17. Specific Guidance on use of FAA Categorical Exclusions

This chapter provides guidance memos on application of specific Categorical Exclusions (CATEXs), including implementing instructions for the legislative CATEXs established through the Federal Aviation Administration's (FAA) Reauthorization Act of 2012.

17.1. CATEX 5-6.6b Aerobatic Actions

> *Authorizations and waivers for infrequent or one-time actions, such as an air show or aviation-related exposition (to include an aerobatic practice area containing one aerobatic practice box or aerobatic contest box) or parachuting or skydiving events, that may result in some temporary impacts that revert back to original conditions upon action completion. (ATO, AVS)*

Clarification of FAA Order 1050.1 CATEX for Aerobatic Actions was originally implemented on January 10, 2013 and provides guidance on the interpretation of terms and facilitation of consistent application of this CATEX. This memo is still valid.

Please note that references to CATEX 312b of Order 1050.1E is now CATEX 5-6.6b of Order 1050.1F. The following pages contain the original guidance memo.

Federal Aviation Administration

Memorandum

FAA Order 1050.1, Guidance Memo #6[1]

Date: January 10, 2013

To: Bruce DeCleene, Manager, Flight Technologies and Procedures Division, AFS-400
Michael Danahy, Acting Manager, Quality, Integration and Process Division, AQS-100

CC: Rebecca Cointin, Manager, Noise Division, AEE-100

From: Julie Marks, Manager, Environmental Policy and Operations Division, AEE-400

Subject: Clarification of FAA Order 1050.1 CATEX for Aerobatic Actions

Purpose

This memorandum is in response to Aviation Safety's (AVS) request for clarification from the Office of Environment and Energy (AEE) for the Categorical Exclusion (CATEX) pertaining to aerobatic actions in FAA Order 1050.1 *Environmental Impacts: Policies and Procedures* in order to harmonize the interpretation of terms and facilitate consistent application of this CATEX. The current version of the order is FAA Order 1050.1E, Change 1, and the CATEX pertaining to aerobatic actions is contained in paragraph 312b (*Categorical Exclusions for Regulatory Actions*). Paragraph 312b FAA Order 1050.1E, Change 1 reads as follows:

312b. Authorizations and waivers for infrequent or one-time actions, such as an airshow or aviation-related exposition, to include an aerobatic practice box or aerobatic contest box per FAA Order 8700.1, Chapter 48, and parachuting or skydiving events that may result in some temporary impacts that revert back to original conditions upon action completion. (ATO, AFS)[2]

There have been different interpretations of the term "infrequent" used in Categorical Exclusion (CATEX) 312b. In addition, the use of the terms "aerobatic practice box" and "aerobatic contest box," as opposed to "aerobatic practice area," may make it difficult to determine when the CATEX is applicable. Therefore, this memorandum seeks to (1) define the term "infrequent" in

[1] This document is guidance memo #6 for FAA Order 1050.1. It is the sixth in a series of memos to provide additional guidance on FAA's NEPA requirements, procedures, and practices.

[2] This CATEX references 8700.1, which no longer exists. The current reference is FAA Order 8900.1 Flight Standards Information Management System, Volume 3 General Technical Administration, Chapter 5 Issue a Certificate of Waiver for an Aerobatic Practice Area or an Aerobatic Contest Box, Section 1.

the context of the aerobatic actions CATEX[3] and (2) clarify the applicability of CATEX 312b to "aerobatic practice areas" (APAs).

Defining "Infrequent"

Based on years of experience with aerobatic operations, noise is the environmental impact with the most potential to result in a significant impact. Therefore, aerobatic operations that can occur and not cause a significant noise impact have been determined by examining the noise results of the Volpe National Transportation System Center (Volpe) Report DOT-VNTSC-FAA-12-06 named "Analysis of Aerobatic Aircraft Noise Using the FAA's Integrated Noise Model", hence referred to as the Volpe Report.

The Volpe Report grouped aerobatic operations by aircraft category (e.g., low weight piston, high power radial (warbird), high power jets) and by routine type (i.e., Sportsman, Intermediate, Advanced, Unlimited). The Volpe Report examined the aircraft types and routines that are flown in the aerobatic practice box or aerobatic contest box, along with different numbers of operations flown. Based on the Volpe Report results, AEE has determined that the number of operations by aircraft category is the governing factor for noise impact and that the type of routines being flown do not result in a substantial difference in noise. We have also used the Volpe Report to determine the number of operations by aircraft category that can be flown in an aerobatic practice box in a year without resulting in a Day-Night Average Sound Level (DNL) of 65 decibels (dB) and, therefore, would not result in a significant noise impact. Since a significant noise impact could only occur if a proposed action would cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB, an annual number of operations in an aerobatic practice box that would not result in a DNL of 65 dB would not result in a significant noise impact absent extraordinary circumstances.[4] Accordingly, we can support a CATEX that defines infrequent use in terms of numbers of annual operations by aircraft category.

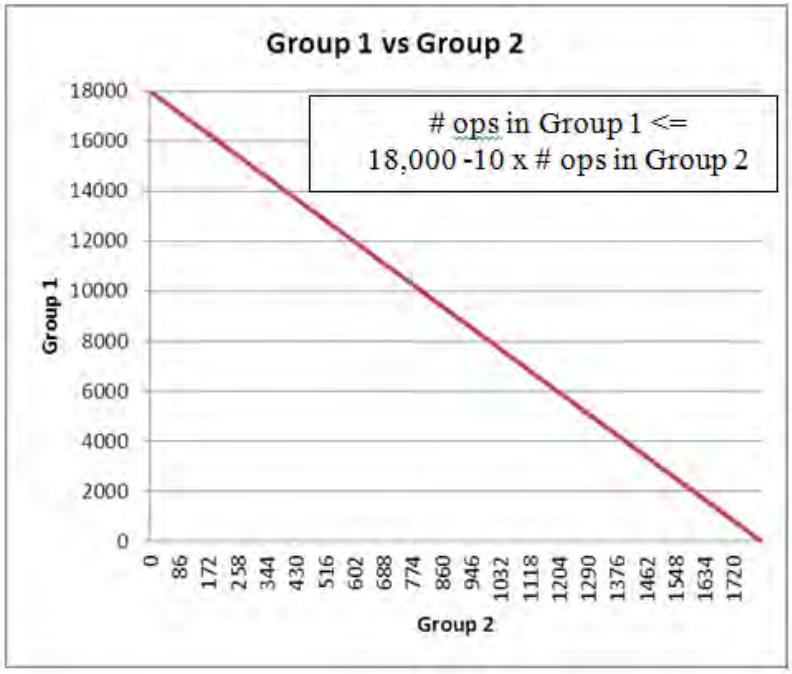
For low weight pistons, mid weight pistons, high weight pistons and high weight radials, "infrequent" is defined as 18,000 or less annual operations. For aircraft that are categorized as mid power jets and high power radials (warbirds), "infrequent" is defined as 1,800 or less annual operations. Finally, for high power jets, "infrequent" is defined as 300 or less annual operations. Below is a table with these aircraft categories and the corresponding "infrequent" definition. The Attachment lists aircraft by name and engine type within each category that were used to determine these numbers.

