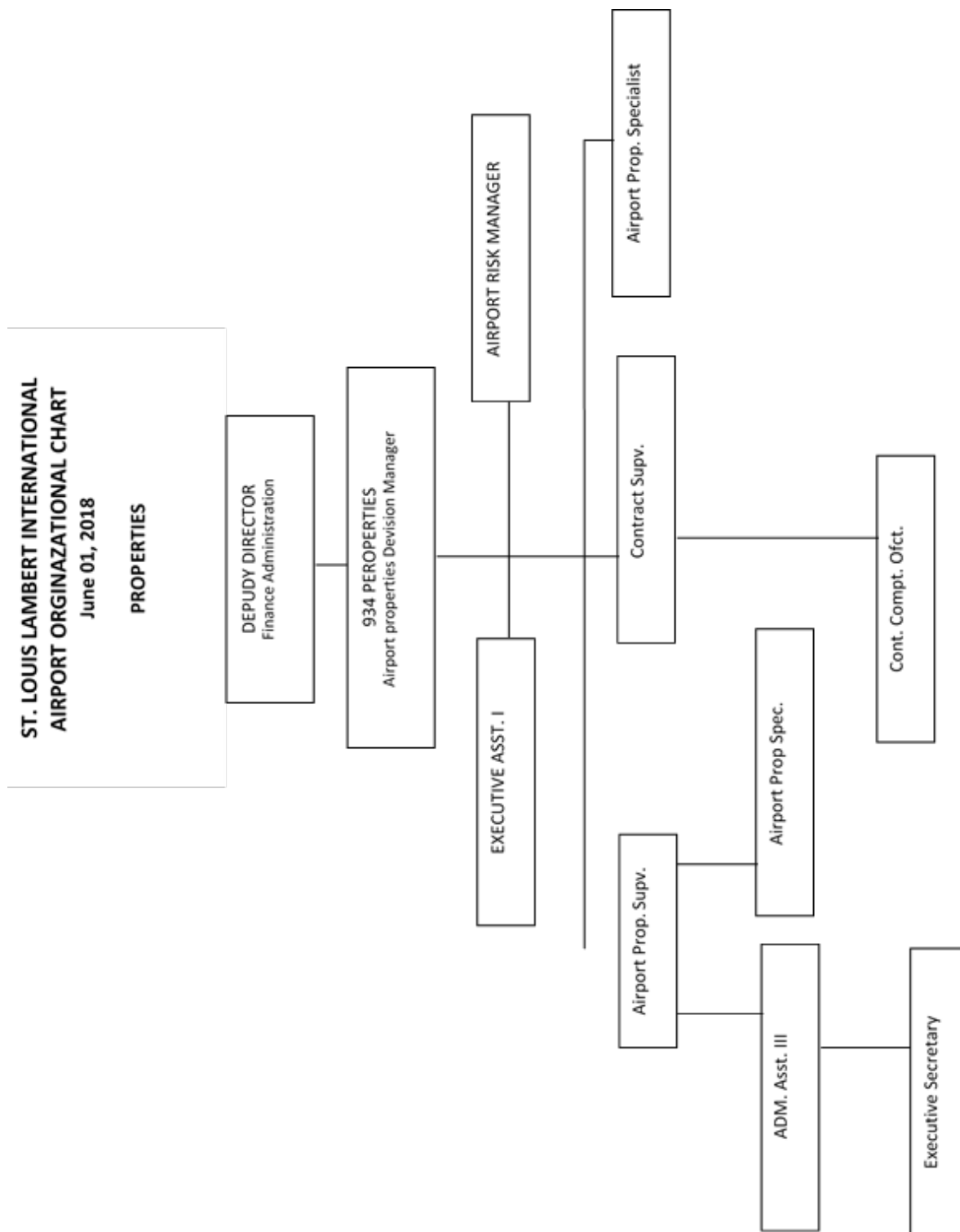
**ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
ORGANIZATIONAL CHART
JUNE 1, 2018**

PLANNING / ENGINEERING



ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
 ORGANIZATIONAL CHART
 June 01, 2018
 DIRECTORS OFFICE





139.305 PAVED AREAS

1. Required Pavement Conditions

All airport paved areas are of either asphalt or concrete pavement. Areas include runways, taxiways, airline ramp areas, parking aprons, and vehicle roadways. St. Louis – Lambert International Airport Authority maintain and, as expeditiously as possible, repair any and all paved areas. Work will be performed in conjunction with the following guidelines:

- A. Pavement edges will not exceed 3 inches difference in elevation between abutting pavement sections and between full strength pavement and abutting shoulders.
- B. The pavement shall have no holes exceeding 3 inches in depth nor have a slope of which from any point in the hole to the lip is 45 degrees or greater as measured from the pavement surface plane, unless, in either case, the entire of the hole can be covered by a 5 – inch diameter circle.
- C. The pavement shall be free of cracks and surface variations which could impair directional control of air carrier aircraft. Any pavement crack or surface deterioration that produces loose aggregate or other contaminants shall be immediately repaired.
- D. Mud, dirt, sand, loose aggregate, debris, foreign objects, rubber deposits, and other contaminants shall be removed promptly and as completely as possible. This requirement does not apply to the associated use of materials such as sand and deicing solutions for snow removal and ice control.
- E. Any chemical solvent used to clean any pavement area shall be removed as soon as possible, consistent with the instructions of the manufacturer of the solvent.
- F. The pavement shall be sufficiently drained and free of depressions to prevent ponding that obscures markings or impairs safe aircraft operations.

2. Inspection and Maintenance of Paved Areas by Airport Operations Center Personnel

- A. Pavement areas are inspected in accordance with AC 150/5200 – 18, current edition, Airport Safety Self-Inspection.
- B. Paved areas are inspected daily during the morning field inspection performed by Operations Center Personnel under the direction of the Airport Operations Center Supervisor. In addition, Field Maintenance or Operations Center Personnel may make unscheduled, spontaneous inspections as part of their daily assignments or in response to conditions which may arise. On occasion, or as requested, airline personnel are

allowed to accompany Field Maintenance or Airport Operations Center Personnel on field inspections.

- C. Pavement conditions requiring corrective actions will be noted on the airport Self-Inspection checklists; see Appendix A. These checklists will then be turned over to the Field Maintenance Supervisor who will initiate corrective actions or repairs as necessary through the Field Maintenance Department. Repairs beyond the capabilities or scope of the Field Maintenance Department will be noted to the Assistant Director of Planning and Engineering for review and repair by outside contractors.
- D. For pavement conditions requiring immediate attention, if possible, actions will be taken to correct these conditions by Field Maintenance personnel. If immediate corrective actions are not possible, Operations Center personnel will be notified and an amendment to the Airport Condition Report will be issued if appropriate. If the condition does not require an amendment, Operations Center personnel will contact FAA ATCT, airlines, or airport tenants who may be affected by the condition.
- E. Once a repair or corrective action has been taken, Field Maintenance personnel will notify the Field Maintenance Supervisor and the Airport Operations Center personnel. If an amendment to the Airport Condition Report was issued, the Operations Center will cancel the respective amendment and notify any affected tenants that the condition has been corrected.
- F. Airport self-inspection checklists are maintained electronically in the Airport Operations Center for no less than twelve consecutive calendar months.

139.309 SAFETY AREAS

See Appendix B for Runway and Taxiway Safety Area locations.

1. Safety Area Dimensions

Safety areas are maintained at the dimensions that existed on or before December 31, 1987. If a runway or taxiway is reconstructed, or a runway is extended, safety area dimensions shall conform to FAA standards in AC 150/5300 – 13, current edition, Airport Design, unless authorized by the Administrator. Safety area dimensions are as follows:

Runway 12R/30L – 250 feet from centerline and 1000 feet off each end

Runway 12L/30R – 250 feet from centerline, 1000 feet off the Runway 12L approach end, and 1000 feet off the Runway 30R approach end

Runway 11/29 – 250 feet from centerline and 1000 feet off each end

Runway 6/24 – 250 feet from centerline and 1000 feet off each end

Taxiways – 85.5 feet from the centerline

The precision approach runways at St. Louis Lambert, Runways, 12R/30L, 12L/30R, 11/29, 6/24, meet the safety area specifications for Airplane Design Group IV Aircraft. Aircraft with wingspans from 118 feet up to but not including 171 feet.

All taxiways at St. Louis Lambert meet the safety area specifications for Airplane Design Group IV Aircraft. Aircraft with wingspans from 118 feet up to but not including 171 feet.

With the exception of the taxiways listed below, all runways and taxiways consist of stabilized pavement shoulders then turf. Stabilized shoulders are 25 feet wide and are of either asphalt or concrete construction.

2. Safety Areas of Turf and Shoulders less than 25 feet

A. Taxiway Victor from Runway 12R/30L to Taxiway Foxtrot (15 feet wide, asphalt).

3. Required Conditions of Safety Areas

Safety areas are maintained as follows:

A. All runway and taxiway safety areas are kept clear of debris and foreign objects and are maintained free of potentially hazardous ruts, humps, depressions, or other surface irregularities.

- B. All safety areas are drained by means of grading and storm sewers.
- C. All safety areas, when dry, are capable of supporting the weight of snow removal equipment, ARFF equipment, Airport Authority and Airline vehicles, and he occasional aircraft which may stray off of a runway or taxiway onto a safety area. Manhole covers and storm sewer grates are made of steel and are sufficient thickness and strength to support vehicles and/or aircraft.
- D. To the extent practicable, all items constructed within runway or taxiway safety areas will be constructed with frangible mounts with the frangible points being no more than 3 inches higher than the surrounding grade.
- E. Safety areas shall conform to dimensions acceptable to the FAA if any runways or taxiways are constructed, reconstructed, or extended.

4. Inspection and Maintenance of Safety Areas

- A. Safety Areas are inspected daily during the morning field inspections performed by Operations Center personnel under the direction of the Operations Center Supervisor. In addition, Field Maintenance or Operations Center personnel may make unscheduled, spontaneous inspections as a part of their daily assignments or in response to conditions which may arise.
- B. Safety area conditions requiring corrective actions will be noted on the Airport self-inspection checklists; See Appendix A. These checklists will then be turned over to the Field Maintenance Supervisor who will initiate corrective actions or repairs as necessary through the Field Maintenance Department. Repairs beyond the capabilities or scope of the Field Maintenance Department will be noted to the Assistant Director of Planning and Engineering for review and repair by outside contractors.
- C. For safety area conditions requiring immediate remedy, if possible, actions will be taken to correct these conditions by Field Maintenance personnel. If immediate corrective actions are not possible, Operations Center personnel will be notified, and an amendment to the Airport Condition Report will be issued if appropriate. If the condition does not require an amendment, Operations Center personnel will contact the FAA Control Tower, airlines, or airport tenants who may be affected by the condition.
- D. Any FAA-owned NAVAIDS inside safety areas are the maintenance responsibility of the FAA although the Operations Center personnel will inspect these items as a part of their daily field inspections. Any NAVAID which the Operations Center personnel may find in need of repair will be noted on the Airport self-inspection checklist and given to the Field Maintenance Supervisor who will in turn notify the Assistant Director of Operations & Maintenance. The Assistant Director of Operations &

Maintenance will notify the FAA Control Tower and the FAA Sector Field Office so that FAA personnel may initiate repairs or corrective actions as needed.

- E. Once a repair or corrective action has been taken, Field Maintenance personnel will notify the Field Maintenance Supervisor and the Operations Center personnel. If an amendment to the Airport Condition Report has been issued, the Operations Center personnel will cancel the respective amendment and notify any affected Airport tenants and FAA Technical Operations personnel that the addressed condition has been corrected.
- F. Airport Self-Inspection checklists are maintained electronically in the Airport Operations Center for no less than twelve consecutive calendar months.

139.311 MARKING, SIGNS, AND LIGHTING

1. Marking

Runways and Taxiways at St. Louis Lambert International Airport are marked in compliance with Part 139.311 and will meet the requirements set forth in A/C 150/5340-1, current edition, Standards for Airport Markings, and in A/C 150/5300-13, current edition, Airport Design.

A. Runways

Runway 12R/30L	Precision Instrument (Configuration B)
Runway 12L/30R	Precision Instrument (Configuration B)
Runway 11/29	Precision Instrument (Configuration B)
Runway 6/24	Precision Instrument (Configuration B)

B. Taxiways

Centerlines, edge markings, and transverse stripes where taxiways have stabilized shoulders.

C. Holding Position Markings

Runway	Category	Holding Distance
12R/30L	D – V	285'
12L/30R	D – V	285'
11/29	D – IV	285'
6/24	D – IV	255

All holding position markings are glass-beaded, highlighted in black, and in accordance with AC 150/5340-1, current edition.

D. Blast Pads

Blast Pads are marked with Chevrons.

E. Runway/Taxiway Closures

If a runway or taxiway is closed for more than 30 days, markings leading into the closed section, including the taxiway centerline and runway lead-on/off lines, must be removed or blacked out.

Original Date _____
Revision Date _____

2. Signs

Signs at St. Louis Lambert International Airport comply with Part 139.311 and will meet standards in AC 150/5340-18, current edition, Standards for Airport Sign Systems, and sign specifications in AC 150/5345-44, current edition, Specifications for Taxiway and Runway Signs. A modification to the standards has been approved for adding arrows to the holding position signs at Runway 6 and Runway 29 intersections. The holding position sign for Runway 6 on the right side of the taxiway is canted toward the taxiway.

A. Signs Identifying Taxi Routes

The airport will provide and maintain a sign system for air carrier operations per FAR Part 139.311 and the Marking and Sign Plan included in Appendix C.

B. Holding Position Signs

Holding position signs are installed at all positions per the Marking and Sign Plan included in Appendix C.

C. ILS Critical Area Signs

ILS Critical Area signs are installed at all ILS holding positions per the Marking and Sign Plan (Appendix C).

3. Lighting

Runway and Taxiway lighting at St. Louis-Lambert International Airport complies with Part 139.311 and AC 150/5340-30, current edition, Design and Installation Details for Airport Visual Aids. See Appendix B for runway and taxiway lighting locations.

A. Runways

1. *Edge Lighting*. All runway lighting consists of high-intensity elevated and in-pavement runway edge lights (HIRL) with 5-step intensity control. Runway lights are split white/yellow to mark the caution zone on the last 2000 feet of each end of all runways.
2. *Centerline Lighting*. 11/29, 12L/30R, and 12R/30L have installed runway centerline lights. Alternating red and white lights are in place from 3000 feet to 1000 feet from the runway end, and red lights are installed on the last 1000 foot portion.
3. *Touchdown Zone Lighting*. Touchdown zone lights are installed on Runway 11, 12L, 12R, 29, and 30R per AC 150/5340-30, current edition, Design and Installation Details for Airport Visual Aids.

B. Taxiways

Original Date _____
Revision Date _____

1. *Taxiway Edge Lighting.* Medium intensity elevated and in-pavement taxiway lights (MITL) with 3-step intensity control are in place on all taxiways and high-speed taxiways.
2. *Centerline Lighting.* Taxiways Alpha – 2, 3, 4, & 5 and Echo – 1 & 2 have in-pavement centerline lights. These taxiways are acute-angled exits for 11-29 and 12L-30R, respectively, and have alternating green and yellow in-pavement “lead off” lights between the runway centerline and the runway holding position for each taxiway.
3. *Runway Guard Lights (RGL).* Elevated RGL fixtures consist of two alternately illuminated, unidirectional yellow lights and are collocated with the runway hold position markings on both sides of all taxiways. In-pavement RGLs consists of a row of alternately illuminated, unidirectional yellow lights installed at all runway hold position markings.

C. Additional Lighting

1. Medium intensity elevated and in-pavement airline ramp edge lights
2. Size 4, Class II, internally lighted runway distance remaining signs
3. Size 3, Class II, internally lighted taxiway guidance signs
4. Size 2, Class II, internally lighted taxiway guidance signs located in the island bordered by Taxiway Alpha, Bravo, Tango, and Uniform

D. Approach Lighting and NAVAIDS

Runway approach lighting complies with the requirements outlined in FAR Part 139.311 (c) Approach Lighting Meeting the Specifications for the Approach with the Lowest Minimums Authorized for Each Runway.

Approach lighting and NAVAIDS for each runway are as follows:

Runway 11	ALSF – 2	TDZL	PAPI
Runway 12L	ALSF – 2	TDZL	PAPI
Runway 12R	MALSR	TDZL	PAPI
Runway 29	ALSF – 2	TDZL	PAPI
Runway 30L	MALSR		PAPI
Runway 30R	ALSF – 2	TDZL	PAPI
Runway 6	MALSR		PAPI
Runway 24	MALS		PAPI

Original Date _____
 Revision Date _____

E. Airport Beacon

St. Louis Lambert International Airport is equipped with a 24 inch rotating green and white beacon located in the West Airfield of the Airport, just north of the West Fire House. The FAA Air Traffic Control Tower controls the operations of this beacon. St. Louis Lambert International Airport is responsible for the maintenance and upkeep of the beacon.

F. Obstruction Lighting and Marking

Obstructions as determined by the FAA, which fall under the responsibility of the St. Louis Lambert International Airport and which may require lighting, are as follows:

1. Airport Terminal Buildings
2. FBO Hangars
3. Airline Hangars
4. Runway Approach Lighting / Instrument System Components
5. Perimeter Fence

As determined by the FAA, Obstructions are outside of the Airport Perimeter, are exhibited in Appendix B.

G. Airfield Emergency Generators

To ensure a constant power source for airfield lighting, the North Substation is powered by two electrical feeds from Ameren UE. The North Substation powers two Electrical Vaults: Vault 2 (North Field Lighting) and Vault 3 (West Field Lighting). Each Vault is powered by two electrical feeds. If one feed fails, it switches to the other feeder. Each Vault has an Emergency Generator that will start once both electrical feeds fail. The airport has hired a contractor to inspect and maintain the Emergency Generators. The Emergency Generators are maintained per NFPA 110, current edition, standards and manufacturer's recommended tolerances. The Emergency Generators are tested and inspected weekly by the contractor.

H. Other Airport Lighting

Airport lighting at St. Louis Lambert International Airport, which is not directly related to aircraft operations, such as Terminal Building lighting, mast lights, ramp, and apron floodlights, is either directed downward or shielded to prevent inadvertent blinding of airline personnel or Air Traffic Control Tower personnel and subsequent interruptions of aircraft operations.

Original Date _____
Revision Date _____

4. Maintenance

For conditions that may require immediate remedy, if possible, actions will be taken to correct the discrepancy. If immediate corrective actions are not possible, Operations Center personnel will be notified and, if appropriate, an amendment to the Airport Condition Report will be issued until the discrepancy is corrected or repaired. If the addressed condition does not require an amendment, Operations Center personnel will contact the FAA Control Tower, or any airline or airport tenants who may be affected by the discrepancy.

Once a repair or corrective action has been completed, the Field or Electric Maintenance Departments will notify their respective Supervisors, who will inform the Airport Operations of the completion of repairs. If an amendment to the Airport Condition Report was issued, and Airport Operations will cancel the amendment and notify any affected tenants that the discrepancy has been corrected.

The FAA will retain responsibility for maintaining and upkeep of all FAA-owned NAVAIDS, approach lighting, and equipment located at St. Louis Lambert International Airport. Any FAA equipment which airport personnel find inoperable or in need of repair will be reported to the Assistant Director of Operations & Maintenance who will then notify the local FAA sector office so that they may initiate repairs or corrective actions as needed.

- A. *Markings and Signs.* Each marking, sign, and lighting system installed by the airport and owned by the airport will be appropriately maintained by cleaning, replacing or repairing any faded, missing, or non-functional item. These systems will also be maintained in a manner that prevents them from being obscured, clearly visible, and each item will provide an accurate reference to airport users.
- B. *Lighting.* Small repairs are made, when possible, by the Electrical Department during their maintenance inspections. Repairs requiring more time are scheduled to take place when their impact has the least effect on air traffic operations. If necessary, an amendment to the Airport Condition Report will be issued to notify Airmen of the discrepancy and to ensure repairs can be made with a minimum of air traffic interference.

Lighting problems that require an immediate solution will be undertaken by Airport Electricians. The Airport Operations Center and the Air Traffic Control Tower will coordinate efforts to expedite needed repairs.

Each lighting system will be maintained at least to the minimum operational criteria listed in Appendix A of AC 150/5340-26, current edition, Maintenance of Airport Visual Aid Facilities. The operating limits for lighting systems before a system is considered inoperable are as follows:

Original Date _____
Revision Date _____

Runway Edge Lights	• 85% operable for Visual, Non-Precision or Cat I runways • 95% operable for Cat II & III
Runway Centerline Lights	• 95% operable
Runway TDZ Lights	• 90% operable
Runway End/Threshold Lights	• 75% operable (2 inoperable max at any runway end)
Taxiway Edge Lights	• 85% operable
Taxiway Centerline Lights	• 90% operable
Runway Guard Lights	• Elevated – no more than one light in a fixture inoperable • In – Pavement – no more than three lights per location inoperable nor two adjacent lights inoperable

The allowable percentage of inoperable lights shall not be in such a way as to alter the basic pattern of the lighting system. In addition, an inoperable light shall not be adjacent to another inoperable light. Lights are considered adjacent if located either laterally or longitudinally in a lighting system.

Original Date _____
Revision Date _____

139.313 SNOW AND ICE CONTROL

St. Louis Lambert International Airport is located where snow and icing conditions seasonally occur. The airport complies with Section 313 by referencing AC 150/5200 – 30, *Airport Field Condition Assessments and Winter Operations Safety*, current edition, which contains information and standards that are acceptable to the FAA. St. Louis Lambert International Airport has prepared and complies with its Snow and Ice Control Plan. The Deputy Director of Operations & Maintenance has the primary responsibility for implementing the airport's snow removal program.

The Snow and Ice Control Plan is found under a separate cover.

139.315 AIRCRAFT RESCUE & FIREFIGHTING: INDEX DETERMINATION

St. Louis Lambert International Airport maintains vehicles and personnel meeting the requirements of an Index "D" Airport, air carrier aircraft at least 159 feet but less than 200 feet in length. Should Air Carrier departures increase to an average of 5 or more aircraft per day that are at least 200 feet in length, the Lambert ARFF District will increase its index to meet the new index requirements. Air Carriers will not be allowed to begin operations of larger aircraft until the Lambert ARFF District meets the requirements of the next higher index.

At the present time, Lambert's ARFF vehicles and personnel meet and/or exceed the requirements of an Index "D" Airport.

139.317 ARFF VEHICLES AND CAPABILITIES

The vehicles which make up the Aircraft Rescue and Fire Fighting District at St. Louis Lambert International Airport are listed, along with their descriptions and capabilities, on pages 317 – 2 through 317-7, and the number and type of portable fire extinguishers on page 317 – 8. In addition, ARFF vehicles are available for use from Boeing Corporation, listed on page 317 – 9. Boeing vehicles may, on occasion, be stationed at any of the Lambert ARFF District Houses and manned by Lambert ARFF District personnel in meeting the requirements of an Index “D” Airport.

Along with the vehicles listed on pages 317 – 2 through 317-7, the ARFF Stations also maintain several pieces of “Front Line” structural fire equipment and several “Reserve” fire apparatus.

STL Primary ARFF Vehicles

NORTH HOUSE

Oshkosh Striker 3000 – Snozzle (43)

1. Year In Service – 2014
2. Title Year – 2014
3. Date of Manufacturer – 2013
4. 3000 gallons of water
5. 420 gallons of 3% AFFF
6. 700 lbs Purple K Dry Chemical
7. 500 lbs Halotron
8. Flow rate 1250 high/625 gpm low water/AFFF type roof turret
9. Flow rate 1250 high/625 gpm low dry chemical entrainment type bumper turret
10. 1-20lb BC Portable Extinguishers
11. Crew of two (2) - One (1) operator and one (1) for handline and exterior operations



Oshkosh Striker 1500 (48*)

1. Year In Service – 2012
2. Title Year – 2013
3. Date of Manufacturer – 2012
4. 1500 gallons of water
5. 210 gallons of 3% AFFF
6. 500 lbs Purple K Dry Chemical
7. 500 lbs Halotron
8. Flow rate 1000 high/350 gpm low water/AFFF type bumper turret
9. Flow rate 1000 high/350 gpm low dry chemical entrainment type roof turret
10. 1-20lb BC Portable Extinguishers
11. Crew of two (2) - One (1) operator and one (1) for handline and exterior operations



ROSENBAUER AIRWOLF Class 2 (42*)

1. Year In Service – 2021
2. Title Year – 2021
3. Date of Manufacturer – 2020
4. 300 gallons of water
5. 40 gallons of AFFF
6. 500 lbs Purple K Dry Chemical
7. 90 gpm bumper turret -11lbs/second Dry Chemical
8. 1 ABC 20 lb / 1 BC 20lb Portable Extinguisher
9. Crew of one (1) - One operator



WEST HOUSE

ROSENBAUER PANTHER 3000 (46*)

1. Year In Service – 2021
2. Title Year – 2020
3. Date of Manufacturer – 2021
4. 3000 gallons of water
5. 420 gallons of 3% AFFF
6. 700 lbs Purple K Dry Chemical
7. 500 lbs Halotron
8. Flow rate 1200 high/600 gpm low dry chemical entrainment type bumper turret
9. Flow rate 1200 high/600 gpm low water/AFFF type turret
10. 1-20lb BC Portable Extinguishers
11. Crew of two (2) - One (1) operator and one (1) for handline and exterior operations



ROSENBAUER PANTHER 1500 (52*)

1. Year In Service – 2022
2. Title Year – 2022
3. Date of Manufacturer – 2022
4. 1600 gallons of water
5. 200 gallons of 3% AFFF
6. 500 lbs Purple K Dry Chemical
7. Flow rate 100 high/500 gpm low dry chemical entrainment type bumper turret
8. Flow rate 1000 high/500 gpm low water/AFFF type roof turret
9. 1-20lb BC Portable Extinguishers
10. Crew of two (2) - One (1) operator and one (1) for handline and exterior operations



Rosenbauer AirWolf Class 2 (49*)

1. Year In Service – 2020
2. Title Year – 2019
3. Date of Manufacturer – 2019
4. 300 gallons of water
5. 40 gallons of AFFF
6. 500 lbs Purple K Dry Chemical
7. 90 gpm bumper turret -11lbs/second Dry Chemical
8. 1-20lb BC Portable Extinguisher
9. Crew of one (1) - One operator



STL Alternate ARFF Vehicles

SMEAL 100' AERIAL PLATFORM (40)

1. Year In Service – 2021
2. Title Year – 2020
3. Date of Manufacturer – 2020
4. 300 gallons of water
5. 20 gallons of AFFF
6. 500 lbs Purple K Dry Chemical
7. Crew of one (2) - One operator and one (1) for handline and exterior operations



Oshkosh Striker 3000 Rhino Low Attack (45)

1. Year In Service – 2003
2. Title Year – 2003
3. Date of Manufacturer – 2003
4. 3000 gallons of water
5. 420 gallons of 3% AFFF
6. 700 lbs Purple K Dry Chemical
7. 500 lbs Halotron
8. Flow rate 1000 high/250 gpm water/AFFF type roof turret
9. Flow rate 1000 high/250 gpm low dry chemical entrainment type bumper turret
10. 1-20lb BC Portable Extinguishers
11. Crew of two (2) - One (1) operator and one (1) for handline and exterior operations



Mark I Quad Agent (53*)

1. Year In Service – 2006
2. Title Year – 2006
3. Date of Manufacturer – 2005
4. 90 gallons of water
5. 10 gallons 3% AFFF
6. 500 lbs Purple K Dry Chemical
7. 60 gpm bumper turret
8. 1-20lb BC Portable Extinguisher
9. Crew of one (1)-One operator



STL Support Vehicle

FORD F-550 MINI RESCUE ARFF (50)

1. Year In Service – 2008
2. Title Year – 2008
3. Date of Manufacturer – 2007
4. 0 gallons of water
5. 0 gallons of AFFF
6. 0 lbs Purple K Dry Chemical
7. Crew of one (1) - One operator



NUMBER AND TYPE OF PORTABLE FIRE EXTINGUISHERS

Truck	Dry Chem	Helotron	Class D	Water Gun	C02	A/B/C
40						
41						
42	18lbs	25lbs		2.5 Gals		
43	18lbs	25lbs				
44	18lbs			2.5 Gals	15lbs	37lbs
45	18lbs	25lbs				
46	18lbs	25lbs				
47						
48	18lbs		30lbs			
49	18lbs	25lbs				
50	18lbs	25lbs				
52	18lbs		30lbs			
51						
53						

RESERVE ARFF EQUIPMENT AVAILABLE AT BOEING

Vehicle Number	Vehicle Type	Manufacturer	General Condition	Manning Station	Agent	Water	3% Foam	Chemical	Halon	Type of Assignment
ARFF 7	ARFF	Oshkosh Striker 2009	GOOD	5	N/A	1500	3%	N/A	250 lb	Front Line
ARFF 7-2	ARFF	Oshkosh T1500 2005	GOOD	5	N/A	1500	3%	N/A	250 lb	Reserve

139.319 AIRCRAFT RESCUE AND FIREFIGHTING OPERATIONS

1. ARFF HOURS OF OPERATION

The Lambert ARFF District maintains airport Index "D" personnel and vehicles in a continuous ready-state 24 hours a day, 365 days a year. ARFF personnel and equipment are capable of responding to any incident, aircraft or non-aircraft related, any time.

2. ARFF OPERATIONS/ORGANIZATION

The ARFF District of St. Louis Lambert is the Eighth District of the St. Louis Fire Department. It consists of Firefighters, Company Commanders, a Training Officer and a Chief Officer. Currently, this District has 7 units of ARFF apparatus, 2 units of Rescue apparatus, 2 units of Structural firefighting apparatus and 2 Staff vehicles. Personnel and equipment are based in two ARFF Stations on the Airport. The North Station is located near the intersections of Taxiway F6 and Taxiway F7. The West Station is located at 4640 Fee Fee Rd., on the north side of 11/29. The goal of this District is fire prevention and the protection of life and property. This is accomplished by the ongoing training of ARFF personnel in the subjects listed on Page 319-3. This also includes training with Mutual Aid Departments that respond to Lambert for an emergency. Off Airport response is approved by the Director of Airports, only if the Airport's index is not lowered as required in FAR Part 139.319.

3. ARFF VEHICLE COMMUNICATIONS

All ARFF vehicles at St. Louis Lambert are equipped with the following two-way radios:

- A. Air Traffic Control ground radios
- B. Vehicle-to-vehicle / vehicle-to-ARFF Station radios
- C. ARFF Chief vehicle equipped with 800 MHz Airport Management radio frequency

In addition, handheld portable 800 MHz radios are carried by ARFF personnel. Some pieces of ARFF equipment are also equipped with external public – address speakers.

4. ARFF VEHICLE MARKING AND LIGHTING

All ARFF vehicles attached to the Lambert ARFF District are marked and lighted in compliance with A/C 150/5210-5, current edition, Painting, Marking, and Lighting of Vehicles Used on an Airport.

Currently all vehicles except the Chief's and the Training Officer's vehicle of the Lambert ARFF District are painted lime-yellow with black markings and are equipped with emergency and non-emergency lighting.

5. ARFF VEHICLE MAINTENANCE AND COVER

- A. Maintenance: All City-owned ARFF vehicles stationed at St. Louis Lambert are inspected and maintained on the following basis:
- a. Daily by drivers (Inspection forms at the end of this section)
 - b. Weekly by a mechanic
 - c. As scheduled by a mechanic (12-24 hour preventive maintenance program)
- B. Cover: All ARFF vehicles, personnel, and equipment are provided with temperature-controlled, completely encompassing shelter in both ARFF Stations.

6. INOPERABLE ARFF VEHICLE PROCEDURES

In the event of a piece, or pieces, of ARFF equipment becoming inoperable and thus losing its full operational ready-status, the Airport Fire Chief will notify the Operations Center. During this time, the approximate amount of time the vehicle is expected to be out of service will be noted and mutual aid agreements will be invoked so that a temporary replacement vehicle may be obtained from Boeing Corporation.

Procedures outline in FAR Part 139.319(g) and FAR Part 139.339(8) will be followed in the event of required Index D ARFF equipment becoming inoperable.

7. ARFF VEHICLE RESPONSE CAPABILITIES DURING AIR CARRIER OPERATIONS

ARFF quick-response vehicles, when assisted by Air Traffic Control Tower, are capable of reaching the midpoint of the farthest runway on the Airport from their respective ARFF Stations and begin rescue/ firefighting operations within 3 minutes of notification. Remaining required vehicles will respond within 4 minutes of notification and begin rescue/ firefighting operations. ARFF vehicles responses are in compliance with FAR Part 139.319(h).

8. ARFF PERSONNEL

The Lambert ARFF District consists of three shifts of Firefighters with 15 Firefighters (minimum) and 2 Company Commanders assigned to each shift. The Lambert Fire Chief is present during the day shift and on an as-needed and emergency basis. Firefighters and Commanders are quartered in the ARFF Stations 24 hours a day, year round. All ARFF personnel are equipped with the latest in aircraft fire protection clothing and equipment in accordance with FAR Part 139.319(i).

9. ARFF PERSONNEL TRAINING

The current training of ARFF personnel is maintained and delivered by the Training and Safety Officer of District 8. Personnel must be trained prior to initial performance of aircraft rescue and firefighting duties and receive recurrent instruction every twelve consecutive calendar months. Training includes, but, is not limited to:

- Airport Familiarization
- Aircraft Familiarization
- Personal Safety
- Everyday Communications / Fire Alarms
- Use of Firefighting Equipment / Turrets / Appliances
- Types / Applications of Extinguishing Agents
- Aircraft Evacuation Assistance
- Firefighting Operations
- Adapting / Using Structural Rescue and Firefighting Equipment for Aircraft Rescue and Fire Fighting
- Aircraft cargo hazards, including hazardous materials/dangerous goods incidents
- Airport Emergency Plan

All rescue and firefighting personnel must participate in at least one live-fire drill prior to initial performance of aircraft rescue and firefighting duties and every 12 consecutive calendar months thereafter. A record is maintained by the Training Officer of all training given to each individual under this section for twenty-four consecutive calendar months after completion of training. Such records must include, at a minimum, a description and date of training received.

10. ARFF EMERGENCY MEDICAL PERSONNEL

The ARFF District has at least one firefighter on duty daily (24 hours a day), trained and accredited in basic emergency medical care. This is a minimum of 40 hours of training in the following areas:

- Bleeding
- CPR
- Shock
- Primary Patient Surveys
- Injuries to Skulls, Spine, Chest, Extremities
- Internal Injuries
- Movement of Patients
- Burns
- Patient Triage

In addition to the members of the ARFF who are medically trained, Lambert Airport maintains a contractual agreement for an ambulance service with at least one Paramedic and one EMT on duty and on call 24 hours a day, year round.

