

Supporting Statement
Experimental Permits for Reusable Suborbital Rockets
2120-0722

- 1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection.***

The FAA collects information from applicants for experimental permits in order to determine whether they satisfy the requirements for obtaining an experimental permit under 14 CFR part 437. Pre-flight information is required once a permit is issued. The requirements are designed to achieve public safety while reducing the regulatory burden on developers of reusable suborbital rockets.

The regulations mandating or authorizing the collection of information are as follows:

Section 437.21, General, requires an applicant to provide information for the FAA to analyze environmental impacts and information for the FAA to conduct a maximum probable loss analysis. The applicant is required to provide a program description, a flight test plan and operational safety documentation which are included with the other sections of part 437 discussed below.

Section 437.25, Flight test plan, requires that the applicant provide the FAA a general description of the applicant's flight test program, including an estimate of the number of flights, key flight-safety events, and maximum altitude. The applicant is required to identify and describe the geographic boundaries of one or more proposed operating areas where it plans to perform its flights.

Sections 437.27, Pre-flight and post-flight operations, requires that an applicant demonstrate to the FAA how it will establish a safety clear zone and verify that the public is outside that zone before and during any hazardous operation, in accordance with § 437.53.

Sections 437.29, Hazard analysis, requires that an applicant perform a hazard analysis that complies with § 437.55(a) and provide to the FAA all the results of each step of the hazard analysis.

Section 437.31, Verification of operating area containment and key flight-safety event limitations, requires that an applicant identify, describe, and provide the FAA verification evidence of the methods and systems used to meet the requirements of § 437.57(a) and § 437.59.

Section 437.37, requires an applicant to identify and describe how it will measure in real time the position and velocity of its vehicle, and provide position and velocity data to the FAA for post-flight use, in accordance with § 437.67.

Section 437.41, Mishap Response Plan, requires an applicant for a permit to provide a mishap response plan addressing how an applicant will respond to a mishap, in accordance with § 437.75(b).

Section 437.69, Communications, requires a permittee to be in communication with Air Traffic Control during all phases of flight and to record communications affecting the safety of the flight.

Section 437.89, Pre-flight reporting, requires a permittee to provide the FAA with certain information before each flight or series of flights. The permittee will be required to provide information on: payload and payload operations, when the flight or series of flights are planned, the operating area for each flight, the planned maximum altitude for each flight and a planned trajectory for a collision avoidance trajectory.

The collection of information supports the Department of Transportation's Safety strategic objective.

2. *Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.*

The information to be collected includes data required for performing a safety review, which includes a technical assessment to determine if the applicant can launch a reusable suborbital rocket without jeopardizing public health and safety and the safety of property. This information collection requirement is intended for incorporating acquired data into the experimental permit, which then becomes binding on the launch or reentry operator. The applicant is required to submit information that enables FAA to determine, before issuing a permit, if issuance of the experimental permit would jeopardize the foreign policy or national security interests of the U.S.

Environmental information is required for the FAA to comply with the requirements of the National Environmental Policies Act.

- 3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also describe any consideration of using information technology to reduce burden. [Effective 03/22/01, your response must SPECIFICALLY reference the Government Paperwork Elimination Act (GPEA), which addresses electronic filing and recordkeeping, and what you are doing to adhere to it. You must explain how you will provide a fully electronic reporting option by October 2003, or an explanation of why this is not practicable.]**

With one exception, 100% of the information can be provided in an electronic format. The one exception is that the FAA requires a letter with a signature to certify that an application, including any identified electronic submittals, is accurate, true, and complete. The FAA is considering the use of electronic signatures in the future.

- 4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purpose(s) described in Item 2 above.**

Due to the proprietary nature of the information collected, it is not publicly available and the FAA is the only agency that collects this type of information. The agency is not aware of other government agencies that collect such information pertaining to the launches of a commercial reusable suborbital rockets. Documents produced for a different agency or purpose that meet FAA requirements do not have to be reformatted specifically for the FAA. Also, an applicant who has submitted information in earlier applications does not need to resubmit the same data, but may reference it.

- 5. If the collection of information has a significant impact on a substantial number of small businesses or other small entities (Item 5 of the Paperwork Reduction Act submission form), describe the methods used to minimize burden.**

Pursuant to the Regulatory Flexibility Act of 1980 (RFA), FAA/AST certifies that the rule does not have a significant economic impact on a substantial number of small entities. Regulations are written to allow flexibility and innovation.