[3] In this memorandum, the term "aerobatic actions CATEX" refers to CATEX 312b in FAA Order 1050.1E, Change 1, and future versions of this CATEX contained in FAA Order 1050.1F and subsequent revisions, unless explicitly stated otherwise.

[4] Special consideration needs to be given to certain noise sensitive areas where other noise is very low and a quiet setting is a generally recognized purpose and attribute (e.g., quiet areas in national parks), see FAA Order 1050.1E Change 1 Section 14.

Aircraft Category	Aircraft Group (for mixed use definition)	"Infrequent" Definition
Low Weight Pistons	Group 1	18,000 or less annual operations
Mid Weight Pistons	Group 1	18,000 or less annual operations
High Weight Pistons	Group 1	18,000 or less annual operations
High Weight Radials	Group 1	18,000 or less annual operations
Mid Power Jets	Group 2	1,800 or less operations
High Power Radials (Warbirds)	Group 2	1,800 or less operations
High Power Jets	Group 3	300 or less annual operations

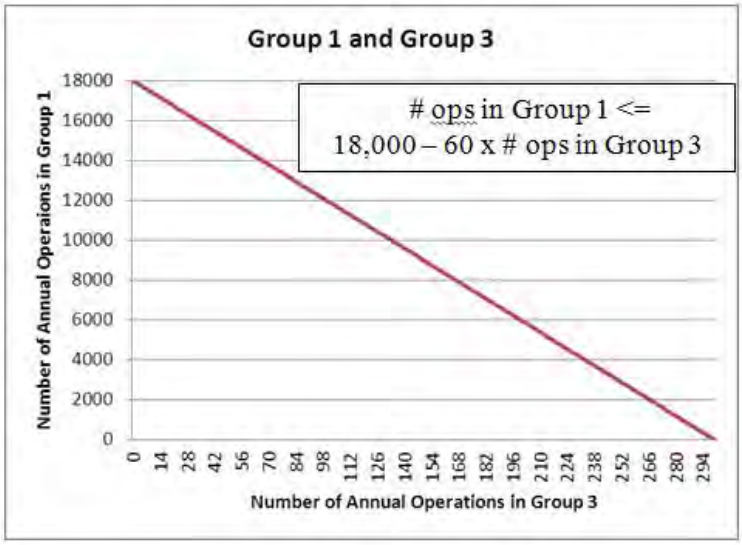
In addition, "infrequent" has been defined for situations when the aerobatic practice box or the aerobatic contest box will be used by more than one aircraft group, i.e., "mixed use". For mixed use situations, the definition of "infrequent" is defined using a graphical method to account for a trade-off between the numbers of aircraft in each group that ensures noise would remain below the significant level. Below are three graphs showing the trade-offs between the three groups. Annual numbers of operations on and below the line depicted in the graphs support a CATEX. An exact number can be found by using the formula provided.



Example: Number of annual operations in Group 1 is 10,000, and number of annual operations in Group 2 is 770.

18,000 – 10 x 770 = 18,000 – 7,700 = 10,300

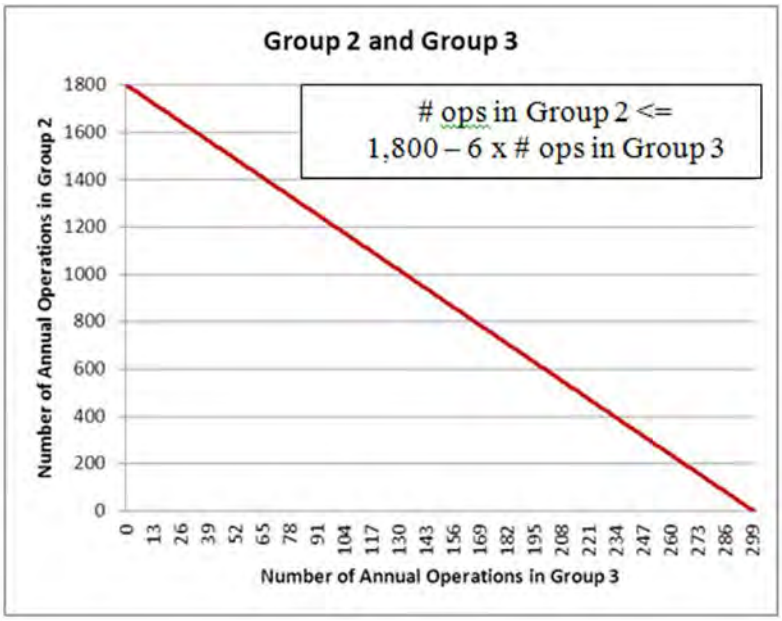
The number of annual operations in Group 1 (10,000 ops) is less than 10,300. The APA with this mixed use is eligible for the aerobatic actions CATEX.



Example: Number of annual operations in Group 1 is 8,000, and number of annual operations in Group 3 is 170.

18,000 – 60 x 170 = 18,000 – 10,200 = 7,800

The number of annual operations in Group 1 (8,000 ops) is not less than or equal to 7,800. The APA with this mixed use is not eligible for the aerobatic actions CATEX.



Example: Number of annual operations in Group 2 is 800, and number of annual operations in Group 3 is 166.