11. ARFF ALERTING SYSTEM/TESTING

The ARFF District is notified by the following in case of a fire alarm, building incident, airfield or aircraft incident:

- 426-8133 Emergency Telephone Number
- Via the Airport Police Dispatcher
- Via the Airport Operations Center
- Via the Air Traffic Control Tower
- By way of heat/smoke/sprinkler systems and alarms throughout the Airport Terminal Buildings and Airport Buildings
- By way of CRT and computer printouts in each ARFF Station
- By way of a horn and siren system located in each ARFF Station
- Tests of these systems are completed daily

In addition to the ARFF alarm system, a public address system with voice paging, fire warning klaxons, and emergency evacuation messages is housed in the Airport Operations Center for use in Airport Terminal 1 and 2. This system is activated by the Operations Center personnel when necessary and is tested once per month.

12. HAZARDOUS MATERIALS GUIDANCE

Each ARFF vehicle is equipped with the *North American Emergency Response Guidebook*.

13. ARFF EMERGENCY ACCESS ROADS

At the present time, St. Louis Lambert International Airport has no designated ARFF emergency access roads; however all service roads, access roads, and Airport roadways are available for use by emergency vehicles. In addition, a gravel road exists which surrounds the inner perimeter of the airport. All paved roads and the gravel roads are maintained so as to be usable by ARFF vehicles or other Airport vehicles as practicable.

Additionally, all Airport surfaces, paved or turf, are designed and maintained for use by ARFF or other Airport vehicles as practicable, weather permitting.

See Appendix B for Airport Roadways.

**St. Louis Fire Department
Lambert St. Louis International Airport
Daily Apparatus Check Sheet - T 1500 & T 3000**

Truck: _____		Road Miles: _____	
Month: _____ Year: 2018		Starting: _____	
		Engine Hours: _____	

** ITEMS TO BE CHECKED **	OPERATOR SIGNATURE	DAY			
1. LUBRICATING OIL LEVELS (engine, trans, differential, power steer.)		1			
2. COOLANT; FUEL (fuel above 3/4)		2			
3. LEAKS (oil, fuel, coolant, air, exhaust, etc.)		3			
4. DRIVE BELTS (tension, condition)		4			
5. TIRES, WHEELS AND LUG BOLTS FOR TIGHTNESS, PRESSURE OR DAMAGE.		5			
6. BATTERIES FOR FLUID LEVEL, DAMAGE, CLEAN AND BATTERY CHARGE.		6			
7. CLEANLINESS, DAMAGE, MISSING ITEMS AND CORROSION (interior/exterior)		7			
8. GENERATOR OIL/FUEL (start and test halogen lights)		8			
9. PUMP CLUTCHES (operate foam and water clutches with engine off)		9			
** ENGINE/DRIVING CHECKS **		10			
		11			
10. PARKING BRAKE AND STOPPING BRAKES.		12			
11. STEERING/SPRINGS AND SHACKLES FOR OPERATION AND DAMAGE.		13			
12. SAFETY DEVICES (lights, buzzers, extinguishers, seat belts)		14			
13. OPERATION OF ALL LIGHTS, SIRENS, HORNS AND MIRRORS.		15			
14. SPECIAL TOOLS AND EQUIPMENT, (inventory)		16			
15. AGENTS (Foam, Water, Halon, Dry Chem.)		17			
16. HEATER/DEFROSTER/AIR CONDITIONER		18			
17. WINDSHIELD/WIPERS/WASHERS		19			
18. INSTRUMENTS AND GAUGES (during operation)		20			
19. UNUSUAL NOISES (during operation)		21			
20. SWITCHES SET FOR PROPER OPERATION (dash and panel)		22			
21. HANDLINES/UNDERTRUCK NOZZLES (operation)		23			
22. TURRETS (hydraulic and manual operation)		24			
23. PUMPS/PIPING AND VALVES FOR LEAKS OR CORROSION (operation)		25			
24. FIRE RADIO (trans/receive) GROUND (receive test)		26			
		27			
ITEM	DATE		W.O.	CAPT.	
					28
					29
					30
					31

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TURN IN WITH MONTHLY REPORTS

NOTES

(1) ENGINE OIL CHECK

The engine oil level is checked with a dipstick mounted on the right rear of the oil pan. The oil filter cap is on the front of the RH valve cover. Check with engine shut-off and COLD. Add oil to bring the level to "full" mark on dipstick.

(2) DRIVE BELTS

Belts should be checked for frayed areas, cracks and general wear.

(3) COOLANT LEVEL

Check coolant level at sight glass, mounted on radiator to tank, add coolant as required. 60% anti-freeze. Make notation if rusty looking.

(4) TRANSMISSION

Check transmission oil level with dipstick which is located above the frame rail, in the LH center body compartment, ahead of the water pump. Check with truck on level ground, transmission warm, with engine running and parking brake applied. Shift the transmission through all drive ranges to fill the clutch cavities and oil passages, then shift to neutral.

(5) POWER DIVIDER

Check power divider oil level with dipstick located in lower forward area of engine RH compartment. Check level warm, engine off.

(6) PARKING BRAKE

The parking brake shall hold at a 50% incline or decline.

(7) POWER STEERING/TURRET HYDRAULIC RESERVOIR

The steering/turret reservoir is mounted on the RH side of the engine. Check oil level with the engine shut off. Fill cap on reservoir has dipstick.

(8) BATTERIES

The batteries are mounted on a slid-out tray in a compartment on the LH side. Check and maintain the electrolyte level in batteries $\frac{1}{4}$ to $\frac{1}{2}$ inch above the top of the separators. Check specific gravity should read 1.265 at 80° F full charge, and 1.120 at 80° F discharged.

(9) LOW AIR WARNING SYSTEM

With parking brake on, pump foot brake while watching air pressure. Buzzer should activate when pressure drops below 65psi.

**St. Louis Fire Department
Lambert St. Louis International Airport
Daily Apparatus Check Sheet - Structural Trucks**

Truck: _____		Road Miles: _____	
Month: _____ Year: 19 ²⁰ _____		Starting: _____	
		Engine Hours: _____	

** ITEMS TO BE CHECKED **	OPERATOR SIGNATURE	DAY		
1. LUBRICATING OIL LEVELS (engine, trans, differential, power steer.)		1		
2. COOLANT; FUEL (fuel above 3/4)		2		
3. LEAKS (oil, fuel, coolant, air, exhaust, etc.)		3		
4. DRIVE BELTS (tension, condition)		4		
5. TIRES, WHEELS AND LUG BOLTS FOR TIGHTNESS, PRESSURE OR DAMAGE.		5		
6. BATTERIES FOR FLUID LEVEL, DAMAGE, CLEAN AND BATTERY CHARGE.		6		
7. CLEANLINESS, DAMAGE, MISSING ITEMS AND CORROSION (interior/exterior)		7		
** ENGINE/DRIVING CHECKS **		8		
		9		
8. PUMPS OPERATE (engage/disengage manually and electrically)		10		
9. AERIAL LADDER (engage PTO, outriggers, extend/retract)		11		
10. PARKING BRAKE AND STOPPING BRAKES.		12		
11. STEERING/SPRINGS AND SHACKLES FOR OPERATION AND DAMAGE.		13		
12. SAFETY DEVICES (lights, buzzers, extinguishers, seat belts)		14		
13. OPERATION OF ALL LIGHTS, SIRENS, HORNS AND MIRRORS.		15		
14. SPECIAL TOOLS AND EQUIPMENT, (inventory)		16		
15. AGENTS (water, foam)		17		
16. HEATER/DEFROSTER/AIR CONDITIONER		18		
17. WINDSHIELD/WIPERS/WASHERS		19		
18. INSTRUMENTS AND GAUGES (during operation)		20		
19. UNUSUAL NOISES (during operation)		21		
20. SWITCHES SET FOR PROPER OPERATION (dash and panel)		22		
21. HOSE (booster, cotton, supply, uncovered in good weather)		23		
22. PUMPS/PIPING AND VALVES FOR LEAKS OR CORROSION (operating)		24		
23. FIRE RADIO (trans/receive) GROUND RADIO (receive only)		25		
** DISCREPANCIES ** DEFINE PROBLEM		26		
		27		
ITEM	DATE	W.O.	CAPT.	
				28
				29
				30
				31

420-119 (M192)

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139.321 HANDLING & STORING OF HAZARDOUS SUBSTANCES & MATERIALS

The scope of this plan includes all spills and release events at the airport, including, but not limited to, fuels, oils, sanitary waste, dangerous goods, hazardous materials, hazardous substances, hazardous waste, and special waste. The scope of this plan includes notification of Airport Operations and the Airport Fire Department and, if necessary, the notification of outside agencies as determined by federal, state, and local environmental statutes.

Reportable Quantity: The quantity, as outlined in 40 CFR 302, the release of which requires notification to the National Response Center (NRC) at (800) 424-8802 as soon as the responsible party has knowledge of the release. In addition, the responsible party must contact the Missouri Emergency Response Hotline at (573) 634-2436, and the United States Coast Guard at (800) 325-7376 if a hazardous material or fuel spill reaches the receiving stream in any quantity.

Due to the length and amount of data in this section, this section will be broken down into two parts. Part 1 will deal with hazardous cargo/material handling and storage, and part 2 will cover the fueling standards and safety.

If a person or persons is exposed to or inadvertently ingests a chemical or product, a hazardous material data file and two hazardous chemical/toxic material data books are kept in the North Fire House and the Safety Office for reference.

This file and the accompanying books are used to determine the personal health hazards, potential fire hazards, fire-aid treatments, and fire containment measures to be taken if exposure or contact with chemicals or products of potentially hazardous natures.

The purpose of this plan is to provide direction to the Airport personnel and Airport tenant personnel about spills and releases of fuels, oils, sanitary waste, or any other hazard or hazardous material, hazardous substance, hazardous waste or special waste that is spilled or released to the environment at the St. Louis Lambert International Airport.

A. Hazardous Cargo/Material

The St. Louis Lambert International Airport reserves the right to establish such procedures for the handling and storing of hazardous articles, cargo, radioactive materials, and/or nuclear materials as may become necessary or as the St. Louis Lambert International Airport deems necessary to ensure the safety of the traveling public and/or airport employees.

1. All scheduled air carriers, cargo carriers, and non-scheduled carriers shall be responsible for the storage and handling of articles, cargo and/or materials of a hazardous nature within their respective air cargo areas, and shall comply with all applicable local, state, and federal regulations.

2. Air Carriers shall be responsible for receiving assurances that hazardous articles, cargo, or materials received for storage or shipment are safe to handle, signed by the shipper, and contain any special handling instructions required to assure safe shipment or storage.
3. All hazardous materials will be marked in accordance with the recommended practices in NFPA 704 (2017), Standard System for the Identification of the Hazards of Materials for Emergency Response.
4. In addition to the data given by the Carriers, they shall adhere to the following five regulations:
 - a. No person shall store, keep, handle, use, dispense or transport at, in or upon the Airport any Class A or B explosives, Class A poison, poisonous substances, liquid gasses, compressed gasses, radioactive articles, substances, or materials (as defined in the Interstate Commerce Commission Regulations for Transportation of Explosives, and Other Dangers Articles) at such time or place, or in such matter or condition as to endanger unreasonably, or as to be likely to endanger persons or property here at St. Louis Lambert International Airport.
 - b. All carriers shall abide with the provisions set forth in regulations #1 above, and shall park all aircraft carrying, loading or unloading hazardous material or cargo in areas which the carrier can secure in order to ensure minimal exposure to personnel and equipment to the hazardous material or cargo. The area, while remaining secure, shall still be accessible by ARFF personnel and vehicles.
 - c. It shall be the responsibility of the Air Carriers to request an ARFF escort of all aircraft carrying, loading or unloading hazardous materials or cargo to parking areas, and subsequently from parking areas once loading or unloading of hazardous materials or cargo has been completed. ARFF crews will also be requested to standby while loading or unloading operations take place.
 - d. Any spill or release of material meeting the following designations must be reported to Airport Operations at 314-426-8040 and the Airport Fire Department at 314-426-8133.

Environmentally Hazardous Substance: Any substance of mixture of substances that presents a danger to the public health, safety, or the environment and includes;

1. Any hazardous waste identified or listed in 40 CFR 261.3 or RSMO 260.350 – 430.
2. Any element, compound, mixture, solution, or substance designated pursuant to Sections 101(14) and 102 of CERCLA, or designated pursuant to Section 304 of EPCRA, and

3. Any hazardous material designated by the Secretary of the United States Department of Transportation under the Hazardous Materials Transportation Act.

Hazardous Material: A substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated. The term includes hazardous substances, hazardous wastes, marine pollutants and elevated temperature materials as defined in this section, materials designated as hazardous under the provisions of 49 CFR 172.101.

1. All persons having come into contact, in any manner, with the material as defined above shall immediately make said contact known to the responding Fire Department.
2. The Airport Fire Department, upon arrival at the site, shall make an assessment and take action as appropriate or direct action to be taken to secure the area in order to minimize the risk of further contamination of personnel and/or property.
3. Once the spill has been contained, the party responsible for the spill/release event will be obligated to initiate cleanup operations as appropriate to the material.

B. Fueling Agents

The following fueling agents operate at the airport:

1. Signature Flight Support
2. Swissport
3. AOA
4. AGI

C. Airport Fire Safety Fuel Handling Standards

NFPA 407 2022 version, and NFPA 30, 2024 version, is the local fire code governing airport fueling operations at St. Louis Lambert International Airport. To establish and maintain fire safety fueling standards at the airport, as required by FAR Part 139.321(b), the airport provides each fueling agent with a copy of NFPA 407 and NFPA 30 standards.

NFPA 407

Standards for Aircraft Fuel Service

2022 Edition

Administration

1.1 Scope.

This standard applies to the fuel servicing of all types of aircraft using liquid fuel.

1.1.1

This standard does not apply to any of the following:

- (1) In-flight fueling
- (2) Fuel servicing of flying boats or amphibious aircraft on water
- (3) Draining or filling of aircraft fuel tanks incidental to aircraft fuel system maintenance operations or manufacturing
- (4) Spacecraft

1.1.2*

This document is not intended to be used as the sole standard for design, construction, operation, and maintenance of fuel storage and transfer facilities, as it does not address requirements for environmental protection, fuel quality, or other issues not directly related to fire safety.

1.2* Purpose.

1.2.1

The purpose of this standard is to establish reasonable minimum fire safety requirements for procedures, equipment, and installations for the protection of

persons, aircraft, and other property during ground fuel servicing of aircraft using liquid petroleum fuels. These requirements are based upon sound engineering principles, test data, and field experience.

1.2.2

The fire hazard properties of aviation fuels vary; however, for the purpose of this standard, the same fire safety precautions are specified for all types.

1.3 Retroactivity.

The provisions of this standard reflect a consensus of what is necessary to provide an acceptable degree of protection from the hazards addressed in this standard at the time the standard was issued.

1.3.1

Unless otherwise specified, the design and installation provisions of this standard shall not apply to facilities, equipment, structures, or installations that existed or were approved for construction or installation prior to the effective date of the standard.

1.3.2

Unless otherwise specified, operations and maintenance activities shall meet the current standard.

1.3.3

In those cases where the authority having jurisdiction determines that the existing situation presents an unacceptable degree of risk, the authority having jurisdiction shall be permitted to apply retroactively

any portions of this standard deemed appropriate.

1.3.4

The retroactive requirements of this standard shall be permitted to be modified if their application clearly would be impractical in the judgment of the authority having jurisdiction, and only where it is clearly evident that a reasonable degree of safety is provided.

1.4 Equivalency.

Nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, rating, and safety over those prescribed by this standard.

1.4.1

Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.

1.4.2

The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

1.5 Units.

Where the value for a measurement as specified in this standard is followed by an equivalent value in other units, the first value shall be regarded as the requirement. The equivalent value could be approximate.

Referenced Publications

2.1 General.

The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications.

National Fire Protection Association,
1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 10, *Standard for Portable Fire Extinguishers*, 2022 edition.

NFPA 30, *Flammable and Combustible Liquids Code*, 2021 edition.

NFPA 70®, *National Electrical Code*®, 2020 edition.

NFPA 385, *Standard for Tank Vehicles for Flammable and Combustible Liquids*, 2022 edition.

NFPA 410, *Standard on Aircraft Maintenance*, 2020 edition.

NFPA 415, *Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways*, 2022 edition.

NFPA 418, *Standard for Heliports*, 2021 edition.

NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, 2022 edition.

2.3 Other Publications.

2.3.1 ASME Publications.

American Society of Mechanical Engineers,
Two Park Avenue, New York, NY 10016-5990.

ASME B31.3, *Process Piping*, 2018.

2.3.2 ASTM Publications.

ASTM International, 100 Barr Harbor Drive,
P.O. Box C700, West Conshohocken, PA
19428-2959.

ASTM D380, *Standard Test Methods for
Rubber Hose*, 1994, (2020).

2.3.3 AWS Publications.

American Welding Society, 8669 NW 36
Street, # 130, Miami, FL 33166-6672.

AWS A5.10, *Welding Consumables — Wire
Electrodes, Wires, and Rods for Welding of
Aluminum and Aluminum Alloys —
Classification*, 2017.

2.3.4 EI Publications.

Energy Institute, 61 New Cavendish Street,
London W1G 7AR, United Kingdom.

EI 1529, *Aviation Fuelling Hose and Hose
Assemblies*, 7th edition, 2014.

EI 1540, *Design, Construction,
Commissioning, Maintenance and Testing of
Aviation Fuelling Facilities*, 5th Edition,
2014.

EI 1542, *Identification Markings for
Dedicated Aviation Fuel Manufacturing and
Distribution Facilities, Airport Storage, and
Mobile Fuelling Equipment*, 9th Edition,
2012.

2.3.5 UL Publications.

Underwriters Laboratories Inc., 333
Pfingsten Road, Northbrook, IL 60062-2096.

UL 913, *Standard for Intrinsically Safe
Apparatus and Associated Apparatus for
Use in Class I, II, and III Division 1,
Hazardous (Classified) Locations*, 8th
edition, 2013, revised 2019.

2.3.6 US Government Publications.

US Government Publishing Office,
732 North Capitol Street, NW, Washington,
DC 20401-0001.

Title 49, Code of Federal Regulations,
Part 172.504, “General Placarding
Requirements.”

Title 49, Code of Federal Regulations,
Part 178.345, “General Design and
Construction Requirements Applicable to
Specification DOT 406.”

2.3.7 Other Publications.

Merriam-Webster’s Collegiate Dictionary,
11th edition, Merriam-Webster, Inc.,
Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections.

NFPA 30, *Flammable and Combustible
Liquids Code*, 2021 edition.

NFPA 385, *Standard for Tank Vehicles for
Flammable and Combustible Liquids*, 2022
edition.

Definitions

3.1 General.

The definitions contained in this chapter
shall apply to the terms used in this
standard. Where terms are not defined in
this chapter or within another chapter, they
shall be defined using their ordinarily
accepted meanings within the context in
which they are used. *Merriam-Webster’s
Collegiate Dictionary*, 11th edition, shall be
the source for the ordinarily accepted
meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved.

Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ).

An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Labeled.

Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

3.2.4* Listed.

Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.5 Shall.

Indicates a mandatory requirement.

3.2.6 Should.

Indicates a recommendation or that which is advised but not required.

3.2.7 Standard.

An NFPA Standard, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase “standards development process” or “standards development activities,” the term “standards” includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1 Aircraft.

A vehicle designed for flight that is powered by liquid petroleum fuel.

3.3.2 Aircraft Fuel Servicing.

See 3.3.29.1.

3.3.3 Aircraft Fuel Servicing Hydrant Vehicle (Hydrant Vehicle).

See 3.3.37.1.

3.3.4 Aircraft Fuel Servicing Ramp or Apron.

An area or position at an airport used for the fuel servicing of aircraft.

3.3.5 Aircraft Fuel Servicing Tank Vehicle (Fueller).

See 3.3.37.2.

3.3.6 Aircraft Fueling Vehicle.

See 3.3.37.3.

3.3.7 Airport Fueling System.

An arrangement of aviation fuel storage tanks, pumps, piping, and associated equipment, such as filters, water separators, hydrants and station, or aircraft fuel servicing vehicles, installed at an airport and designed to service aircraft at fixed positions.

3.3.8* Aviation Fuel.

Any petroleum fuel for use in aircraft engines.

3.3.9 Bulkhead.

A liquidtight transverse closure between compartments of a cargo tank.

3.3.10 Burst Pressure.

See 3.3.26.1.

3.3.11* Cargo Tank.

A container used for carrying fuels and mounted permanently or otherwise secured on a tank vehicle.

3.3.12 Cathodic Protection.

A method of controlling or impressing an electrical current to prevent corrosion of metal components of airport fueling systems that are in contact with the ground.

3.3.13 Deadman Control.

A device that requires a positive continuing action of a person to allow the flow of fuel.

3.3.14 Electric Hand Lamp.

A portable lamp other than a flashlight.

3.3.15 Emergency Fuel Shutoff.

A function performed to stop the flow of fuel in an emergency.

3.3.16* Fuel Servicing Station.

A unit that includes all necessary equipment to enable the transfer of fuel into or from an aircraft or fueller.

3.3.17 Fueller.

See 3.3.37.2.

3.3.18 Fueling Point.

The location on an aircraft where fuel enters the aircraft from an external source.

3.3.19 Head.

A liquidtight transverse closure at the end of a cargo tank.

3.3.20 Hydrant Cart.

A non-driven vehicle used to deliver fuel from a hydrant to an aircraft.

3.3.21 Hydrant Valve.

An outlet of an airport fueling system that includes a deadman-controlled valve and adapter assembly to which a coupler on a hose or other flexible conduit on an aircraft fuel servicing vehicle can be connected.

3.3.22 Hydrant Vehicle.

See 3.3.37.4.

3.3.23 Loading Rack.

A fixed site utilized for filling or emptying aircraft fuel servicing tank vehicle cargo tanks, excluding aircraft fuel servicing.

3.3.24 Misfueling.

The accidental fueling of an aircraft or refueling vehicle tank with an incorrect grade of product.

3.3.25 Overshoot.

The fuel that passes through a valve after the deadman control is released or another flow control device is activated.

3.3.26 Pressure.

3.3.26.1 Burst Pressure.

The pressure at which a component fails due to stresses induced as a result of the pressure.

3.3.26.2 Test Pressure.

The pressure to which a system or a component of a system is subjected to verify the integrity of the system or component.

3.3.26.3 Working Pressure.

The maximum allowable pressure, including momentary surge pressure, to which a system, hose, or other component can be safely subjected while in service.

3.3.27 Pressure Fuel Servicing.

See 3.3.29.3.

3.3.28 Self-Service Fueling.

The dispensing of aviation fuels into aircraft fuel tanks by persons other than the facility owner/operator.

3.3.29 Servicing.

3.3.29.1 Aircraft Fuel Servicing.

The transfer of fuel into or from an aircraft.

3.3.29.2 Overwing Fuel Servicing.

A system used to fuel an aircraft through an opening in the aircraft fuel tank using a hose with a hand-held nozzle.

3.3.29.3 Pressure Fuel Servicing.

A system used to fuel an aircraft by closed coupled connection under pressure.

3.3.30 Tank Baffle.

A nonliquidtight transverse partition in a cargo tank.

3.3.31 Tank Compartment.

A liquidtight division in a cargo tank.

3.3.32 Tank Full Trailer.

A vehicle that is not self-propelled and that has a cargo tank for the transportation of aviation fuel mounted thereon or built as an integral part thereof. It is so constructed that its weight and load rest on its own wheels.

3.3.33 Tank Semitrailer.

A vehicle that is not self-propelled and that has a cargo tank for the transportation of aviation fuel mounted thereon or built as an integral part thereof. It is so constructed that when drawn by a tractor by means of a fifth wheel connection, some of its load and weight rests upon the towing vehicle.

3.3.34 Tank Truck.

Any single self-propelled motor vehicle equipped with a cargo tank mounted thereon and used for the transportation of flammable and combustible liquids or asphalt. [385, 2022]

3.3.35 Tank Vehicle.

See 3.3.37.5.

3.3.36 Test Pressure.

See 3.3.26.2.

3.3.37 Vehicle.

3.3.37.1 Aircraft Fuel Servicing Hydrant Vehicle (Hydrant Vehicle).

A vehicle equipped with facilities to transfer fuel between a fuel hydrant and an aircraft.

3.3.37.2 Aircraft Fuel Servicing Tank Vehicle (Fueller).

A vehicle having a cargo tank (tank truck, tank full trailer, tank semitrailer) designed for or used in the transportation and transfer of fuel into or from an aircraft.

3.3.37.3 Aircraft Fueling Vehicle.

A fuel servicing hydrant vehicle, hydrant cart, or an aircraft fuel servicing tank vehicle.

3.3.37.4 Hydrant Vehicle.

See 3.3.37.1.

3.3.37.5 Tank Vehicle.

Any tank truck, tank full trailer, or tractor and tank semitrailer combination.

3.3.38 Vent Point.

The location on the exterior of an aircraft where fuel vapors are released from the aircraft's fuel system.

3.3.39 Working Pressure.

See 3.3.26.3.

General Requirements

4.1 Design and Construction.

4.1.1 General Requirements.

4.1.1.1

The requirements of Chapter 4 shall apply to all aviation fueling facilities, aircraft fueling vehicles, rooftop heliport fueling facilities, and self-service aviation fueling facilities.

4.1.1.2

Aviation fueling facilities shall also comply with the requirements of Chapter 5.

4.1.1.3

Aircraft fueling vehicles and carts shall also comply with the requirements of Chapter 6.

4.1.1.4

Rooftop heliport fueling facilities shall also comply with the requirements of Chapter 5 and Chapter 7.

4.1.1.5

Self-service aviation fueling facilities shall also comply with the requirements of Chapter 5 and Chapter 8.

4.1.2 Fuel Storage Tanks. (Reserved)

4.1.3 Fuel Dispensing Systems.

4.1.3.1

Any valve that controls the flow of fuel into or from an aircraft fuel servicing vehicle or cart, or into or from an aircraft shall have a deadman control(s).

4.1.3.2

The deadman flow control in the nozzle shall be permitted for overwing fueling.

4.1.3.3

Notches or latches in the handle of an overwing nozzle that could allow the valve to be locked open shall be prohibited.

4.1.3.4

Nozzles for pressure fuel servicing shall be designed to be attached securely to the aircraft adapter before the nozzle can be opened.

4.1.3.5

Disengaging the nozzle from the aircraft adapter shall not be possible until the nozzle is fully closed.

4.1.3.6

Fuel servicing pump mechanisms shall be designed and arranged so that failure or seizure does not cause rupture of the pump housing, of a tank, or of any component containing fuel.

4.1.3.7

Fuel pressure shall be controlled within the stress limits of the hose and plumbing by means of either an in-line pressure controller or, a system pressure relief valve, or other suitable means.

4.1.3.8

The working pressure of any system component shall equal or exceed any pressure to which it could be subjected.

4.1.4* Fueling Hose.

4.1.4.1 Performance Requirements.

Hose and couplings shall comply with the requirements of EI 1529.

4.1.4.2 Fueling Hose Apparatus.

Nozzle receptacles and hose storage shall be arranged to avoid kinks and maintain the hose bend radius within the requirements of EI 1529 and EI 1540.

4.1.4.3 Additional Requirements.

4.1.4.3.1

Each coupled length of hose shall be tested at the same minimum proof pressure rating for that grade of hose as defined in EI 1529.

4.1.4.3.2

A test certificate shall be provided for each coupled length of hose and shall state the following:

- (1) Manufacturer's name of hose
- (2) Manufacturer's name of couplings
- (3) Hose type
- (4) Hose grade
- (5) Size and length of hose
- (6) Serial number or reference number of hose
- (7) Quarter and year of manufacture of hose
- (8) Model number of couplings
- (9) Sizes of coupling ferrules
- (10) Hydrostatic test pressures
- (11) Coupled length serial number
- (12) Identification of individual responsible for coupling the hose
- (13) Name and address of company responsible for coupling the hose
- (14) Date of certification

4.1.4.3.3

The coupling tests as specified in EI 1529 shall be performed for each hose grade, type, and manufacturer.

4.1.4.3.4

Each coupling of a coupled length of hose shall be permanently marked with a serial

number corresponding to its hydrostatic test certificate.

4.1.4.3.5

The hose at the end of each coupling ferrule shall be permanently marked prior to hydrostatic testing to serve as a reference to determine whether a coupling has slipped during testing or while in service.

4.1.4.3.6*

Lengths of hose shall not be spliced together.

4.1.4.3.7 Hydrostatic Testing.

Hydrostatic testing shall be in accordance with ASTM D380.

4.1.4.3.7.1

Following a hydrostatic test, all the water shall be drained and the hose shall be dried internally.

4.1.4.3.7.2

Following a hydrostatic test, the open ends of the hose, including the threads of the couplings, shall be suitably covered to protect the threads and to prevent contamination.

4.1.4.3.7.3

A hose that is recoupled for any reason shall be hydrostatically tested and recertified to the same criteria as a newly coupled hose.

4.1.4.3.8

Hose shall be connected to rigid piping or coupled to a hose reel in a manner that prevents kinks or undue bending action or mechanical stress on the hose or hose couplings.

4.1.5 Electrostatic Hazards and Bonding.

4.1.5.1

A provision for bonding shall be incorporated in the design of fuel servicing vehicles or carts and airport fueling systems to prevent differences in electrostatic potential.

4.1.5.2

The maximum resistance between the bonding cable clip and the fueling system framework shall not exceed 25 ohms.

4.1.5.3

Bonding cables shall be constructed of conductive, durable, and flexible material.

4.1.5.4

Bonding connections shall be electrically and mechanically firm.

4.1.5.5

Jacks, plugs, clamps, and connecting points shall be clean, unpainted metal to provide a positive electrical connection.

4.1.5.6

EI 1529 Type C hose (semiconductive) shall be used to prevent electrostatic discharges but shall not be used to accomplish required bonding.

4.1.5.7

EI 1529 Type A hose that does not have a semiconductive cover shall not be used.

4.1.5.8

EI 1529 Type F hose (hard wall) and EI 1529 Type CT hose (cold temperature) shall be permitted because they have semiconductive covers.

4.1.5.9*

The design of airport fueling systems shall incorporate the provision of a 30-second relaxation period following the filter separator, monitors, or other filtration devices discharging into tanks.

4.1.5.9.1

The relaxation period required by 4.1.5.9 shall not apply to the actual refueling of an aircraft.

4.1.5.9.2

The relaxation period required by 4.1.5.9 shall not apply to fuels with static dissipater additives.

4.1.6 Electrical Systems. (Reserved)

4.1.7 Control of Fuel Flow. (Reserved)

4.1.8 Filters and Ancillary Equipment.

4.1.8.1

Filter vessels used in aviation fuel service shall have a functional automatic air vent (AAV) or automatic air eliminator (AAE).

4.1.8.2

The AAV or AAE shall discharge to a closed system.

4.1.9 Emergency Fuel Shutoff Systems. (Reserved)

4.1.10 Fire Extinguishers.

4.1.10.1*

During fueling operations, fire extinguishers shall be available on aircraft servicing ramps or aprons, in accordance with NFPA 410.

4.1.10.2

All fire extinguishers shall conform to the requirements of NFPA 10.

4.1.10.3*

ABC multipurpose dry chemical fire extinguishers (ammonium phosphate) shall not be placed on aircraft fueling vehicles, airport fuel servicing ramps or aprons, or at airport fuel facilities that are located within 150 m (500 ft) of aircraft operating areas.

4.1.11 Marking and Labeling.

4.1.11.1

Each emergency fuel shutoff station location shall be placarded EMERGENCY FUEL SHUTOFF in letters at least 50 mm (2 in.) high.

4.1.11.2

The method of operation shall be indicated by an arrow or by the word PUSH or PULL, as appropriate.

4.1.11.3

Any action necessary to gain access to the shutoff device (e.g., BREAK GLASS) shall be shown clearly.

4.1.11.4

Lettering shall be of a color contrasting sharply with the placard background for visibility.

4.1.11.5

Placards shall be weather resistant.

4.1.12 Aircraft Fueling Ramps.

4.1.12.1 Aircraft Radar Equipment.

4.1.12.1.1

Surveillance radar equipment in aircraft shall not be operated within 90 m (300 ft) of any fueling, servicing, or other operation in which flammable liquids, vapors, or mist could be present.

4.1.12.1.2

Weather-mapping radar equipment in aircraft shall not be operated while the aircraft in which it is mounted is undergoing fuel servicing.

4.1.12.2* Ground Radar Equipment.

4.1.12.2.1

Antennas of airport flight traffic surveillance radar equipment shall be located so that the beam will not be directed toward any fuel storage or loading racks within 90 m (300 ft).

4.1.12.2.2

Aircraft fuel servicing shall not be conducted within the 90 m (300 ft) distance established by 4.1.12.2.1.

4.1.12.2.3

Antennas of airport ground traffic surveillance radar equipment shall be located so that the beam will not be directed toward any fuel storage or loading racks within 30 m (100 ft).

4.1.12.2.4

Aircraft fuel servicing or any other operations involving flammable liquids or vapors shall not be conducted within 30 m (100 ft) of antennas of airport ground traffic surveillance radar equipment.

4.1.12.3 Emergency Fire Equipment Accessibility.

Accessibility to aircraft by emergency fire equipment shall be considered in establishing aircraft fuel servicing positions.

4.1.12.4 Ramp and Apron Drainage.

Aircraft servicing ramps or aprons shall be sloped and drained in accordance with NFPA 415.

4.1.12.4.1

The ramp or apron shall slope away from the rim or edge of fueling hydrants or fueling pits to prevent flooding.

4.1.12.4.2

Fueling hydrant boxes or fueling pits that are connected to a ramp drainage system shall be fitted with vapor-sealing traps.

4.2 Operations.

4.2.1 Security. (Reserved)

4.2.2 Training.

4.2.2.1*

Only personnel trained in the safe operation of the equipment and the fuels they use, the operation of emergency controls, and the procedures to be followed in an emergency shall be permitted to handle fuel.

4.2.2.2*

Fuel servicing personnel shall be trained in the use of the available fire-extinguishing equipment they could be expected to use.

4.2.3* Prevention and Control of Spills.

4.2.3.1

Following fueling of an aircraft or fuel servicing vehicle, all hoses shall be removed, including those from hydrant systems if applicable.

4.2.3.2

All hoses shall also be properly stowed.

4.2.3.3

Fuel nozzles shall not be dragged along the ground.

4.2.3.4

Approved pumps, either hand operated or power operated, shall be used where aircraft are fueled from drums.

4.2.3.4.1

Pouring or gravity flow shall not be permitted from a container with a capacity of more than 19 L (5 gal).