- 6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.**

If the collection of information, which involves reporting, recordkeeping, and disclosures, is not conducted, the FAA may not be able to make a permit determination. The frequency of collecting the information is contingent upon the number of permit applications and missions.

- 7. Explain any special circumstances that require the collection to be conducted in a manner inconsistent with the general information collection guidelines in 5 CFR 1320.5(d)(2).**

This requirement follows the guideline of 5 CFR 1320.5(d)(2).

- 8. Describe efforts to consult persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported. If applicable, provide a copy and identify the date and page number of publication in the Federal Register of the agency's notice, required by 5 CFR 1320.8(d) soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.**

A 60 day notice for public comment was published on August 21, 2013, vol. 78, no. 162, pages 51807-51808 in preparation for this new submission to OMB. No comments were received.

- 9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.**

No decision was made to provide any payment or gift to respondents.

- 10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.**

Information collected, including company proprietary information, will be protected in accordance with the Freedom of Information Act and 49 U.S.C. §70114. Furthermore, in accordance with 14 CFR § 413.9, any person furnishing information or data to the FAA may request in writing that trade secrets or proprietary commercial or financial data be treated as confidential. The request must be made at the time the information or data is submitted, and state the period of time for which confidential treatment is desired.

- 11. Provide additional justification for any questions of sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private.**

The FAA does not collect any sensitive information under 14 CFR part 437.

- 12. Provide estimates of hour burden of the collection of information.**

Presented below are estimates of cost for each section that results in paperwork costs. The FAA estimates that the industry loaded hourly cost is \$74.52. In addition, the FAA examined two scenarios. At the low end, the FAA would issue 8 experimental permits

(and renew 7 of these) and the industry would perform 455 flights under these experimental permits over 10 years. At the high end, the FAA would issue 12 experimental permits (and renew 11 of these) and the industry would perform 910 flights under these experimental permits over 10 years.

The total estimated annual number of responses ranges from a low of 92.5 to a high of 184.3. This averages to 138 responses per year.

Section 413.23 License or Permit Renewal

A permittee renewing its permit has to submit a written application to the FAA which describes proposed changes in its permitted activities and provide additional information required by the FAA. Each renewal requires an estimated 223 hours to collect and provide the information to the FAA.

Low Estimate

The applicant needs an estimated 223 person-hours to collect and provide information for the renewal for each of 7 permits.

$$\text{Annual Hour Burden} - (7 \times 223)/10 = 156.1$$

$$\text{Annual Cost Burden} - \$74.52 \times 156.1 = \$11,633$$

High Estimate

The applicant needs an estimated 223 person-hours to collect and provide information for the renewal for each of 11 permits.

$$\text{Annual Hour Burden} - (11 \times 223)/10 = 245.3$$

$$\text{Annual Cost Burden} - \$74.52 \times 245.3 = \$18,280$$

Section 437.21 General

The applicant is required to provide information for the FAA to analyze environmental impacts and information for the FAA to conduct a maximum probable loss analysis. We estimate that for each initial permit an applicant would require 500 hours to collect and provide the FAA with information for the environmental analysis. A permit applicant also spends an estimated 40 hours to collect and provide the FAA with information for the maximum probable loss analysis. These hours are in addition to hours spent preparing the initial application and the renewal application. The paperwork estimated hours and costs for the applicant to provide a program description, a flight test plan and operational safety documentation are included with the other 437 sections discussed below.

Low Estimate

The FAA estimates the applicant needs an estimated 500 person-hours to collect and provide information for the environmental analysis and an estimated 40 hours to collect and provide information for the maximum probable loss analysis for each of 8 permits.

$$\text{Annual Hour Burden} - (8 \times (500 + 40))/10 = 432$$

$$\text{Annual Cost Burden} - \$74.52 \times 432 = \$32,193$$

High Estimate

The FAA estimates the applicant needs an estimated 500 person-hours to collect and provide information for the environmental analysis and an estimated 40 hours to collect and provide information for the maximum probable loss analysis for each of 12 permits.

$$\text{Annual Hour Burden} - (12 \times (500 + 40))/10 = 648$$

$$\text{Annual Cost Burden} - \$74.52 \times 648 = \$48,082$$

Section 437.37 Tracking and Section 437.67 Tracking

§ 437.37 and § 437.67 require that a permittee measure in real time the position and velocity of its reusable suborbital rocket and that an applicant identify and describe the methods it would use to meet the tracking requirement. We estimate that an applicant would require 96 hours to prepare a description of the tracking methods and to install the associated equipment. Of the 96 hours, 9.6 hours would be required to prepare the description of the tracking methods and would be considered a paperwork cost.