1,800 – 6 x 166 = 1,800 – 996 = 804

The number of annual operations in Group 2 (800 ops) is less than 804. The APA with this mixed use is eligible for the aerobatic actions CATEX.

Should a unique situation occur in which mixed use is proposed that would involve all three groups of aircraft, please consult AEE regarding the calculation of operations that would be eligible for an aerobatic actions CATEX.

Aerobatic Practice Area Applicability

While CATEX 312b has been applied to aerobatic practice boxes and aerobatic contest boxes, it has not been applied to aerobatic practice areas (APAs). This guidance is intended to clarify that CATEX 312b can be applied to Certificates of Waiver requests for an "aerobatic practice area" when the request for a waiver is limited to one box.

FAA Order 8900.1 Flight Standards Information Management System, Volume 3 General Technical Administration, Chapter 5 Issue a Certificate of Waiver for an Aerobatic Practice Area or an Aerobatic Contest Box, Section 1[5], paragraph 3-118(A)(3)(a) states that "an aerobatic practice area is established for the purpose of practicing aerobatic skills" but does not define the area. FAA Order 8900.1, Volume 3, Chapter 5, Section 1, paragraph 3-118(A)(3)(b) also states that an "aerobatic contest box is established for the sole purpose of conducting competitive aerobatic demonstrations in accordance with the rules, procedures and practices of the International Aerobatic Club (IAC)." In addition, FAA Order 8900.1, Volume 3, Chapter 6 states that an "aerobatic box" is "The airspace at an air show where participating aircraft are authorized to perform aerobatic maneuvers appropriate to their category".

The federal action associated with an "aerobatic practice area" is the Certificate of Waiver, which is the same federal action as for an "aerobatic practice box" and the same action to which CATEX 312b is applied.

An "aerobatic practice area" containing a single box is essentially the same as an "aerobatic practice box" and should be treated the same for purposes of applying CATEX 312b. Examination of documentation associated with 115 Waiver requests from approximately 2009 to 2011 compiled by AVS found that 95.7% of the "aerobatic practice areas" analyzed contain single boxes.

Conclusion

Based upon a review of the data in the Volpe Report, consultation with AVS, and absent extraordinary circumstances, the aerobatic actions CATEX (paragraph 312b in FAA Order 1050.1E, Change 1) can be applied to Certificates of Waiver requests for an "aerobatic practice area" (in addition to aerobatic practice boxes and aerobatic contest boxes) when (1) the request for a waiver is limited to one box, and (2) the APA usage will not exceed the numbers of annual operations for the appropriate aircraft category or mix of categories allowed in this guidance memo.

We hope that this clarification will alleviate any misinterpretation of the CATEX in question, and provide consistent understanding across the AVS organization.

cc: AFS-408, AGC-600

/s/ Julie Marks on January 10, 2013
Manager, Environmental Policy and Operations Division, AEE-400

[5] http://fsims.faa.gov/wdocs/8900.1/v03%20tech%20admin/chapter%2005/03_005_001.htm.

Attachment

Aircraft List

The mappings of aerobatic aircraft used for the definition of "infrequent" are presented below.

Low Weight Piston

Aircraft Name	Engine
Steen Skybolt	Lycoming HO-360-B1B piston, 180 hp (130 kW)
American Champion Citibria	Lycoming O-320-A2B, 150 hp (111.9 kW)
Pitts S-2	Textron Lycoming AEIO-540-D4A5 flat-six air cooled piston engine, 260 hp (194 kW)
RV-4	Lycoming O-320, O-360 or IO-360, 150-180 hp (110-135 kW)
RV-6	Lycoming O-320 or Lycoming O-360 fixed pitch or constant speed, 150-180 hp (112-134 kW)
Piper J-3	Continental A-65-8 air-cooled flat four, 65 hp (48 kW) at 2,350 rpm
Aviat Eagle	Lycoming AEIO-360-A1D, 200 hp (149 kW)
Great Lakes 2T	Lycoming engine
Lazer 230	piston engine
Stearman	radial engine

Mid Weight Piston

Aircraft Name	Engine
Zlin 242	Avia M 137A inverted 6 cylinder inline engine, 134 kW (180 hp)
American Champion 8KAB Decathlon	Lycoming AEIO-360-H1B CSU, 180 hp (134.2 kW)
RV-7	Lycoming O-320 or Lycoming O-360 Constant Speed or Fixed Pitch, 160 to 200 hp (119 to 149 kW)
RV-8	Lycoming O-320, Lycoming O-360 or Lycoming IO-360 fixed pitch or constant speed, 150-200 hp (112-149 kW)
Cap 232	Lycoming AEI0-540-L1 B5D air-cooled flat-six, 224 kW (300 hp)
Edge 540	Modified Lycoming AEIO-540 Hartzell composite, 3 blade, 254 kW (340 hp)
Giles 202	Lycoming AEIO-360-A1E piston engine, 235 hp ()

High Weight Piston

Aircraft Name	Engine
Grob G120	Lycoming AEIO-540-D4D5 6-cylinder, horizontally opposed engine, 194 kW (260 hp)
Extra 300	Lycoming AEIO-540-L1B5 MT-Propeller composite propeller (3- or 4-blade), 224 kW (300 hp)

High Weight Radial

Aircraft Name	Engine
Sukhoi 31	Vedeneyev M-14PF, 294 kW (400 hp)
Super solution	Pratt & Whitney R-1340 Radial, 535 hp (399 kW)
Yak 52	Vedeneyev M-14P 9-cylinder radial engine, 268 kW (360 hp)
Yak 55	Vedeneyev M14P 9-cylinder radial engine, 268.5 kW (360.1 hp)

Mid Power Jet

Aircraft Name	Engine
Aero Vodochody L39C	Ivchenko AI-25TL turbofan, 16.87 kN (3,792 lbf)
Dornie alpha jet	SNECMA Turbomeca Larzac 04-C5 turbofans, 13.24 kN (2,976 lbf) each
MiG 15 UTi	Klimov VK-1 turbojet, 26.5 kN (5,950 lbf)

High Power Radia (Warbird)