4.2.3.5 Fuel Spill Procedures.

4.2.3.5.1

Where a spill is observed, the fuel servicing shall be stopped immediately by release of the deadman controls.

4.2.3.5.2

In the event that a spill continues, the equipment emergency fuel shutoff shall be actuated.

4.2.3.5.3

In the event that a spill continues from a hydrant system, the system emergency fuel shutoff shall be actuated.

4.2.3.5.4

The supervisor shall be notified immediately.

4.2.3.5.5

Cleaning operations shall be performed by personnel trained in accordance with 4.2.2.1.

4.2.3.5.6

Operation shall not be resumed until the spill has been cleared and conditions are determined to be safe.

4.2.3.5.7

The airport fire crew, if established, or the local fire department serving the airport shall be notified if a spill covers over 3 m (10 ft) in any direction or is over 5 m² (50 ft²) in area, continues to flow, or is otherwise a hazard to persons or property.

4.2.3.5.8

The spill shall be investigated to determine the cause, to determine whether emergency procedures were properly carried out, and to determine the necessary corrective measures.

4.2.3.5.9

Corrective measures identified by the spill investigation shall be implemented as required by the authority having jurisdiction.

4.2.3.6

Transferring fuel by pumping from one tank vehicle to another tank vehicle shall not be permitted except under emergency maintenance conditions.

4.2.3.7

Not more than one tank vehicle shall be permitted to be connected to the same aircraft fueling manifold, unless means are provided to prevent fuel from flowing back into a tank vehicle due to a difference in pumping pressure.

4.2.4 Emergency Fuel Shutoff.

4.2.4.1

Emergency fuel shutoff control stations shall be accessible at all times.

4.2.4.2

A procedure shall be established to notify the fire department serving the airport in the event of a control station activation.

4.2.4.3

If the fuel flow stops for an unknown reason, the emergency fuel shutoff system shall be checked first.

4.2.4.4

The cause of the shutoff shall be identified and corrected before fuel flow is resumed.

4.2.4.5

Emergency fuel shutoff systems shall be operationally checked at intervals not exceeding 6 months.

4.2.4.6

Each individual device shall be checked at least once during every 12-month period.

4.2.4.7

Suitable records shall be kept of tests required by this section.

4.2.5* Bonding.

4.2.5.1

Prior to making any fueling connection to an aircraft or fuel servicing vehicle, the fueling equipment shall be bonded to the aircraft or fuel servicing vehicle by use of a cable, thus providing a conductive path to equalize the potential between the fueling equipment and the aircraft.

4.2.5.1.1

The electrical bond shall be maintained until fueling connections have been removed, thus allowing separated charges that could be generated during the fueling operation to reunite.

4.2.5.1.2

Grounding for the sole purpose of aircraft fueling shall not be permitted.

4.2.5.2 Bonding for Overwing Fueling.

In addition to the requirements in 4.2.5.1, where fueling overwing, the nozzle shall be bonded to a metallic component of the aircraft that is metallicity connected to the tank filler port.

4.2.5.2.1

The bond connection shall be made before the filler cap is removed.

4.2.5.2.2

If a nozzle bond cable and plug receptacle or means for attaching a clip is available, the operator shall attach the nozzle bond cable before removing the cap in order to equalize the potential between the nozzle and the filler port.

4.2.5.2.3

If no plug receptacle or means for attaching a clip is available, the operator shall touch the filler cap with the nozzle spout before removing the cap in order to equalize the potential between the nozzle and the filler port.

4.2.5.2.4

The nozzle spout shall be kept in contact with the filler neck until the fueling is completed.

4.2.5.3

Where a funnel is used in aircraft fueling, it shall be kept in contact with the filler neck as well as the fueling nozzle spout or the supply container to avoid the possibility of a spark at the fill opening.

4.2.5.3.1*

Only metal funnels shall be used.

4.2.5.4

Where a hydrant servicer or cart is used for fueling, the hydrant coupler shall be connected to the hydrant system prior to bonding the fuel equipment to the aircraft.

4.2.5.5

Bonding and fueling connections shall be disconnected in the reverse order of connection.

4.2.5.6

Conductive hose shall be used to prevent electrostatic discharge but shall not be used to accomplish required bonding.

4.2.6 Control of Fuel Flow.

4.2.6.1

Fuel flow shall be controlled by use of a deadman control device.

4.2.6.2

The use of any means that defeats the deadman control shall be prohibited.

4.2.7 Fire Protection.

4.2.7.1*

During fueling operations, fire extinguishers shall be available on aircraft servicing ramps or aprons, in accordance with NFPA 410.

4.2.7.2*

Extinguishers shall be kept clear of elements such as ice and snow.

4.2.7.3

Extinguishers located in enclosed compartments shall be readily accessible, and their location shall be marked clearly in letters at least 50 mm (2 in.) high.

4.2.7.4

Fuel servicing personnel shall be trained in the use of the available fire-extinguishing equipment they could be expected to use. (See 4.4.2.2.2.)

4.2.8 Maintenance.

4.2.8.1

Fuel servicing equipment shall be maintained in safe operating condition.

4.2.8.2

Malfunctioning equipment shall be removed from service.

4.2.8.3

Where a valve or electrical device is used for isolation during maintenance or modification of a fuel system, it shall be tagged and locked out.

4.2.8.4

The tag/lock shall not be removed until the operation is completed.

4.2.8.5

All inspection and maintenance activities shall be recorded.

4.2.8.6

Inspection and maintenance records shall be retained for a minimum of 12 months.

4.2.9* Aircraft Fueling Hose.

Any hose found to be defective, in accordance with 4.2.9.1 through 4.2.9.4, shall be removed from service.

4.2.9.1

Suitable records shall be kept of required inspections and hydrostatic tests.

4.2.9.2

Aircraft fueling hose shall be removed from service after 10 years from the date of manufacture.

4.2.9.3

Aircraft fueling hose not placed into service within 2 years of the date of manufacture shall not be used.

4.2.9.4 Daily Inspection.

Aircraft fueling hose shall be inspected before use each day.

4.2.9.4.1

The hose shall be extended as it normally would be for fueling.

4.2.9.4.2

The hose shall be checked for evidence of any of the following defects:

- (1) Blistering
- (2) Carcass saturation or separation
- (3) Exposure of the reinforcement material
- (4) Slippage, misalignment, or leaks at couplings

4.2.9.5 Monthly Inspection.

At least once each month the hose shall be completely extended and inspected as required in 4.2.9.4 and 4.2.9.5.

4.2.9.5.1*

The hose couplings and the hose shall be examined for structural weakness or soft spots.

4.2.9.5.2

With the hose completely extended, it shall be pressurized to the working pressure of the fueling equipment to which it is

attached and checked for defects, such as abnormal twisting or blistering.

4.2.9.6 Quarterly Inspection.

4.2.9.6.1

The nozzle screens shall be examined for evidence of hose deterioration.

4.2.9.7

Kinks or short loops in fueling hose shall be avoided.

4.2.10* Lightning.

A written procedure shall be established to set the criteria for when and where fueling operations are to be suspended at each airport as approved by the fueling agent and the airport authority.

4.2.11 Aircraft Fuel Servicing.

4.2.11.1 Location of Aircraft During Fuel Servicing.

4.2.11.1.1

Aircraft fuel servicing shall be performed outdoors.

4.2.11.1.2

Aircraft fuel servicing incidental to aircraft fuel system maintenance operations shall comply with the requirements of NFPA 410.

4.2.11.1.3*

Aircraft being fueled shall be positioned so that aircraft fuel system vents or fuel tank openings are not closer than 7.6 m (25 ft) to any terminal building, hangar, service building, or enclosed passenger concourse other than a loading walkway.

4.2.11.1.4

Aircraft being fueled shall be positioned so that the vent or tank openings are not

closer than 15 m (50 ft) of any combustion and ventilation air intake to any boiler, heater, or incinerator room.

4.2.11.1.5

Accessibility to aircraft by emergency fire equipment shall be maintained for aircraft fuel servicing positions.

4.2.11.2 Aircraft Occupancy During Fuel Servicing.

4.2.11.2.1

If passengers remain on board an aircraft during fuel servicing, at least one qualified person trained in emergency evacuation procedures shall be in the aircraft at or near a door at which there is a passenger loading walkway, integral stairs that lead downward, or a passenger loading stair or stand.

4.2.11.2.1.1

A clear area for emergency evacuation of the aircraft shall be maintained at not less than one additional exit.

4.2.11.2.1.2

Where fueling operations take place with passengers on board away from the terminal building, and stairways are not provided, such as during inclement weather (diversions), all slides shall be armed and the aircraft rescue and fire fighting (ARFF) services shall be notified to respond in standby position in the vicinity of the fueling activity with at least one vehicle.

4.2.11.2.1.3

Aircraft operators shall establish specific procedures covering emergency evacuation under such conditions for each type of aircraft they operate.

4.2.11.2.1.4

All NO SMOKING signs shall be displayed in the cabin(s), and the no smoking rule shall be enforced.

4.2.11.2.2

For each aircraft type, aircraft operators shall determine the areas through which it could be hazardous for boarding or deplaning passengers to pass while the aircraft is being fueled.

4.2.11.2.2.1

Controls shall be established so that passengers avoid such areas.

4.2.12 Fire Hazards on Aircraft Fuel Servicing Ramps.

4.2.12.1* Electrical Equipment Operated on Aircraft Fuel Servicing Ramps or Aprons.

4.2.12.1.1

Battery chargers on any fueling equipment shall not be connected or disconnected while fuel servicing is performed on an aircraft.

4.2.12.1.2*

Aircraft ground-power generators or other electrical ground-power supplies shall not be connected or disconnected while fuel servicing is performed on the aircraft.

4.2.12.1.3

Electric tools or similar tools likely to produce sparks or arcs shall not be used while fuel servicing is performed on an aircraft.

4.2.12.1.4

Other than aircraft fuel servicing vehicles, battery-powered vehicles, including

battery-powered aircraft, that do not comply with the provisions of this standard shall not be operated within 3 m (10 ft) of fueling equipment or spills.

4.2.12.1.5*

Communication equipment located outside of the cab of fuel servicing vehicles and used during aircraft fuel servicing operations within 3 m (10 ft) of the fill or vent points of aircraft fuel systems shall be listed as intrinsically safe for Class I, Division 1, Group D hazardous (classified) locations in accordance with UL 913.

4.2.12.2 Open Flames on Aircraft Fuel Servicing Ramps.

4.2.12.2.1

Entrances to fueling areas shall be posted with NO SMOKING signs.

4.2.12.2.2

Open flames on aircraft fuel servicing ramps or aprons within 15 m (50 ft) of any aircraft fuel servicing operation or fueling equipment shall be prohibited.

4.2.12.2.3

The category of open flames and lighted open-flame devices shall include, but shall not be limited to, the following:

- (1) Lighted cigarettes, cigars, or pipes
- (2) Electronic cigarettes (e.g., personal vaporizers or electronic nicotine delivery systems)
- (3) Exposed flame heaters, liquid, solid, or gaseous devices, including portable and wheeled gasoline or kerosene heaters

- (4) Heat-producing welding or cutting devices and blowtorches
- (5) Flare pots or other open-flame lights

4.2.12.2.4

The authority having jurisdiction can establish other locations where open flames and open-flame devices shall not be permitted.

4.2.12.2.5

Personnel shall not carry lighters, matches, or electronic cigarettes on their person while engaged in fuel servicing operations.

4.2.12.2.6

Lighters, matches, or electronic cigarettes shall not be permitted on or in fueling equipment.

4.2.12.2.7

Equipment performing aircraft servicing functions shall not be positioned within a 3 m (10 ft) radius of aircraft fuel system vent openings.

4.2.12.3 Operation of Aircraft Engines and Heaters.

4.2.12.3.1

Fuel servicing shall not be performed on a fixed wing aircraft while an onboard engine is operating, except as permitted by 4.2.12.3.2 or 4.2.14.

4.2.12.3.2

Aircraft auxiliary power units (APUs) that direct exhaust away from the fueling operation shall be permitted to operate during fuel servicing.

4.2.12.3.3

Combustion heaters on aircraft (e.g., wing and tail surface heaters, integral cabin heaters) shall not be operated during fueling operations.

4.2.13 Defueling of Aircraft.

4.2.13.1

All requirements of this standard shall apply to defueling operations.

4.2.13.2

Each operator shall establish procedures to prevent the overfilling of the tank vehicle, which is a special hazard when defueling.

4.2.14 Rapid Refueling.

4.2.14.1

Rapid refueling of aircraft shall be limited to the following aircraft types:

- (1) Helicopters
- (2) Agricultural aircraft actively engaged in aerial application duties
- (3) Medical aircraft actively engaged in the transport of medical patients
- (4) Fire-fighting and search-and-rescue aircraft actively engaged in emergency operations

4.2.14.2

Only turbine engine aircraft fueled with JET A or JET A-1 fuels shall be permitted to be fueled while an onboard engine is operating.

4.2.14.3

Aircraft permitted to be fueled while an onboard engine is operating shall have all sources of ignition of potential fuel spills located above the fuel inlet port(s) and

above the vents or tank openings, including but not limited to the following:

- (1) Engines
- (2) Exhausts
- (3) Auxiliary power units (APUs)
- (4) Combustion-type cabin heater

4.2.14.4

Aircraft fueling while onboard engines are operating shall be permitted only under the following conditions:

- (1) A pilot licensed by the appropriate governmental body shall be at the aircraft controls during the entire fueling operation.
- (2) All passengers shall be deboarded to a safe location prior to rapid refueling operations, except as permitted in 4.2.14.4(3).
- (3) Patients on board medical transport aircraft shall be permitted to remain on board the aircraft with medical personnel during rapid refueling operations if, in the opinion of the medical provider, removal from the aircraft would be detrimental to the patient's condition.
- (4) Passengers shall not board or deboard during rapid refueling operations.
- (5) Only designated personnel, properly trained in rapid refueling operations, shall operate the equipment. Written procedures shall include the safe handling of the fuel and equipment.

- (6) All doors, windows, and access points allowing entry to the interior of the aircraft that are adjacent to, or in the immediate vicinity of, the fuel inlet ports shall be closed and shall remain closed during refueling operations.
- (7) Fuel shall be permitted to be dispensed by one of the following methods:
 - (a) Into an open port from approved deadman-type nozzles with a flow rate not to exceed 227 L/min (60 gpm)
 - (b) Through close-coupled pressure fueling ports
- (8) Where fuel is dispensed from fixed piping systems, the hose cabinet shall not extend into the rotor space.
- (9) Clearance between aircraft fuel servicing vehicles and rotating components shall be maintained by one of the following methods:
 - (a) A curb or other approved barrier shall be provided to restrict the fuel servicing vehicle from coming within 3 m (10 ft) of any aircraft rotating components.
 - (b) Fuel servicing vehicles shall be kept 6 m (20 ft) away from any aircraft rotating components, and a trained person shall direct fuel servicing vehicle approach and departure.

Aviation Fueling Facilities

5.1 Design and Construction.

5.1.1 General Requirements.

5.1.1.1

Each installation shall be designed and installed in conformity with the requirements of this standard and with any additional fire safety measures deemed necessary by the authority having jurisdiction.

5.1.1.2

The system and each of its components shall be designed for the working pressure of the system.

5.1.1.3

The emergency fuel shutoff system shall be designed and installed as an integral part of the airport fuel system.

5.1.1.4

Operating controls for emergency fuel shutoff of the system shall be located to be readily accessible in the event of an accident or spill.

5.1.1.5

In establishing each aircraft fuel dispensing location, consideration shall be given to the accessibility of the location in an emergency by fire-fighting personnel and equipment.

5.1.1.6 System Design and Approval.

5.1.1.6.1 Design Approval.

Work shall not be started on the construction or alteration of an airport fuel system until the design, plans, and

specifications have been approved by the authority having jurisdiction.

5.1.1.6.2 System Approval.

The authority having jurisdiction shall inspect and approve the completed system before it is put into service.

5.1.1.6.3 Hydrostatic Test.

5.1.1.6.3.1

After completion of the installation (including fill and paving), new airport fuel piping systems shall be subjected to a temperature-compensated hydrostatic test pressure equal to 150 percent of the system working pressure for at least 4 hours and shall be proven tight before the system is placed into service.

5.1.1.6.3.2

For additions or modifications to existing airport fuel piping systems, hydrostatic testing of new piping prior to final tie-in to existing piping shall be permitted, with final closure (tie-in) welds examined in-process in accordance with ASME B31.3.

5.1.2 Fuel Storage Tanks.

5.1.2.1*

Fuel storage tanks shall conform to the applicable requirements of NFPA 30.

5.1.2.2

The authority having jurisdiction shall determine the clearances required from runways, taxiways, and other aircraft movement and servicing areas to any aboveground fuel storage structure or fuel transfer equipment, with due recognition given to national and international standards establishing clearances from obstructions.

5.1.3 Pumps and Piping Systems.

5.1.3.1

Underground piping or impact-protected aboveground piping shall be used in the vicinity of aircraft operating areas.

5.1.3.2

Piping shall be laid on firm supports using clean, noncorrosive backfill.

5.1.3.3

Transfer piping located within buildings not specifically designed for the purpose of fuel transfer shall be located within a steel casing of a pressure rating equal to that of the carrier pipe.

5.1.3.3.1

The casing shall extend beyond the building.

5.1.3.3.2

The casing shall terminate at a low point(s) with an automatic leak detection system.

5.1.3.3.3

The casing shall be capable of being drained to a safe location.

5.1.3.4

Piping, valves, and fittings shall be of steel or stainless steel, suitable for aviation fuel service and designed for the working pressure and mechanically and thermally produced structural stresses to which they could be subjected and shall comply with ASME B31.3.

5.1.3.5

Cast-iron, copper, copper alloy, and galvanized steel piping, valves, and fittings shall not be permitted.

5.1.3.6

Ductile iron valves shall be permitted.

5.1.3.7

Aluminum piping, valves, and fittings shall be used only where specifically approved by the authority having jurisdiction.

5.1.3.8

In the selection of pipe, valves, and fittings, the following shall be considered:

- (1) Working pressure
- (2) Bending and mechanical strength requirements (including settlement)
- (3) Internal and external corrosion
- (4) Impact stresses
- (5) Method of system fabrication and assembly
- (6) Location of piping and accessibility for repair or replacement
- (7) Exposure to mechanical, atmospheric, or fire damage
- (8) Expected period of service and effect of future operations

5.1.3.9

Gaskets in flanged connections shall resist fire temperatures for a duration comparable to the temperature resistance of the flange and bolts.

5.1.3.10

Flanges and their associated bolts shall be steel or stainless steel.

5.1.3.10.1

Flanges shall be rated to the ANSI pressure class suitable to the fuel system working pressures but in no cases shall be less than Class 150.

5.1.3.10.2*

Joints shall be designed and installed so that the mechanical strength of the joint will not be impaired if exposed to a fire.
[30:27.5.1.2]

5.1.3.11

Allowances shall be made for thermal expansion and contraction by the use of pipe bends, welded elbows, or other flexible design.

5.1.3.12

Pressure relief valves shall be provided in lines that can be isolated.

5.1.3.13

Welded joints shall be made by qualified welders in accordance with the standards of the American Welding Society and ASME B31.3.

5.1.3.14*

Isolation valves or devices shall be provided to facilitate dismantling portions of the fueling system.

5.1.3.15

Isolation valves shall be capable of being locked closed.

5.1.3.16

Buried flanges and valves shall not be permitted.

5.1.3.17*

All fueling systems with underground piping shall have cathodic protection to mitigate corrosion.

5.1.3.18

A heat-actuated shutoff valve shall be provided in the piping immediately upstream of loading hoses or swing arm connections.

5.1.4 Hose and Nozzles. (Reserved)

5.1.5 Electrostatic Hazards and Bonding.

The use of a grounding strap from the hydrant head to a grounding path shall not be permitted.

5.1.6 Electrical Systems.

5.1.6.1 Electrical Equipment.

All electrical equipment and wiring shall comply with the requirements of *NFPA 70*, Article 515, utilizing the Class I liquids requirements for all applications.

5.1.7 Control of Fuel Flow.

5.1.7.1* Deadman Controls.

5.1.7.1.1

The valve that controls the flow of fuel to an aircraft or fueling vehicle shall have a deadman control.

5.1.7.1.2

The fuel flow control means shall be one of the following:

- (1) The hydrant pit valve
- (2) At the feed-side of the fueling hose

- (3) A separate valve on the fuel piping system
- (4) On the hose nozzle for overwing servicing
- (5) An electronic control to stop the pump

5.1.7.1.3

Deadman controls shall be designed to preclude defeating their intended purpose.

5.1.7.2 Pressure Fuel Servicing System Controls.

5.1.7.2.1

The system shall be designed to minimize surge pressure.

5.1.7.2.2*

The overshoot shall not exceed 5 percent of actual flow rate in L/min (gal/min) at the time the deadman is released.

5.1.7.2.3

The control valve shall be located and designed so that it will not be rendered inoperative by a surface accident, power failure, or spill.

5.1.7.2.4

The control valve shall be fail-safe by closing completely in the event of control power loss.

5.1.7.3* Hydrant Valves.

Hydrant valves shall be designed so that the flow of fuel shall shut off when the hydrant coupler is closed.

5.1.7.3.1

Hydrant valves shall be of the self-closing, dry-break type.

5.1.7.4 Flow Control Valves.

The flow control valve shall be an integral part of the hydrant valve or coupler.

5.1.7.4.1

The fuel control valve shall be arranged so that it is not rendered inoperative by a surface accident, spill, or malfunction and shall shut off the flow of fuel if the operating energy fails.

5.1.7.4.2

The fuel control system shall be designed to minimize overshoot.

5.1.7.4.3

The system shall be designed to shut off fuel flow quickly and effectively, even if there is a reduction of pressure downstream of the flow control valve such as could result from a major line or hose break.

5.1.7.4.4

A screen shall be provided ahead of the valve to trap foreign material that could interfere with complete closure of the valve.

5.1.7.4.5

The hydrant valve that allows the flow of fuel to the aircraft shall have a deadman control.

5.1.7.4.6

The use of any means that allows fuel to flow without the operator activating the deadman shall not be permitted.

5.1.7.4.7

The deadman control shall be arranged so that the fueling operator can observe the operation while activating the control.

5.1.7.4.8

Wireless deadman controls shall be permitted.

5.1.7.5* Fuel Pressure.

The pressure of the fuel delivered to the aircraft shall be automatically controlled so that it is not higher than that specified by the manufacturer of the aircraft being serviced.

5.1.8 Filters and Ancillary Equipment.

5.1.8.1

All sections of the filtering system shall have electrical continuity with adjoining piping and equipment.

5.1.8.2

In freezing climates, filter separator sumps and associated piping that could contain water shall be protected to prevent freezing and bursting.

5.1.8.3

Heaters shall be constructed of noncorrosive materials.

5.1.8.4

Piping, valves, meters, filters, air eliminators, connections, outlets, fittings, and other components shall be designed to meet the working pressure requirements of the system.

5.1.9 Emergency Fuel Shutoff Systems.

5.1.9.1

Each tank vehicle loading station shall be provided with an emergency fuel shutoff

system, in addition to the deadman control required by 5.1.7.4.

5.1.9.2*

The emergency fuel shutoff system shall shut down the flow of fuel in the entire system or in sections of the system.

5.1.9.3

The emergency fuel shutoff system shall be of a fail-safe design.

5.1.9.4*

The method of fuel transfer (gravity, pumping, or use of hydraulic or inert gas pressure) shall be considered in the design of the emergency fuel shutoff system and the location of the emergency fuel shutoff valve.

5.1.9.5

The emergency fuel shutoff system shall include shutoff stations located outside of probable spill areas and near the route that normally is used to leave the spill area or to reach the fire extinguishers provided for the protection of the area.

5.1.9.6*

At least one emergency shutoff control station shall be accessible to each fueling vehicle loading position or aircraft fueling position.

5.1.9.7

The emergency fuel shutoff system shall be designed so that operation of a station shuts off fuel flow to all hydrants that have a common exposure.

5.1.9.8

Emergency fuel shutoff systems shall be designed so that they shut off the flow of fuel if the operating power fails.

5.1.9.9

Emergency fuel shutoffs shall not be located beneath piping, pumps, vents, or other components containing fuel or fuel vapors.

5.1.10* Fire Protection.

At least one fire extinguisher with a minimum rating of 40-B:C and a minimum capacity of 9.0 kg (20 lb) of dry chemical agent shall be provided at each fueling vehicle loading position or rack.

5.1.10.1*

A single fire extinguisher shall be permitted to serve up to two fueling vehicle loading positions or racks that are on a common island.

5.1.10.2

Travel distance to extinguishers shall not exceed 15 m (50 ft).

5.1.11 Marking and Labeling.

5.1.11.1

Emergency fuel shutoff signs shall be located at least 2.1 m (7 ft) above grade, measured to the bottom of the placard.

5.1.11.2

Emergency fuel shutoff signs shall be positioned so that they can be seen readily from a distance of at least 15.2 m (50 ft).

5.1.11.3

Systems provided with impressed current cathodic protection shall have appropriate signs, located at points of entry, warning

against separation of units without prior de-energization or without proper jumpers across the sections to be disconnected.

5.1.11.4

Fuel storage tanks shall be labelled in accordance with the requirements of NFPA 704.

5.1.11.5

Fuel transfer piping shall be marked in accordance with EI 1542 as to the product type conveyed through the pipe and the proper direction of flow of the product.

5.1.12 Aircraft Fuel Servicing Vehicle Loading and Unloading Racks.

5.1.12.1

The loading rack shall be equipped with an automatic shutdown system that stops the tank loading operation when the fuel servicing vehicle tank is full.

5.1.12.2

All fuel servicing tank vehicle primary shutdown systems shall be compatible with the system utilized at the loading rack.

5.1.12.3

The automatic secondary shutoff control shall not be used for normal filling control.

5.1.12.4

New and existing loading systems shall comply with 5.1.12.1 through 5.1.12.3 by June 2, 2023.

5.1.13 Fuel Servicing Hydrants, Pits, and Cabinets.

5.1.13.1

Fueling hydrants and fueling pits that are recessed below a ramp or apron surface

and are subject to vehicle or aircraft traffic shall be fitted with a cover designed to sustain the load of vehicles or aircraft that taxi over all or part of them.

5.1.13.2

Fueling hydrants and pits shall be located at least 15.2 m (50 ft) from any terminal building, hangar, service building, or enclosed passenger concourse (other than loading bridges).

5.1.13.3

Fueling cabinets shall be located at least 3 m (10 ft) from any building.

5.1.13.4

Fueling cabinets shall be located at least 6.1 m (20 ft) from any building opening.

5.2 Operations.

5.2.1* Security.

Access to fuel storage and fuel vehicle loading areas shall be secured.

5.2.2 Personnel. (Reserved)

5.2.3 Prevention and Control of Spills. (Reserved)

5.2.4 Emergency Fuel Shutoff. (Reserved)

5.2.5 Bonding. (Reserved)

5.2.6 Control of Fuel Flow.

If a wireless deadman control is used, the operator shall be located at the fueling point during the fueling operation.

5.2.7 Fire Protection.

During fueling operations, fire extinguishers shall be available on aircraft servicing ramps or aprons, in accordance with NFPA 410.

5.2.8 Maintenance. (Reserved)

5.2.9 Aircraft Fueling Hose. (Reserved)

Airport Fueling Vehicles

6.1 Design and Construction.

6.1.1 General Requirements.

6.1.1.1

Aircraft fuel servicing tank vehicles that are operated on public roadways shall comply with the requirements of NFPA 385.

6.1.1.2

In addition to any specific requirements in this chapter, only materials safe for use in the service intended and compatible with fuel applications shall be used in the construction of aircraft fuel servicing vehicles and hydrant fuel service carts.

6.1.1.3

Magnesium shall not be used in the construction of any portion of an aircraft fuel servicing vehicle or cart.

6.1.1.4

Trailer connections shall be designed to secure the trailer firmly and to prevent the towed vehicle from swerving from side to side at the speeds anticipated so that the trailer essentially remains in the path of the towing vehicle.

6.1.2 Tanks.

6.1.2.1

Every cargo tank shall be supported by and attached to, or shall be a part of, the tank vehicle upon which it is carried in accordance with NFPA 385.

6.1.2.2

Cargo tanks shall be constructed in accordance with 49 CFR 178.345, DOT 406, or other equivalent standard for international application.

6.1.2.3

Aluminum alloys for high-strength welded construction shall be joined by an inert gas arc welding process using filler metals R-GR40A, E-GR40A (5154 alloy), R-GM50A, and E-GM50A (5356 alloy) in accordance with AWS A5.10.

6.1.2.4

Tank outlets shall be of substantial construction.

6.1.2.5

Tank outlets shall be attached securely to the tank.

6.1.2.6 Baffles.

Every cargo tank or compartment over 2.3 m (7.5 ft) long shall be provided with baffles, the total number of which shall be such that the distance between any two adjacent baffles, or between any tank head or bulkhead and the baffle closest to it, shall in no case exceed 1.5 m (5 ft).

6.1.2.6.1

The cross-sectional area of each baffle shall be not less than 80 percent of the cross-sectional area of the tank.

6.1.2.6.2

The thickness of a baffle shall be not less than that required for the heads and bulkheads of the cargo tank in which it is installed.

6.1.2.7

Venting shall be in accordance with 49 CFR, DOT 406.

6.1.2.8

Cargo draw-off valves or faucets projecting beyond the frame of a tank vehicle shall be protected against damage.

6.1.2.9 Fill Openings and Top Flashings.

6.1.2.9.1

Dome covers shall be provided with a forward mounted hinge and self-latching catches and shall be fitted with watertight fuel-resistant seals or gaskets designed to prevent spillage or leakage from overturn and to prevent water entry.

6.1.2.9.2

Dome covers shall automatically close and latch with the forward motion of the vehicle.

6.1.2.9.3

Drains from top flashing shall divert spilled fuel from possible sources of ignition, including the engine, the engine exhaust system, the electrical equipment, or an auxiliary equipment enclosure.

6.1.2.9.4

The tank fill openings shall be protected against overturn damage by a rigid member(s) fixed to the tank and extending a minimum of 25 mm (1 in.) above any dome cover, handle, vent opening, or projection of the unit.

6.1.2.9.5

Overturn protection shall be braced adequately to prevent collapse.

6.1.2.9.6

Overturn protection shall be designed to channel rainwater, snow, or fuel to the exterior of the cargo tank and away from vehicle exhaust components.

6.1.2.10 Tanks for Flammable Liquids Other than Fuel.

Vehicle or cart fuel tanks and containers for other flammable liquids shall be made of metal and shall be designed, constructed, and located in a manner that precludes hazardous arrangements.

6.1.2.10.1

Tanks shall be substantially protected by their location.

6.1.2.10.2

Fill pipes shall not project beyond the vehicle profile.

6.1.2.10.3

Tanks and containers shall vent away from sources of ignition during filling.

6.1.2.10.4

Any arrangement not protected by location shall be listed for such use.

6.1.2.10.5

The fuel tank arrangement shall allow for drainage without the tank's removal from its mountings.

6.1.2.11 Tests.

Cargo tanks, at the time of manufacture, shall be tested by a minimum air or hydrostatic pressure of 24.4 kg/m² (5 psi) applied to the whole tank (or each compartment thereof if the tanks are compartmented) for a period of at least 5 minutes.

6.1.2.11.1

If the test is by air pressure, the entire exterior surface of all joints shall be coated with a solution of soap and water, heavy oil, or other substance that causes foaming or bubbling that indicates the presence of leaks.

6.1.2.11.2

If the test is by hydrostatic pressure, it shall be gauged at the top of the tank, and the tank shall be inspected at the joints for the issuance of liquid to indicate leaks.

6.1.2.11.3

Any leakage discovered by either of the methods described in 6.1.2.11.1 and 6.1.2.11.2, or by any other method, shall be considered evidence of failure to meet these requirements.

6.1.3 Pumps and Piping System.

6.1.3.1

All portions of the flammable liquid feed system shall be constructed and located to minimize the fire hazard.

6.1.3.2

Piping and plumbing shall be made of materials not adversely affected by the fluid

or by other materials likely to be encountered.

6.1.3.3

Piping and plumbing shall be of adequate strength for the purpose.

6.1.3.4

Piping and plumbing shall be secured to avoid chafing or undue vibration.

6.1.3.5

Piping and plumbing shall be supported adequately.

6.1.3.6

Product piping shall be metal and rated for the system working pressure or at least 1030 kPa (150 psi), whichever is greater.

6.1.3.7

Except as provided in 6.1.3.8, all joints shall be welded.

6.1.3.8

Flanged connections or approved couplings shall be provided to avoid the need for cutting and welding where components are serviced or replaced.

6.1.3.9

Gaskets in flanged connections shall be of a material and design that resist fire exposure for a time comparable to the flange and bolts.

6.1.3.10

Gravity feed systems shall not be used.

6.1.3.11

At the time of manufacture, the section of the fuel dispensing system that is under pressure during service shall be subjected

to a hydrostatic test pressure equal to 150 percent of the working pressure of the system for at least 30 minutes and shall be proven tight before it is placed in service.

6.1.3.11.1

Hose connections shall be permitted to be plugged during this test.

6.1.3.12 Loading System.

6.1.3.12.1 Top Loading.

6.1.3.12.1.1

Drop tubes shall be used.

6.1.3.12.1.2

Splash filling shall be prohibited.

6.1.3.12.1.3

Drop tubes used in top loading or overhead loading of tank vehicles shall be designed to minimize turbulence.

6.1.3.12.1.4

Drop tubes shall be metallic.

6.1.3.12.1.5

Drop tubes shall extend to the bottom of the tank or to the inside of the sump to maintain submerged loading and to avoid splashing of the fuel.

6.1.3.12.2 Bottom Loading.

6.1.3.12.2.1

The bottom-loading connection of a tank truck shall be a dry-break coupler that cannot be opened until it is engaged to the vehicle tank adapter.

6.1.3.12.2.2

It shall not be possible to disconnect the hose coupler from the tank vehicle until the coupler valve is fully closed.

6.1.3.12.2.3*

The bottom loading fitting of the tank vehicle shall be a spring-loaded check valve that remains in a closed position until opened by connecting the coupler.

6.1.3.12.2.4

A float-actuated shutoff or other automatic sensing device shall be provided to close the bottom-loading valve when the tank is filled.

6.1.3.12.2.5

Any liquid bled from a sensing device during loading shall be piped to the bottom of the cargo tank.

6.1.3.12.2.6

The fill pipe and valving on bottom-loaded tank vehicles shall be arranged to prevent fuel spray and turbulence in the cargo tank.

6.1.3.12.2.7

The cargo tank vehicle shall be equipped with an automatic primary shutdown system that stops the tank loading operation when the tank is full, unless an automatic shutdown is provided on the loading rack in accordance with 5.1.12.

