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09 May 2013

Mr. Earl Lawrence
U.S. Department of Transportation (DOT)
Federal Aviation Administration
Small Airplane Directorate
901 Locust, Room 301
Kansas City, MO 64106

Subject: Additional Substantiation Data - ICON Aircraft Request for Exemption

Dear Mr Lawrence:

ICON Aircraft has reviewed your letter dated April 25, 2013, that requested additional data to substantiate the Spin Resistance of the ICON Aircraft Model A5. We have prepared the attached data package to fulfill your request.

ICON filed its exemption request over a year ago on May 7, 2012, in order to enable production of a Spin Resistant Airframe. FAA's guidance suggests applicants should allow up to 120 days for the FAA to issue a decision for exemptions. While we are optimistic that the FAA will ultimately make the decision to support this significant advancement in aviation safety, these types of delays introduce extraordinary costs into our industry and can actually deter safety innovation. Two of the FAA's recently published Strategic Goals are to "Move to the Next Level of Safety" and to "Deliver Aviation Access through Innovation." ICON is also committed to both of these noble goals and believes that they show the appropriate thought-leadership by the FAA for the future of the industry. However, lengthy delays in regulatory decision making can severely undermine achieving those goals by crippling the very innovation engine within the private sector that is required to achieve them.

Given the length of time since the request was made, and the importance of achieving the Next Level of Safety within aviation (such as making Spin Resistant Airframes readily available to the public), **ICON respectfully requests that the FAA issue its final decision on or before May 31, 2013.**

If you have any questions or need additional information, please contact me.

Sincerely,

Kirk Hawkins

Kirk Hawkins
CEO & Founder / ICON Aircraft
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Los Angeles, CA 90066

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Additional Substantiation Data:
ICON Aircraft Request for Exemption

Note: The information in Appendices I, II, and III is considered proprietary in nature; please do not place it in the public docket. Only pages 1-13 and Appendices IV, V, and VI are provided to the FAA for public dissemination.

Introduction

The FAA has requested additional data to support the analysis of ICON's exemption request. A copy of the FAA's request letter can be found in Appendix V. This request includes the following subjects which are addressed in this document by number:

1. Aircraft Configuration Definition;
2. Description of Flight Conditions Tested;
3. Clarification of the Standards Used to Prove Spin Resistance;
4. A Statement Attesting that Spin Resistance Has Been Met;
5. Clarification of Whether Inflatable Restraints are Included in the A5;
6. Information to Support Request for LSA Repairmen;
7. Explanation of Factors for ICON Training of Repairmen; and,
8. Explanation of Factors for ICON Training for Sport Pilots.

While each of these requests are directly answered below, ICON would like to make clear that some of the data requested exceeds the requirements of ASTM F2245 using 14 CFR §23.221 as the basis of compliance for spin resistance. The ICON A5 is designed to, and has been tested to, fully comply with the spin resistance requirements in F2245 and 14 CFR §23.221. Under the exemption we expect that the FAA will not put in place additional standards or requirements beyond those contained in F2245 and 14 CFR §23.221, as further restrictions will hinder safety innovations and future product development.

Substantiation Data Origin

ICON is developing a new aircraft concept utilizing a development process that is common for new aircraft types. This process includes testing of a Proof of Concept (POC) aircraft to reduce risk in the production design. ICON's A5-POC has undergone extensive testing including over 650 flights, with 248 flights just for stall and spin resistance development and verification. The A5-POC aircraft was utilized to validate Spin Resistance, and the data from that proprietary testing is shared below.

The Production A5 aircraft will be slightly more refined than the A5-POC and is planned to result in equivalent or better performance than the A5-POC. All of the required testing, including the spin resistance testing discussed in this document, will be repeated with the production prototype A5 which will be built and inspected to the production design. Further, each production A5 aircraft will undergo production flight testing which will include some of the most critical spin resistance tests to assure each production aircraft is spin resistant.

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The A5 is designed to the ASTM LSA standards and will be tested to verify it meets these ASTM standards which include the allowance of spin resistance. For testing purposes, ICON chose to use the widely accepted definition of spin resistance in 14 CFR §23.221 as the basis for this testing.

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1. Aircraft Configuration Definition

FAA's Request: *A description of the design data that ICON Aircraft claims meets the requirements of 14 CFR § 23.221(a)(2), such as an ICON Model A5 master drawing list or top drawing that includes revision level and date*

ICON's Response:

Appendix I contains ICON's high-resolution layout drawing of the Production A5, which is proprietary to ICON Aircraft. A low-resolution copy of this drawing is shown in Figure 1 below. The layout drawing (ICA007990) defines the current design revision of the A5 that meets spin resistance, and it is subject to change at any time in accordance with all requirements of 14 CFR § 21.190. If the configuration defined in ICA007990 changes, spin resistance will be verified using the same tests used to prove initial compliance.