Aircraft Name	Engine
Hawker Sea Fury	Bristol Centaurus XVIIC 18-cylinder twin-row radial engine, 2,480 hp (1,850 kW)
North American T6	Pratt & Whitney R-1340-AN-1 Wasp radial engine, 600 hp (450 kW)
North American P51 Mustang	Packard V-1650-7 liquid-cooled supercharged V-12, 1,490 hp (1,111 kW) at 3,000 rpm;[76] 1,720 hp (1,282 kW)at WEP
Lockheed P-38	Allison V-1710-111/113 V-12 piston engine, 1,725 hp [N 7] (1,194 kW) each
Grumman 7F7	Pratt & Whitney R-2800-34W "Double Wasp" radial engines, 2,100 hp (1,566 kW) each
P-47	Pratt & Whitney R-2800-59 twin-row radial engine, 2,535 hp (1,890 kW)
Grumman F8F Bearcat	Pratt & Whitney R-2800-34W "Double Wasp" two-row radial engine, 2,100 hp (1,567 kW)
North American A36	Allison V-1710-87 liquid-cooled piston V12 engine, 1,325 hp (988 kW)
North American T28	Wright R-1820 single row radial 1425 hp

High Power Jet

Aircraft Name	Engine
F-15	Pratt & Whitney F100-100 or −220 afterburning turbofans
F-16	F110-GE-100 afterburning turbofan

17.2. CATEX 5-6.5q [CATEX1]

The following procedures taken in accordance with Section 213 of the FAA Modernization and Reform Act of 2012, conducted at, above, or below 3,000 feet above ground level (AGL), unless there is a determination that extraordinary circumstances exist:

(1) Area Navigation/Required Navigation Performance (RNAV/RNP) procedures proposed for core airports and any medium or small hub airports located within the same metroplex area considered appropriate by the Administrator and

(2) RNP procedures proposed at 35 non-core airports selected by the Administrator (ATO)

In June 2018, AEE issued Guidance for 5-6.5.q (aka CATEX1) titled, *Consolidated Guidance for Implementation of the Categorical Exclusion in Section 213(c)(1) of the FAA Modernization and Reform Act of 2012.* The following pages contain the guidance memorandum in its original form.

Federal Aviation Administration

Memorandum

FAA Order 1050.1 Guidance Memo

Date: June 13, 2018

To: FAA Lines of Business and Managers with NEPA Responsibilities

From: Katherine Andrus, Manager, Environmental Policy and Operations, Office of Environment and Energy, AEE-400

Subject: **Consolidated Guidance for Implementation of the Categorical Exclusion in Section 213(c)(1) of the *FAA Modernization and Reform Act of 2012***

In December 2012, AEE issued Guidance for *Implementation of the Categorical Exclusion in Section 213(c)(1) of the* ***FAA Modernization and Reform Act of 2012*** (see Attachment A), hereafter referred to as CATEX1 Memo. This memorandum provides clarified guidance to:

- Provide more precision on the types of airports and procedures to which this CATEX may be applied;
- Provide guidance on appropriate airport operator and community engagement; and
- Require concurrence by the Office of Environment and Energy (AEE-400) and the Office of Chief Counsel (AGC-600) prior to the use of this CATEX.

Applicable Airports:

Core Airports:

As the original CATEX1 Memo specified, the CATEX applies to Area Navigation System (RNAV) and Required Navigation Performance (RNP) and procedures at the 30 Core Airports and any medium or small hub airport located within the same metroplex area considered appropriate by the Administrator.

FAA has defined specific airport categories (including medium and small hub airports) based on number of enplanements[6]. The definitions are contained in 49 USC 47102(13) and (25), and provided below:

- A medium hub airport means a commercial service airport that has at least 0.25 but less than 1.0 percent of passenger boardings.

[6] http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/categories/.

- A small hub airport means a commercial service airport that has at least 0.05 percent but less than 0.25 percent of passenger boardings.
- A list of the applicable Core Airports and the associated medium and small hub airports, to which this CATEX may potentially apply, are included in Attachment B. Note that CATEX1 does not apply to non-hub primary, non-primary commercial service, reliever or other general aviation airports. The FAA's Office of Airport Planning and Programming or regional Airports Divisions should be contacted to confirm the category of specific airports if there is any doubt.

35 Non-core Airports

The CATEX can also be used for RNP procedures at 35 Non-OEP/Non-Core Airports listed in Attachment C.

Applicable Procedures:

The CATEX may only be used for applicable RNAV and RNP procedures, as follows:

- FAA-identified RNAV and RNP procedures to be "developed, certified, published, or implemented" at Core airports, as well as at medium and small hub airports located within the same metroplex area as the Core Airports
- FAA-identified RNP procedures to be "developed, certified, published or implemented" at non-Core Airports

CATEX1 may not be used for new conventional procedures, or a combination of conventional procedures and applicable RNAV and RNP procedures. All instrument flight procedures in development, including procedures for which this CATEX may potentially apply, are available on FAA's Instrument Flight Procedures Information Gateway, which is located at: https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/. If CATEX1 is being considered for a procedure, it should be confirmed that the procedure is listed on the Instrument Flight Procedures Information Gateway to fulfill the requirements of Section 213(c)(1) of the FAA Modernization and Reform Act of 2012.

As indicated in the original memo, before applying this CATEX, it must be determined that extraordinary circumstances do not exist and connected actions must be evaluated in conjunction with the proposed action to ensure cumulative impacts are appropriately evaluated.

Airport Operator and Community Engagement

FAA collaboration with airport operators is critical during the planning and design of proposed RNP/RNAV procedures, and as part of determining the applicability of this CATEX. This collaboration should include consideration of appropriate FAA community engagement that would inform the affected public of proposed procedures and help identify community concerns.

Required AEE and AGC Concurrence

Due to the unique nature of this CATEX, all Lines of Business/Staff Offices must coordinate with and obtain written concurrence from AEE-400 and AGC-600 prior to applying this CATEX to a proposed action until further notice.

Effective Date

This supplemental guidance is effective immediately.

For further information, contact:

Julie Marks, Office of Environment and Energy, Manager, Environmental Policy and Operations (AEE-400), Federal Aviation Administration, 800 Independence Avenue SW, Washington DC 20591, telephone (202) 267-3494

or

Michon Powell, Air Traffic Organization, Mission Support Services, Acting Manager, Environmental Policy Team (AJV-11), Federal Aviation Administration, 800 Independence Avenue SW, Washington DC 20591, telephone (202) 267-9183.