6.1.3.12.2.8

The cargo tank vehicle shall be equipped with an automatic secondary shutdown system that stops the tank loading operation when the tank is full.

6.1.3.12.2.9

The automatic secondary shutoff control shall not be used for normal filling control.

6.1.3.13

Each outlet valve shall be provided with a fusible device that causes the valve to close automatically in case of fire.

6.1.3.14

A shear section shall be provided between shutoff valve seats and discharge outlets that breaks under strain, unless the discharge piping is arranged to afford the same protection and leave the shutoff valve seat intact.

6.1.3.15

Openings in cargo tank compartments that are connected to pipe or tubing shall be fitted with a spring-loaded check valve, a self-closing valve, or a similar device to prevent the accidental discharge of fuel in case of equipment malfunction or line breakage.

6.1.3.15.1

Unless the valves required in 6.1.3.15 are located inside the tank, they shall be equipped with a shear section as described in 6.1.3.14.

6.1.3.16

The operating mechanism for each tank outlet valve shall be adjacent to the fuel delivery system operating controls.

6.1.3.16.1

The operating mechanism for each tank outlet valve shall be arranged so that the outlet valve(s) can be closed simultaneously and instantly in the event of a fire or other emergency.

6.1.3.16.2

A means shall be provided to assure proper operation.

6.1.4 Hose and Nozzles. (Reserved)

6.1.5 Bonding.

6.1.5.1

All metallic components and vehicle or cart chassis shall be electrically bonded to prevent a difference in their electrostatic potential.

6.1.5.2

Such bonding shall be inherent to the installation or by physical application of a suitable bonding mechanism.

6.1.5.3

A provision shall be provided on the vehicle to bond the tank to a fill pipe or loading rack as specified in 6.2.11.10.1.

6.1.5.4

Cables shall be provided on the vehicle or cart to allow the bonding operations specified in 4.2.5.

6.1.6 Electrical System.

6.1.6.1 Battery Compartments.

Batteries that are not in engine compartments shall be securely mounted in compartments to prevent accidental arcing.

6.1.6.1.1

The compartment shall be separate from fueling equipment.

6.1.6.1.2

Suitable shielding shall be provided to drain possible fuel spillage or leakage away from the compartment.

6.1.6.1.3

The compartment shall be provided with a vent at the top of the compartment.

6.1.6.2 Wiring.

Wiring shall be of adequate size to provide the required current-carrying capacity and mechanical strength.

6.1.6.2.1

Wiring shall be installed to provide protection from physical damage and from contact with spilled fuel either by its location or by enclosing it in metal conduit or other oil-resistant protective covering.

6.1.6.2.2

All circuits shall have overcurrent protection.

6.1.6.2.3

Junction boxes shall be weatherproofed.

6.1.6.2.4

The vehicle shall be equipped with a battery disconnect switch.

6.1.6.3

Spark plugs and other exposed terminal connections shall be insulated to prevent sparking in the event of contact with conductive materials.

6.1.6.4*

Motors, alternators, generators, and their associated control equipment located outside of the engine compartment or vehicle cab shall be of a type listed for use in accordance with *NFPA 70*, Class I, Division 1, Group D locations.

6.1.6.5

Electrical equipment and wiring located within a closed compartment shall be of a type listed for use in accordance with *NFPA 70*, Class I, Division 1, Group D locations.

6.1.6.6

Lamps, switching devices, and electronic controls, other than those covered in 6.1.6.4 and 6.1.6.5, shall be of the enclosed, gasketed, weatherproof type.

6.1.6.7

Other electrical components not covered in 6.1.6.4 through 6.1.6.6 shall be of a type listed for use in accordance with *NFPA 70*, Class I, Division 2, Group D locations.

6.1.6.8

Electronic equipment shall not be installed in compartments with other equipment that can produce flammable vapors, unless permitted by *NFPA 70*.

6.1.6.9 Tractor Trailer Wiring.

Electrical service wiring between a tractor and trailer shall be designed for heavy-duty service.

6.1.6.9.1

The connector shall be of the positive-engaging type.

6.1.6.9.2

The trailer receptacle shall be mounted securely.

6.1.7 Control of Fuel Flow.

6.1.7.1*

The valve that controls the flow of fuel to an aircraft shall have a deadman control.

6.1.7.2

The fuel flow control valve shall be one of the following:

- (1) The hydrant pit valve
- (2) At the tank outlet on a tank vehicle
- (3) A separate valve on the tank vehicle
- (4) On the hose nozzle for overwing servicing

6.1.7.3

Deadman controls shall be designed to preclude defeating their intended purpose.

6.1.7.4 Pressure Fuel Servicing System Controls.

6.1.7.4.1

The system shall be designed to minimize surge pressure.

6.1.7.4.2*

The overshoot shall not exceed 5 percent of actual flow rate in L/min (gal/min) at the time the deadman is released.

6.1.7.4.3

The control valve shall be located and designed so that it will not be rendered inoperative by a surface accident, power failure, or spill.

6.1.7.4.4

The control valve shall be fail-safe by closing completely in the event of control power loss.

6.1.7.5

On tank full trailer or tank semitrailer vehicles, the use of a pump in the tractor unit with flexible connections to the trailer shall be prohibited unless one of the following conditions exists:

- (1) Flexible connections are arranged above the liquid level of the tank in order to prevent gravity or siphon discharge in case of a break in the connection or piping.
- (2) The cargo tank discharge valves required by 6.1.7.1 are arranged to be normally closed and to open only when the brakes are set and the pump is engaged.

6.1.7.6 Air Elimination.

Aircraft fuel servicing tank vehicles having a positive displacement product pump shall be equipped with a product tank low-level shutdown system that prevents air from being ingested into the fueling system.

6.1.8 Filters and Ancillary Equipment.

6.1.8.1 Cabinets.

6.1.8.1.1

All cabinets, other than those housing electronic equipment, shall be vented to prevent the accumulation of fuel vapors. (See 6.1.6.)

6.1.8.1.2

All cabinets, other than those housing electronic equipment, shall be constructed of noncombustible materials. (See 6.1.6.)

6.1.8.2 Product Recovery Tanks.

The refueling system product recovery tank shall be equipped with a control that shuts down the vehicle's fuel dispensing system

when the refueling system product recovery tank is three-quarters full.

6.1.9 Emergency Fuel Shutoff Systems.

6.1.9.1

The vehicle shall have at least two emergency shutoff controls, one mounted on each side of the vehicle.

6.1.9.2

The emergency fuel shutoff controls shall be quick-acting to close the outlet valve in case of emergency.

6.1.9.3

The emergency fuel shutoff controls shall be remote from the fill openings and discharge outlets and shall be operable from a ground level standing position.

6.1.9.4

All vehicles or carts equipped with a top deck or elevating platform shall have an additional emergency shutoff control operable from the deck or platform.

6.1.10* Fire Protection.

6.1.10.1

Each aircraft fuel servicing tank vehicle shall have two listed fire extinguishers, each having a rating of at least 40-B:C and a minimum capacity of 9.0 kg (20 lb) of dry chemical agent, with one extinguisher mounted on each side of the vehicle.

6.1.10.2

One listed fire extinguisher having a rating of at least 40-B:C and a minimum capacity of 9.0 kg (20 lb) of dry chemical agent shall be installed on each hydrant fuel servicing vehicle or cart.

6.1.10.3

Extinguishers shall be readily accessible from the ground.

6.1.10.4

The area of the paneling or tank adjacent to or immediately behind the extinguisher(s) on fueling vehicles or carts shall be painted a color contrasting with that of the extinguisher.

6.1.10.5

Extinguishers shall be kept clear of elements such as ice and snow.

6.1.10.6

Extinguishers located in enclosed compartments shall be readily accessible.

6.1.10.7

The locations of extinguishers in enclosed compartments shall be marked clearly in letters of a contrasting color at least 50 mm (2 in.) high.

6.1.10.8 Smoking Equipment.

6.1.10.8.1*

Smoking equipment, such as cigarette lighter elements and ashtrays, shall not be provided.

6.1.10.8.2

If a vehicle includes smoking equipment, it shall be removed or rendered inoperable.

6.1.10.8.3

Subsection 6.1.10.8.2 shall be retroactive to existing vehicles.

6.1.11 Marking and Labeling.

6.1.11.1

Aircraft fueling vehicles shall be marked with the name of the operator or the responsible organization.

6.1.11.2

The marking shall be approved, legible signs on both sides of the exterior of the vehicle.

6.1.11.3 Signage.

Each aircraft fuel servicing vehicle or cart shall have a signage viewable from all sides of the vehicle.

6.1.11.3.1

Signs shall have letters at least 75 mm (3 in.) high.

6.1.11.3.2

Signs shall be of a color contrasting sharply with the sign background for visibility.

6.1.11.3.3

The words FLAMMABLE, NO SMOKING, and the name of the product carried, such as JET A, JET B, GASOLINE, or AVGAS, shall appear on each sign.

6.1.11.3.4

Placards shall be weather resistant.

6.1.11.3.5

A NO SMOKING sign shall be posted prominently in the cab of every aircraft fuel servicing vehicle.

6.1.11.3.6

Hazardous material placards meeting the requirements of 49 CFR 172.504 or equivalent shall be displayed on all four sides of fuel servicing vehicles.

6.1.11.4 Emergency Fuel Shutoff Signs.

6.1.11.4.1

Each emergency fuel shutoff station location shall be placarded EMERGENCY FUEL SHUTOFF in letters at least 50 mm (2 in.) high.

6.1.11.4.2

The method of operation shall be indicated by an arrow or by the word PUSH or PULL, as appropriate.

6.1.11.4.3

Any action necessary to gain access to the shutoff device (e.g., BREAK GLASS) shall be shown clearly.

6.1.11.4.4

Lettering shall be of a color contrasting sharply with the placard background for visibility.

6.1.12 Drive Train.

6.1.12.1

Propulsion or power engine equipment shall be in a compartment housing that shall minimize the hazard of fire in the event of leakage or spillage of fuel during the servicing of an aircraft.

6.1.12.2

The engine air intake shall retain the manufacturer's configuration to prevent the emission of flame in case of backfiring.

6.1.12.3

Where provided, the sediment bowl in the fuel supply line shall be of steel or material of equivalent fire resistance.

6.1.12.4

Full trailers and semitrailers, except tow carts with a gross vehicle weight rating (GVWR) under 1360 kg (3000 lb), shall be equipped with service brakes on all wheels.

6.1.12.5

All full trailers and semitrailers, including tow carts with a GVWR under 1360 kg (3000 lb), shall be equipped with parking brakes.

6.1.12.6

Self-propelled aircraft fuel servicing vehicles shall have an integral system or device that prevents the vehicle from being moved unless all of the following conditions are met:

- (1) All fueling nozzles and hydrant couplers are properly stowed.
- (2) All mechanical lifts are lowered to their stowed position.
- (3) Bottom-loading couplers have been disconnected from the vehicle.

6.1.12.7

The vehicle shall have a means to override the system or device required by 6.1.12.6 so that the vehicle can be moved during an emergency.

6.1.12.7.1

The override control shall be clearly marked and accessible.

6.1.12.7.2

A light to indicate activation of the override shall be located in the cabin and visible outside.

6.1.12.7.3

The override control shall be secured in the normal position with a breakaway seal.

6.1.12.7.4

The override control shall deactivate the fueling system.

6.1.13 Exhaust System.

6.1.13.1*

The engine exhaust system shall be designed, located, and installed to minimize the hazard of fire in the event of any of the following:

- (1) Leakage of fuel from the vehicle or cart (where applicable) fuel tank or fuel system
- (2) Leakage from the fuel dispensing system of the vehicle or cart
- (3) Spillage or overflow of fuel from the vehicle or cart (if applicable) fuel tank or the cargo tank
- (4) Spillage of fuel during the servicing of an aircraft

6.1.13.2

Exhaust system components shall be secured and located clear of components carrying flammable liquids and separated from any combustible materials used in the construction of the vehicle.

6.1.13.3

Suitable shielding shall be provided to drain possible fuel spillage or leakage away from exhaust system components safely.

6.1.13.3.1

Diesel particulate filter (DPF) regeneration system piping shall be shielded from the

engine discharge manifold to the outlet at the tailpipe.

6.1.13.3.2

DPF regeneration—equipped vehicles shall have a listed diffuser installed at the outlet of the exhaust tailpipe.

6.1.13.4

Exhaust gases shall not be discharged where they could ignite fuel vapors that could be released during normal operations or by accidental spillage or by leakage of fuel.

6.1.13.4.1

DPF regeneration—equipped vehicles shall have a lockout mode that will prevent automatic regeneration when these vehicles are operated within 30 m (100 ft) of aircraft parking areas.

6.1.13.5

A muffler (or silencer) cutout shall not be provided.

6.1.13.6

Carbureted gasoline-powered engines on fuel servicing vehicles shall be provided with flame- and spark-arresting exhaust systems.

6.1.13.7*

Non-turbo-charged diesel engines on fuel servicing vehicles shall be equipped with flame- and spark-arresting exhaust systems.

6.2 Operations.

6.2.1 Security.

6.2.1.1 Parking of Aircraft Fuel Servicing Tank Vehicles.

Parking areas for unattended aircraft fuel servicing tank vehicles shall be arranged to provide the following:

- (1) Dispersal of the vehicles in the event of an emergency
- (2) A minimum of 3 m (10 ft) of clear space between parked vehicles for accessibility for fire control purposes
- (3) Prevention of any leakage from draining to an adjacent building or storm drain that is not suitably designed to handle fuel
- (4) A minimum of 15 m (50 ft) from any parked aircraft and buildings other than maintenance facilities and garages for fuel servicing tank vehicles

6.2.1.2 Parking of Aircraft Fuel Servicing Hydrant Vehicles and Carts.

Parking areas for unattended aircraft fuel servicing hydrant vehicles or carts shall be arranged to provide the following:

- (1) Dispersal of the vehicles in the event of an emergency
- (2) Prevention of any leakage from draining to an adjacent building or storm drain that is not suitably designed to handle fuel

6.2.1.3*

The authority having jurisdiction shall determine the suitability of tunnels,

enclosed roadways, or other limited access areas for use by fuel servicing vehicles.

6.2.2 Training. (Reserved)

6.2.3 Prevention and Control of Spills. (Reserved)

6.2.4 Emergency Fuel Shutoff. (Reserved)

6.2.5 Bonding. (Reserved)

6.2.6 Control of Fuel Flow.

6.2.6.1

The fueling operator shall monitor the fueling operation.

6.2.6.2

During overwing fueling, the operator shall monitor the fill port.

6.2.7 Fire Protection. (Reserved)

6.2.8 Maintenance.

6.2.8.1

Aircraft fuel servicing vehicles or carts shall not be operated unless they are in proper repair and free of accumulations of grease, oil, or other combustibles.

6.2.8.2

Leaking vehicles or carts shall be removed from service, defueled, and parked in a safe area until repaired.

6.2.8.3

Maintenance and servicing of aircraft fuel servicing vehicles and carts shall be performed outdoors or in a building approved for the purpose.

6.2.8.4

At least monthly the operator shall perform a check to ensure complete closure of the bottom-loading valve on the tank vehicle.

6.2.9 Aircraft Fueling Hose. (Reserved)

6.2.10 Exhaust System.

6.2.10.1

All vehicles that have engines equipped with an exhaust after-treatment device, such as a DPF, that requires the filter to be cleaned at high temperature (regenerated) while installed on the vehicle shall meet the requirements of 6.2.10.2 through 6.2.10.10.

6.2.10.2

DPF regeneration shall be performed only in area(s) designated by the authority having jurisdiction.

6.2.10.3

DPF regeneration shall not be performed within 30 m (100 ft) of any aircraft refueling operations.

6.2.10.4* Vehicle Regeneration Area.

6.2.10.4.1

The immediate area surrounding the DPF exhaust outlet shall be concrete or other high temperature-resistant material and shall be clear of any grass, soil, or flammable materials.

6.2.10.4.2

The area shall be in a remote location that is a minimum of 30 m (100 ft) from the nearest aircraft parking location, airport terminal, or flammable storage or a minimum of 15 m (50 ft) from any other building.

6.2.10.4.3

The area shall be clearly marked with a minimum 61 cm by 30 cm (2 ft by 1 ft) sign reading VEHICLE DPF REGENERATION AREA, which shall have letters at least 75 mm (3 in.) high and shall be of a color contrasting sharply with the sign background for visibility.

6.2.10.5

The regeneration cycle shall be performed only by trained personnel, who shall remain with the vehicle until the regeneration cycle is complete.

6.2.10.6

The vehicle shall be visually inspected for any signs of fluid leaks under or around the vehicle before regeneration is initiated.

6.2.10.7

DPF regeneration shall not be initiated if there are any signs of any fluid leaks on or beneath the vehicle.

6.2.10.8

Once a regeneration cycle is started, it shall be completed without interruption.

6.2.10.9

After the regeneration process is successfully completed, the vehicle shall be permitted to return to normal service.

6.2.10.10

Problems occurring during the regeneration cycle shall be corrected prior to the vehicle returning to normal service.

6.2.10.11

Aircraft refueling operations shall not be initiated if the regenerative system indicates regeneration is required.

6.2.11 Loading and Unloading.

6.2.11.1

Aircraft fuel servicing tank vehicles shall be loaded only at an approved loading rack.

6.2.11.2

Aircraft fuel servicing tank vehicles shall not be loaded from a hydrant pit, unless permitted by the authority having jurisdiction under emergency circumstances.

6.2.11.3

Filling of the vehicle cargo tank shall be under the observation and control of a qualified and authorized operator at all times.

6.2.11.4

The required deadman and automatic overfill controls shall be in normal operating condition during the filling operation.

6.2.11.5

The controls shall not be blocked open or otherwise bypassed.

6.2.11.6

The engine of the tank vehicle shall be shut off before starting to fill the tank.

6.2.11.7

To prevent leakage or overflow from expansion of the contents due to a rise in atmospheric temperature or direct exposure to the sun, no cargo tank or

compartment shall be loaded to the point where it is liquid full.

6.2.11.7.1

No cargo tank or compartment shall be loaded above the rated net capacity, as specified by the manufacturer's data plate.

6.2.11.7.2

Space for thermal expansion, in no case less than 3 percent of the tank volume, shall be provided to prevent leakage.

6.2.11.8

The driver, operator, or attendant of any tank vehicle shall not remain in the vehicle but shall not leave the vehicle unattended during the loading or unloading process.

6.2.11.8.1

Delivery hose, when attached to a tank vehicle, shall be considered to be a part of the tank vehicle.

6.2.11.9

No fuel shall be transferred to or from any tank vehicle until the parking brake and wheel chocks have been set to prevent motion of the vehicle.

6.2.11.10 Top Loading.

6.2.11.10.1

Where loading tank trucks through open domes, a bond shall be established between the loading piping and the cargo tank to equalize potentials.

6.2.11.10.2

The bond connection shall be made before the dome is opened and shall be removed only after the dome is closed.

6.2.11.10.3

Drop tubes attached to loading assemblies extending into the vehicle tank shall extend to the bottom of the tank and shall be maintained in that position until the tank is loaded to provide submerged loading and avoid splashing or free falling of fuel through the tank atmosphere.

6.2.11.10.4

Splash filling shall be prohibited.

6.2.11.10.5

The flow rate into the tanks shall not exceed 25 percent of the maximum flow until the outlet is fully covered.

6.2.11.10.6

Fixed drop tubes permanently mounted in the vehicle tank shall extend to the bottom of the tank or to the inside of the sump to maintain submerged loading and to avoid splashing of the fuel.

6.2.11.10.7

The level in the tank shall be visually monitored at all times during top loading.

6.2.11.11 Bottom Loading.

6.2.11.11.1

A bonding connection shall be made between the cargo tank and the loading rack before any fuel connections are made and shall remain in place throughout the loading operation.

6.2.11.11.2

The operator shall initiate fuel flow by means of a deadman control device.

6.2.11.11.3

The operator shall ensure that the automatic high-level shutoff system is functioning properly for each compartment shortly after flow has been initiated.

6.2.12 Positioning of Aircraft Fuel Servicing Vehicles and Carts During Fueling.

6.2.12.1

Aircraft fuel servicing vehicles and carts shall be positioned so that a clear path of egress from the aircraft for fuel servicing vehicles shall be maintained.

6.2.12.2

The propulsion or pumping engine of aircraft fuel servicing vehicles or carts shall not be positioned under the wing of the aircraft during overwing fueling or where aircraft fuel system vents are located on the upper wing surface.

6.2.12.3

Aircraft fuel servicing vehicles or carts shall not be positioned within a 3 m (10 ft) radius of aircraft fuel system vent openings.

6.2.12.4

Parking brakes and chocks shall be set on all fuel servicing vehicles or carts before operators begin the fueling operation.

6.2.12.5

During overwing aircraft fuel servicing where aircraft fuel system vents are located on the upper wing surface, equipment shall not be positioned under the trailing edge of the wing.

6.2.12.6

Aircraft fuel servicing tank vehicles shall be positioned so that the vehicle is not closer than 7.6 m (25 ft) to any terminal building,

hangar, service building, or enclosed passenger concourse other than a loading walkway.

Rooftop Heliports

7.1 Design and Construction.

7.1.1 General Requirements.

7.1.1.1 System Design and Approval.

7.1.1.1.1

Fueling on rooftop heliports shall be permitted only where approved by the authority having jurisdiction.

7.1.1.1.2

In addition to the special requirements in this chapter, the heliport shall comply with the requirements of NFPA 418.

7.1.1.1.3

Facilities for dispensing fuel with a flash point below 37.8°C (100°F) shall not be permitted at any rooftop heliport.

7.1.1.1.4

In addition to the special requirements of this chapter, the fuel storage, piping, and dispensing system shall comply with the requirements of NFPA 30 and with applicable portions of this standard.

7.1.1.1.5

The entire system shall be designed so that no part of the system is subjected to pressure above its working pressure.

7.1.2 Fuel Storage Tanks.

7.1.2.1

Fuel storage tanks and components shall comply with the requirements of NFPA 30.

7.1.2.2

The fuel storage system shall be located at or below ground level.

7.1.3 Pumps and Piping Systems.

7.1.3.1

Pumps and piping systems shall comply with the requirements of NFPA 30.

7.1.3.2

Pumps shall be located at or below ground level.

7.1.3.3

Relay pumping shall not be permitted.

7.1.3.4

Pumps installed outside of buildings shall be located not less than 1.5 m (5 ft) from any building opening.

7.1.3.5

Pumps shall be anchored and protected against physical damage from collision.

7.1.3.6

Pumps installed within a building shall be in a separate room with no opening into other portions of the building.

7.1.3.7

The pump room shall be adequately ventilated.

7.1.3.8

Electrical wiring and equipment in pump rooms shall conform to the requirements of *NFPA 70*, Article 515.

7.1.3.9

Piping above grade shall be steel and, unless otherwise approved by the authority having jurisdiction, shall be suitably cased or shall be installed in a duct or chase.

7.1.3.9.1

Such piping duct or chase shall be constructed so that a piping failure does not result in the entry of fuel liquid or vapor entering the building.

7.1.3.9.2

All pipe casings, ducts, and chases shall be drained.

7.1.3.10

Piping shall be anchored and shall be protected against physical damage for a height of at least 2.4 m (8 ft) above the ground.

7.1.3.11

An isolation valve shall be installed on the suction and discharge piping of each pump.

7.1.3.12

A check valve shall be installed at the base of each fuel piping riser to automatically prevent the reverse flow of the fuel into the pump room in the event of pump seal failure, pipe failure, or other malfunction.

7.1.3.13

Piping within buildings shall comply with 5.1.3.3.

7.1.4 Hose and Nozzles. (Reserved)

7.1.5 Electrostatic Bonding. (Reserved)

7.1.6 Electrical Systems. (Reserved)

7.1.7 Control of Fuel Flow. (Reserved)

7.1.8 Filters and Ancillary Equipment. (Reserved)

7.1.9 Emergency Fuel Shutoff Systems.

7.1.9.1

At least two emergency fuel shutoff stations located on opposite sides of the heliport at exitways or at similar locations shall be provided.

7.1.9.2

An additional emergency fuel shutoff station shall be located at ground level and shall be located at least 3 m (10 ft) from the pump but no further than 6 m (20 ft).

7.1.10 Fire Protection.

Fire protection shall conform to the requirements of NFPA 418.

7.1.11 Marking and Labeling. (Reserved)

7.2 Operations.

7.2.1 Security. (Reserved)

7.2.2 Personnel.

All heliport personnel shall be trained in the use of the available fire extinguishers and fixed extinguishing systems.

7.2.3 Prevention and Control of Spills. (Reserved)

7.2.4 Emergency Fuel Shutoff.

All heliport personnel shall be trained in the operation of emergency fuel shutoff controls.

7.2.5 Bonding. (Reserved)

7.2.6 Monitoring of Fuel Flow. (Reserved)

7.2.7 Fire Protection. (Reserved)

7.2.8 Maintenance. (Reserved)

7.2.9 Aircraft Fueling Hose. (Reserved)

Self-Service Aircraft Fueling

8.1 Design and Construction.

8.1.1 General Requirements.

8.1.1.1 System Design and Approval.

Self-service fueling shall be permitted, subject to the approval of the authority having jurisdiction.

8.1.1.2

Dispensing devices shall be located on an island to protect against collision damage or shall be protected with pipe bollards or other approved protection.

8.1.2 Fuel Storage Tanks.

In addition to the special requirements of this chapter, the fuel storage system shall comply with the requirements of NFPA 30.

8.1.3 Pumps and Piping Systems.

8.1.3.1

In addition to the special requirements of this chapter, the piping and dispensing system shall comply with the requirements of NFPA 30.

8.1.3.2

Listed or approved dispensing devices shall be used.

8.1.4 Hose and Nozzles. (Reserved)

8.1.5 Electrostatic Bonding. (Reserved)

8.1.6 Electrical Systems. (Reserved)

8.1.7 Control of Fuel Flow. (Reserved)

8.1.8 Filters and Ancillary Equipment. (Reserved)

8.1.9 Emergency Fuel Shutoff Systems.

8.1.9.1

The controls shall be designed to allow only authorized personnel to reset the system after an emergency fuel shutoff.

8.1.9.2

The emergency fuel shutoff controls shall be installed in a location acceptable to the authority having jurisdiction and shall be more than 6 m (20 ft) but less than 30 m (100 ft) from the dispensers.

8.1.9.3

A clearly identified means to notify the fire department shall be provided and shall be located in the immediate vicinity of each emergency fuel shutoff control.

8.1.9.4

Dispensing devices shall have a listed or approved emergency shutoff valve, incorporating a fusible link or other thermally actuated device designed to close automatically in case of fire.

8.1.9.5

The emergency shutoff valve also shall incorporate a shear section that automatically shuts off the flow of fuel due to severe impact.

8.1.9.6

The emergency shutoff valve shall be rigidly mounted at the base of the dispenser in accordance with the manufacturer's instructions.

8.1.10* Fire Protection.

8.1.10.1

Each facility shall have a minimum of one fire extinguisher with a rating of at least 40-B:C and a minimum capacity of 9.0 kg (20 lb) of dry chemical agent located at the dispenser.

8.1.10.2

At least one fire extinguisher with a rating of at least 40-B:C and a minimum capacity of 9.0 kg (20 lb) of dry chemical agent shall be provided at each emergency fuel shutoff control.

8.1.11 Marking and Labeling.

8.1.11.1

Emergency instructions shall be conspicuously posted in the dispensing area and at the emergency fuel shutoff control.

8.1.11.2

Emergency instructions shall incorporate the following or equivalent wording:

EMERGENCY INSTRUCTIONS

IN CASE OF FIRE OR SPILL

(1) Use emergency fuel shutoff.

(2) Report accident by calling (specify local fire emergency reporting number) on phone.

(3) Report address of site (list address of site here).

8.1.11.3 Operating Instructions.

Operating instructions shall be posted.

8.1.11.4

The operating instructions shall include the following:

- (1) Proper operation and use of all equipment
- (2) Correct bonding procedures
- (3) Procedures to be employed to dispense fuel safely
- (4) Location and use of the emergency fuel shutoff controls
- (5) Procedures to be used in the event of an emergency

8.2 Operations.

8.2.1 Security.

Access to dispensing equipment shall be controlled by means of mechanical or electronic devices designed to resist tampering and to prevent access or use by unauthorized persons.

8.2.2 Training. (Reserved)

8.2.3 Prevention and Control of Spills. (Reserved)

8.2.4 Emergency Fuel Shutoff. (Reserved)

8.2.5 Bonding. (Reserved)

8.2.6 Monitoring of Fuel Flow. (Reserved)

8.2.7 Fire Protection. (Reserved)

8.2.8 Maintenance. (Reserved)

8.2.9 Occupancy.

The aircraft shall not be occupied during self-service fueling

Annex A

A.1.1.2

Additional guidance can be obtained from other documents, including, but not limited to: A4A Spec 103, ASTM MNL5, API STD 607, API RP 1595, API RP 2003, EI 1529, EI 1540, EI 1550, EI 1581, EI 1583, EI 1590, EI 1596, JIG 4, NATA *Refueling and Quality Control Procedures for Airport Service and Support Operations*, NIST Handbook 44, PEI RP1300, PEI RP 100, PEI RP 200, PEI RP 800, OSHA regulations in 29 CFR, FAA AC-150-5230, and/or EPA regulations in 112 (Oil Pollution Prevention) and 280 (Underground Tanks).

A.1.2

Aircraft fuel servicing involves the transfer of a flammable or combustible liquid fuel between a bulk storage system and the fuel tanks of an aircraft. It includes both fueling and defueling. The transfer is usually accomplished by using a tank vehicle, a hydrant vehicle, a hydrant cart, a fuel servicing cabinet, or a fueling pit. Drums and pumps sometimes are used. The movement of the

fuel through the pumps, piping, and filters of the transfer system causes the fuel to be charged electrostatically. If the charge on the fuel is sufficiently high when it arrives at the fuel tank, a static spark could occur that can ignite the fuel vapor.

During overwing fueling, the fuel is discharged into an opening in the aircraft fuel tank using a hose with a hand-held nozzle. The flow and splashing of fuel causes the generation of static electricity and the production of flammable mists and vapors. Top loading of tank vehicles creates similar hazards.

Underwing servicing, hydrant servicing, and bottom loading of tank vehicles use hoses or flexible connections of metal tubing or piping, as well as devices to allow temporary connection of fuel transfer lines. These methods minimize the charge generation and misting hazards associated with overwing fueling and top loading.

Other potential sources of ignition that could present a hazard during aircraft fuel servicing include the following:

- (1) Operating aircraft engines, auxiliary power units, and heaters
- (2) Operating automotive or other internal combustion engine servicing equipment in the vicinity
- (3) Arcing of electrical circuits
- (4) Open flames
- (5) Energy from energized radar equipment
- (6) Lightning

The autoignition temperatures of turbine fuels (*see Annex B*) are such that the residual heat of aircraft turbine engines after shutdown or the residual heat of turbine aircraft brakes following hard use can ignite such fuels if they are spilled or sprayed on these surfaces before they have cooled below the autoignition temperatures of the fuels.

Aircraft fuel tank vents usually are located some distance above ground level. Under normal conditions, fuel vapors from the vents are quickly dissipated and diluted safely. Fuel spilling from the vents of an overfilled tank is a much more serious hazard. Spills resulting from leaks or equipment failure also are a hazard.

Fire prevention measures in aircraft fuel servicing are directed principally toward the following:

- (1) Prevention of fuel spillage
- (2) Elimination or control of potential ignition sources

A.3.2.1 Approved.

The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the

authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A.3.2.2 Authority Having Jurisdiction (AHJ).

The phrase “authority having jurisdiction,” or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

A.3.2.4 Listed.

The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.

A.3.3.8 Aviation Fuel.

See Annex B.

A.3.3.11 Cargo Tank.

The term *cargo tank* does not apply to any container used solely for the purpose of supplying fuel for the propulsion of the vehicle on which it is mounted.

A.3.3.16 Fuel Servicing Station.

This unit can be installed in a cabinet above or below ground.

A.4.1.4

The section on aircraft refueling hose has been altered extensively by referencing EI 1529. NFPA 407 formerly contained many requirements for hose, but these were intended to address only those features that could be related to a fire or the results of a fire. It was not until 1982 that a comprehensive aircraft refueling hose specification was published by the American Petroleum Institute (API). Prior to that time, NFPA 407 was the only document in existence that addressed this subject. In 2010, the API transferred responsibility for aviation fuel-handling standards to the Energy Institute (EI).

EI 1529 deals with all aspects of hose safety, including the couplings that are acceptable.

NFPA 407 recognizes the need for an extensive document such as EI 1529 and requires hoses that meet that standard. However, it is important to recognize that EI does not perform testing and that it does not regulate those manufacturers who claim to sell hose that meets EI 1529. The hose user and the cognizant authority having jurisdiction could find it prudent to require hose manufacturers to produce copies of test reports or documents that certify that hoses of identical construction and compounds have been tested and have passed all requirements of EI 1529 satisfactorily.

A.4.1.4.3.6

Splicing of a hose with couplings alters the design bend radius of the hose, creating two kinks when the hose is wound on a drum.

A.4.1.5.9

The charge on the fuel can be reduced by the use of a static dissipater additive that increases the electrical conductivity of the fuel and thereby allows the charge to relax or dissipate more quickly, or by the use of a relaxation chamber that increases the residence time of the fuel downstream of the filter to at least 30 seconds, thereby allowing most of the charge to dissipate before the fuel arrives at the receiving tank.

API RP 2003 recommends a 30-second relaxation time for loading tank trucks and refuelers. However, it has not been a common practice to require a similar relaxation time for aircraft refueling, primarily because of the relatively few electrostatic incidents that have occurred during aircraft fueling. (For additional information on this topic, see CRC Report No. 583.)

In filling tank trucks or storage tanks, API RP 2003 recommends that at least 30 seconds of residence time be provided downstream of a filter in order to allow static charges generated in flowing fuel to relax before fuel enters the tank.

The reason it is possible to fuel aircraft safely with low conductivity fuel without providing 30 seconds of relaxation time is due primarily to the difference in the geometry of aircraft tanks as compared with tank truck compartments. Flow into the aircraft normally is subdivided into several tanks simultaneously and also distributed into adjoining compartments of each tank by a multihole inlet. Bachman and Dukek (1972) conducted full-scale research using a simulated large aircraft tank and concluded that none of the tanks or compartments hold sufficient fuel to allow enough charges to accumulate and create large surface voltages. Slower fill rates per compartment also allow more charge to relax.