Low Estimate

The FAA estimates 9.6 person-hours to prepare a description of the tracking methods for each of 8 permits.

$$\text{Annual Hour Burden} - (8 \times 9.6)/10 = 7.68$$

The estimated average annual cost for companies to prepare a description of the tracking methods is:

$$\text{Annual Cost Burden} - \$74.52 \times 7.68 = \$572$$

High estimate

The FAA estimates 9.6 person-hours to prepare a description of the tracking methods for each of 12 permits.

Annual Hour Burden - $(12 \times 9.6)/10 = 11.52$

The estimated average annual cost for companies to prepare the description of the tracking methods is:

Annual Cost Burden - $\$74.52 \times 11.52 = \858.4

Section 437.25, Flight test plan, Section 437.27, Pre-flight and post-flight operations, Section 437.29, Hazard analysis, Section 437.31, Verification of operating area containment and key flight-safety event limitations, Section 437.53, Pre-flight and post-flight operations, Hazard analysis, Section 437.57, Operating area containment, and Section 437.59, Key flight-safety event limitations

Collectively, these sections require a private entity performing launch and reentry under an experimental permit to demonstrate that its operations would protect public safety. The FAA estimates that a permit holder will devote 1,560 hours to fulfilling these requirements, all of which would be considered paperwork.

Low Estimate

The FAA estimates 1,560 for each of 8 permits to provide the required documentation and analyses.

Annual Hour Burden – $(8 \times 1,560)/10 = 1,248$

Annual Cost Burden - $\$74.52 \times 1,248 = \$93,001$

High Estimate

The FAA estimates 1,560 for each of 12 permits to provide the required documentation and analyses.

Annual Hour Burden – $(12 \times 1,560)/10 = 1,872$

Annual Cost Burden - $\$74.52 \times 1,872 = \$139,501$

Section 437.41 -Mishap Response Plan

Section 437.41 requires an applicant for a permit to provide a mishap response plan addressing response to a mishap. The FAA estimates that a permit holder devotes 120 hours to fulfilling these requirements, all of which would be considered paperwork. Unless lessons learned dictated otherwise, a permittee will likely use the same Mishap Response Plan when applying for a renewal.

Low Estimate

The FAA estimates 120 hours for each of 8 permits to provide the mishap response plan.

Annual Hour Burden – $(8 \times 120)/10 = 96$

Annual Cost Burden - $\$74.52 \times 96 = \$7,154$

High Estimate

The FAA estimates 120 for each of 12 permits to provide the mishap response plan.

Annual Hour Burden – $(12 \times 120)/10 = 144$

Annual Cost Burden - $\$74.52 \times 144 = \$10,731$

Section 437.69 - Communications

Section 437.69 requires a permittee to be in communication with Air Traffic Control during all phases of flight and to record communications affecting the safety of the flight. While this requires a response from the operator, it would be a passive response because it would simply involve turning on a recorder. Therefore, we do not expect this requirement to add to the annual hourly or cost burden. Under the high scenario we expect there would be 955 responses and under the low scenario 455 responses over ten years.

Section 437.89 Pre-flight reporting

Section 437.89 requires the permittee to provide the FAA with certain information before each flight or series of flights. The permittee is required to provide information on: payload and payload operations, when the flight or series of flights are planned, the operating area for each flight, the planned maximum altitude for each flight and a planned trajectory for a collision avoidance trajectory.

The FAA estimates that the permittee requires at most 2 hours to provide this information for each flight. Under the higher estimate we expect there would be 910 responses and under the low estimate 455 responses over ten years.

Low Estimate

The FAA estimates 2 hours for each of 455 flights to provide the required information to the FAA.

Annual Hour Burden – $(455 \times 2)/10 = 91$

Annual Cost Burden - $\$74.52 \times 91 = \$6,781$

High Estimate

The FAA estimates 2 hours for each of 910 flights to provide the required information to the FAA.