Attachment A

Guidance for Implementation of the Categorical Exclusion in Section 213(c)(1) of the FAA Modernization and Reform Act of 2012

Federal Aviation Administration

Memorandum

FAA Order 1050.1E, Change 1, Guidance Memo #5[1]

Date: December 6, 2012

To: FAA Lines of Business and Managers with NEPA Responsibilities

From: Julie Marks, Manager, Environmental Policy and Operations, AEE-400

Subject: **Guidance for Implementation of the Categorical Exclusion in Section 213(c)(1) of the *FAA Modernization and Reform Act of 2012***

This memorandum provides guidance to implement a new legislative categorical exclusion (213(c)(1)) CATEX) that was established by Congress in the FAA Modernization and Reform Act of 2012 ("Act"). Implementation of the 213(c)(l) CATEX is effective as of the date of this memorandum.

The CATEX in Section 213(c)(l) of the Act provides:

> (c) COORDINATED AND EXPEDITED REVIEW.
>
> "(1) In General.−Navigation performance and area navigation procedures developed, certified, published, or implemented under this section shall be presumed to be covered by a categorical exclusion (as defined in section 15084 of title 40, Code of Federal Regulations) under chapter 3 of FAA Order 1050.1E unless the Administrator determines that extraordinary circumstances exist with respect to the procedure."

Implementing Instructions

The 213(c)(l) CATEX is specific to procedures described under Section 213 of the Act at:

- 35 Operational Evolution Partnership (OEP) airports and any medium or small hub airport located within the same metroplex area considered appropriate by the Administrator,
- and at 35 non-OEP airports.

[7] This document is guidance memo # 5 for FAA Order I050.1E (Change I). It is the fifth in a series of memos to provide additional guidance on FAA 's NEPA requirements, procedures, and practices.

In March 2011 the FAA replaced the OEP with an initiative to incorporate NextGen technology into the Nation al Airspace System based on the Core Airports (see Attachment I). The Core Airports consist of the 29 large hub airports plus Memphis International Airport. The FAA interprets the phrase '35 OEP airports in section 213 to refer to the 30 Core Airports. The FAA identified the RNAV and RNP to be "developed, certified, published, or implemented" at Core airports, as well as at medium and small hub airports located within the same metroplex area as the Core Airports to which this CATEX will potentially apply at the following website:

http://www.faa.gov/air_traffic/flight_info/aeronav/procedures/reports/

The FAA also identified the RNP to be "developed, certified, published or implemented" at non-Core Airports at this website pursuant to section 213 (b)(1). The 213(c)(1) CATEX does not apply to other types of proposed procedures or other airports. Most proposed air traffic procedures are covered by established CATEXes under paragraph 311 in Chapter 3 of FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures.* This new 213(c)(1) CATEX may be used for proposed RNP/RNAV procedures at the specified airports in addition to other CATEXes that may also apply.

FAA Order 1050.1E lists two categories of procedures in paragraphs 401m and 401n that normally require an Environmental Assessment (EA). These are:

> "New instrument approach procedures, departure procedures, en route procedures, and modifications to currently approved instrument procedures which routinely route aircraft over noise sensitive areas at less than 3,000 feet above ground level (AGL)."
>
> “New or revised air traffic control procedures which routinely route air traffic over noise sensitive areas at less than 3,000 feel AGL."

Proposed RNP/RNA V procedures that have to date normally required an EA under the provisions of Order 1050.1E will, as of the date of the FAA Modernization And Reform Act of 2012, February l4, 2012, fall within the scope of the 213(c)(1) CATEX at the specified airports absent extraordinary circumstances. Procedures other than RNP/RNAV still fall under the provisions of paragraphs 401m and 40ln.

The 213(c)(1) CATEX is subject to the same requirements as other CATEXes in Order 1050. 1E. The statutory language specifically states that the Administrator must determine if extraordinary circumstances exist before applying this legislative CATEX. Extraordinary circumstances exist when a proposed action involves one or more of the circumstances described under paragraph 304 of Order 1050.1E and may have a significant impact. Screening[8] and other consultation or analyses that are performed to determine the potential for extraordinary circumstances apply to the 213(c)(I) CATEX just as they do to other procedural CATEXes. If extraordinary circumstances do not exist, FAA's environmental review will be completed with a documented CATEX that includes the results of screening and any other reviews that were performed (i.e., an EA will not be prepared). If extraordinary circumstances are found to exist. FAA will prepare an EA or Environmental Impact Statement (EIS) in accordance with Order 1050.1E.

[8] Screening is a process where a first order analysis is performed to determine if there is a potential for significant environmental impacts. Screening can be completed using FAA approved look up tables and/or screening tools. Specific guidance around the appropriate use of the different screening mechanisms and the interpretations of the results exist and should be referenced during the screening process.

Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) governing cumulative effects and connected actions continue to apply to proposed RNAV and RNP procedures at the specified airports. Proposed RNP/RNAV procedures at the specified airports must not be inappropriately segmented from larger projects or evaluated in isolation from potential cumulative effects with other proposed agency action s (e.g., conventional and PBN procedures for implementation at the same location an d the same time, or runway development and associated PBN procedures). Environmental laws in addition to NEPA also continue to apply if they are relevant, e.g., the Clean Air Act.

Background

FAA Order 1050.1E (Change 1) *Environmental Impacts: Policies and Procedures* (March 20, 2006) establishes agency-wide policies and procedures for compliance with NEPA and the implementing regulations issued by CEQ (40 CFR parts 1500-1508). CATEXes are categories of actions which do not individually or cumulatively have a significant effect on the environment and are, therefore, not subject to further review in an EA or EIS. A CATEX is not an exemption from NEPA review. Proposed actions that fall under CATEXes are subject to a sufficient amount of review to allow the FAA to determine that no extraordinary circumstances apply that would require more detailed environmental review with an EA or EIS.