Additionally, the inlet system of most aircraft tanks directs fuel toward the bottom of the tank to avoid splashing that generates more charge. Finally, while the hoses that connect the fueler to the aircraft provide only a few seconds of residence time for charge relaxation at high rates

of flow, the actual relaxation volume in the system is significantly greater where a coated screen is used as a second stage water barrier. In this case, the vessel's volume after the first stage filter coalescer could represent an additional 15 seconds of residence time for charge relaxation. (The coated screen, unlike other water barriers, does not generate charge.)

A flammable vapor space in the tank due to the presence of JET B or JP-4 fuels still constitutes a potential hazard. Therefore, to minimize the chance for static ignition, FAA regulations require that fueling be conducted at half of the rated flow where civil aircraft have used such fuels.

A.4.1.10.1

Carbon dioxide extinguishers should not be selected due to their limited range and effectiveness in windy conditions.

A.4.1.10.3

Multipurpose dry chemical (ammonium phosphate) fire-extinguishing agent is known to cause corrosion to aircraft components. Although the agent is capable of extinguishing fires on or near aircraft, it is likely that the agent will spread to other, uninvolved aircraft, causing damage from corrosion.

A.4.1.12.2

The beam of radar equipment has been known to cause ignition of flammable vapor–air mixtures from inductive electric heating of solid materials or from electrical arcs or sparks from chance resonant conditions. The ability of an arc to ignite flammable vapor–air mixtures depends on the total energy of the arc and the time lapse involved in the arc's duration, which is related to the dissipation characteristics of the energy involved. The intensity or peak power output of the radar unit, therefore, is a key factor in establishing safe distances between the radar antenna and fueling operations, fuel storage or fuel loading rack areas, fuel tank truck operations, or any operations where flammable liquids and vapors could be present or created.

Most commercially available weather-mapping airborne radar equipment operates at peak power outputs, varying from 25 kW to 90 kW. Normally this equipment should not be operated on the ground. Tests have shown that the beam of this equipment can induce energy capable of firing flash bulbs at considerable distances. If the equipment is operated on the ground for service checking or for any other reason, the beam should not be directed toward any of the hazards described in the previous paragraph that are located within 30 m (100 ft). Higher power radar equipment can require greater distances.

Airport surface detection radar operates under a peak power output of 50 kW. It is fixed rather than airborne equipment.

Airborne surveillance radar of the type currently carried on military aircraft has a high peak power output. Aircraft carrying this type of radar can be readily distinguished by radomes atop or below the fuselage, or both.

Aircraft warning radar installations are the most powerful. Most of these installations are, however, remotely located from the hazards specified in the first paragraph and therefore are not covered herein. Ground radar for approach control or traffic pattern surveillance is considered the most fire hazardous type of radar normally operating at an airport. The latter type of equipment has a peak power output of 5 MW. Where possible, new installations of this type of equipment should be located at least 150 m (500 ft) from any of the hazards described in the first paragraph.

A.4.2.2.1

Records should be kept of personnel training. These records should be made available to the authority having jurisdiction upon request.

A.4.2.2.2

Fuel servicing personnel should be given adequate training with extinguishers so that such equipment is used effectively in an emergency. Such training should be given on fires of the type that could be encountered on the job. To ensure prompt action in the event of a spill or other hazardous condition developing during fueling operations, aircraft servicing personnel also should be trained in the operation of emergency fuel shutoff controls. Each new fuel servicing employee should be given indoctrination training covering these and similar safety essentials that are related to the job. Follow-up and advanced training should be given as soon as the employee is sufficiently acquainted with the work to benefit from such training. Supervisors should be given training in the more technical aspects of fire safety so that they understand the reason for these and similar requirements and have an appreciation for the responsibility of a supervisor and the safety of an operation.

A.4.2.3

The following actions are appropriate in the event of a fuel spill, although each spill should be treated as an individual case due to such variables as the size of the spill, type of flammable or combustible liquid involved, wind and weather conditions, equipment arrangement, aircraft occupancy, emergency equipment, and personnel available:

- (1) The flow of fuel should be stopped, if possible. If the fuel is discovered leaking or spilling from fuel servicing equipment or hoses, the emergency fuel shutoff should be operated at once. If the fuel is discovered leaking or spilling from the aircraft at the filler opening, vent line, or tank seams during fueling operations, fueling should be stopped immediately. Evacuation of the aircraft should be ordered when necessary. The aircraft then should be thoroughly checked for damage or entrance of flammable liquid or vapors into any concealed wing or fuselage area, and corrective action should be taken as necessary before it is returned to normal operational service.
- (2) The airport fire crew should be notified if the spill presents a fire hazard. The only routine exceptions are for small spills. Supervisory personnel should be notified to ensure that operations in progress can be continued safely or halted until the emergency is past and that corrective measures can be taken to prevent recurrence of a similar accident.
- (3) It could be necessary to evacuate the aircraft if the spill poses a serious fire exposure to the aircraft or its occupants. Walking through the liquid area of the fuel spill should not be permitted. Persons who have been sprayed with fuel or had their clothing soaked with fuel should go to a place of refuge, remove their clothing, and wash. Individuals whose clothing has been ignited should be wrapped in blankets, coats, or other items or should be told to or forced to roll on the ground.
- (4) Mobile fueling equipment and all other mobile equipment should be withdrawn from the area or left as is until the spilled fuel is removed or made safe. No fixed rule can be made as fire safety varies with circumstances. Shutting down equipment or moving vehicles can provide a source of ignition if no fire immediately results from the spillage.
- (5) Aircraft, automotive, or spark-producing equipment in the area should not be started before the spilled fuel is removed or made safe. If a vehicle or cart engine is running at the time of the spill, it normally is good practice to drive the vehicle away from the hazard area unless the hazard to personnel is judged too severe. Fuel servicing vehicles or carts in operation at the time of the spill should not be moved until a check is made to verify that any fuel hose that could have been in use or connected between the vehicle and the aircraft is safely stowed.
- (6) If any aircraft engine is operating at the time of the spill, it normally is good practice to move the aircraft away from the hazard area unless air currents set up by operating power plants would aggravate the extent or the nature of the existing vapor hazard.

- (7) If circumstances dictate that operating internal combustion engine equipment within a spill area that has not ignited should be shut down, engine speeds should be reduced to idle prior to cutting ignition in order to prevent backfire.
 - (8) The volatility of the fuel can be a major factor in the initial severity of the hazard created by a spill. Gasoline and other low flash point fuels at normal temperatures and pressures produce vapors that are capable of forming ignitable mixtures with the air near the surface of the liquid, whereas this condition does not normally exist with kerosene fuels (JET A or JET A-1) except where ambient temperatures are 38°C (100°F) or above or where the liquid has been heated to a similar temperature.
 - (9) Spills of gasoline and low flash point turbine fuels (JET B) greater than 3 m (10 ft) in any dimension and covering an area of over 5 m² (50 ft²) or that are of an ongoing nature should be blanketed or covered with foam. The nature of the ground surface and the existing exposure conditions dictate the exact method to be followed. Such fuels should not be washed down sewers or drains. The decision to use a sewer or drain should be made only by the chief of the airport fire brigade or the fire department. If fuels do enter sewers, either intentionally or unintentionally, large volumes of water should be introduced to flush such sewers or drains as quickly as possible to dilute the flammable liquid content of the sewer or drain to the maximum possible extent. Normal operations involving ignition sources (including aircraft and vehicle operations) should be prohibited on surface areas adjacent to open drains or manholes from which flammable vapors could issue due to the introduction of liquids into the sewer system until it can be established that no flammable vapor–air mixture is present in the proximity. (NOTE: NFPA 415 provides further information on aircraft fueling ramp drainage designs to control the flow of fuel that could be spilled on a ramp and to minimize the resulting possible danger.)
 - (10) Spills of kerosene grades of aviation fuels (JET A or JET A-1) greater than 3 m (10 ft) in any dimension and covering an area of over 5 m² (50 ft²) or that are of an ongoing nature and that have not ignited should be blanketed or covered with foam if there is danger of ignition. If there is no danger of ignition, an absorbent compound or an emulsion-type cleaner can be used to clean the area. Kerosene does not evaporate readily at normal temperatures and should be cleaned up. Smaller spills can be cleaned up using an approved, mineral-type, oil absorbent.
 - (11) Aircraft on which fuel has been spilled should be inspected thoroughly to ensure that no fuel or fuel vapors have accumulated in flap well areas or internal wing sections not designed for fuel tankage. Any cargo, baggage, express, mail sacks, or similar items that have been wetted by fuel should be decontaminated before being placed aboard any aircraft.
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A.4.2.5

Hydrocarbon fuels, such as aviation gasoline and JET A, generate electrostatic charge when passing through the pumps, filters, and piping of a fuel transfer system. (The primary electrostatic generator is the filter/separator that increases the level of charge on a fuel by a factor of 100 or more as compared with pipe flow.) Splashing, spraying, or free-falling of the fuel further enhances the charge. When charged fuel arrives at the receiving tank (cargo tank or aircraft fuel tank), one of two possible events will occur:

- (1) The charge will relax harmlessly to ground.
- (2) If the charge or the fuel is sufficiently high, a spark discharge can occur. Whether or not an ignition follows depends on the energy (and duration) of the discharge and the composition of the fuel-air mixture in the vapor space (i.e., whether or not it is in the flammable range).

The amount of charge on a fuel when it arrives at the receiving tank, and hence its tendency to cause a spark discharge, depends on the nature and amount of impurities in the fuel, its electrical conductivity, the nature of the filter media (if present), and the relaxation time of the system [i.e., the residence time of the fuel in the system between the filter (separator) and the receiving tank]. The time needed for this charge to dissipate is dependent upon the conductivity of the fuels; it could be a fraction of a second or several minutes.

No amount of bonding or grounding prevents discharges from occurring inside a fuel tank. Bonding ensures that the fueling equipment and the receiving tank (aircraft or fueler) are at the same potential and provides a path for the charges separated in the fuel transfer system (primarily the filter/separator) to combine with and neutralize the charges in the fuel. Also, in overwing fueling and in top loading of cargo tanks, bonding ensures that the fuel nozzle or the fill pipe is at the same potential as the receiving tank, so that a spark does not occur when the nozzle or fill pipe is inserted into the tank opening. For this reason, the bonding wire has to be connected before the tank is opened.

Grounding during aircraft fueling or fuel servicing vehicle loading is no longer required because of the following:

- (1) Grounding does not prevent sparking at the fuel surface (*see NFPA 77*).
- (2) Grounding is not required by NFPA 77.
- (3) The static wire might not be able to conduct the current in the event of an electrical fault in the ground support equipment connected to the aircraft and could constitute an ignition source if the wire fuses. If ground support equipment is connected to the aircraft or if other operations are being conducted that necessitate electrical earthing, separate connections should be made for this purpose. Static electrical grounding points can have high resistance and, therefore, are unsuitable for grounding. For a more complete discussion of static electricity in fuels, see NFPA 77.

A.4.2.5.3.1

Ordinary plastic funnels or other nonconducting materials can increase static generation. The use of chamois as a filter is extremely hazardous.

A.4.2.7.1

Portable fire extinguishers for ramps where fueling operations are conducted are intended to provide an immediate means of fire protection in an area likely to contain a high concentration of personnel and valuable equipment. The prominent and strategic positioning of portable fire extinguishers is essential for them to be of maximum value in the event of an emergency. Extinguishers should not be located in probable spill areas. For normal single parking configurations, extinguishers specified for protection of fuel servicing operations should be located along the fence, at terminal building egress points, or at emergency remote control stations of airport fixed-fuel systems. To provide accessibility from adjoining gates, particularly where more than one unit is specified, extinguishers can be permitted to be located approximately midway between gate positions. Where this is done, the maximum distance between extinguishers should not be over 60 m (200 ft). Where the specified extinguishers are not located along the fence but are brought into the servicing area prior to the fueling operation, they should be located upwind not over 30 m (100 ft) from the aircraft being serviced. For protection of fuel servicing of aircraft that are double parked or triple parked, extinguishers should be located upwind not over 30 m (100 ft) from the aircraft being serviced.

A.4.2.7.2

During inclement weather, extinguishers not in enclosed compartments can be permitted to be protected by canvas or plastic covers.

A.4.2.9

Failure of an aircraft fueling hose in service is a potential source of fuel spillage and a potential fire hazard. The principal reasons for failure of aircraft fueling hoses include the following:

- (1) Using damaged hoses
 - (2) Using aged hoses
 - (3) Exceeding hose pressure limits
 - (4) Installing hoses improperly
-

A.4.2.9.5.1

Particular attention should be paid to the 305 mm (12 in.) adjacent to the couplings. These areas are prone to premature failure.

A.4.2.10

Establishing precise rules for fueling is impossible when the electrical storms are in the vicinity of the airport. The distance of the storm from the airport, the direction in which it is traveling, and its intensity are all factors to be weighed in making the decision to suspend fueling operations temporarily. Experience and good judgment are the best guides. Sound travels approximately 322 m/sec (1/5 mi/sec). The approximate number of miles to the storm can be determined by counting the seconds between a flash of lightning and the sound of thunder and dividing by 5.

A.4.2.11.1.3

The precautions in 4.2.11.1.3 and 4.2.11.1.4 are intended to minimize the danger of the ignition of any flammable vapors discharged during fueling and of fuel spills by sources of ignition likely to be present in airport terminal buildings.

A.4.2.12.1

Electric hand lamps used in the immediate proximity of the fueling operation should be of the type approved for use in *NFPA 70*, Class I, Division 1, Group D hazardous locations. No supportable basis exists for requiring, in the petroleum industry, the use of approved, listed, or permitted two- or three-cell flashlights to avoid igniting Class I, Group D vapors.

A.4.2.12.1.2

Aircraft ground-power generators should be located as far as practical from aircraft fueling points and tank vents to reduce the danger of igniting flammable vapors that could be discharged during fueling operations at sparking contacts or on hot surfaces of the generators.

A.4.2.12.1.5

For further information on intrinsically safe apparatus, see UL 913, FM Approval 3610, or UL 60079-11.

A.5.1.2.1

Where pressure tanks are used, details on construction, spacing, and location should be in accordance with industry good practice and approved by the authority having jurisdiction. When AVGAS, MOGAS, or JET B turbine fuels are stored in bulk quantities in aboveground tanks, they should be stored in floating roof-type tanks. Covered floating roof tanks minimize the hazardous flammable vapor–air space above the liquid level. The vapor spaces of underground tanks storing fuels should not be interconnected.

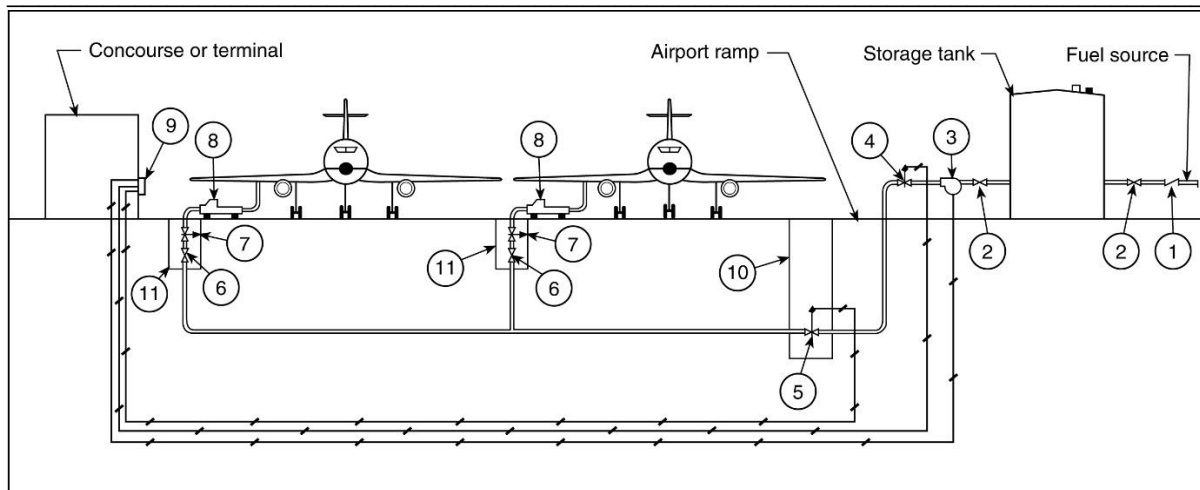
A.5.1.3.10.2

It is expected that some joints may leak under fire exposure; however, the joint itself should not come apart.

A.5.1.3.14

Flanged connections should be provided for ease of dismantling and to avoid cutting and welding after the system has been placed in service. The location of these isolation devices depends upon the size and character of each system, but the following locations generally apply (*see Figure A.5.1.3.14*):

- (1) At each storage tank
- (2) At each pump
- (3) At each filter separator
- (4) At each hydrant or on each hydrant lateral
- (5) At each flow regulator or pressure control valve



Note: No dimensional relationship exists between elements in this figure. Refer to this standard, NFPA 30, *NFPA 70*, and FAA Regulations for separations and clearances.

Key:

- | | |
|--|--------------------------------------|
| 1. Check valve at tank inlet | 6. Hydrant shutoff valve |
| 2. Isolation valve at tank inlet/outlet | 7. Hydrant pit valve |
| 3. Pumping system | 8. Hydrant fueling servicing vehicle |
| 4. Pump discharge control valve or hydrant system shutoff valve (alternate location) | 9. Emergency fuel shutoff station |
| 5. Hydrant system shutoff valve (alternate location) | 10. Valve box |
| | 11. Hydrant pit |

Figure A.5.1.3.14 Typical Fixed Airport Fueling System Isolation Valving Operating and Emergency Controls.

A.5.1.3.17

Cathodic protection is recommended for metal components of airport fueling systems and fuel storage facilities that are in contact with the ground. The two types of cathodic protection are as follows:

- (1) Galvanic anode method, which generates its own current
- (2) Impressed current method, which has an external current source

A.5.1.7.1

Deadman controls should be designed so that the operator can use them comfortably while wearing gloves and hold them for the time needed to complete the operation. A pistol grip deadman device that is squeezed to operate is preferable to a small button that needs to be held by a thumb or finger.

A.5.1.7.2.2

The overshoot of pressure control release, $V_{\max}$, should be calculated by the following equation:

Example

If the actual fuel flow rate at the time of deadman control release is 1500 L/min (400 gpm), total overshoot must not exceed 75 L/min (20 gal/min).

A.5.1.7.3

Hydrant valves and couplers should be in accordance with EI 1584.

A.5.1.7.5

Where surge suppressors are necessary, they should be located so that exposure to vehicular traffic, weather conditions, and the result of accidental rupture is minimized.

A.5.1.9.2

The following times should be considered reasonable fuel shutoff times for certain diameter valves. This information is based on testing double block and bleed valves.

- (1) 10 in. and smaller-diameter valves = 29 seconds
 - (2) 12 in.-diameter valves = 41 seconds
 - (3) 14 in. and larger-diameter valves = 45 seconds
-

A.5.1.9.4

Fuel transfer by pumping is the more common procedure and normally is preferred from a fire protection standpoint, since it allows rapid shutdown of fuel flow through pump shutdown. Gravity transfer is the simplest method but normally is limited to relatively low flow rates. Because the static head does exert some pressure in the system, a safety shutdown should include a valve or valves located as close to the tank as practicable.

A.5.1.9.6

The operation of the emergency shutoff control should sound an alarm at the airport fire crew station and at the fuel storage facility.

A.5.1.10

Fire extinguishers with a rated discharge of at least 0.4536 kg/sec (1 lb/sec) in accordance with the requirements of NFPA 10 should be considered.

A.5.1.10.1

The locations of fire extinguishers at fixed sites can be combined. For example, two loading racks on opposite sides of a fueling island can share one fire extinguisher mounted on the island.

A.5.2.1

The airport perimeter fence can be sufficient to meet this requirement.

A.6.1.3.12.2.3

An optional precaution against misfueling of aircraft fuel servicing tank vehicles is to equip the coupler and truck fitting with coded lugs or a mechanical device to ensure product selection and to prevent mixing of products. This might not be feasible on over-the-road-type tank vehicles.

A.6.1.6.4

Electrical equipment contained in aircraft fuel servicing vehicles or cart engine compartments and located 460 mm (18 in.) or more above ground can be permitted to be of the general-purpose type.

A.6.1.7.1

See A.5.1.7.1.

A.6.1.7.4.2

See A.5.1.7.2.2.

A.6.1.10

Fire extinguishers with a rated discharge of at least 0.4536 kg/sec (1 lb/sec) in accordance with the requirements of NFPA 10 should be considered.

A.6.1.10.8.1

It is not the intent of 6.1.10.8.1 to prohibit 12 V power outlets. The intent is to prohibit glowing elements.

A.6.1.13.1

Wherever possible, flexible engine exhaust pipe should be avoided due to the potential of breaking. Where used, stainless steel is preferable, and the length should be limited to approximately 460 mm (18 in.).

A.6.1.13.7

The requirement for spark-arresting exhaust systems is not intended to extend to diesel engines equipped with turbochargers. The USDA Forest Service, the governmental body that regulates the spark arrester standard, clearly identifies that all diesel engines with a turbocharger and no waste gate (also clearly identified therein) are exempt from the requirements to have an additional spark-arresting device.

A.6.2.1.3

The use of tunnels or enclosed roadways is discouraged. Where there is no alternate route, and the fuel servicing vehicle requires the use of a tunnel or enclosed roadway, the authority having jurisdiction should examine the following considerations:

- (1) Length
 - (2) Clearances
 - (3) Fixed fire suppression or extinguishing systems
 - (4) Frequency of use
 - (5) Ventilation
 - (6) Overlying structures and operations
 - (7) Other traffic
 - (8) Fire department access
 - (9) Emergency egress
-

- (10) Drainage
 - (11) Other conditions
-

A.6.2.10.4

The size of the DPF regeneration area depends on the equipment being used (fleet size). The authority having jurisdiction should designate the size and number of DPF regeneration pads and determine whether a centralized facility is advantageous.

A.8.1.10

Fire extinguishers with a rated discharge of at least 0.4536 kg/sec (1 lb/sec) in accordance with the requirements of NFPA 10 should be considered.

Annex B — Aviation Fuel

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

B.1 General.

The fire hazard properties of aviation fuels are best described by analyzing the factors described in Sections B.2 and B.3.

B.2 Susceptibility to or Ease of Ignition.

B.2.1 Flash Point.

The flash point of standard grades of aviation gasoline has been established at approximately –46°C (–50°F) at sea level by the Tag closed-cup method. The flash point of JET B turbine fuel is not regulated by specification, but samples have been tested by the closed-cup method and have been found to be as low as –23°C (–10°F) at sea level. JET A– or kerosene-grade turbine fuels have a minimum flash point of 38°C (100°F).

Aviation gasoline and JET B turbine fuels produce large volumes of vapor and are capable of forming ignitable mixtures with air even at very low temperatures. Kerosene grades of turbine fuel (JET A) do not produce ignitable mixtures with air at normal temperatures and pressures, but when a JET A turbine fuel is heated above its flash point (or exists in the form of a mist), the mixture can be ignited. This condition can develop where temperatures are 38°C (100°F) or higher.

B.2.2 Flammability Conditions.

The lower limit represents the minimum concentration while the upper limit defines the maximum amount of fuel vapors in air that allows combustion. The generally accepted flammability range by volume for most gasolines is 1.4 percent to 7.6 percent. The average range for JET B turbine fuels is 1.16 percent to 7.63 percent. The average range for kerosene-grade (JET A) turbine fuels is 0.74 percent to 5.32 percent.

More significant than the strict flammability range is the temperature range in which it is possible for such flammable vapor–air mixtures to form. At sea level in a storage tank, such a temperature range for aviation gasoline is approximately -46°C to -1°C (-50°F to 30°F); for JET B turbine fuels, the range is approximately -23°C to 27°C (-10°F to 80°F); and, for kerosene-grade (JET A) turbine fuels, the range is approximately 38°C to 74°C (100°F to 165°F). It is evident that JET B turbine fuels represent the most serious practical hazard under normal temperature conditions.

Air enters as vented tanks are drained, and, during such periods, the flammable vapor conditions can change drastically. The same change occurs when the aircraft descends in altitude. These facts are important in assessing the degree of hazard that could exist in a tank containing any of these volatile products during or after such air mixing.

Under aircraft crash impact conditions where fuel mists are created following tank failures, all of the fuels are readily ignitable at essentially all ambient temperatures. Under these conditions, fuel in mist form presents a hazard equal to fuel in vapor form with respect to flammability limits.

B.2.3 Vapor Pressure.

The vapor pressure of these fuels is the pressure of the vapor at any given temperature at which the vapor and liquid phases of the substance are in equilibrium in a closed container. Such pressures vary with the temperature, but, most commonly, information on hydrocarbon mixtures is obtained using the Reid method, in which the pressures are measured at 38°C (100°F) (see *ASTM D323*). The Reid vapor pressures of average grades of aviation gasoline have a range of 38 kPa to 48 kPa (5.5 psi to 7.0 psi). For JET B turbine fuels, the Reid vapor pressure range is 14 kPa to 21 kPa (2.0 psi to 3.0 psi). JET A (kerosene-grade) turbine fuels have a Reid vapor pressure range of approximately 0.7 kPa (0.1 psi).

The practical significance of this characteristic of the three grades of fuel is that the standard grades of aviation gasoline do produce flammable vapors in ignitable amounts at normal temperatures and pressures. However, where these vapors are confined, the vapor–air mixture over the liquid surface most often is too rich to be ignited by sparks, since it is above the upper flammability limit. With JET B turbine fuel, due to its relatively low vapor pressure, the vapor–air mixture above the liquid surface under normal temperature and pressure conditions frequently is within the flammability range. This means that ignition of JET B turbine fuel vapors either within or exterior to a tank can cause violent combustion within the confined space if

flame enters. The JET A (kerosene-grade) turbine fuels do not produce flammable vapors in ignitable amounts unless the fuel temperature is above 38°C (100°F).

B.2.4 Autoignition Temperature.

The autoignition temperature is the minimum temperature of a substance that will initiate or cause self-sustained combustion independently of any sparks or other means of ignition.

Under one set of test conditions, standard grades of aviation gasoline have ignition temperatures of approximately 449°C (840°F). Turbine fuels have ignition temperatures among the lowest found for hydrocarbons and are considerably lower than those for aviation gasoline. For example, the autoignition temperature of a JET B turbine fuel was measured using the same test procedure at approximately 249°C (480°F). A JET A (kerosene-grade) turbine fuel tested under the same method was found to have an autoignition temperature of approximately 246°C (475°F). Temperatures in this range can exist for a considerable period in turbine engines after shutdown or on brake surfaces following hard use.

It should be noted that these temperatures are derived from reproducible laboratory test procedures, whereas, in actual field conditions, these ignition temperatures could be higher.

B.2.5 Distillation Range.

The initial and the end boiling points of standard grades of aviation gasoline are approximately 43°C and 163°C (110°F and 325°F), respectively. The initial boiling point of JET B turbine fuels is approximately 57°C (135°F), and the end point is approximately 252°C (485°F). The only marked difference in the distillation ranges of the three fuels under consideration occurs in the JET A or kerosene-grades of turbine fuels that have initial boiling points of approximately 163°C (325°F) and end points of approximately 300°C (572°F). Note that initial and end boiling points should be determined by ASTM D86.

The boiling range, along with the flash points and vapor pressures of the fuels, indicates the relative volatility of the fuels; the initial and end boiling points indicate the overall volatility of a fuel through its entire distillation range; the flash point and vapor pressures measure the initial tendency of the fuel to vaporize.

B.3 Fire Severity After Ignition.

B.3.1 Heat of Combustion.

The net heat of combustion of gasoline normally is quoted as approximately 44.19 kJ/kg (19,000 Btu/lb). For JET B turbine fuels, the average is approximately 43.50 kJ/kg (18,700 Btu/lb), while for JET A (kerosene-grade) turbine fuels it is approximately 43.26 kJ/kg (18,600 Btu/lb).

These figures for heat of combustion clearly indicate that there is little difference in the heats of combustion for these various hydrocarbons that are of significance with regard to fire safety.

B.3.2 Rate of Flame Spread.

Where fuel is spilled, there is a marked difference in the rates of flame spread over pools of JET A– or kerosene-grade turbine fuels as compared with the other two types. Under these conditions, a direct relationship exists between the rate of flame spread and the vapor pressures of the materials. A report, entitled *An Evaluation of the Relative Fire Hazards of JET A and JET B for Commercial Flight* (N74-10709) [Hacker and Hibbard, 1973], states that the rate (of flame spread) for JP-4 (JET B) is about 30 times greater than for aviation kerosene (JET A) at the temperatures most often encountered. This is an important factor in evaluating the severity of the fire hazard encountered under these conditions and also is a factor that affects the ease of fire control under similar conditions.

This slower rate of flame propagation for JET A– or kerosene-grade turbine fuels does not occur, however, where the fuel is released as a fuel mist, as frequently results in aircraft impact accidents or where the fuels are heated to or above their flash point. If a flammable or combustible liquid exists in mist form or is at a temperature above its flash point, the speed of flame spread in the mist or vapor is essentially the same, regardless of the liquid spilled.

B.4 Fire Control Factors.

B.4.1 Relative Density.

The relative density of a material is commonly expressed as related to water at 16°C (60°F). All these fuels are lighter than water; the relative density of aviation gasolines is normally quoted at about 0.70, JET B turbine fuels at about 0.78, and the JET A (kerosene-grade) fuels at about 0.81.

This means that, with respect to fire control, all of the fuels float on water. This can be a handicap during fire-fighting operations under certain conditions where sizable quantities of spilled fuel are involved.

B.4.2 Solubility in Water.

All three of the fuels are essentially nonsoluble in water. Fires involving all three fuels can be handled with regular foam concentrates (as opposed to alcohol types).

The amount of water that is entrained in the fuel due to water contamination is not particularly significant from a fire hazard viewpoint, except for the fact that the amount of water increases the static generation hazard of the fuel.

B.4.3 Standard Grades of Aviation Fuels.

Standard grades of aviation fuels include the following:

- (1) Aviation gasoline (AVGAS) includes all gasoline grades of fuel for reciprocating engine–powered aircraft of any octane rating. It has the general fire hazard characteristics of ordinary automotive gasoline (MOGAS).

- (2) JET A and JET A-1 are kerosene grades of fuel for turbine engine–powered aircraft, whatever the trade name or designation. JET A has a –40°C (–40°F) freezing point (maximum); JET A-1 incorporates special low-temperature characteristics for certain operations having a –47°C (–53°F) freezing point (maximum). JP-8 (identical to JET A except for the additive package) and JP-5 (slightly less volatile than either JET A or JET A-1) are used by certain U.S. military forces. JET A and JP-8 are known in the United Kingdom and in many former U.K. areas of influence as AVTUR, whereas JP-5 is similar to the U.K.-designated AVCAT.
- (3) JET B is a blend of gasoline and kerosene grades of fuel for turbine engine–powered aircraft, whatever the trade name or designation. JET B is a relatively wide boiling range volatile distillate having a –51°C (–60°F) freezing point (maximum). JP-4 is one grade of JET B fuel used by U.S. military forces; JP-4 has identical specifications to JET B as they relate to fire hazards. This fuel is known in the United Kingdom as AVTAG.

Annex C – Clarification of Retroactivity

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

C.1 Changes to Design and Construction Requirements.

In the 2017 edition of this standard, a retroactivity section was added in Chapter 1. The Technical Committee on Aircraft Fuel Servicing recognized that, while many changes were needed in this standard, requiring existing facilities and equipment to comply with the new requirements would not be feasible for a variety of reasons, both technical and economic. The addition of the retroactivity section allowed necessary updates to be made to the standard, while permitting existing equipment to continue to operate safely.

One impact for the enforcer community has been in determining when certain requirements became effective and what constitutes “new” versus “existing” equipment. Table C.1 lists changes — effective June 2, 2016 — to Design and Construction Sections 4.1, 5.1, 6.1, 7.1, and 8.1. Equipment and installations permitted or built prior to the effective date of the listed change would not be required to meet the new criteria.

All requirements in all editions prior to and including the 2012 edition apply to all existing equipment, facilities, and installations.

Table C.1 Summary of 2017 Edition Changes to Design and Construction Requirements
(effective June 2, 2016)

Section	Requirement Change
1.3	Retroactivity section
4.1.8.1	Filter vessels used in aviation fuel service shall have a functional automatic air vent (AAV) or automatic air eliminator (AAE).
4.1.8.2	The AAV or AAE shall discharge to a closed system.
4.1.10.1	During fueling operations, fire extinguishers shall be available on aircraft servicing ramps or aprons, in accordance with NFPA 410.
4.1.10.3	ABC multipurpose dry chemical fire extinguishers (ammonium phosphate) shall not be placed on aircraft fueling vehicles, airport fuel servicing ramps or aprons, or at airport fuel facilities that are located within 150 m (500 ft) of aircraft operating areas.
5.1.1.6.3.2	For additions or modifications to existing airport fuel piping systems, hydrostatic testing of new piping prior to final tie-in to existing piping shall be permitted, with final closure (tie-in) welds examined in-process in accordance with ASME B31.3.
5.1.3.4	Piping, valves, and fittings shall be of steel or stainless steel, suitable for aviation fuel service and designed for the working pressure and mechanically and thermally produced structural stresses to which they could be subjected and shall comply with ASME B31.3.
5.1.3.10.1	Flanges shall be rated to the ANSI pressure class suitable to the fuel system working pressures but in no cases shall be less than Class 150.
5.1.3.10.2	Joints shall be installed so that the mechanical strength of the joint will not be impaired if exposed to fire. [30:27.5.1.2]

Section	Requirement Change
5.1.9.9	Emergency fuel shutoffs shall not be located beneath piping, pumps, vents, or other components containing fuel or fuel vapors.
5.1.10 Fire Protection	At least one fire extinguisher with a minimum rating of 40-B:C and a minimum capacity of 9.0 kg (20 lb) of dry chemical agent shall be provided at each fueling vehicle loading position or rack.
5.1.11.1	Emergency fuel shutoff signs shall be located at least 2.1 m (7 ft) above grade, measured to the bottom of the placard.
5.1.11.2	Emergency fuel shutoff signs shall be positioned so that they can be seen readily from a distance of at least 15.2 m (50 ft).
5.1.11.5	Fuel transfer piping shall be marked in accordance with EI 1542 as to the product type conveyed through the pipe and the proper direction of flow of the product.
5.1.12.3	The automatic secondary shutoff control shall not be used for normal filling control.
6.1.3.6	Product piping shall be metal and rated for the system working pressure or at least 1030 kPa (150 psi), whichever is greater.
6.1.3.12.2.7	The cargo tank vehicle shall be equipped with an automatic primary shutdown system that stops the tank loading operation when the tank is full, unless an automatic shutdown is provided on the loading rack in accordance with 5.1.12.
6.1.6.2.4	The vehicle shall be equipped with a battery disconnect switch.
6.1.10.1	Each aircraft fuel servicing tank vehicle shall have two listed fire extinguishers, each having a rating of at least 40-B:C and a minimum capacity of 9.0 kg (20 lb) of dry chemical agent, with one extinguisher mounted on each side of the vehicle.
6.1.10.2	One listed fire extinguisher having a rating of at least 40-B:C and a minimum capacity of 9.0 kg (20 lb) of dry chemical agent shall be installed on each hydrant fuel servicing vehicle or cart.
6.1.11.3.6	Hazardous material placards meeting the requirements of 49 CFR 172.504 or equivalent shall be displayed on all four sides of fuel servicing tank vehicles.