Annual Hour Burden – (910 x 2)/10 = 182

Annual Cost Burden - \$74.52 x 182 = \$13,563

Summary of Industry Paperwork Costs

Proposed Rule Section	Paperwork Hours Per New Permit	Low Annual Hourly Burden	High Annual Hourly Burden	Low Annual Cost Burden	High Annual Cost Burden
§ 413.23 License or Permit Renewal	223	156.1	245.3	\$11,633	\$18,280
§ 437.21 General (b)(1) Environmental (b)(2) Financial Responsibility	500 40				
Total	540	432	648	\$32,193	\$48,082
§ 437.37 Tracking § 437.67 Tracking	9.6	7.68	11.52	\$572	\$858
§ 437.25 Flight Test Plan § 437.27 Pre-flight and Post-flight Operations § 437.29 Hazard Analysis § 437.31 Verification of operating area containment and key flight-safety event limitations § 437.53 Pre-flight and Post-flight Operations § 437.55 Hazard Analysis § 437.57 Operating Area Containment § 437.59 Key Flight-Safety Event Limitations	1,560	1,248	1,872	\$93,001	\$139,501
§ 437.41 Mishap Response Plan	120	96	144	\$7,154	\$10,731
437.89 Pre-flight	2	91	182	\$6,781	\$13,563

reporting					
Total Paperwork Costs		2,031	3,103	\$151,334	\$231,016

The total estimated annual paperwork burden ranges from a low of 2,031 to a high of 3,103 hours, as indicated in the preceding table. **This averages to 2,567 hours per year. The average of the low annual cost burden and the high annual cost burden is \$191,175.**

Number of Responses

Recording

The following sections have recording requirements:

Section 437.69 Communications requires a permittee to record communications affecting the safety of the flight. We assume this would be done during every flight and count each flight as one response.

Low Estimate

Number of Responses – 455

Annual Number of Responses – $455/10 = 45.5$

High Estimate

Number of Responses – 910

Annual Number of Responses – $910/10 = 91$

Reporting

Section 437.89 Pre-flight reporting requires a permittee to provide the FAA with certain information before each flight or series of flights. We assume this would be done before every flight and count each flight as one response.

We assume that prospective 8 to 12 permittees will each respond one time by submitting all the information required for the application to the FAA when they initially apply for a permit. We assume that 7 to 11 permittees would again respond one time when renewing their permits by submitting all information required for the renewal to the FAA.

Low Estimate

Number of Responses – $(455 + 8 + 7)/10 = 47$

High Estimate

Number of Responses – (910 + 12 +11)/10 = 93.3

Type of Response	Low	High
Recording	45.5	91.0
Reporting	47.0	93.3
Total	92.5	184.3

13. Provide an estimate of the total annual cost burden to respondents or recordkeepers resulting from the collection of information.

Total estimated paperwork cost of the regulation is presented in item #12 above. Permittees would also likely incur costs to equip their vehicles with a means to measure in real time the position and velocity of its reusable suborbital rocket. The FAA estimates that it would cost each permittee \$2,000 to equip its vehicle. The FAA assumes that each permit holder would have one vehicle.

Low Estimate

Annual Cost to Equip Vehicle = (8 x \$2,000)/10 = \$1,600

High Estimate

Annual Cost to Equip Vehicle = (12 x \$2,000)/10 = \$2,400

Estimated average paperwork cost (from question 12): \$191,175

Average annual cost to equip vehicle: \$2,000

Averaged total: \$193,175

14. Provide estimates of annualized cost to the Federal Government. Also, provide a description of the method used to estimate cost, and other expenses that would not have been incurred without this collection of information.

Presented below are estimates of person-hours that the FAA incurs per permit. The FAA assumes that government personnel working in the Washington D.C. area at a GS 13 level step 5 perform the work. The loaded hourly wage rate is \$52.04. The FAA examined two scenarios. Under the high mission scenario, the FAA issues 12 experimental permits (and renews 11 of these) over 10 years. Under the low mission estimate, the FAA issues 8 experimental permits (and renews 7 of these) over 10 years.

Section 413.23 License or permit renewal

Section 413.23 (b)(1) A license or permit renewal application shall satisfy the requirements set forth in this part and any other applicable part of this chapter.

The FAA estimates that it would expend 120 person hours if it had to re-inspect a vehicle for a permit renewal under section 413.23. The FAA estimates that it would expend as many as 72 person-hours [calculated as 3 personnel × (8 hours onsite + 16 hours travel) = 72 person-hours] performing an inspection of a reusable suborbital rocket. Further, we estimate that the FAA would expend an additional 48 person-hours assessing this information in relation to the initial permit representations and subsequently issuing an experimental permit renewal. The FAA estimates it would also incur travel expenses of \$3,316 per inspection. We assume each permittee has one vehicle and that each vehicle has to be re-inspected when the permit is renewed.

Low Estimate

Annual Hour Burden - $(7 \times 120)/10 = 84$

Annual Cost Burden - $\$52.04 \times 84 = \$4,371$

High Estimate

Annual Hour Burden - $(11 \times 120)/10 = 132$

Annual Cost Burden - $\$52.04 \times 132 = \$6,869$

Section 413.23 (c) Review of application

The FAA estimates that it would need 624 hours to conduct the reviews required to determine whether the applicant's permit may be renewed for an additional term.