The 213(c)(l) CATEX was created by Congress with the intent to expedite environmental reviews of proposed RNP/RNAV procedures at certain airports. We expect this will be achieved through the ability to use more documented CATEXes for these procedures in lieu of EAs that are concluded with Findings of No Significant Impact (FONSIs). Some concern has been expressed that the 213(c)(l) CATEX enables NextGen procedures to be implemented without appropriate consideration of potential environmental impacts, especially noise impacts. The Act addresses this concern by placing the 213(c)(l) CATEX within the context of FAA Order 1050.1E and making the 213(c)(1) CATEX subject to extraordinary circumstances. Noise screening and other environmental reviews that apply to the FAA's administratively established CATEXes also apply to the 213(c)(1) CATEX. Proposed procedures that would trigger extraordinary circumstances, including significant noise impacts, cannot be CATEXed.

The Act includes a second legislative CATEX in Section 213(c)(2). This second CATEX is subject to future guidance and is not within the scope of this memorandum.

Effective Date

The use of the legislative CATEX in Section 213(c)(l) of the FAA Modernization an d Reform Act of 2012 was dependent on FAA identifying the procedures and airports to which this CATEX will potentially apply. Since FAA has identified the procedures and airports at the above referenced FAA website, the CATEX can now be used and is effective immediately. The CATEX will also be incorporated into the revision of Order 1050.1E.

For further information, contact:

Julie Marks, Office of Environment and Energy, Manager, Environmental Policy and Operations

(AEE-400), Federal Aviation Administration. 800 Independence Avenue SW, Washington DC 20591, telephone (202) 267-494

or

Donna Warren, Air Traffic Organization, Mission Support Services, Manager. Environmental Policy Team (AJV-114). Federal Aviation Administration, 800 Independence Avenue SW, Washington DC 20591, telephone (202) 267-9183.

Attachment 1

FAA Core Airports

1. Hartsfield-Jackson Atlanta
2. Boston Logan
3. Thurgood Marshall Baltimore-Washington
4. Charlotte Douglas
5. Ronald Reagan Washington National
6. Denver
7. Dallas-Fort Worth
8. Detroit Metropolitan-Wayne County
9. Newark
10. Fort Lauderdale-Hollywood
11. Honolulu
12. Washington Dulles
13. George Bush
14. John F. Kennedy
15. McCarran
16. Los Angeles
17. LaGuardia
18. Orlando
19. Chicago Midway
20. Memphis
21. Miami
22. Minneapolis-St. Paul
23. Chicago O'Hare
24. Philadelphia
25. Phoenix Sky Harbor
26. San Diego-Lindbergh Field
27. Seattle-Tacoma
28. San Francisco
29. Salt Lake City
30. Tampa

Attachment B

List of CATEX 1 Applicable

Core Airports and the Associated Medium and Small Hub Airports

Core Airports	Metroplex	Medium Hub Airports	Small Hub Airports
Hartsfield-Jackson Atlanta	Atlanta		
Boston Logan	Boston	Bradley International Airport; T.F. Green Airport	Manchester-Boston Regional Airport
Thurgood Marshall Baltimore-Washington	D.C.		
Charlotte Douglas	Charlotte	Raleigh-Durham International	Columbia Metropolitan; Piedmont Triad International; Greenville-Spartanburg
Ronald Reagan Washington National	D.C.		
Denver	Denver		
Dallas-Fort Worth	North Texas	Dallas Love Field	
Detroit Metropolitan-Wayne County	Detroit		
Newark	New York/Philadelphia		Westchester County; Long Island MacArthur
Fort Lauderdale-Hollywood	South Florida		
Honolulu	Honolulu		
Washington Dulles	D.C.		
George Bush	Houston	William P. Hobby	
John F. Kennedy	New York/Philadelphia		Westchester County; Long Island MacArthur
McCarran	Las Vegas Valley		
Los Angeles	Southern California	Bob Hope; Ontario International; John Wayne Airport-Orange County Airport	Long Beach; Palm Springs International
LaGuardia	New York/Philadelphia		Westchester County; Long Island MacArthur
Orlando	Orlando		Orlando Sanford International
Chicago Midway	Chicago	General Mitchell International	
Memphis	Memphis		

Core Airports	Metroplex	Medium Hub Airports	Small Hub Airports
Miami	South Florida		
Minneapolis-St Paul	Minneapolis-St. Paul		
Chicago O'Hare	Chicago	General Mitchell International	
Philadelphia	New York/Philadelphia		Westchester County; Long Island MacArthur
Phoenix Sky Harbor	Phoenix		Phoenix-Mesa Gateway
San Diego-Lindbergh Field	Southern California	Bob Hope; Ontario International; John Wayne Airport-Orange County Airport	Long Beach; Palm Springs International
Seattle-Tacoma	Seattle		
San Francisco	Northern California	Norman Y. Mineta San Jose International; Sacramento International	Oakland International
Salt Lake City	Salt Lake City		
Tampa	Tampa		St. Petersburg-Clearwater International; Sarasota/Bradenton International

Note: This list is current as of the effective date of this memorandum. When considering use of CATEX1, the current list of Core Airports could potentially change and should be reviewed at: http://www.faa.gov/nextgen/snapshots/airport/.

Attachment C

List of CATEX 1 Applicable Non-OEP/Non-Core Airports

Airport Code	Airport Name
1V6	Fremont County Airport
ABQ	Albuquerque International Sunport
ALB	Albany International Airport
ANC	Ted Stevens Anchorage International Airport
APF	Naples Municipal Airport
AUS	Bergstrom International Airport
BCT	Boca Raton Airport
BED	Laurence G Hanscom Field Airport
BHM	Birmingham-Shuttlesworth International Airport
BIL	Billings Logan International Airport
BLI	Bellingham International Airport
BNA	Nashville International Airport
CHS	Charleston International Airport
CMH	Port Columbus International Airport
CRW	Yeager Airport
DAL	Dallas Love Field Airport
ECP	Northwest Florida Beaches International Airport
ELP	El Paso International Airport
FAI	Fairbanks International Airport
HRL	Valley International Airport
HTO	East Hampton Airport
IND	Indianapolis International Airport
IWA	Phoenix-Mesa Gateway Airport
JAX	Jacksonville International Airport
MCI	Kansas City International Airport
MHT	Manchester-Boston Regional Airport
OMA	Eppley Airfield Airport
PRC	Prescott Municipal Airport
PUW	Pullman-Moscow Regional Airport
PVD	Green Airport
RIC	Richmond International Airport
SDF	Louisville International Airport

Airport Code	Airport Name
SMF	Sacramento International Airport
SMO	Santa Monica Municipal Airport
TTN	Trenton Mercer Airport

17.3. CATEX 5-6.5r [CATEX2]

> *Any navigation performance or other performance based navigation procedure that, in the determination of the Administrator, would result in measurable reductions in fuel consumption, carbon dioxide emissions, and noise, on a per flight basis, as compared to aircraft operations that follow existing instrument flight rules procedures in the same airspace. This CATEX may be used irrespective of the altitude of such procedures. (ATO)*

In March 2016, AEE issued Guidance for 5-6.5.r (aka CATEX2) titled, *Guidance for Implementation of the Categorical Exclusion in Section 213(c)(2) of the* ***FAA Modernization and Reform Act of 2012.***

The following pages contain the guidance memorandum in their original form.