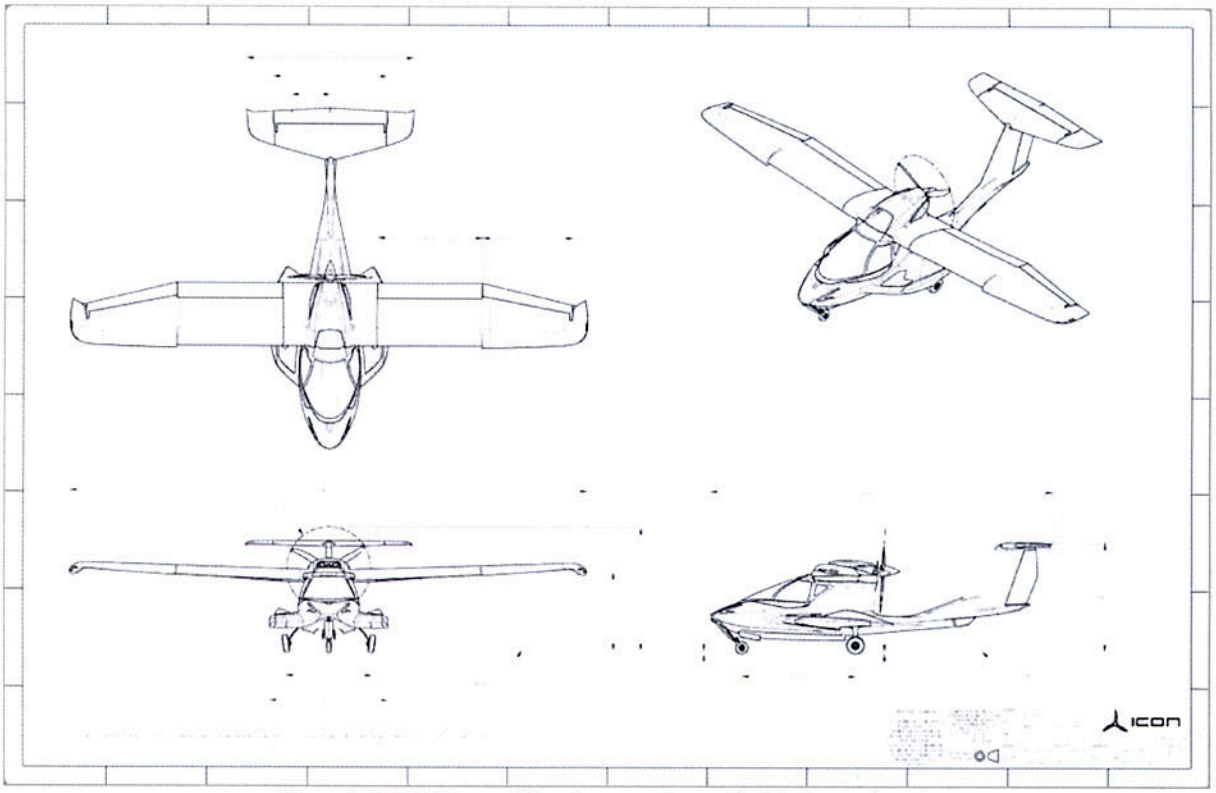

Figure 1: ICON A5 Layout Drawing – see Appendix I for larger format

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2. Description of Flight Conditions Tested

FAA's Request: *A list of the flight test conditions in which ICON Aircraft confirmed the Model A5 meets the requirements of § 23.221(a)(2). For each condition, include at a minimum:*

- *a brief description of the type of test conducted*
- *weight*
- *center of gravity*
- *altitude*
- *trim speed*
- *power*
- *airplane configuration*
- *stall entry deceleration rate*
- *stall entry bank angle (for turning flight and accelerated turning stalls used in showing compliance with § 23.221(a)(2)(iii))*
- *control surface positions for each spin resistance demonstration test point (neutral or pro-spin)*

ICON's Response:
The ICON A5-POC was tested to determine its spin resistance. These tests included the maneuvers prescribed in 14 CFR § 23.221(a)(2):

- 30°-30° banked turns while holding full aft stick;
- Uncoordinated wings-level stalls;
- Uncoordinated turning flight stalls;
- Uncoordinated accelerated turning flight stalls; and,
- 7-second abused controls while holding full aft stick.

The tests were performed at five weight and CG combinations from full forward to full aft limit. The pressure altitude used for these tests was 8,000 - 9,000 feet for the 7-second tests and 7,000 feet for all other tests. Three aircraft configurations were flown: 1) flaps and gear up; 2) flaps takeoff and gear up; and, 3) flaps landing and gear down. Trim speed, engine power, airspeed entry rate, bank angle and control surface positions for all tests were as prescribed by the regulation (1.5Vs or 1.5Vs0 as appropriate, 1 kt/sec for un-accelerated stalls and 3-5 kt/sec for accelerated stalls, 30° bank angle for turning flight stalls, and either neutral or full opposite aileron for the 7-second abused controls test).

Spin resistance flight tests were performed by ICON's test pilot, Jon Karkow, and FAA DER test pilot, Len Fox. When the configuration that met spin resistance was determined, the entire series of tests was repeated by Len Fox to verify all spin resistance requirements were met. Len's qualifications can be found in Appendix VI.