Low Estimate

Annual Hour Burden - $(7 \times 624)/10 = 436.8$

Annual Cost Burden - $\$52.04 \times 436.8 = \$22,731$

High Estimate

Annual Hour Burden - $(11 \times 624)/10 = 686.4$

Annual Cost Burden - $\$52.04 \times 686.4 = \$35,721$

Subpart B

The FAA estimates it would spend about 6,240 hours per permit consulting with a permit applicant and reviewing and approving applications for permits under the regulation.

Low estimate

$$\text{Annual Hour Burden} - (8 \times 6,240)/10 = 4,992$$

$$\text{Annual Cost Burden} - \$52.04 \times 4,992 = \$259,784$$

High estimate

$$\text{Annual Hour Burden} - (12 \times 6,240)/10 = 7,488$$

$$\text{Annual Cost Burden} - \$52.04 \times 7,488 = \$389,676$$

Section 437.21 General

To administer section 437.21, the FAA estimates that it would expend as many as 72 person-hours [calculated as 3 personnel \times (8 hours onsite + 16 hours travel) = 72 person-hours] per initial permit performing an inspection of a suborbital rocket as part of the permit application process, in accordance with proposed § 437.21.¹

Low Estimate

$$\text{Annual Hour Burden} - (8 \times 72)/10 = 57.6$$

The estimated average annual cost for the FAA to inspect the vehicle is:

Annual Cost Burden due to hours-	$\$52.04 \times 57.6$	= \$2,998
Annual Cost Burden due to travel –	$(\$3,316 \times 8)/10$	= \$2,653
Total Annual Cost Burden including travel and hours		= \$5,651

High Estimate

$$\text{Annual Hour Burden} - (12 \times 72)/10 = 86.4$$

The estimated average annual cost for the FAA to inspect the vehicle is:

Annual Cost Burden due to hours –	$(\$52.04 \times 86.4)$	= \$4,496
Annual Cost Burden due to travel –	$(\$3,316 \times 12)/10$	= \$3,979
Total Annual Cost Burden including travel and hours		= \$8,475

¹ Based on discussions with Federal Aviation Administration personnel assigned to the Associate Administrator for Commercial Space Transportation regarding actual experience under the licensing regime.

Section 437.85 Allowable design changes; Modification of an experimental permit

Under § 437.85, the FAA is responsible for identifying at the time of issuance, the types of changes that may be made to the reusable suborbital rocket without invalidating the permit. The FAA estimates that it would expend as many as 120 person-hours per permit to identify at the time of permit issuance, the types of changes that may be made to the reusable suborbital rocket without invalidating the permit.

Low Estimate

Annual Hour Burden – $(8 \times 120)/10 = 96$

Annual Cost Burden - $\$52.04 \times 96 = \$4,996$

High Estimate

Annual Hour Burden – $(12 \times 120)/10 = 144$

Annual Cost Burden - $\$52.04 \times 144 = \$7,494$

The following table summarizes the cost impacts of the new provisions that would result in cost impacts.

Summary of FAA Paperwork Costs

Rule Section	Paperwork Hours Per New Permit	Low Annual Hourly Burden	High Annual Hourly Burden	Low Annual Cost Burden	High Annual Cost Burden
Subpart B	6,240	4,992	7,488	\$259,784	\$389,676
§ 413.23 License or permit renewal					
(b) Application	120	84	132	\$4,371	\$6,869
(c) Review of application	624	436.8	686.4	\$22,731	\$35,721
§ 437.21 General	72	57.6	86.4	\$5,651	\$8,475
§ 437.85 Allowable design changes; Modification of an experimental permit	120	96	144	\$4,996	\$7,494
Total		5,666	8,537	\$297,533	\$448,235

The average between the high and low burden scenarios leave an annual hourly burden of **7102 hours** and an annual cost burden of **\$372,884**.

15. Explain the reasons for any program changes or adjustments reported in Items 13 or 14 of the OMB Form 83-I.

There have been no changes to the hourly burden since the previous submission. Wage and other monetary costs have been updated to current rates.

16. For collections of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

The FAA does not intend to publish this information.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.

The FAA is not seeking an approval to not display the expiration date.

18. Explain each exception to the certification statement identified in Item 19, "Certification for Paperwork Reduction Act Submissions," of OMB Form 83-I.

There are no exceptions.