Section	Requirement Change
6.1.12.7.2	A light to indicate activation of the override shall be located in the cabin and visible outside.
6.1.12.7.3	The override control shall be secured in the normal position with a breakaway seal.
6.1.12.7.4	The override control shall deactivate the fueling system.
6.1.13.6	Carbureted gasoline-powered engines on fuel servicing vehicles shall be provided with flame- and spark-arresting exhaust systems.
6.1.13.7	Non-turbo-charged diesel engines on fuel servicing vehicles shall be equipped with flame- and spark-arresting exhaust systems.
7.1.1.1.4	In addition to the special requirements of this chapter, the fuel storage, piping, and dispensing system shall comply with the requirements of NFPA 30 and with applicable portions of this standard.
7.1.9.2	An additional emergency fuel shutoff station shall be located at ground level and shall be located at least 3 m (10 ft) from the pump but no further than 6 m (20 ft).
8.1.9.2	The emergency fuel shutoff controls shall be installed in a location acceptable to the authority having jurisdiction and shall be more than 6 m (20 ft) but less than 30 m (100 ft) from the dispensers.
8.1.10.2	At least one fire extinguisher with a rating of at least 40-B:C and a minimum capacity of 9.0 kg (20 lb) of dry chemical agent shall be provided at each emergency fuel shutoff control.

Annex D — Informational References

D.1 Referenced Publications.

The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in Chapter 2 for other reasons.

D.1.1 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 30, *Flammable and Combustible Liquids Code*, 2021 edition.

NFPA 70®, *National Electrical Code*®, 2020 edition.

NFPA 77, *Recommended Practice on Static Electricity*, 2019 edition.

NFPA 410, *Standard on Aircraft Maintenance*, 2020 edition.

NFPA 415, *Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways*, 2022 edition.

D.1.2 Other Publications.

D.1.2.1 A4A Publications.

Airlines for America, 1275 Pennsylvania Avenue, NW, Suite 1300, Washington, DC 20004.

Spec 103: *Standard for Jet Fuel Quality Control at Airports*, 2019.

D.1.2.2 API Publications.

American Petroleum Institute, 200 Massachusetts Avenue NW, Suite 1100, Washington, DC 20001.

API RP 1595, *Design, Construction, Operation, Maintenance, and Inspection of Aviation Pre-Airfield Storage Terminals*, 2012.

API RP 2003, *Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents*, 2015.

API STD 607, *Fire Test for Quarter-Turn Valves and Valves Equipped With Nonmetallic Seats*, 2016.

D.1.2.3 ASME Publications.

American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990.

ASME B31.3, *Process Piping*, 2014.

D.1.2.4 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D86, *Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure*, 2020a.

ASTM D323, *Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)*, 2020.

ASTM MNL5, *Aviation Fuel Quality Control Procedures*: 5th ed., 2017.

D.1.2.5 CRC Publications.

Coordinating Research Council Inc., 5755 North Point Parkway, Suite 265, Alpharetta, GA 30022.

CRC Report No. 583, *Aircraft and Refueler Bonding and Grounding Study*, 1993.

D.1.2.6 EI Publications.

Energy Institute, 61 New Cavendish Street, London, W1G 7AR, United Kingdom.

EI 1529, *Aviation Fueling Hose and Hose Assemblies*, 7th edition, 2014.

EI 1540, *Design, Construction, Commissioning, Maintenance and Testing of Aviation Fueling Facilities*, 5th edition, 2014.

EI 1542, *Identification Markings for Dedicated Aviation Fuel Manufacturing and Distribution Facilities, Airport Storage and Mobile Fuelling Equipment*, 9th edition, 2012.

EI 1550, *Handbook on Equipment Used for the Maintenance and Delivery of Clean Aviation Fuel*, 3rd edition, 2019.

EI 1581, *Specification and Laboratory Qualification Procedures for Aviation Fuel Filter/Water Separators*, 6th edition, 2016.

EI 1583, *Laboratory Tests and Minimum Performance Levels for Aviation Fuel Filter Monitors*, 7th edition, 2019.

EI 1584, *Four-Inch Hydrant System Components and Arrangements*, 4th edition, 2017.

EI 1590, *Specifications and Qualification Procedures for Aviation Fuel Microfilters*, 3rd edition, 2014.

EI 1596, *Design and Construction of Aviation Fuel Filter Vessels*, 3rd edition, 2019.

D.1.2.7 FAA Publications.

Federal Aviation Administration, US Department of Transportation, 800 Independence Avenue, SW, Washington, DC 20591.

FAA AC-150/5230-4B, *Aircraft Fuel Storage, Handling, Training, and Dispensing on Airports*, 2012.

D.1.2.8 FM Publications.

FM Approvals LLC, 1151 Boston-Providence Turnpike, P.O. Box 9102, Norwood, MA 02062.

FM Approval 3610, *Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III Division 1, Hazardous (Classified) Locations*, 2018.

D.1.2.9 JIG Publications.

Joint Inspection Group, P.O. Box 33094, 6A Foscoate Mews, London, W9 2YX, United Kingdom.

JIG 4, Issue 3, *Aviation Fuel Quality Control & Operating Standards for Smaller Airports*, 2016.

D.1.2.10 NATA Publications.

National Air Transportation Association, 818 Connecticut Avenue, NW, Suite 900, Washington, DC 20006.

Refueling and Quality Control Procedures for Airport Service and Support Operations, 2011.

D.1.2.11 NIST Publications.

National Institute of Standards and Technology, 100 Bureau Drive, Stop 1070, Gaithersburg, MD 20899-1070.

NIST Handbook 44, *Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2020.

D.1.2.12 NTIS Publications.

National Technical Information Service, 5301 Shawnee Road, Alexandria, VA 22312.

Hacker, P. T., and R. R. Hibbard, *An Evaluation of the Relative Fire Hazards of JET A and JET B for Commercial Flight* (N7410709), 1973.

D.1.2.13 PEI Publications.

Petroleum Equipment Institute, 6514 E 69th St, Tulsa, OK 74133.

PEI RP 100, *Recommended Practices for Installation of Underground Liquid Storage Systems*, 2020.

PEI RP 200, *Recommended Practices for Installation of Aboveground Storage Systems for Motor Vehicle Fueling*, 2019.

PEI RP 800, *Recommended Practices for the Installation of Bulk Storage Plants*, 2013.

PEI RP 1300, *Recommended Practices for the Design, Installation, Service, Repair and Maintenance of Aviation Fueling Systems*, 2020.

D.1.2.14 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 913, *Standard for Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III Division 1, Hazardous (Classified) Locations*, 2013, revised 2019.

UL 60079-11, *Explosive Atmospheres — Part 11: Equipment Protection by Intrinsic Safety 'i'*, 2013, revised 2018.

D.1.2.15 US Government Publications.

US Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

OSHA, Title 29, Code of Federal Regulations.

EPA, Title 40, Code of Federal Regulations, Part 112, “Oil Pollution Prevention.”

EPA, Title 40, Code of Federal Regulations, Part 280, “Underground Tanks.”

Title 49, Code of Federal Regulations, Part 172.504, “General Placarding Requirements.”

D.1.2.16 Other Publications.

Bachman, K. C., and W. G. Dukek, *Static Electricity in Fueling Superjets*, 1972. Esso Research & Eng. Co. Brochure, Linden, NJ.

D.2 Informational References.

The following documents or portions thereof are listed here as informational resources only. They are not a part of the requirements of this document.

D.2.1 API Publications.

American Petroleum Institute, 1220 L Street, NW, Washington, DC 20005-4070.

API STD 2000, *Venting Atmospheric and Low-Pressure Storage Tanks*, revised 2020.

D.2.2 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D910, *Standard Specification for Aviation Gasolines*, 2020a.

ASTM D1655, *Standard Specification for Aviation Turbine Fuels*, 2020c.

D.2.3 FAA Publications.

Federal Aviation Administration, US Department of Transportation, Distribution Unit, M-494.3, Washington, DC 20590.

FAA AC-150/5300-13A, *Airport Design*, 2014.

D.3 References for Extracts in Informational Sections.

NFPA 30, *Flammable and Combustible Liquids Code*, 2021 edition.

D. Compliance

All fueling agents are required by the airport to comply with NFPA 407 and NFPA 30 fire code standards, and surveillance of all fueling activities on the airport is conducted by the Airport Authority.

E. Inspections of Fueling Facilities

Airport Fire Department personnel conduct inspections of the fueling agent fuel facilities and aircraft fuel servicing vehicle for compliance to the above Airport Fire Safety Fuel Handling Standards every three months. These inspections are conducted in January, April, July, and October each year. Follow-up inspections will be conducted when unsatisfactory items are found. A copy of the checklists used by Airport Safety personnel when conducting the inspections and follow-up inspections are included at the end of this section. Inspection records are primarily stored electronically and maintained on paper as backup by ARFF. Inspection records are stored electronically by Airport Operations for at least twelve consecutive calendar months.

All fueling agents engaged in handling and dispensing aviation fuel are required to take immediate corrective action whenever notified of noncompliance with any of the Airport Safety Fuel Handling Standards. Discrepancies that do not require the immediate removal of equipment from service must be corrected within ten (10) days. Equipment not brought into compliance within this timeframe shall be removed from service until the corrective action is completed. If corrective action cannot be accomplished within a reasonable period of time, the Assistant Director of Airside Operations will notify the assigned Airport Certification Safety Inspector.

F. Standards Concerning Diesel Particulate Filters (DPF)

When any fueling trucks are equipped with diesel particulate filters, the airport will provide a DPF regeneration area as required by NFPA 407, 2022 version.

G. Training

1. A supervisor with the fuelers, as listed above, will complete an aviation fuel training course in fire safety. The supervisor will receive recurrent training at least once every twenty-four months. If a new supervisor is hired, he/she will be enrolled in an authorized aviation fuel training course that will be completed within 90 days.
2. All other employees who fuel aircraft, accept fuel shipment, or handle fuel, receive at least initial on-the-job training in fire safety and recurrent training every twenty-four months from the supervisor mentioned in the previous paragraph.
3. All fueling agents, engaged in handling and dispensing fuel at the airport, will provide written confirmation to the airport operator/certificate holder every 12

consecutive calendar months that the training required by 14 CFR § 139.321(e) has been accomplished. These records shall include: Fuel Safety Supervisor, Line Fuel Service, and Fire Extinguisher Training. Airport Operations shall maintain the training confirmation records for 24 consecutive calendar months.

H. Fuel Spill Reporting and Response

For the purpose of this section, fuel is defined as any petroleum based product in liquid form used to power aircraft, ground service vehicles, and/or stationary power plants.

1. Notification

Immediate notification by the fueling operator or aircraft operator shall be made to Airport Operations & the Airport Fire Department should any fuel spill occur, or fuel leak is detected. Airport Operations will then notify other Airport Authority departments as necessary.

The reporting party shall provide the following info:

- a. If the spill is minimal or requires an emergency response
- b. The location of the spill
- c. The nature of the spilled product (gasoline, diesel fuel, jet fuel, AVGAS, hydraulic, or engine oils)
- d. The quantity if known

To determine the appropriate response by the Airport Fire Department, the reporting party shall use the following guidelines:

Minimum Spill

- Product has a flash point at or above 100F
- Product spill covers less than 50 square feet or less than 10 feet in any direction
- Product has not entered a storm or sanitary drain and is in no immediate danger of doing so
- Product is not in proximity to an ignition source

Emergency Spill

- Product has a flash point below 100F
- Product spill covers over 50 sq. ft. or more than 10 feet in any direction
- Product has entered a storm or sanitary drain
- Product is in proximity to an ignition source
- Product spill is an immediate hazard to the safety of personnel or public

2. Roles and Responsibilities

- a. **Airport Fire Department (AFD):** The AFD has the responsibility for protecting life and property at the St. Louis Lambert International Airport. Any fuel spill must be reported immediately to AFD at 314-426-8133.
- b. **Airport Operations Center:** Airport Operations will aid in the coordination of activities on airport property. Any spill/release event reported to the AFD will be relayed to Airport Operations for the coordination of operational activities and the documentation of spill/release events in the Operations Center Logbook.
- c. **Airport Environmental / Safety Department:** The Airport Environmental Regulatory Compliance & Safety Manager of the Airport Environmental / Safety Department has the responsibility for managing the regulatory compliance of affected media (air, soil, and water) pursuant to spills and release of fuels within the constraints of environmental statutes and permit obligations and for managing file storage of the *Spill/Release Notification and Corrective Action* reports submitted pursuant to spills and releases at the airport.
- d. **Airport Tenant Airlines:** Airport tenant airline management has the responsibility for identifying a point of contact for all spills and releases associated with their operations. The tenant airline has the responsibility for managing spills and releases of potential pollutants from their operations that could potentially enter surface water or infiltrate the subsurface and contaminate ground water. Tenant Airlines have the responsibility to notify the AFD of the spill or release of any hazardous material, hazardous substance, or hazardous waste. Airport tenant airlines have the responsibility for completing and submitting form *Spill/Release Notification and Corrective Action* to the Environmental Regulatory Compliance & Safety Manager within (5) business days of the spill/release event.
- e. **Airport Tenant Fueling Operator:** Airport tenant fueling operational contractor has the responsibility for designating a point of contact for any spill or release of fuel from the fueling operation. The fueling contractor has the responsibility for managing fuel spills and releases from all fueling operations at the airport in accordance with this procedure and the tenant fueling operator's SPCC Plan for the St. Louis Lambert International Airport.

3. Spill/Release Cleanup

- a. All fuel spills and releases must be cleaned up in a safe and efficient manner as soon as possible following a release to protect human health and environmental integrity. Fuel spills and flammable liquid clean-ups must address the cleanup of fuel from pavement surfaces, and if spills enter storm drains, retrievable spills must be removed from Cold Water Creek and Cowmire Creek basin.

Cleanup shall consist of the following:

- Securing an area adjacent to and encompassing the spill/release to protect personnel.
- Identifying (if unknown) the spilled material(s)

- Notification of the AFD and subsequent notification of local, state, and federal agencies with jurisdiction as required pursuant to statutory environmental regulations.
 - Implement removal and cleanup of affected media (pavement surfaces, grass areas, interior spaces, and if affected, storm water sewers and the storm water receiving stream.
 - Disposal of received product/waste and affected media restoration (if applicable).
- b. Spill cleanup and restoration shall be accomplished without unnecessary delay. All tenant operations shall designate a point of contact for spill response emergencies, acting as a liaison with the Airport Fire Department in spill notification and subsequent cleanup.
- c. The company responsible for a spill/release of a reportable quantity of fuel, hazardous material, substance, or waste shall complete and submit the *Spill/Release Notification and Corrective Action* form.

All completed forms must be returned to the Environmental Regulatory Compliance & Safety Manager within 5 business days of a reportable spill/release event. Any changes to operations or logistics as a result of corrective action(s) instituted as a result of spills or releases should be implemented immediately, and those actions should be documented on the aforementioned corrective action document submittal to the Environmental Regulatory Compliance & Safety Manager.

Fueling Equipment Inspection methods

Primary Inspection Method: CityWorks electronic forms

 ST. LOUIS LAMBERT INTERNATIONAL AIRPORT	AIRCRAFT FUEL SERVICING TANKER QUARTERLY INSPECTION
Inspection ID: Inspected By: Type of Fuel: Tanker #:	Inspection Date: Fueling Agent: Resolution: Completed
Observations:	
Vehicle Type: Bat mobile	
Fuel trucks/trailers parked 50 ft from bldgs and 10 ft apart:	Satisfactory
Fuel trucks marked with operator name on both sides:	Satisfactory
No Fuel Leaks:	Satisfactory
Vehicles Exhaust System - Shielded/Leak free/spark arrestor if required:	Satisfactory
No Smoking sign-cab/all 4 sides/No evidence of smoking/No ashtray:	Unsatisfactory
Interior cabin free of trash/debris:	Satisfactory
Flammability/Product signs all 4 sides of fuelers vehicle:	Satisfactory
Hazmat placards all 4 sides of fuel trucks and fuel carts:	Satisfactory
Bonding cables provided and clips/plugs functional:	Satisfactory
Fuel Trucks - Two 80-B:C extinguishers on sides/No ABC DC Ext.:	Satisfactory
Deadman Control for all nozzles/Not bypassed:	Satisfactory
Integral system for nozzles to be stowed before moving fuel vehicles:	Satisfactory
Brake interlock system for bottom loading coupler/Overwing nozzles:	Satisfactory
Emergency fuel shutoffs operable and properly placard/1 each side:	Satisfactory
Acft fueling hose/No blistering, cracking, saturation, separation:	Satisfactory
Dry break couplers and adapters are installed:	Satisfactory
Aviation fueling hose used/No Kinks:	Satisfactory
Explosion proof electrical/Lights lens intact:	Satisfactory
Dome cover seals intact with forward mounted hinge:	Satisfactory
Truck cabinets have grating type flooring or open flooring:	Satisfactory
Vehicle DPF Regeneration Area meets standards, if applicable:	Satisfactory
Proper Fueling Procedures Observed:	Satisfactory
Follow Up Required: No	



AIRCRAFT FUEL SERVICING SYSTEM QUARTERLY INSPECTION

Inspection ID:

Inspection Date:

Inspected By:

Fueling Agent:

Type of Fuel:

Resolution:

System #:

Observations:

Entrances to fueling areas posted with No Smoking signs:	Satisfactory
No evidence of smoking:	Satisfactory
All tanks, machinery, piping is bonded or grounded:	Satisfactory
Areas around tanks are free of weeds, trash, or combustible material:	Satisfactory
Emergency fuel shutoff provided for airport fueling system/Outside spill area:	Satisfactory
Emergency fuel shutoffs provided for each tank vehicle loading station:	Satisfactory
Proper EMERGENCY FUEL SHUTOFF placards/7ft above grade:	Satisfactory
Emergency fuel shutoffs kept clear and tested every 6 months:	Satisfactory
Fuel servicing equipment properly maintained free of leaks:	Satisfactory
Procedures for prevention & control of spills and notification to Fire Dept.:	Satisfactory
Bonding connections available for loading stations:	Satisfactory
Deadman controls available for loading stations/Not bypassing Deadman:	Satisfactory
Dry break couplers and adapters installed:	Satisfactory
Aircraft fuel hose/blistering, cracking, carcass saturation, separation, kinks:	Satisfactory
Fueling hydrants, pits, cabinets located 50 ft from bldg. except loading bridges:	Satisfactory
80-B:C fire extinguishers at fuel storage area at Emerg Fuel Shutoff:	Satisfactory
80-B:C rated extinguisher at each fuel vehicle loading station:	Satisfactory
No A:B:C rated DC extinguishers within 500 ft of aircraft operating areas:	Satisfactory
Wheeled extinguishers on aircraft servicing aprons at gates or 200 ft apart:	Satisfactory
Explosion proof electrical equipment:	Satisfactory
Above ground fuel piping on acft movement area protected by barrier guard:	Satisfactory
Follow Up Required:	No



AIRCRAFT FUEL SERVICING CART QUARTERLY INSPECTION

Inspection ID:

Inspection Date:

Inspected By:

Fueling Agent:

Type of Fuel:

Resolution: Re-inspection Required

Cart #:

Observations:	
Fuel trucks marked with operator name on both sides:	Unsatisfactory
No Fuel Leaks:	Unsatisfactory
Flammability/Product signs all 4 sides of fuelers/hydrant veh/carts:	Satisfactory
Bonding cables provided and clips/plugs functional:	Satisfactory
Hydrant vehicles and carts - One 80-B:C extinguisher:	Satisfactory
Product recovery tank lid seals intact:	Satisfactory
Deadman Control for all nozzles/Not bypassed:	Satisfactory
Emergency fuel shutoffs operable and properly placarded/1 each side:	Unsatisfactory
Acft fueling hose/No blistering, cracking, saturation, separation:	Satisfactory
Dry break couplers and adaptors are installed:	Satisfactory
Aviation fueling hose used/No Kinks:	Satisfactory
Proper Fueling Procedures Observed:	Satisfactory
Follow Up Required: Yes	Re-inspect

Secondary Inspection method: Paper checklists based on NFPA 2022

AIRCRAFT FUEL SERVICING VEHICLES

Inspector: _____ Fueling Agent: _____ Date: _____

S - Satisfactory U - Unsatisfactory R- Remark Below		T - Tanker H - Hydrant	Truck Number Type Fuel			
			S	U	R	
1	Fuel trucks/trailers parked 50' from bldgs and 10' apart					
2	Fuel trucks marked with operator name on both sides					
3	No Fuel Leaks					
4	Vehicle Exhaust System -Shielded/Leak free/spark arrestor if required					
5	No Smoking sign-cab/all 4 sides/No evidence of smoking/No ashtray					
6	Interior cabin free of trash/debris					
7	Flammability/Product signs all 4 sides of fuelers vehicle					
8	Hazmat placards all 4 sides of fuel trucks and fuel carts					
9	Bonding cables provided and clips/plugs functional					
10	Fuel Trucks - Two 80-B:C extinguishers on sides /No ABC DC Ext.					
11	Deadman Control for all nozzles/Not bypassed					
12	Integral system for nozzles to be stowed before moving fuel vehicle					
13	Brake interlock system for bottom loading coupler/Overwing nozzles					
14	Emergency fuel shutoffs operable and properly placard/1 each side					
15	Acft fueling hose/No blistering, cracking, saturation, separation					
16	Dry break couplers and adaptors are installed					
17	Aviation fueling hose used/No Kinks					
18	Explosion proof electrical/Light lens intact					
19	Dome cover seals intact with forward mounted hinge					
20	Truck cabinets have grating type flooring or open flooring					
21	Vehicle DPF Regeneration Area meets standards, if Applicable					
Proper Fueling Procedures Observed						
Remarks:			FOLLOW UP REQUIRED			

Checklist Based on the 2022 NFPA Fire Code for Airport Fueling Operations

AIRPORT FUEL SYSTEMS

QUARTERLY INSPECTION

Inspector: _____ Fueling Agent: _____ Date: _____

S - Satisfactory U - Unsatisfactory R- Remark Below		AVGAS 100LL		
		S	U	R
1	Entrances to fueling areas posted with No Smoking signs			
2	No evidence of smoking			
3	All tanks, machinery, piping is bonded or grounded			
4	Areas around tanks are free of weeds, trash or combustible materials			
5	Emergency fuel shutoff provided for airport fueling system/Outside spill area			
6	Emergency fuel shutoffs provided for each tank vehicle loading station			
7	Proper EMERGENCY FUEL SHUTTOFF placards /7 ft above grade			
8	Emergency fuel shutoffs kept clear and tested every 6 months			
9	Fuel servicing equipment properly maintained free of leaks			
10	Procedures for prevention & control of spills and notification to fire dept			
11	Bonding connections available for loading stations			
12	Deadman controls available for loading stations/Not bypassing Deadman			
13	Dry break couplers and adaptors installed			
14	Aircraft fuel hose/blistering, cracking, carcass saturation, separation, kinks			
15	Fueling hydrants, pits, cabinets located 50' from bldg except loading bridges			
16	80-B:C fire extinguishers at fuel storage area at Emerg Fuel Shutoff			
17	80-B:C rated extinguisher at each fuel vehicle loading station			
18	No A:B:C rated DC extinguishers within 500 ft of aircraft operating areas			
19	Wheeled extinguishers on aircraft servicing aprons at gates or 200 ft apart			
20	Explosion proof electrical equipment			
21	Above ground fuel piping on acft movement area protected by barrier guard			
Remarks:		FOLLOW UP REQUIRED		

Checklist Based on the 2022 NFPA 407 Fire Code for Airport Fueling Operations

AIRPORT FUEL SYSTEMS

QUARTERLY INSPECTION

Inspector: _____ Fueling Agent: _____ Date: _____

S - Satisfactory U - Unsatisfactory R- Remark Below		JET A		
		S	U	R
1	Entrances to fueling areas posted with No Smoking signs			
2	No evidence of smoking			
3	All tanks, machinery, piping is bonded or grounded			
4	Areas around tanks are free of weeds, trash or combustible materials			
5	Emergency fuel shutoff provided for airport fueling system/Outside spill area			
6	Emergency fuel shutoffs provided for each tank vehicle loading station			
7	Proper EMERGENCY FUEL SHUTTOFF placards /7 ft above grade			
8	Emergency fuel shutoffs kept clear and tested every 6 months			
9	Fuel servicing equipment properly maintained free of leaks			
10	Procedures for prevention & control of spills and notification to fire dept			
11	Bonding connections available for loading stations			
12	Deadman controls available for loading stations/Not bypassing Deadman			
13	Dry break couplers and adaptors installed			
14	Aircraft fuel hose/blistering, cracking, carcass saturation, separation, kinks			
15	Fueling hydrants, pits, cabinets located 50' from bldg except loading bridges			
16	80-B:C fire extinguishers at fuel storage area at Emerg Fuel Shutoff			
17	80-B:C rated extinguisher at each fuel vehicle loading station			
18	No A:B:C rated DC extinguishers within 500 ft of aircraft operating areas			
19	Wheeled extinguishers on aircraft servicing aprons at gates or 200 ft apart			
20	Explosion proof electrical equipment			
21	Above ground fuel piping on acft movement area protected by barrier guard			
Remarks:		FOLLOW UP REQUIRED		

Checklist Based on the 2022 NFPA 407 Fire Code for Airport Fueling Operations

AIRPORT FUEL SYSTEMS

QUARTERLY INSPECTION

Inspector: _____ Fueling Agent: _____ Date: _____

S - Satisfactory U - Unsatisfactory R- Remark Below		DIESEL		
		S	U	R
1	Entrances to fueling areas posted with No Smoking signs			
2	No evidence of smoking			
3	All tanks, machinery, piping is bonded or grounded			
4	Areas around tanks are free of weeds, trash or combustible materials			
5	Emergency fuel shutoff provided for airport fueling system/Outside spill area			
6	Emergency fuel shutoffs provided for each tank vehicle loading station			
7	Proper EMERGENCY FUEL SHUTTOFF placards /7 ft above grade			
8	Emergency fuel shutoffs kept clear and tested every 6 months			
9	Fuel servicing equipment properly maintained free of leaks			
10	Procedures for prevention & control of spills and notification to fire dept			
11	Bonding connections available for loading stations			
12	Deadman controls available for loading stations/Not bypassing Deadman			
13	Dry break couplers and adaptors installed			
14	Aircraft fuel hose/blistering, cracking, carcass saturation, separation, kinks			
15	Fueling hydrants, pits, cabinets located 50' from bldg excpt loading bridges			
16	80-B:C fire extinguishers at fuel storage area at Emerg Fuel Shutoff			
17	80-B:C rated extinguisher at each fuel vehicle loading station			
18	No A:B:C rated DC extinguishers within 500 ft of aircraft operating areas			
19	Wheeled extinguishers on aircraft servicing aprons at gates or 200 ft apart			
20	Explosion proof electrical equipment			
21	Above ground fuel piping on acft movement area protected by barrier guard			
Remarks:		FOLLOW UP REQUIRED		

Checklist Based on the 2022 NFPA 407 Fire Code for Airport Fueling Operations

AIRPORT FUEL SYSTEMS

QUARTERLY INSPECTION

Inspector: _____ Fueling Agent: _____ Date: _____

S - Satisfactory U - Unsatisfactory R- Remark Below		GAS		
		S	U	R
1	Entrances to fueling areas posted with No Smoking signs			
2	No evidence of smoking			
3	All tanks, machinery, piping is bonded or grounded			
4	Areas around tanks are free of weeds, trash or combustible materials			
5	Emergency fuel shutoff provided for airport fueling system/Outside spill area			
6	Emergency fuel shutoffs provided for each tank vehicle loading station			
7	Proper EMERGENCY FUEL SHUTOFF placards /7 ft above grade			
8	Emergency fuel shutoffs kept clear and tested every 6 months			
9	Fuel servicing equipment properly maintained free of leaks			
10	Procedures for prevention & control of spills and notification to fire dept			
11	Bonding connections available for loading stations			
12	Deadman controls available for loading stations/Not bypassing Deadman			
13	Dry break couplers and adaptors installed			
14	Aircraft fuel hose/blistering, cracking, carcass saturation, separation, kinks			
15	Fueling hydrants, pits, cabinets located 50' from bldg except loading bridges			
16	80-B:C fire extinguishers at fuel storage area at Emerg Fuel Shutoff			
17	80-B:C rated extinguisher at each fuel vehicle loading station			
18	No A:B:C rated DC extinguishers within 500 ft of aircraft operating areas			
19	Wheeled extinguishers on aircraft servicing aprons at gates or 200 ft apart			
20	Explosion proof electrical equipment			
21	Above ground fuel piping on acft movement area protected by barrier guard			
Remarks:		FOLLOW UP REQUIRED		

Checklist Based on the 2022 NFPA 407 Fire Code for Airport Fueling Operations

AIRCRAFT FUEL SERVICING CART

QUARTERLY INSPECTION

Inspector: _____ Fueling Agent: _____ Date: _____

	S - Satisfactory U - Unsatisfactory R- Remark Below	Cart Number Type Fuel			
			S	U	R
1	Fuel trucks marked with operator name on both sides				
2	No Fuel Leaks				
3	Flammability/Product signs all 4 sides of fuelers/hydrant veh/carts				
4	Bonding cables provided and clips/plugs functional				
5	Hydrant vehicles and carts - One 80-B:C extinguisher				
6	Product recovery tank lid seals intact				
7	Deadman Control for all nozzles/Not bypassed				
8	Emergency fuel shutoffs operable and properly placard/1 each side				
9	Acft fueling hose/No blistering, cracking, saturation, separation				
10	Dry break couplers and adaptors are installed				
11	Aviation fueling hose used/No Kinks				
	Proper Fueling Procedures Observed				
Remarks:			FOLLOW UP REQUIRED		

Checklist Based on the 2022 NFPA Fire Code for Airport Fueling Operations

139.323 TRAFFIC AND WIND INDICATORS

1. Wind Indicators/Socks

The primary wind cone is lighted and located 1,000 feet inward and to the left of Runway 12R approach end. Supplemental windsocks are lighted and are located at points 1,000 feet inward and to the left of the following runway ends:

- Runway 6
- Runway 11
- Runway 12L
- Runway 24
- Runway 29
- Runway 30R
- Runway 30L

Another windsock is located atop the Signature FBO. A final wind indicator/sock is located atop Field Maintenance Building “A.”

St. Louis Lambert International Airport has a continuously manned Air Traffic Control Tower, there is no need for a segmented circle and thus Lambert does not have, nor is one planned to be installed here in the future.

2. Procedures for Inspection and Maintenance

The Primary wind indicators/socks and Supplemental wind indicators/socks will be inspected as a part of the daily field inspection. Discrepancies will be noted on the Airport Self – Inspection Checklists located in Appendix A and work orders will be created. The work orders will be sent directly to the Field Maintenance Supervisor and Electric Shop Supervisor for initiation of repairs or corrective actions.

As a rule, wind indicators/socks at Lambert are changed twice a year or when conditions dictate replacement.

Original Date _____
Revision Date _____

139.325 AIRPORT EMERGENCY PLAN

1. Airport Emergency Plan

The St. Louis Lambert International Airport’s “Airport Emergency Plan” is found under a separate cover. The Plan was developed and coordinated with law enforcement agencies, rescue and firefighting agencies, medical personnel and organizations, the principal tenants at the airport, and all other agencies/persons who have responsibilities under this plan.

2. Training of Airport Personnel

All airport personnel that have duties and responsibilities under the AEP are properly trained and familiar with their assignments.

3. Annual Review of the AEP

A review of the AEP is conducted at least once every twelve consecutive calendar months to ensure that the AEP is current and all parties with whom the plan is coordinated are familiar with their responsibilities. All of the agencies involved in the AEP shall participate in the annual review meeting.

4. Triennial Full – Scale Exercise of the AEP

A full – scale exercise of the AEP is conducted at least once every 36 consecutive calendar months. The full – scale exercise involves, to the extent practicable, all mutual aid participants and a reasonable amount of emergency equipment. The purpose of this exercise is to test the effectiveness of the AEP through a combined response of the Airport and mutual aid agencies to an air carrier accident at the Airport, and to familiarize emergency personnel with their responsibilities in the plan.

5. Consistency with Security Regulations

The AEP contains instructions for the response to bomb incidents, including designation of parking areas for the aircraft involved; and sabotage, hijack incidents, and other unlawful interference with operations that are consistent with the approved airport security program.

139.327 SELF – INSPECTION PROGRAM

1. Airport Inspection Procedures

Field and Electrical Inspections are made daily at scheduled times by personnel of the Operations Center. Maintenance inspections of the above areas are also made by Field Maintenance as a part of their daily work routine.

Inspections are the responsibility of the Operations Center. Daily inspections are generally made at night and are performed by the Operations Center Personnel. Inspections are made by personnel in vehicles driving on runways, taxiways, and other Airport areas in such a way as to observe any and all conditions which may require corrective actions or repairs.

Discrepancies will be noted on the Airport Self-Inspection Checklists located in Appendix A. Corrective actions or repairs will be made in accordance with the specifications of this Airport Certification Manual.

In addition to the daily inspections, special inspections of Airport areas may be made for the following reasons:

- A. During and after construction activities
- B. In response to weather – induced conditions (extreme heat, snow, ice, etc.)
- C. Immediately after any incident or accident, aircraft or non – aircraft related, which has taken place on Airport grounds
- D. When possible, in response to airline requests for FOD/debris inspections
- E. In response to any other condition which may occur on Airport grounds and which may necessitate an inspection by Airport personnel

2. Inspection Reporting System

If Operations Center Personnel determine that a field or electrical item requires rectification, a work order shall be issued for the discrepancy through the digital inspection software program and it will be disseminated automatically to Maintenance Department Heads for initiation of corrective actions or repairs. Additionally, these discrepancies will be noted to the Assistant Director of Operations & Maintenance and the Operations Center. If the Assistant Director of Operations & Maintenance or Operations Center determines a condition exists which may be, or is, hazardous to Aircraft Operations or if any such condition is in violation of FAA Rules and Regulations, such area(s) where the condition exists will be closed or restricted to aircraft operations.

Closures/restrictions will be disseminated by means of the Airport Condition Report issued via the AC dissemination process through the Airport Operations Center.

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Personnel in this department are responsible for issuing, verifying and cancelling all amendments to the Airport Condition Report regardless of the nature or condition the amendment addresses.