Federal Aviation Administration

Memorandum

FAA Order 1050.1, Guidance Memo

Date: March 29, 2016

To: FAA Lines of Business and Managers with NEPA Responsibilities

From: Julie Marks, Manager, Environmental Policy and Operations, AEE-400

Subject: **Guidance for Implementation of the Categorical Exclusion in Section 213(c)(2) of the *FAA Modernization and Reform Act of 2012***

This memorandum provides guidance to implement the legislative categorical exclusion (CATEX) established by Congress in section 213(c)(2) of the FAA Modernization and Reform Act of 2012. Section 213(c)(2) of the Act provides:

(c) COORDINATED AND EXPEDITED REVIEW.

> (2) NEXTGEN PROCEDURES. – Any navigation performance or other performance based navigation procedure developed, certified, published, or implemented that, in the determination of the Administrator, would result in measurable reductions in fuel consumption, carbon dioxide emissions, and noise, on a per flight basis, as compared to aircraft operations that follow existing instrument flight rules procedures in the same airspace, shall be presumed to have no significant affect [sic] on the quality of the human environment and the Administrator shall issue and file a categorical exclusion for the new procedure.

Implementing Instructions

Applicability of Section 213(c)(2) CATEX

The Section 213(c)(2) CATEX, commonly referred to as CATEX 2, has been included in FAA Order 1050.1, *Environmental Impacts: Policies and Procedures,* in paragraph 5-6.5r under

Categorical Exclusions for Procedural Actions. The use of CATEX 2 is limited to NextGen performance based navigation (PBN) procedures. This CATEX cannot be used for conventional procedures (flight procedures that rely on ground-based navigational aids), for projects involving a mix of conventional and PBN procedures (i.e., where PBN procedures are part of a larger project including non-PBN actions), or where PBN procedures are connected actions (i.e., (a) where they automatically trigger other actions; (b) cannot or will not proceed unless other actions are taken previously or simultaneously; or (c) are interdependent parts of a larger action and depend on the larger action for their justification). In cases where a larger action that includes PBN procedures is covered by a different CATEX, that CATEX should be used for the entire action, rather than CATEX 2.

In order to use CATEX 2, the PBN procedures must result in measureable reductions in fuel consumption, carbon dioxide emissions, and noise on a per flight basis as compared to aircraft operations that follow existing instrument flight rule procedures in the same airspace. Reductions in noise have been the most challenging to define. As defined in the attachment to this memorandum, the FAA will determine that there is a measurable reduction in noise on a per flight basis if proposed PBN procedures, when compared to existing procedures they replace in the same airspace, would result in a net noise reduction within that area of airspace and would not significantly increase noise.

Reductions in all three of the legislative criteria—fuel consumption, carbon dioxide emissions, and noise—must be achieved for this CATEX to be used. The methodology for determining whether these three legislative criteria would be met is described in the attachment to this memorandum.

Under the terms of the legislation, the potential significance of other categories of impact or the existence of extraordinary circumstances do not preclude the use of CATEX 2.

Airport Operator and Community Involvement

FAA collaboration with airport operators is critical during the planning and design of proposed PBN procedures. In addition, the Council on Environmental Quality (CEQ) encourages agencies to determine circumstances in which the public should be engaged or notified before a CATEX is used. The FAA has determined that this public notification provision applies to the use of this CATEX. Collaboration with airport operators and public notification should include provision for appropriate community outreach that not only informs the affected public of the FAA's proposal, but also allows the public to provide feedback on community concerns.

Documentation

The use of CATEX 2 requires additional documentation in accordance with the instructions in paragraph 5-3.b. of Order 1050.1F. The documentation should describe how the proposed action fits within the CATEX and meets the statutory criteria. Any applicable special purpose laws and

requirements (such as Section 106 of the National Historic Preservation Act) must be complied with in the same manner as with other CATEXs.

Required AEE and AGC Concurrence

Due to its unique nature, written concurrence from AEE-400 and AGC-600 is required prior to applying this CATEX to a proposed action until further notice. The Air Traffic Organization's request for concurrence should be submitted to AEE and AGC by the Director of Airspace Services (AJV-1)along with the following information:

- The initial environmental review.
- Noise screening data showing projected noise changes, including but not limited to the identification of reportable noise increases.
- Information on residential communities and other noise sensitive areas (e.g., schools, hospitals, historical or cultural sites) affected by proposed PBN flight tracks and the altitudes of new or increased concentration of aircraft overflights of these areas compared to the existing situation.
- Feedback from collaboration with airport operators, public notification and outreach sessions, and other information on potential community concerns and controversy.

Additional information may be requested in some cases to assist in this concurrence review.

Background

Categorical Exclusions under NEPA

Regulations issued by the Council on Environmental Quality (CEQ) at 40 CFR parts 1500-1508 for implementing the National Environmental Policy Act (NEPA) establish three levels of environmental review for federal actions: environmental impact statements (EIS), environmental assessments (EA) and categorical exclusions (CATEX). A CATEX is not an exemption or waiver of NEPA review; it is a level of NEPA review. CATEXs are categories of actions which do not individually or cumulatively have a significant effect on the environment. FAA Order 1050.1, *Environmental Impacts: Policies and Procedures*, establishes agency-wide policies and procedures for compliance with NEPA and the implementing regulations.

Ordinarily, an agency's procedures must also provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect which would preclude the use of a CATEX. 40 CFR §1508.4. However, under the terms of the legislation the CATEX created by Section 213(c)(2) does not consider whether extraordinary circumstances apply.