Once a discrepancy has been corrected, Maintenance personnel will complete the work order via digital inspection software program and it will automatically send it to the Operations Center for re-inspection. Upon re-inspection of a work order, the Airport Operations Center Personnel shall determine if it satisfies FAA Rules and Regulations and will close out the work order. The Operations Center will notify the Air Traffic Control Tower and/or the affected Airport tenants that the discrepancy or condition has been corrected or repaired. If an amendment to the Airport Condition Report was issued, that amendment will be canceled by the Operations Center personnel. If the Airport Operations Center Personnel determine that the work order does not satisfy FAA Rules and Regulations, it shall be sent back to the respective Maintenance Department Heads for corrective action to be taken and the Airport Condition Report shall be updated accordingly.

In the event of an digital inspection software program network failure, the Operations Center shall revert back to the Airport Self – Inspection Checklists located in Appendix A.

3. Training

The Airport Operations Supervisor is responsible for training the Operations Center personnel to ensure that qualified personnel perform the inspections. In addition to on-the-job training, instruction includes initial and/or recurrent training in the following subjects:

- A. Airport Familiarization and Radio Procedures Class
- B. USDA Wildlife Training
- C. AMO notification procedures
- D. AAAE Airport Safety and Security Specialist School (ASOS), subject to budgetary constraints
- E. Discrepancy reporting procedures
- F. Inspection Procedures and Recordkeeping

4. Recordkeeping

A. Inspection

All Airport Self – Inspection Checklists will be kept on file electronically no less than twelve calendar months. Upon the request by the FAA Administrator, or his designee, Airport Operations Personnel shall furnish all said inspections for the previous twelve

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calendar months. The Airport Self-Inspection will be conducted via digital inspection software program.

B. Training

Training records for each individual include a description and date of training received. Training records are kept for no less than twenty – four consecutive calendar months as specified in FAR Part 139.301.

5. Field and Lighting Inspection Conditions

Conditions which are inspected daily include but are not limited to the following:

A. Pavement Areas

1. Pavement lips exceeding three inches
2. Holes exceeding three inches deep and five inches across
3. Cracks or surface variations which could impair directional control of aircraft
4. Presence of snow, ice, slush, standing water or ponding

B. Safety Areas

1. Potentially hazardous ruts, depressions, humps, erosion, or other surface variations
2. Objects in safety areas, other than those required by function
3. Mounting bases on authorized objects in safety areas in which the frangible point exceeds three inches above grade, including FAA NAVAIDs
4. Ponding of water or plugged drains
5. Removed or missing manhole covers
6. Snowbanks in such a height that all Air Carrier propellers, engine pods, and wingtips shall not clear the snowbanks when the aircraft's landing gear located at any point along the full strength edge of the pavement.

C. Pavement Markings

1. Markings which are not clearly visible and in good condition
2. Glass beads not clearly visible at night
3. Markings which are not in accordance with standards in AC 150/5340 – 1, current editions, Standards for Airport Markings and the Marking and Sign Plan

D. Guidance Signs

1. Signs not in accordance with the Marking and Sign Plan
2. Signs not in accordance with standards in AC 150/5340 – 18, current edition, Standards for Airport Sign Systems

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3. Signs not in accordance with specifications in AC 150/5345 – 44, current edition, Specification for Taxiway and Runway Signs
4. Inoperable lighting
5. Damaged, missing, peeling, flaking or obscured signs
6. Concrete base or frangible point more than three inches above grade

E. Holding Position Markings/Signs

1. Signs not in accordance with standards in AC 150/5340 – 18, current edition, Standards for Airport Sign Systems and AC 150/5345 – 44, current edition, Specification for Taxiway and Runway Signs
2. Marking not in accordance with standards in AC 150/5340 – 1, current editions, Standards for Airport Markings
3. Hold markings not clearly visible
4. Glass beads not clearly visible at night
5. Damaged, missing, peeling, flaking, inoperable or obscured hold signs

F. Lighting

1. Lights not in accordance with standards in AC 150/5340 – 30, current edition, Design and Installation Details for Airport Visual Aids
2. Lighting systems not maintained in accordance with Section 311 of this ACM or Appendix A, of AC 150/5340 – 26, current edition, Maintenance of Airport Visual Aid Facilities
3. Lights obscured, dirty, missing, or out of adjustment
4. Inoperable lighting system
5. More than 15% of lights out on runway edge light system for CAT I, NPI or visual runway
6. More than 5% of lights out on runway edge light system for CAT II or III runway
7. Two or more runway edge lights out in a row (Any missing fixtures at intersections are counted as an inoperable light)
8. More than 5% runway centerline lights out
9. More than 10% TDZ lights out
10. Two or more threshold/runway end lights out on any runway end
11. More than two adjacent taxiway lights out/more than 15% out in a taxiway system
12. More than 10% taxiway centerline lights out in a taxiway system
13. Inadequate shielding of apron, parking, and roadway lighting

G. NAVAIDS

1. Inoperable rotating beacon
2. Inoperable lighting on wind direction indicators
3. Deteriorated, faded, or malfunctioning windsock
4. Objects, vegetation, or snow that may affect NAVAID signals

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H. Obstructions

1. Inoperable obstruction lights
2. New construction nearby which may affect aircraft operations or NAVAIDS

I. Airfield Construction Areas

1. Barricades not in place or too high to provide adequate clearance for aircraft
2. Construction warning lights inoperable
3. Construction warning lights on movement areas are not red
4. Marking of construction vehicle routes inadequate
5. NOTAMs not current
6. Construction equipment parked or operating in unauthorized areas
7. Marking, lighting, or sign systems being installed contrary to FAA standards
8. Potentially confusing marking/lighting/signs around construction areas
9. Construction activity contrary to AC 150/5370 – 2, current edition, Operational Safety on Airports during Construction
10. Construction activity contrary to the Construction Safety Plan

J. Fencing

1. Perimeter fencing down, gates open, or signs missing
2. Apron fencing down, gates open, or signs missing

K. Wildlife Hazards

1. Presence of birds, deer, coyotes, or other wildlife that could affect safe operations of Air Carrier aircraft

139.329 PEDESTRIANS AND GROUND VEHICLES

1. Authorized Ground Vehicles

Only those ground vehicles authorized by the Airport Authority or those operating in support of Aircraft/Airline operations will be allowed in the aircraft movement area and safety areas at St. Louis Lambert International Airport.

Operators of the above vehicles will be required to have both a valid state operator's and a Lambert Airport Identification Badge. Operators of vehicles who do not possess an Airport ID Badge will be escorted at all times by personnel possessing appropriate Airport Identification.

2. Access to Airport Movement Areas and Safety Areas

Access to aircraft movement areas and safety areas is restricted by means of 2 (two) continuously manned, guard controlled electric gates, a remote-controlled overhead electric gate and a series of perimeter fence gates, each of which is chained and padlocked.

Keys to padlocks and controls for remote – controlled gates are distributed to Airport Personnel on an as needed basis. Access through any of the four manned electric gates is only possible by displaying Airport Identification and by driving an approved vehicle.

3. Vehicle Communications

All ground vehicles desiring to enter, cross or drive on any runway, taxiway or other aircraft movement area and/or associated safety area must be equipped with a two-way radio capable of communications with STL ATCT on the operative Ground Control frequency.

All ground vehicles that are not being escorted will establish two-way radio communications with STL ATCT Ground Control and receive clearance prior to entering any runway, taxiway or other aircraft movement area. Vehicles that are cleared will maintain two-way radio communications with, constantly monitor and be subject to control by STL ATCT Ground Control at all times while operating in aircraft movement areas and must request and receive clearance before entering any other movement area. Before proceeding onto an aircraft movement area that has been closed by an amendment to the Airfield Condition Report, vehicles must still request and receive an initial clearance from STL ATCT Ground Control. Vehicles will always advise STL ATCT Ground Control when they are clear of the respective aircraft movement area following each clearance by STL ATCT.

In the event a vehicle loses radio contact with STL ATCT Ground Control while on an active runway, taxiway or other Airport Movement Area, the vehicle will flash its headlights in the direction of the Control Tower in an effort to get the attention of Air Traffic Control personnel. Once so alerted, STL ATCT personnel will signal the vehicle with a light gun from the Control Tower Cab until such times the vehicle is clear of the aircraft movement area.

A ground vehicle not equipped with a two-way radio capable of communications with STL ATCT on operative Ground Control frequencies that desires access to any runway, taxiway or other aircraft movement area and/or associated safety area, must be escorted on and off the runway, taxiway, or other aircraft movement area and/or associated safety area and accompanied at all times by a vehicle so equipped.

4. Lead Vehicle Escorting Procedures

The lead vehicle shall establish communications with the Air Traffic Control Tower, stating their location, intentions and the number of vehicles being escorted. All vehicles being escorted must follow the lead vehicle at all times while under escort. The lead escort vehicle will inform all subsequent vehicle operators of this standard operating procedure. An escorted vehicle may break off from an established group only if they have established communications with the Air Traffic Control Tower on their radio and receive clearance to break off from the group.

5. Ground Vehicle Operations Procedures

The following procedures establish the rules and regulations governing vehicle movements on aircraft movement areas at St. Louis Lambert International Airport under the authority of St. Louis, Missouri County Ordinance #8778, dated August 8, 1978.

A. Rules and Regulations

1. Only persons possessing a valid state operator's license and a valid airport identification badge will be authorized to operate any motorized vehicle, other than aircraft, on aircraft movement areas at Lambert.
2. Riding on baggage carts, trailer hitches, fenders, or on any portion of a vehicle not equipped with proper seats is prohibited.
3. All vehicle lights will be lighted from sundown to sunup or during the time of reduced visibility when said vehicle is being operated.
4. All baggage tugs and motorized ramp vehicles must have at least two working headlights. When headlights cannot be dimmed by a dimmer switch, they must be focused so as to strike the ground not more than 50 feet ahead of the vehicle. All baggage tugs and motorized ramp vehicles must have at least one operating tail light.

5. All non-motorized equipment will have reflectorized material on the rear of said equipment.
6. All vehicles with a type chassis that normally would be licensed to operate on highways will have two headlights, two operating tail lights and stop lights.

B. Traffic Rules and Regulations on Ramp/Aprons

1. No person will operate a motor vehicle of any kind in a reckless manner or in excess of the speed limits prescribed by the Airport Authority (15 miles per hour on the apron or ramp). Motor vehicles will be so operated as to be under proper control at all times.
2. A moving aircraft, an aircraft with engines running, or an aircraft under tow has the right of way over all vehicles.
3. Transit vehicles crossing the ramp and/or apron area around the gate positions will travel on the outer side of the parked aircraft.
4. Vehicles operating on the ramp and/or apron will pass to the right of approaching vehicles at all times. To pass a vehicle traveling in the same direction, the overtaking vehicle will pass on the left side of the vehicle being overtaken.
5. No vehicle will be left unattended with motor running on the ramp or apron without first setting the parking brake, and only when necessary to perform the primary vehicle function.
6. No equipment or vehicle will be parked in the middle of the ramp or apron, or in such a manner as to obstruct or block driveways or doors.
7. No vehicle will have more than four carts, six pod dollies, or four wide body trailers in tow at any one time.
8. Private vehicles will not be permitted on aircraft movement areas unless escorted by Airport Police, airline personnel, or Airport Authority personnel.
9. All vehicles will use traffic lanes where they are marked or as so designated.
10. In the event a vehicle becomes disabled, the operator is to immediately turn on the vehicle emergency flashers and/or rotating beacon(s), and notify their company of the situation and request assistance. A representative of the company is to then notify the Airport Operations Center with type of vehicle, location and an estimate of the time required to remove the vehicle from the area.

C. Enforcement

Enforcement of the ground vehicle operations procedures and traffic rules and regulations as contained in this section will be the same as regards to the consequences of noncompliance by any employee, tenant or contractor as follows;

1. Violators of the above rules and regulations maybe issued a traffic citation requiring appearance in St. Louis County Traffic Court.

2. Movement Area Violations - Upon notification of a violation, such as a runway incursion, the Director of Airports or designated representative will take under advisement the individual and the violations involved and may, at his/her discretion, immediately revoke the airport movement area driving privileges of the concerned individual. A debrief and recurrent Movement Area training by Airport Operations shall be conducted before any person involved in a runway incursion will be authorized to drive on the Movement Area.
3. Non-Movement Area Violations – Violations, such as speeding on the ramp, follow a progressive penalty type of system. 1st violation is a written warning, 2nd violation is mandatory recurrent training with Airport Operations, 3rd violation is a loss of driving privileges for 7 days and mandatory recurrent training with Airport Operations and the 4th violation is loss of driving privileges for one year and mandatory recurrent training with Airport Operations.
4. The uniformed Police Officers or Airport Operations, as designated by the Director of Airports are empowered to require compliance with these rules and regulations. No authority is hereby either expressed or implied, however, that would permit any individual other than the Director of Airports to change, alter, or amend these rules and regulations, in accordance with St. Louis County Ordinance No. 8778 (7-24-78).

6. Training of Employees

A. Movement Area and Safety Area Access

The Airport Operations Center shall train all personnel who access movement areas and safety areas and perform duties in compliance with the requirements of the ACM and Part 139. Training must be completed before the initial performance of such duties and, for all personnel authorized to access the movement areas and safety areas. All personnel shall undergo recurrent training at least once every twelve consecutive calendar months on the AAAE Interactive Employee Training (IET) computers. The Airport has prepared a Movement Area Driver's Training Class Manual that is provided to all personnel authorized to operate on the movement areas and safety areas. The curriculum for initial and recurrent training must include at least the following areas:

1. Review of the Movement Area Driver's Training Class Manual
2. Airport Familiarization, including airport marking, lighting and signs system
3. Procedures for access to, and operations in, movement areas and safety areas, as specified under Part 139.329
4. Airport communications, including radio communication between ATCT and personnel
5. Any additional subject areas as required under Part 139, Sections 319, 321, 325, 327, 337, and 339, as appropriate.
6. Viewing a PowerPoint presentation and a training video

Additional department specific Part 139 training for Airport Authority employees is conducted by the Safety Office.

B. Apron and Ramp Area Access Only

The Airport Operations Center has prepared a Non-Movement Area Driver's Training Class that new employees, who access apron and ramp areas, are required to attend prior to the initial performance of their duties. These employees primarily consist of airline and FBO employees, contractors, and Airport Authority personnel. The curriculum includes at least the following areas:

1. Review of the Non-Movement Area Driver's Training Class Manual
2. Airport Familiarization, including airport marking, lighting, and signs
3. Regulations governing vehicular traffic
4. Foreign Object Debris (FOD)
5. Any additional subject areas required under Part 139, Sections 321, 329, and 339, as appropriate.
6. Viewing a PowerPoint presentation and a training video

On-the-job training for Airport Authority employees is conducted by the employee's supervisor.

C. Tenant Training

The Airport Administrator may, on a case by case basis, allow an individual tenant to train their employees. These employee trainers are required to complete the appropriate Airport Authority class described above and are strongly encouraged to complete recurrent training with the Airport Authority at least once every twelve consecutive calendar months.

Tenants that conduct their own training are responsible for keeping records of all training completed by each individual in compliance with this section.

To ensure proper training and oversight, tenant training records and classes may be audited at any time by the Airport Operations Supervisor.

D. Personnel Training Program

A training curriculum has been prepared for the following topics related to the airport certification program required by FAR Part 139.303(c). The training consists of an outline of the subject matter for each airport certification related topic and a list of training materials available for use. Content of training is primarily based on airport related Advisory Circulars, (Series 150), the ACM and FAR Part 139. The Airport

Operations Supervisor and the Airport Safety Manager are responsible for administering the training program and maintaining records of training.

The following personnel are required to receive initial and annual recurrent training in airport certification related areas as required by Part 139.303(c).

1. Airport Operations Center personnel are trained in accordance with a training curriculum addressing the following topics:
 - a. Airfield Familiarization and Radio Procedures
 - b. Airport Certification Manual (ACM)
 - c. FAA Standards for Airfield Markings, Signs and Lighting, instructed by the Airport Safety Office
 - d. Airport Self-Inspection Program; FAR Part 139 Maintenance Criteria for Maintaining Paved Areas, Safety Areas, Airfield Markings, Signs, Lighting, Obstruction Lighting, ILS Critical Areas, Traffic and Wind Direction Indicators
 - e. Maintenance of Airport Visual Aid Facilities, current edition
 - f. Operational Safety on Airport During Construction, current edition
 - g. Ground Vehicle/Pedestrian Operations on the Movement Area
 - h. Wildlife Hazard Management (trained by USDA Wildlife Biologists)
 - i. Snow and Ice Control Plan
 - j. Airport Condition Reporting (NOTAMS)
 - k. Airport Emergency Plan (responsibilities related to their position)
 - l. Surface Movement Guidance and Control Systems (SMGCS)
2. Airport Airfield Maintenance personnel are trained in accordance with a training curriculum addressing the following topics:
 - a. Airfield Familiarization and Radio Procedures
 - b. FAA Standards for Airfield Markings, Signs and Lighting, instructed by the Airport Safety Office.
 - c. Snow and Ice Control Plan
3. Airport Electric Shop personnel are trained in accordance with a training curriculum addressing the following topics:
 - a. Airfield Familiarization and Radio Procedures
 - b. FAA Standards for Airfield Markings, Signs and Lighting, instructed by the Airport Safety Office.

4. FAA Technical Operations personnel are trained in accordance with a training curriculum addressing the following topics:
 - a. Airfield Familiarization and Radio Procedures
 5. FBO/Airline personnel are trained in accordance by their own safety instructors with a training curriculum addressing the following topics:
 - a. Non-Movement Area Driver's Training Class
 6. Boeing personnel are trained in accordance by their own safety instructors with a training curriculum addressing the following topics:
 - a. Airfield Familiarization and Radio Procedures
 7. Authorized Construction personnel are trained in accordance with a training curriculum addressing the following topics:
 - a. Airfield Familiarization and Radio Procedures
7. Distribution to Airport Tenants, Employees, and Contractors

A copy of ground vehicle operations procedures, traffic rules and regulations and enforcement provisions as contained in this section will be made available to each employee, tenant or contractor with access to any aircraft movement area as follows:

- A. A copy will be provided to all affected Airport tenants via the Airports' website. It will be the responsibility of the Airport Authority to ensure distribution of these procedures, rules and regulations and enforcement provisions to the tenants; however, it will be the responsibility of the tenant to ensure further distribution to their own personnel.
- B. A copy will be made available to all affected employees through their respective Airport Authority Department heads.
- C. A copy will be provided to all affected Airport contractors as part of the Security Access Procedures. It will be the responsibility of the Airport Authority to ensure distribution of these procedures, rules and regulations and enforcement provisions to the contractors; however, it will be the responsibility of the contractor to ensure further distribution to their own personnel.

8. Vehicle Accident Reports

All persons involved in any personal or automotive accident occurring on the premises of St. Louis Lambert International Airport Will make a report to the Airport Police as soon as possible giving all pertinent information as requested by the responding officer. Each operator of a ground vehicle involved in any accident or incident with an aircraft or involved in any accident or incident in a movement or safety area will immediately report the accident or incident both to the Airport Police and the Airport Authority Operations Center, giving all pertinent information as requested by the responding officer and Operations Supervisor in charge.

9. Records

- A. Records of training completed by each individual will include, at a minimum, a description and date of training received. These records are maintained for twenty-four consecutive calendar months after completion of training.
- B. Accident and incident reports in the Movement Areas and Safety Areas will be kept on file in the Airport Operations Center for no less than twelve months.

139.331 OBSTRUCTIONS

1. General

All contractors shall send an FAA Form 7460 – 1, Notice of Proposed Construction or Alteration to the FAA Regional Office when / where applicable.

2. Obstructions

Obstructions as determined by the FAA which are lighted and listed in Section 139.311 of this Airport Certification Manual. Obstruction lighting is inspected daily as part of the Electrical Inspections, see Section 139.327 of this Airport Certification Manual.

Obstructions as determined by the FAA which are outside the Airport perimeter fence are listed in Appendix B.

3. Zoning Ordinance

It will be the responsibility of any contractor, individual or organization who wishes to build upon, alter existing premises or construct new premises upon property at St. Louis Lambert International Airport to be in compliance with all Local, City, County, State and Federal Ordinances, to include FAR Part 77.13, Construction or Alteration Requiring Notice, and must submit a Tenant Construction or Alteration Application to the Airport Properties Division Manager.

139.333 PROTECTION OF NAVAIDS

1. Construction Review

It shall be the responsibility of the Assistant Director of Engineering and the Assistant Director of Operations & Maintenance to review all proposed construction plans and equipment needed for such construction, which may take place on, around or near Airport Grounds. When such plans require it, they will be submitted to the FAA Regional Office along with FAA Form 7460-1, Notice of Proposed Construction or Alteration. This form and plans will be submitted no less than 30 days prior to the starting date of the construction or alteration.

Necessary requirements for submission of FAA Form 7460 – 1 are as follows:

- A. Construction or alteration on Airport Property
- B. Construction, alteration or necessary equipment in Instrument Approach Areas
- C. Construction, alteration or necessary equipment above 200 feet AGL
- D. Penetration of FAR Part 77 Imaginary Surfaces by construction, alteration or necessary equipment.

2. Construction Coordination

Prior to the start-up of any construction, the Assistant Director of Planning & Engineering, the Assistant Director of Operations & Maintenance, affected Airport Tenants, and personnel of the local FAA Air Traffic Control Tower will meet to ensure construction will create the absolute minimum interference to airport and/or aircraft operations and airport NAVAIDS.

Blueprints are available in the Airport Engineering Offices for use by construction personnel to prevent the inadvertent disruption of Airport utilities (Utilities such as underground electrical lines, sewage lines, fuel pipelines, water lines, etc.). Additionally, during construction, personnel of the Airport Authority will periodically inspect construction areas to ensure minimization of airport/aircraft operations interruptions.

3. NAVAID Protection

NAVAIDS located inside the airport perimeter are protected by the airport's perimeter fence and are thus not easily accessible for theft, vandalism or acts of malicious mischief. NAVAIDS located outside the airport perimeter are individually protected by chain link fences.

NAVAIDS inside Airport property are inspected daily by Operations personnel on their scheduled inspections. NAVAIDS outside Airport property are inspected for integrity by members of the Airport Police on their perimeter inspections.

4. Protection of NAVAID Visual and Electronic Signals

Inadvertent interruption of NAVAID visual and electronic signals is to be kept to a minimum by the use of the following:

- A. Use of ILS Hold Signs, where needed, in, around or near ILS Critical Areas
- B. Use of ILS Hold Signs, where needed, on service/access roads passing through or near ILS Critical Areas
- C. Inspections of ILS Critical Areas for excess build-ups of snow, vegetation or other foreign debris
- D. Training of airport vehicle operators in locations, weather conditions and restrictions of ILS Critical Areas

139.335 PUBLIC PROTECTION

1. Fencing

The airport perimeter at St. Louis Lambert International Airport is surrounded entirely by a series of 8-10 foot chain link fencing. Atop the chain link fencing is three strands of barbed wire to prevent individuals from scaling these fences.

Signs indicating the following are posted at 200' intervals along the perimeter fencing:

**RESTRICTED AREA
DO NOT ENTER
TRESPASSERS WILL BE PROSECUTED**

Fencing at Lambert is constructed in such a way as to prevent inadvertent or accidental entries onto Airport Property and is designed to seriously hamper any attempts to breach Airport Perimeters.

In addition to the perimeter fencing, internal chain link fencing has also been erected at certain areas of the Airport. These areas are:

- a. ATS Jet Center
- b. At the Boeing Complex at the northeast corner of the Airport
- c. At the Signature FBO at the northeast corner of the Airport
- d. At the Airline Cargo area at the southeast corner of the Airport
- e. At the Fuel Farm vehicle storage and staging area
- f. Contractor staging and snow dump areas

All perimeter fencing will have gates incorporated for field access. These gates are kept chained, padlocked and are inspected daily by the Airport Police on their perimeter checks.

2. Field Access

Access to the Aircraft Movement Area is restricted to those individuals with an operational need for access. These individuals must attend the Airport Security Identification Display Class and an Airfield Familiarization Class to obtain a valid Airport Identification Badge which must be shown/worn. Access through perimeter fence gates is only authorized when personnel are complying with 49 CFR Part 1542. Access through perimeter fence gates will be controlled by the Airport Authority and the Director of Airports will have the final approval authority for all personnel desiring entrance into the Aircraft Movement Area.

All perimeter fence gates will be chained and locked each time an entry or exit is made through a gate. Perimeter fence gates will not be allowed to stand open unless an individual is stationed at the gate to monitor vehicle and personnel using the gate.

3. Inspection and Maintenance

Perimeter gates and fences are inspected on a daily basis by the Airport Police with at least one inspection per shift (A minimum of 3 perimeter fence and gate inspections daily). Airfield Maintenance and Airport Operations personnel also make periodic inspections of the perimeter fencing and gates. Fences will be checked for integrity and gates will be checked to ensure they are chained and locked.

Should a gate be found unlocked, it will be locked immediately and a report given to the Airport Police so they may follow-up and determine who left the gate unlocked and then take the appropriate disciplinary measures.

Should a section of fencing be found damaged, Airfield Maintenance personnel will be notified so that they can make immediate repairs as needed to reinstate the integrity of that section. If necessary, further required and permanent repairs will be scheduled at the soonest possible time should immediate repairs not be adequate to ensure final integrity of the fence in question.

4. Blast Fencing

At this time, there are four areas at Lambert that have Blast Fences. These areas are:

1. At the southwest corner of the Airline Ramp between the Charlie Pad and the Missouri Air National Guard Ramp
2. At the south side of the “A” Concourse at the connecting point with Terminal 1
3. At the south edge of the American Airlines Maintenance/Cargo Ramp located at the southeast corner of the airport
4. Near the southeast retention basin

139.337 WILDLIFE HAZARD MANAGEMENT

Due to potential wildlife hazards to aircraft operations, a Wildlife Hazard Assessment (WHA) was completed for the St. Louis Lambert International Airport by the USDA-APHIS-Wildlife Services (WS). This comprehensive assessment identifies potential wildlife hazards at St. Louis Lambert International Airport and was developed in compliance with FAA Advisory Circular 150/5200-38. The recommendations are now reflective of the WHA, but continually modified using the Continual Monitoring Annual Report to protect the traveling public from wildlife hazards.

1. Requirements

The St. Louis Lambert International Airport will conduct a review of the plan per FAA requirements when any of the following events occur:

- A. Multiple birdstrikes or engine ingestion experienced by an Air Carrier aircraft
- B. Collision of an Air Carrier aircraft with wildlife, other than birds, resulting in aircraft damage
- C. Observation of wildlife having access to aircraft operation areas or in-flight patterns containing numbers or sizes cable of causing either of the above events

In case any of the above events occur, the Assistant Director of Operations & Maintenance will report to the FAA Regional Office and the U.S. Department of Agriculture, Wildlife Services Office.

2. Contents

The content of the assessment and annual continual monitoring reports conducted include, but are not limited to the following:

- A. Review and analysis of an event
- B. Identification of the species and number of birds or animals involved in the event
- C. Identification of the local movement areas of the involved species
- D. Daily and seasonal occurrences of wildlife
- E. Identification and location of features on and near the airport that may attract wildlife
- F. Description of the wildlife hazard to Air Carrier Operations

3. Responsibilities

- A. Airport Operations Supervisor
 - Responsible for all wildlife management activities at St. Louis Lambert International Airport

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- Provides resources and supplies required to support the provision of the WHMP.
- Responsible for the annual cooperative service agreement between the STLAA and the USDA – APHIS – Wildlife Services

B. Airport Operations

- The on-duty Operations Supervisor or their designee has overall authority to coordinate immediate wildlife issues at St. Louis Lambert International Airport.
- Inspect and monitor the airfield for significant wildlife activity.
- Disperse activity when necessary to protect life and property.
- Respond to wildlife strike notifications made by ATC, pilots, and other personnel. Take appropriate action as needed.
- Advise ATCT of significant wildlife activity that is observed on the airfield that may be a present and imminent danger to aircraft arriving at or departing from St. Louis Lambert International Airport.
- Document wildlife strikes involving known or unknown aircraft and any significant wildlife activity observed on, above, or in the vicinity of St. Louis Lambert International Airport in the Airport Operations logbook.
- Complete Bird/Wildlife strike reports and observation reports as needed.
- Advise USDA Wildlife Service’s personnel at St. Louis Lambert International Airport of changes in wildlife activity.

C. Airfield Maintenance Department

- Provide Airport Operations with assistance as needed.
- Contact Airport Operations when large flocks of birds, dogs, or other wildlife are observed on or above the airport.

D. Airport Police Department

- Provide Airport Operations with assistance as needed.
- Contact the Airport Operations when large flocks of birds, dogs, or other wildlife are observed on or above the airport.

E. Environment / Safety Department

- Provide Airport Operations with assistance as needed.
- Contact Airport Operations when large flocks of birds, dogs, or other wildlife are observed on or above the airport.

F. Air Traffic Control Tower (FAA)

- Advise Airport Operations of significant wildlife activity that is observed on the airfield that may present an imminent danger to aircraft arriving at or departing from St. Louis Lambert International Airport.

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- Complete the STL ATCT Form 7210 – 27 Wildlife Strike Form when applicable.
- ATCT will advise Airport Operations when a Wildlife Strike Form is completed.
- A copy of each completed form will be provided to Airport Operations.
- Place wildlife advisory statements on the ATIS recording as needed.

G. USDA – APHIS – Wildlife Services

- Two full time USDA Wildlife Service employees work at Lambert under a cooperative service agreement with the St. Louis Airport Authority. Wildlife Services will assist Airport Operations with wildlife issues as needed. See the end of this section for their 10-year certificates.

H. Other Airport Authority Departments

- Assist Airport Operations with wildlife issues as needed.

4. Habitat Management Plans

Actions taken on a regular basis by Airport Authority personnel will include but not be limited to the following:

- A. Removal of food sources attractive to birds or wildlife, when possible
- B. Removal of brush, woodlands and undergrowth, when possible
- C. Systematic cutting of all grass areas on airport property before they go to seed
- D. Agricultural areas adjacent to airport properties shall be restricted to the farming generally unattractive to birds or wildlife where the airport has jurisdiction
- E. Fencing and maintenance of all Aircraft Movement Areas to prevent and discourage the entry and passage of animals
- F. Utilization of appropriate government agencies for those areas outside airport control
- G. Removal of pigeons and starlings from the airfield and terminal areas
- H. Removal of waterfowl from the airfield and surrounding properties

5. Federal Wildlife Control Permits

The USDA – APHIS – Wildlife Services coordinates all wildlife management activities with the Department of the Interior – US Fish and Wildlife Service. All necessary permits are maintained. Control of mammals and other wildlife covered by the Missouri Code of State Regulations is coordinated through the Missouri Department of Conservation. If requested, the USDA – APHIS – Wildlife Services will assist the St. Louis Lambert International Airport in obtaining the necessary permits required to carry out the Wildlife Hazard Management Plan.

Original Date _____
Revision Date _____

St. Louis Lambert International Airport currently has all permits that comply with 50 CFR Parts 13 and 21.41: see copies at the end of this section.

6. Supplies and Resources

Supplies maintained by Airport Operations:

- 2, 7 – Shot pyrotechnic launchers that shoot both bird bangers and screamers
- 3, 10 – Shot pyrotechnic launchers that shoot both bird bangers and screamers
- Bird Identification Resources
- Strike collection kits

If necessary, assistance from one or more of the following agencies will be solicited:

- A. U.S. Department of Agriculture
- B. Missouri Department of Conservation
- C. St. Louis County Department of Community Health/Rabies Control
- D. Cities of Berkeley, Bridgeton, and Hazelwood Animal Control
- E. World Bird Sanctuaries
- F. Humane Society of Missouri
- G. Animal Protective Association of Missouri

7. Procedures to be Followed during Air Carrier Operations

- A. It shall be the responsibility of the carrier involved to maintain control at all times over animals being shipped. The carriers will be responsible for all shipped animals in their leasehold areas and will be responsible for the capture and retrieval of any animals which may escape and enter the Airline Ramp Area.

In the event an animal, wild or domestic, enters onto a runway or taxiways, Airfield Maintenance, Airport Operations and/or Airport Police personnel will attempt to either capture the animal or force it from Airport Property.

If necessary, Airport Operations or Airfield Maintenance personnel will also collect and dispose of any bird or animal carcasses that may be found on Airport Property.

- B. Airport Operations will inspect the airport for wildlife activity as needed. Priority will be given to those wildlife hazards which may pose an immediate danger to Air Carrier Operations.

Original Date _____
Revision Date _____

- C. Wildlife management activities will be conducted at the airport as needed. Each situation will be evaluated and handled in an appropriate manner. The use of pyrotechnics will resolve most situations; however, lethal control is sometimes necessary. When pyrotechnics, a pellet gun, and/or the use of a shotgun are used on the airfield, Airport Operations will notify Airport Police, and wildlife activities must be coordinated with ATCT. Airport Operations personnel should remain in radio contact with ATCT to ensure that the dispersal activities do not create a hazard for Aircraft Operations.

8. Periodic Review

The Wildlife Hazard Management Plan will be reviewed annually to determine its effectiveness in dealing with wildlife issues. Topics to be reviewed will include but not be limited to the previous year's recorded wildlife observations and strikes, future airport planning, and wildlife management procedures. The review of the plan should include representatives from the St. Louis Lambert International Airport, the USDA – APHIS – Wildlife Services, ATCT, and interested airport tenants.

9. Training

The USDA – APHIS – Wildlife Services has made an initial and recurrent training course available every twelve months. St. Louis Lambert International Airport personnel involved in wildlife hazard management activities. The course includes wildlife hazard recognition, laws and regulations, wildlife identification, wildlife deterrent techniques, and pyrotechnic safety and use. Airport personnel review the current edition of the Wildlife Hazard Management Plan annually as part of the required training.

10. Permits

Current depredation permits are available for review in the Airport Operations Center.

1/11/24, 2:07 PM

Federal Permit PER7036495



EAGLE DEPREDAATION

Permit Number: MB205601

Version Number: 1

Effective: 2024-04-01 **Expires:**
2029-03-31

Issuing Office:

Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
MB Bloomington Permit Office
5600 American Blvd West, Suite 990
Bloomington, Minnesota 55437-1458
permitsR3MB@fws.gov
Tel: 612-713-5436

**Richard
Rottman**

Digitally signed by

Richard Rottman
2024-01-11 09:12:50

Legal Instruments
Examiner

Permittee:

CITY OF ST LOUIS AIRPORT
AUTHORITY
C/O ALEC SONNEK
4780 ST ANDREW LANE
BRIDGETON, MO 63044
US

Name and Title of Principal Officer:

ALEC SONNEK Wildlife Biologist

Authority: Statutes and Regulations: 16 U.S.C. 668 (a) 50 CFR Part 13, 50 CFR 22.100

Location where authorized activity may be conducted:

Lambert - St. Louis International Airport, St. Louis, MO to include all properties leased, owned and/or managed by the City of St. Louis Airport Authority or where a right - of - entry agreement exists

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Federal Permit PER7036495



EAGLE DEPREDAATION

Permit Number: MB205601

Version Number: 1

Effective: 2024-04-01 **Expires:**
2029-03-31

Reporting requirements:

ANNUAL REPORT DUE: 1/31 You must submit an annual report to your Regional Migratory Bird Permit Office each year, even if you had no activity. Form can be found at: <https://fwsepermits.servicenowservices.com/fwse> Under "Explore Permits" select your permit type. Annual Report Form is under Permit Details.

Authorizations and Conditions:

A. You are authorized to use non-lethal scare devices, scare tactics or frightening devices to move or disperse Bald Eagles endangering human safety due to a high risk of a serious bird strike to landing and departing aircraft. You are authorized to use airhorns, pyrotechnics, and drive vehicles with horns as necessary to scare eagles. Pyrotechnics must not be shot directly at the eagles.

B. You must make a continuous effort to eliminate attractants and other physical properties that may draw eagles to airport property.

C. This permit does not authorize the killing, injury or capture of any eagle or the destruction of any young or nests.

D. This permit does not authorize the disturbance of eagles at active nest sites that contain eggs or young or nests.

E. You must notify the permit issuing office at permitsR3MB@fws.gov within 48 hours of any injury or death of any eagle during project activities.

F. The following subpermittees are authorized:

Lane Best Daniel Durbin Michael Samko Designated agents of the
permittee

In addition, any other person who is (1) employed by or under contract to you for the activities specified in this permit, or (2) otherwise designated a subpermittee by you in writing, may exercise the authority of this permit.

https://fwsepermits.servicenowservices.com/fwse?id=fws_print_federal_permit&sys_id=222cc66f8727b510dced63570cbb3572

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Federal Permit PER7036495



EAGLE DEPREDATION

Permit Number: MB205601

Version Number: 1

Effective: 2024-04-01 **Expires:**
2029-03-31

G. You must submit a report of activities conducted under this permit to the USFWS, Migratory Bird Permit Office, 5600 American Blvd. West, Suite 990, Bloomington, MN 55437 or permitsR3MB@fws.gov (<mailto:permitsR3MB@fws.gov>), by the due date specified on the face of the permit. The report form, 3-202-11, is available at: <http://www.fws.gov/forms/3-202-11.pdf>. (<http://www.fws.gov/forms/3-202-11.pdf>.)

H. You and any subpermittees must comply with the below Standard Conditions. These standard conditions are nationwide and may not be modified for individual permits.

1. All of the provisions and conditions of the governing regulations at 50 CFR part 13 and 50 CFR part 22.100 are conditions of your permit. Failure to comply with the conditions of your permit could be cause for suspension of the permit. If you have questions regarding these conditions, refer to the regulations or, if necessary, contact your migratory bird permit issuing office. For copies of the regulations and forms, or to obtain contact information for your issuing office, visit: <https://www.fws.gov/program/migratory-bird-permit/permit-types-and-forms> (<https://www.fws.gov/program/migratory-bird-permit/permit-types-and-forms>).
2. General conditions set out in Subpart E of 50 CFR part 13, and specific conditions contained in Federal regulations cited above, are hereby made a part of this permit. All activities authorized herein must be carried out in accordance with and for the purposes described in the application submitted. Continued validity or renewal of this permit is subject to complete and timely compliance with all applicable conditions, including the filing of all required information and reports.
3. The validity of this permit is also conditioned upon strict observance of all applicable foreign, state, local tribal, or other federal law.
4. Valid for use by permittee named above.
5. Unless otherwise specified on the face of this permit, you may not lethally take any bald eagle or golden eagle under this permit. Eagles may be taken only by the method(s) specified on the face of your permit. [Note: Explosive Pest Control Devices (EPCDs) are regulated by the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF). If you plan to use EPCDs, you require a Federal explosives permit, unless you are exempt under 27 CFR 555.141. Information and contacts may be found at <https://www.atf.gov/resource-center/fact-sheet/fact-sheet-federal-firearms-and-explosives-licenses-types> (<https://www.atf.gov/resource-center/fact-sheet/fact-sheet-federal-firearms-and-explosives-licenses-types>).

https://fwsepermits.servicenowservices.com/fws?id=fws_print_federal_permit&sys_id=222cc68b727b510dced63570cbb3572

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Federal Permit PER7036495



EAGLE DEPREDAATION

Permit Number: MB205601

Version Number: 1

Effective: 2024-04-01 **Expires:**
2029-03-31

6. If you encounter an eagle with a Federal band issued by the U.S. Geological Survey Bird Banding Laboratory, Laurel, MD, report the band number to <http://www.reportband.gov> (<http://www.reportband.gov/>).
 7. This permit does not authorize take or release of any bald eagle or golden eagle on Federal lands without additional prior written authorization from the applicable Federal agency, or on State lands or other public or private property without prior written permission or permits from the landowner or custodian.
 8. Unless otherwise specified on the face of the permit, any bald eagle or golden eagle taken under this permit must be promptly turned over to a U.S. Fish and Wildlife Service (Service) agent or other wildlife law enforcement officer designated on the face of the permit.
 9. Any person exercising the authorities of this permit must carry a legible copy of this permit, including these Standard Conditions, and display it upon request to any State or Federal officer when exercising its authority.
 10. You must maintain records as required in 50 CFR 13.46. All records relating to the permitted activities must be kept at the location indicated in writing by you to the migratory bird permit issuing office.
 11. Acceptance of this permit authorizes the Service to inspect any wildlife held, and to audit or copy any permits, books, or records required to be kept by the permit and governing regulations.
 12. You may not conduct the activities authorized by this permit if doing so would violate the laws of the applicable State, county, municipal or tribal government or any other applicable law.
- For suspected illegal activity, immediately contact USFWS Law Enforcement 1-844-FWS-TIPS (397-8477)
- <https://www.fws.gov/program/office-of-law-enforcement/contact-us>
(<https://www.fws.gov/program/office-of-law-enforcement/contact-us>)

https://fwsepermits.servicenowservices.com/fws?id=fws_print_federal_permit&sys_id=222cc66f8727b510dced63570cbb3572

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DEPREDATION AT AIRPORTS

Permit Number: MB841099

Version Number: 4

Effective: 2025-04-01 **Expires:**
2025-12-31

Issuing Office:

Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
MB Bloomington Permit Office
5600 American Blvd West, Suite 990
Bloomington, Minnesota 55437-1458
permitsR3MB@fws.gov
Tel: 612-713-5436

**Richard
Rottman**

Legal Instruments
Examiner

Digitally signed by

Richard Rottman
2025-04-02 08:32:29

Permittee:

CITY OF ST LOUIS AIRPORT
AUTHORITY
C/O ALEC SONNEK
4780 ST ANDREW LANE
BRIDGETON, MO 63044
US

Name and Title of Principal Officer:

ALEC SONNEK Wildlife Biologist

Authority: Statutes and Regulations: 16 U.S.C 703-712 50 CFR Part 13, 50 CFR 21.100

Location where authorized activity may be conducted:

CITY OF ST LOUIS AIRPORT AUTHORITY
4780 ST ANDREW LANE
BRIDGETON, MO 63044



DEPREDAATION AT AIRPORTS

Permit Number: MB841099

Version Number: 4

Effective: 2025-04-01 **Expires:**
2025-12-31

Reporting requirements:

ANNUAL REPORT DUE: 1/31 You must submit an annual report to your Regional Migratory Bird Permit Office each year, even if you had no activity. Form can be found at:
<https://fwsepermits.servicenowservices.com/fwse> Under "Explore Permits" select your permit type. Annual Report Form is under Permit Details.

Authorizations and Conditions:

Last Full Review: 2021

Next Full Review: 2026

Migratory Bird Permit Office Contact: permitsR3MB@fws.gov
(<mailto:permitsR3MB@fws.gov>)

A. To resolve or prevent threats to human safety and/or aircraft safety at airports or airfields, you are authorized to take, temporarily possess, and transport the migratory birds specified below.

1. Additional authorization is required for bald eagles, golden eagles, and bird species federally or state listed as threatened or endangered (t/e) ([FWS Endangered Species](http://www.fws.gov/endangered) (<http://www.fws.gov/endangered>)).

Take of Birds of Conservation Concern (BCC) requires additional notification (see A(5) below). A list of BCC species can be found at: [2021 Birds of Concern](https://www.fws.gov/media/birds-conservation-concern-2021.pdf) (<https://www.fws.gov/media/birds-conservation-concern-2021.pdf>)

For information on the presence of bird species at your airport, we recommend using [IPAC](https://ipac.ecosphere.fws.gov/) (<https://ipac.ecosphere.fws.gov/>).

2. Lethal Take:

up to 300 Migratory Birds (except eagles, t/e, and BCC species)



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3. Active Nest Take (including egg destruction/addling):
up to 100 Migratory Bird nests (except eagles, t/e, and BCC species)

Trap-Relocate:
up to 300 Migratory Birds (except eagles, t/e, and BCC species)

4. Emergency Take:

You are authorized to exceed the take authorized in 2-4 above in emergency situations and/or to take BCC species. You must notify your Migratory Bird Permit Office (contact information above Condition A) within 48 hours and include the following information:

- i. Emergency situation description, including date and time
- ii. Species and number of bird(s) taken
- iii. Method of take

A response from the office is not expected or required. You will be contacted only if further coordination is appropriate.

5. To minimize the lethal take of migratory birds, you are required to continually apply non-lethal methods in conjunction with lethal control. All take must be done as part of an integrated wildlife damage management program that implements nonlethal management techniques. You may not use this authority for situations in which migratory birds are merely causing nuisance.

6. Do not report the following activities under your Airport Depredation permit. If activities are conducted under a Depredation Order, Conservation Order, or other regulatory authorization or permit you should conduct activities in accordance with those authorizations and reporting requirements. Canada goose nests should be taken and reported under the Resident Canada Goose registration system (<https://epermits.fws.gov/eRCGR/>).

B. Methods. You may use the following methods of take. The use of any of the below methods is at your discretion for each situation.



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Effective: 2025-04-01 **Expires:**
2025-12-31

1. Firearms. Shotguns, rifles, and professional air rifles are authorized. Shotguns used must be no larger than 10-gauge and must be fired from the shoulder. Nontoxic ammunition (e.g. bullets and shot) must be used if humane and feasible. If nontoxic ammunition is not humane or feasible, lead ammunition may be used. If lead ammunition is used, bird remains must be disposed of in a manner that prevents further introduction of lead in the environment. Use of lead ammunition is prohibited over water. Firearm use must be in accordance with all other applicable laws and ordinances.

Paint ball guns may be used to haze birds but are not an authorized firearm for take. You may not use blinds, pits, or other means of concealment, decoys, duck calls, or other devices to lure or entice migratory birds into gun range.

2. Lethal and/or live traps. All trapping must be under humane and healthful conditions (50 CFR 13.41 and 50 CFR 21.6).

Pole traps (padded-jaw and V-nail-design) may be used to capture raptors when other reasonable and appropriate methods have been employed and fail to alleviate the problem. Pole traps used between sunrise and sunset must be checked at least every 2 hours. Pole traps used between sunset and sunrise must be checked at least once during the night, not including set-up and take-down. Checks may be in person, by camera, or by other remote-sensing technology such as trap transponders. During inclement weather (e.g., extreme precipitation or temperatures), pole traps must continuously monitored or closed. The Service recommends the tether on pole traps be long enough for raptors to land on the ground and stand on their feet.

Pole Trap Reporting Requirements

1. Injury or death due to pole trapping must be reported your Migratory Bird Permit Office within 72 hours (contact information above Condition A)
2. Non-target capture in a pole trap must be reported your Migratory Bird Permit Office



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within 72 hours (contact information above Condition A)

3. Annual Report: report each raptor captured with a pole trap, including target and non-target species, trap type (padded-jaw or Verball set), the date taken, if injured or killed during trapping, and the final disposition (released, transferred including permit number of recipient, euthanized) of the bird (see MBPM-4, 2022).

Trap-and-euthanized birds count toward the lethal take authorized under Condition A of your permit. If birds are trapped and released, birds must be released in suitable habitat in an area where they are unlikely to pose a depredation threat. When appropriate, birds should be relocated a distance sufficient to minimize potential for return to the capture site. This permit does not authorize retaining birds in captivity longer than 24 hours. Additional state and/or tribal authorization may be required for release. The Service recommends banding or marking released raptors under a USGS Bird Banding permit prior to release.

If a bird is not appropriate for release to the wild, it may be transferred as non-releasable to an individual or entity authorized to receive live birds, such as for educational use or to a licensed falconer. Approval from your Migratory Bird Permit Office is required PRIOR to transferring birds. Transferred birds count toward the lethal take authorized under Condition A, as they are removed from the wild population. Contact your Migratory Bird Permit Office prior to placement to request authorization (contact information above Condition A).

3. Nest Take: Viable eggs may be oiled, addled, or destroyed. Eggs must be oiled using only 100% corn oil, a substance exempt from regulation by the Environmental Protection Agency. Eggs may be addled in any humane manner (see 6 below). Nests, including viable eggs, may be destroyed by any humane method, provided they are completely destroyed and eggs and/or nests are not retained after destruction.

Report take as number of active nests (not number of eggs). Do not report inactive nests taken (nests with no viable eggs or chicks present). No federal authorization is required



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for the take of inactive migratory bird nests.

4. Registered animal drugs (excluding nicarbazin), pesticides, and repellents. Must be humane and used in accordance with label instructions. Additional state and/or tribal authorization may be required for use.

5. Falconry Abatement. Migratory birds may be killed by abatement falconry birds. Birds killed by falconry abatement count toward the lethal take authorized under Condition A. Additional state and/or tribal authorization may be required.

6. Any live birds trapped or otherwise in-hand must be in humane and healthful conditions (50 CFR 13.41 and 50 CFR 21.6). Birds euthanized must follow the American Veterinary Medical Association Guidelines on Euthanasia (<https://www.avma.org/sites/default/files/2020-02/Guidelines-on-Euthanasia-2020.pdf>).

C. Sick, injured, or orphaned migratory birds. You may possess and immediately transport any birds found sick, injured, or orphaned to a federally permitted rehabilitator or licensed veterinarian for care. You do not need to report these birds (50 CFR 21.76(a)), except: Birds injured by your activities must be humanely euthanized or transferred immediately to a federally permitted migratory bird rehabilitator or a licensed veterinarian for medical care at the permittee's expense. You must report any birds injured by your activities on your Annual Report.

D. Salvage. Salvage activities are authorized under 50 CFR 21.16 Authorization—salvage (<https://www.ecfr.gov/current/title-50/section-21.16>). Any person may salvage migratory bird specimens under the conditions set forth in the regulation. The regulation includes conditions for timelines, record keeping, methods of disposal, and the additional requirements for salvage of bald eagle and golden eagle specimens and species listed as threatened or endangered under the Endangered Species Act.

For a list of threatened and endangered species in your state, visit the U.S. Fish and Wildlife Service's Threatened and Endangered Species System (TESS) at: Endangered Species (<http://www.fws.gov/endangered/>).



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If you suspect birds were illegally killed or if five or more birds are found dead, you must notify the Service Office of Law Enforcement (see [50 CFR 10.22 \(https://www.ecfr.gov/current/title-50/section-10.22\)](https://www.ecfr.gov/current/title-50/section-10.22) for contact information) prior to salvaging the birds and follow the instructions provided.

E. Disposition of dead migratory birds. Migratory birds, nests, or eggs taken under this permit must be disposed of by one of the following:

1. Donated to an individual or entity authorized by permit or regulation to receive donated birds (i.e. scientific, educational, or tribal use);
2. Completely destroyed in accordance with local laws and ordinances;
3. Retained for diagnostic or personnel training purposes;
4. Retained and used as effigies; or
5. If the species is a migratory game bird and suitable for consumption, donated to a public charity.

F. Reporting.

Immediate Notification. You must immediately notify your Migratory Bird Permit Office at the contact information above Condition A about:

1. Emergency Take (Condition A(1))

Annual Report. You must submit an annual report (Form 3-202-9). You must report take by species (e.g. ring-billed gull, Canada goose) and method (e.g. kill, nest take, trap-release, trap-relocate, FRC-1339).

Pole Trapping. See Condition B(2) for additional pole trapping notification and reporting requirements.

G. Subpermittees. A subpermittee is an individual to whom you have provided written authorization to conduct some or all of the permitted activities in your absence. As the permittee, you are legally responsible for ensuring that your subpermittees are adequately trained and adhere to the terms of your permit.

The following subpermittees are authorized: Designated agents of the permittee



DEPREDAATION AT AIRPORTS

Permit Number: MB841099

Version Number: 4

Effective: 2025-04-01 **Expires:**
2025-12-31

In addition, any other person who is (1) employed by or under contract to you for the activities specified in this permit, or (2) otherwise designated a subpermittee by you in writing, may exercise the authority of this permit.

You and any subpermittees must carry a legible paper or electronic copy of this permit and display it upon request whenever you are exercising its authority. Subpermittees must be at least 18 years of age. You are responsible for maintaining current records of who you have designated as a subpermittee, including copies of any designation letters provided to individuals not named above.

H. You and any subpermittees must comply with the below Standard Conditions. These standard conditions are a continuation of your permit conditions and must remain with your permit. These standard conditions are nationwide and may not be modified for individual permits.

1. All of the provisions and conditions of the governing regulations at 50 CFR part 13 and 50 CFR part 21.100 are conditions of your permit. Failure to comply with the conditions of your permit could be cause for suspension of the permit. If you have questions regarding these conditions, refer to the regulations. If necessary, contact your migratory bird permit issuing office. For copies of the regulations and forms, or to obtain contact information for your issuing office, visit [Migratory Birds Permit Types and Forms](https://www.fws.gov/program/migratory-bird-permit/permit-types-and-forms) (<https://www.fws.gov/program/migratory-bird-permit/permit-types-and-forms>)

2. General conditions set out in Subpart B of 50 CFR 13, and specific conditions contained in Federal Regulations cited above, are hereby made a part of this permit. All activities authorized herein must be carried out in accord with and for the purposes described in the application submitted. Continued validity, or renewal of this permit is subject to complete and timely compliance with all applicable conditions, including the filing of all required information and reports.

3. The validity of this permit is also conditioned upon strict observance of all applicable foreign, state, local tribal, or other federal law.



DEPREDAATION AT AIRPORTS

Permit Number: MB841099

Version Number: 4

Effective: 2025-04-01 **Expires:**
2025-12-31

4. Valid for use by permittee named above.

5. Explosive Pest Control Devices (EPCDs) are regulated by the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF). If you plan to use EPCDs, you require a Federal explosives permit, unless you are exempt under 27 CFR 555.141. Information and contacts may be found at Federal Firearms and Explosives License Types Fact Sheet (<https://www.atf.gov/resource-center/fact-sheet/fact-sheet-federal-firearms-and-explosives-licenses-types>).

6. If you encounter a migratory bird with a Federal band issued by the U.S. Geological Survey Bird Banding Laboratory, Laurel, MD, report the band number to the Bird Banding Laboratory (<http://www.reportband.gov>).

7. You are responsible for obtaining appropriate, prior, written landowner permission for activity (take or release) of any migratory birds, nests, or eggs on lands where you are not the landowner or custodian.

8. You must maintain records as required in 50 CFR 13.46 and 50 CFR 21.100. All records relating to the permitted activities must be kept at the location indicated in writing by you to the migratory bird permit issuing office.

9. Acceptance of this permit authorizes the U.S. Fish and Wildlife Service to inspect any wildlife held, and to audit or copy any permits, books, or records required to be kept by the permit and governing regulations.

10. You may not conduct the activities authorized by this permit if doing so would violate the laws of the applicable State, county, municipal or tribal government or any other applicable law.

For suspected illegal activity, immediately contact USFWS Law Enforcement (<https://www.fws.gov/program/office-of-law-enforcement/contact-us>) 1-844-FWS-TIPS (397-8477).

WILDLIFE SERVICES CERTIFICATE QUALIFIED AIRPORT WILDLIFE BIOLOGIST



This is to certify that: **Alec C. Sonnek**

United States
Department of
Agriculture

Animal and Plant
Health Inspection
Service

Wildlife Services

has the requisite qualifications, training and accomplishments to fulfill the requirements of Federal Aviation Administration Advisory Circular 150/5200-36B "Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports" and is hereby certified to conduct the activities of a Qualified Airport Wildlife Biologist in accordance with approved directives and guidelines.

**MICHAEL
BEGIER**

Digitally signed by
MICHAEL BEGIER
Date: 2022.07.25
17:45:48 -04'00'

National Coordinator, WS AWWP

WS FORM 83B (2013)

Expiration Date: December 31, 2027

Original Date _____
Revision Date _____

WILDLIFE SERVICES CERTIFICATE QUALIFIED AIRPORT WILDLIFE BIOLOGIST	
	This is to certify that: Lane R. Best
United States Department of Agriculture	has the requisite qualifications, training and accomplishments to fulfill the requirements of Federal Aviation Administration Advisory Circular 150/5200-36B "Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports" and is hereby certified to conduct the activities of a Qualified Airport Wildlife Biologist in accordance with approved directives and guidelines.
Animal and Plant Health Inspection Service	
Wildlife Services	
MICHAEL BEGIER Digitally signed by MICHAEL BEGIER Date: 2022.02.18 11:46:13 -0500 National Coordinator, WS, AWP	
WS FORM 83B (2013) Expiration Date: December 31, 2027	

Original Date _____
Revision Date _____

WILDLIFE SERVICES CERTIFICATE QUALIFIED AIRPORT WILDLIFE BIOLOGIST



United States
Department of
Agriculture

Animal and Plant
Health Inspection
Service

Wildlife Services

This is to certify that: **Michael Samko**

has the requisite qualifications, training and accomplishments to fulfill the requirements of Federal Aviation Administration Advisory Circular 150/5200-36B "Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports" and is hereby certified to conduct the activities of a Qualified Airport Wildlife Biologist in accordance with approved directives and guidelines.

Michael J Begier

National Coordinator, WS AWHP

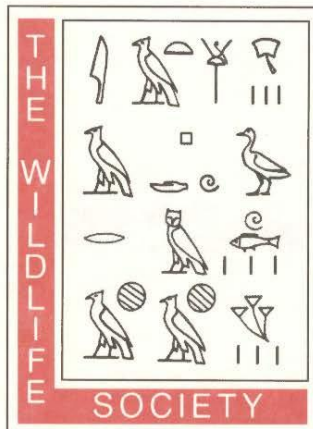
Acting Coordinator:

JANET PARAAN

Expiration Date: December 31, 2030

WS FORM 83B (2013)

USDA Wildlife Services is an Equal Opportunity Employer. Minorities and women are encouraged to apply. For more information, contact the National Wildlife Services Office at (202) 734-3100.



The Wildlife Society

INCORPORATED IN WASHINGTON, D.C.

grants the designation

Certified Wildlife Biologist

to

Alec C. Sonnek

in recognition of fulfillment of all the professional requirements approved by The Wildlife Society and verified by the Society's Certification Review Board. This designation is valid for 5 years, beginning the first day of January 2018, provided membership in the Society remains in good standing.



John E. McDonald Jr.
President, The Wildlife Society

deVries
Chairman, Certification Review Board

Edgar
Executive Director, The Wildlife Society

139.339 AIRPORT CONDITION REPORTING

Conditions that may affect the safe operations of air carriers at St. Louis Lambert International Airport will be reported to the Assistant Director of Operations & Maintenance and/or the Operations Center. These personnel will then issue an amendment to the Airport Condition Report (ACR) by updating the report on the airports' public website. STL ATCT has access to the airports' public website to see the Airport Condition Report from the Cab. All Air Carriers are encouraged to check the web link at any time to receive the most current field conditions at the airport. Additionally, the St. Louis Lambert International Airport utilizes the FAA direct entry Digital NOTAM System (DNS). Operations Center personnel will make the required entry into the DNS for any condition that may affect the safe operations of Air Carriers at the airport.

In the event of an internet network outage or failure of the DNS system, Operations Center will fax the ACR & DNS to all air carrier tenants and shall revert to the legacy system for NOTAM issuance. The Operations Center will convey required information to the ATCT and Air Carriers using the most expeditious means available during outages.

1. Collection of Airport Conditions

Conditions requiring amendments to the Airport Condition Report are compiled through a variety of means. Regardless of how they are received, all conditions requiring amendments are directed to the Deputy Director of Operations & Maintenance, Assistant Director of Operations & Maintenance and/or the Operations Center.

Methods used to collect airport conditions include but are not limited to the following:

- A. Reports from airline pilots
- B. Daily inspection results from Operations Center Personnel
- C. Halliday RT3 and/or Bowmonk Decelerometer

2. Personnel Authorized to Amend the Airport Condition Report

The following personnel are authorized to amend the Airport Condition Report:

- A. Deputy Director of Operations & Maintenance
- B. Assistant Director of Operations & Maintenance
- C. All personnel of the Airport Operations Center
- D. Authorized Designee

3. Record of Amendments to the Airport Condition Report

Current year amendments are kept on file electronically in the Operations Center until year – end at which time these amendments are filed and a new year amendment file is begun. Electronically filed amendments are kept in the Airport Operations Center for no less than twelve consecutive calendar months.

4. Conditions Requiring Amendments

Amendments will be issued by the personnel in paragraph two of this section when any of the following conditions occur on Lambert's property which may cause unsafe operations of Air Carriers or Airport Operations:

- A. Construction or maintenance on movement areas, safety areas or ramp apron areas
- B. Surface irregularities on movement areas, safety areas, or apron areas
- C. Snow, ice, slush or water on movement areas or apron areas
- D. Piled or drifting snow on or near movement areas at such heights that all Air Carrier aircraft propellers, engine pods, rotors and/or wingtips will not clear the snowdrift or snowbank as the aircraft's landing gear traverses any full strength portion of the movement area
- E. Objects in safety areas, other than those required by function
- F. Malfunction of any required lighting system, holding position signs, or ILS Critical Areas signs
- G. The following light outage conditions as described in AC 150/5340 – 26, current edition, Maintenance of Airport Visual Aid Facilities:
 - 1. Less than 85% runway edge lights operable for CAT I runways
 - 2. Less than 95% runway edge lights operable for CAT II & III
 - 3. Runway light outages that alter the basic pattern of the lighting system
 - 4. Less than 95% runway centerline lights operable
 - 5. Less than 90% runway TDZ lights operable
 - 6. Less than 75% runway threshold lights operable (2 inoperable max at nay runway end)
 - 7. Less than 85% taxiway edge lights operable
 - 8. Less than 90% taxiway centerline lights operable
 - 9. Runway guard lights:
 - a. Elevated: No more than one light in a fixture inoperable
 - b. In – Pavement: No more than three lights per location inoperable nor two adjacent lights inoperable
- H. Unresolved Wildlife Hazards
- I. Non – availability of any required aircraft rescue and firefighting vehicle or capability
- J. Any other condition which may otherwise adversely affect the safe operations of Air Carriers or Airport Operations at Lambert.

139.341 IDENTIFICATION, MARKING, AND LIGHTING CONSTRUCTION AND OTHER UNSERVICEABLE AREAS

1. Construction Coordination

Any and all construction projects done at St. Louis Lambert International Airport must be coordinated through a number of personnel and agencies to ensure minimum amount of interference or obstruction to both Air Carrier and Airport Operations.

Personnel and agencies involved in construction coordination will include but are not necessarily limited to the following:

- A. Director of Airports, or his/her designee
- B. Deputy Director of Operations & Maintenance
- C. Deputy Director of Planning & Development
- D. Assistant Director of Engineering, or his/her designee
- E. Airport Properties Division Manager
- F. Assistant Director of Operations & Maintenance
- G. FAA ATCT Supervisor, if construction will affect Air Carrier Operations
- H. Airlines Managers, if construction will affect the airline and its operations
- I. Airport Authority Operations and Maintenance Departments and/or Construction Contractor, and/or any agency involved in the actual construction

The Assistant Director of Engineering will have the primary responsibility for coordinating construction on the aircraft movement area while the Airport Properties Manager has the primary responsibility for construction with Airport Buildings.

2. Marking and Lighting of Construction Areas

Each construction area on the aircraft movement area will be prominently lighted and marked so as to provide clearly defined construction area perimeters, to prevent inadvertent or accidental entry into the construction area by vehicles or aircraft. Lighting and marking of construction areas will commence prior to the actual start of construction and will remain in place and effective until the construction is completed and the area in question is ready for use again.

Lighting and marking of construction areas will be in accordance with requirements of FAA Advisory Circular 150/5370-2, current edition, Operational Safety on Airports during Construction.

3. Marking and Lighting of Construction Equipment/Roadways

- A. Construction vehicles and related equipment used during construction projects at Lambert will be marked, and drivers of the vehicles will be instructed on proper airfield driving procedures. Vehicles/Equipment, if used after daylight hours, will be equipped with operational headlights, hazard flashers and, if so equipped, with an operational rotating beacon. Drivers of equipment will be instructed to use all lights when working after sunset.

Vehicle marking and lighting will be in accordance with FAA Advisory Circular 150/5370 – 2, current edition, Operational Safety on Airports during Construction.

- B. Construction roadways will be marked and lighted in such a way as to define the roadway adequately and in such a way as to not interfere with aircraft or airport operations.

4. Marking of Unserviceable Areas

Marking of unserviceable areas will be much the same as the methods used for marking and lighting construction areas, Paragraph two of this section. Unserviceable areas will be marked and lighted to prominently define the unserviceable area boundaries and will be set up to prevent inadvertent or accidental entry of vehicles or aircraft into unserviceable areas.

Taxiways or runway which will be closed for an extended period of time will be marked and lighted in accordance with FAA Advisory Circular 150/5370 – 2, current edition, Operational Safety on Airports during Construction.

5. Marking/Lighting of Areas Adjacent to NAVAIDS

Construction areas in, near, or adjacent to NAVAIDS will be marked and lighted, in order to prevent vehicles or equipment from crossing NAVAID signal paths and thus causing interruptions or failures of NAVAID systems. Marking and lighting of such areas will be submitted to the Regional FAA office prior to construction start for approval by the FAA and to ensure compliance with any and all FAA requirements regarding marking and lighting of such areas.

The Assistant Director of Planning & Engineering and the Assistant Director of Operations & Maintenance will ensure contractors have in place all marking and lighting necessary prior to construction start and will ensure these markings and lightings remain operational and readily observable during construction. These individuals, or their designees, will ensure markings or lightings are not dismantled or obliterated until all construction completed.

6. Utilities Damage Avoidance Procedures

Prior to the start of construction, contractors will be apprised of all utilities in or near construction areas which may be affected by their operations. Blueprints with utility locations are maintained in the Airport Authority Engineering Office and are available to all contractors for use prior to construction start. Personnel of the FAA Regional office will assist contractors with locations of NAVAID utility lines.

The Assistant Director of Planning & Engineering, the Assistant Director of Operations & Maintenance, and personnel of the Operations Center will monitor construction activities to ensure utility lines are maintained intact. In the event of utility lines becoming damaged or broken, all efforts will be made to return the utility to operation as expeditiously as possible. Should it be necessary to sever a utility line during construction, all efforts will be made to make temporary connections enabling the utility line to remain operational. The aforementioned personnel will monitor these temporary connections to ensure their continuing operation until permanent reconnections of utility lines can be made.

139.343 NONCOMPLYING CONDITIONS

Unless otherwise authorized by the FAA Administrator, whenever the requirements of Part 139 cannot be met to the extent that uncorrected, unsafe conditions exist on the Airport, St. Louis Lambert International Airport will limit Air Carrier Operations to those portions of the Airport that are determined to be unsafe.

1. Personnel Responsible for Closing Unsafe Airport Areas

The Director of Airports or, his/her designee(s), will have the authority and responsibility to close any area, section, or part of the aircraft movement area in the event an unsafe condition develops which may interfere, disrupt or halt Air Carrier Operations.

Closures will be collected and disseminated in accordance with procedures outline in Section 139.339, Airport Condition Reporting, of this certification manual.

In the event a closure of an area becomes necessary, all efforts will be made to return the affected area to full operational capacity as soon as possible.

2. Limitation of Air Carrier Operations in Unsafe Areas

Air carrier operations in areas deemed unsafe will be limited to those operations the area is capable of handling or operations in the affected area will be halted completely. Unsafe areas will be marked and lighted in accordance with Section 139.341 of this certification manual.

139.401 Airport Safety Management System: General Requirements

Under Part 139.401(a), St. Louis Lambert International Airport is required to comply with SMS requirements as the FAA has determined:

-Is classified as a medium hub based on passenger data extracted from the Air Carrier Activity Information System.

In accordance with Part 139 subpart E, St. Louis Lambert International Airport will develop, implement, maintain, and adhere to the Airport Safety Management System (SMS). The Scope of the Airport SMS encompasses aircraft operation in the movement area, aircraft operation in the non-movement area, and other airport operations addressed under Part 139. The St. Louis Lambert International Airport is the responsible party for compliance with Airport SMS.

Policies and procedures for the development of, implementation of, maintenance of, and adherence to the Airport's SMS, as required under Part 139 subpart E, are contained in a separate Airport SMS Manual, which is maintained in the state of Missouri at St. Louis Lambert International Airport by the Airport Deputy Director of Operations and Maintenance.

On an annual basis, or upon FAA request, the Airport shall provide the FAA copies of any changes to the Airport SMS Manual

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139.402 Components of Airport Safety Management System

A. SMS Components

In accordance with Part 139.402, the Airport SMS has the following components:

- *Safety Policy* establishes senior management's commitment to continually improve safety; defines the methods, processes, and organizational structure needed to meet safety goals.
- *Safety Risk Management* processes and procedures for identifying hazards and their associated risks within airport operations and for changes to those operations covered by Part 139.
- *Safety Assurance* processes and procedures to ensure mitigation measures are adequate and the Airport SMS is functioning effectively.
- *Safety Promotion* processes and procedures to foster an airport operation environment that encourages safety.

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139.403 Airport Safety Management System: Implementation

In accordance with Part 139.403(a), The Airport has an FAA-approved SMS Implementation Plan. This Implementation Plan provides details on how the Airport will meet Part 139 SMS requirements, including:

- A schedule for implementing SMS components and elements prescribed in Part 139.402; and
- Description of any existing programs, policies, or procedures that the Airport intends to use to meet Part 139 SMS requirements;

The Airport will fully implement its Airport SMS within thirty-six months after FAA approves its SMS Implementation Plan (see Approval Letter in Appendix D) and in accordance with the FAA-approved SMS Implementation Plan.

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