Use of a CATEX does not relieve the FAA from the obligation to comply with other applicable environmental laws, such as the Endangered Species Act, the National Historic Preservation Act, or the Clean Air Act. Information on other environmental requirements that may apply to proposed actions is provided in the 1050.1F Desk Reference.

Section 213(c) of the FAA Modernization and Reform Act of 2012

Congress created two legislative CATEXs to expedite environmental review of certain air traffic procedures being implemented as part of NextGen. The CATEX in Section 213(c)(2) presumes no significant effect on the quality of the human environment based on reductions of three factors—fuel consumption, carbon dioxide emissions, and noise—as described in this memorandum.

Section 213(c)(1) created another legislative CATEX, which is covered by Guidance Memo 5, issued on December 6, 2012 and subsequently supplemented. These two CATEXs have been included in the FAA's Order 1050.1.

Effective Date

The use of the legislative CATEX in Section 213(c)(2) of the FAA Modernization and Reform Act of 2012 was dependent on FAA guidance on implementing this CATEX. Since AEE has now issued this guidance, CATEX 2 can now be used and is effective immediately.

For further information, contact:

Office of Environment and Energy, Manager, Environmental Policy and Operations (AEE-400), Federal Aviation Administration, 800 Independence Avenue, SW, Washington DC 20591

Or

Air Traffic Organization, Mission Support Services, Manager, Environmental Policy Team (AJV-11), Federal Aviation Administration, 800 Independence Avenue, SW, Washington DC 20591.

ATTACHMENT

Methodology for Calculating Reductions in Noise, Fuel Consumption, and Carbon Dioxide Emissions for Purposes of Using Sec. 213(c)(2) CATEX

In order to use the Sec. 213(c)(2) CATEX, reductions in all three of the legislative criteria—noise, fuel consumption, carbon dioxide emissions—need to be achieved, as calculated below.

The Aviation Environmental Screening Tool (AEST) has been updated to compute the noise, fuel consumption, and carbon dioxide calculations described below. Once the required information has been entered into AEST, the tool has a CATEX 2 report which can be generated. This report will indicate if the changes between a no action scenario (i.e., aircraft operations that follow existing instrument flight rules procedures in the same airspace) and the proposed PBN procedure meet the CATEX 2 statutory requirements. The report will also provide aggregate data to support the assessment results.

I. Calculating Measurable Reduction in Noise on a Per Flight Basis

Reductions in noise are the most challenging to determine and involve a two-step calculation.

a. Noise screening to identify increases that would preclude use of the CATEX

FAA interprets "measurable reductions in …noise" to preclude situations where there would be significant increases in noise under FAA's long-standing NEPA criterion. This CATEX may not be used if a proposed PBN procedure would result in a noise increase of Day-Night Average Sound Level (DNL) 1.5 dB or more for a noise sensitive area (e.g. homes, schools) that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above this level due to a 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.

A noise grid analysis is performed by identifying population centroids within the noise study area from U.S. Census blocks. Discrete receptor grid points can also be included to represent select noise sensitive areas. The DNL must be calculated at each grid point for both the PBN scenario and the no action scenario. The change in DNL between the two scenarios is computed for each grid point in the study area. An increase of DNL 1.5 dB or more for the PBN scenario for a grid point at a noise sensitive area that is at or above

DNL 65 dB or will be at or above DNL 65 dB due to a 1.5 dB increase will indicate a significant noise increase and preclude the use of the CATEX.

b. Net noise reduction calculation

If noise screening does not preclude use of the CATEX, a net noise reduction calculation is performed. Under the net noise reduction method, proposed PBN procedures would result in a measurable reduction in noise on a per flight basis if, in areas exposed to noise levels of DNL 45 decibels (dB) and higher, the total average change in noise is a decrease when compared to existing procedures they replace in the same airspace. The FAA uses the DNL to calculate average changes in noise.

The Net Noise Reduction Method requires the noise study area to include noise levels of DNL 45 dB and above. Using the input and grid created for the analysis performed in (a) above, the DNL level at each population centroid is calculated for both the PBN scenario and no action scenario.

The population centroids are then grouped by noise exposure level into three noise level bands: DNL 45 to 60 dB, DNL 60 to 65 dB, and DNL >65 dB. For each noise band the change in DNL (ΔDNL) between the PBN and no action scenario is computed at each population centroid. The ΔDNLs in each band are then summed and divided by the number of centroids in the band to obtain an average ΔDNL for the noise band. An average ΔDNL less than zero (PBN minus no action) for a noise band would indicate a net noise reduction in that band. The average ΔDNL for the three noise bands are then summed to obtain the total noise change. The results would be tabulated as shown in Table 1.

Table 1. Tabulation of Average Changes in DNL Level

DNL Noise Exposure Band (dB)	Average Change in DNL
45-60	$\Delta DNL_{(45\text{-}60)}$
60-65	$\Delta DNL_{(60\text{-}65)}$
Above 65	$\Delta DNL_{(above\ 65)}$
Total Change	$\Delta DNL_{(45\text{-}60)} + \Delta DNL_{(60\text{-}65)} + \Delta DNL_{(above\ 65)}$

If the total average DNL change in noise is a decrease, as shown in the example in Table 2 below and screening did not identify any significant noise increases, the measurable noise reduction determination can be made.

Table 2. Example of Average Changes in DNL Level PBN Procedures vs Existing Procedures

DNL Noise Exposure Band	Average Change in DNL
45-60	-0.3 DNL
60-65	0
Above 65	0
Total Change	-0.3 DNL

II. Calculating Measurable Reduction in Fuel Consumption and Carbon Dioxide Emissions on a Per Flight Basis

Using the same tracks, operations, and fleet data used in the noise screening for the proposed PBN procedure and no action alternative), calculate the total fuel burn and carbon dioxide emissions for all flights. To calculate the fuel burn and carbon dioxide emissions on a per flight basis, divide the fuel burn and carbon dioxide number for all flights by the number of flights. Complete this calculation for both the no action scenario and the proposed PBN procedure and compare the results. The PBN procedure will result in measureable reductions in fuel burn and carbon dioxide emissions if the per flight averages are lower with the PBN procedure than under the no action alternative.