For more details on all the test conditions evaluated, see Appendix II and III. Appendix II contains ICON's Stall and Spin Resistance Test Methods which describe how each stall and spin resistance test was conducted. Also included in Appendix II is the associated standard or regulation language that pertains to each test. Appendix III contains a portion of the flight test report from the stall and spin resistance testing, including test cards from five flights that show all of the parameters and combination of conditions tested. Appendix II and Appendix III are proprietary to ICON.

3. Clarification of the Standards Used to Prove Spin Resistance

FAA's Request: *A description of the manner in which ICON Aircraft confirmed the Model A5 meets the requirements of those § 23.221 (a)(2) standards that encompass other Part 23 sections which differ from the consensus standards for light-sport aircraft, i.e.:*

a. *In confirming the Model A5 meets the requirements of § 23.221 (a)(2)(i) and § 23.221 (a)(2)(ii) , did ICON Aircraft use the wings level stall maneuvers of ASTM International Standard F2245, or those of 14 CFR § 23.201?*
b. *At what power settings and in which airplane configurations did ICON Aircraft confirm that the Model A5 meets the requirements of §§ 23.221(a)(2)(i) and 23.221 (a)(2)(ii)?*
c. *In confirming the Model A5 meets the requirements of § 23.221 (a)(2)(ii), did ICON Aircraft use the temporary control force limits specified by Table I of ASTM International Standard F2245-12c, or those of 14 CFR § 23.143(c)?*
d. *In confirming the Model A5 meets the requirements of § 23.221 (a)(2)(iii), did ICON Aircraft use the wings level, turning flight, and accelerated turning stall maneuvers of ASTM International Standard F2245, or those of §§ 23.201 and 23.203?*

ICON's Response:
In general, ICON used ASTM stall and spin resistance requirements unless no ASTM requirement was defined, in which case we used Part 23 test procedures with ASTM limits/max deviations where defined.

A comprehensive explanation of the requirements and ICON's test procedures used for every stall and spin resistance test is described in Appendix II and III. See these appendices for more information related to these Section 3 questions. Additionally, here are succinct answers to the questions posed:

3a. To verify that the A5-POC met the requirements of § 23.221 (a)(2)(i) ICON used the stall maneuver defined in 14 CFR § 23.201 with the ASTM stall limits (±20° max roll or yaw deviation). Since this test is essentially a wings-level stall followed by a 30°-30° maneuver, the ASTM wings-level stall limits of ±20° were adopted instead of using the ±15° 14 CFR § 23 requirement.

To verify that the A5-POC met the requirements of § 23.221 (a)(2)(ii), ICON followed the procedures outlined in § 23.221 (a)(2)(ii). The requirements of § 23.221 (a)(2)(ii) do not directly reference § 23.201 except for the "power and airplane configuration," and for that ICON used the §23.201 (f) conditions. Note that while § 23.221 (a)(2)(ii) specifies § 23.201 (e) for power and airplane configuration, these items are defined in § 23.201 (f), not § 23.201 (e).

3b. To verify that the A5-POC met the requirements of §§ 23.221(a)(2)(i) and 23.221 (a)(2)(ii), ICON tested two engine power settings: idle and 75% maximum rated power. Three aircraft configurations were tested: 1) flaps up and gear up; 2) flaps takeoff and gear up; and, 3) flaps landing and gear down.

3c. To verify that the A5-POC met the requirements of § 23.221 (a)(2)(ii), ICON used the ASTM F2245-12c Table 1 temporary control force limits.

3d. To verify that the A5-POC met the requirements of § 23.221(a)(2)(iii), ICON used the procedures defined in §§ 23.201 and 23.203 with the roll and yaw limits from ASTM:

- ±20° max roll or yaw deviation for wings-level stalls; and,
- ±60° max roll for turning and accelerated turning stalls.

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4. A Statement Attesting That Spin Resistance Has Been Met

FAA's Request: *A statement signed by an individual legally representing ICON Aircraft, Inc. attesting, "I certify that the ICON Aircraft Model A5:*

- meets the requirements of 14 CFR § 23.221(a)(2);

- does not incorporate a stick pusher or other automatic flight control system to achieve satisfactory stall characteristics or spin resistance;

- includes an indicator that provides angle-of-attack (AOA) and sensed AOA rate information to the pilot;

- has a demonstrated descent rate of 20 ft/s (1200 ft/min) or less during a fully developed, wings-level, power-off stall at the most unfavorable weight and center of gravity combination;

- has a demonstrated altitude loss of 300 feet or less during recovery from a wings-level, power-off stall at the most unfavorable weight and center of gravity combination;

- includes a ballistic recovery complete-aircraft parachute system that complies with ASTM International Standard F2316;

- complies with the pilot force requirements of ASTM International Standard F2245-12c;

- includes a propulsion system with a maximum power output of 100 kW (135 horsepower) or less, regardless of flight phase or de-rating of the engine; and

- incorporates interior panels separating and protecting occupants from flight controls, cables, and other systems."

ICON's Response:

The requested statement can be found in Appendix IV.

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5. Clarification of Whether Inflatable Restraints are Included in the A5

FAA's Request: *If inflatable restraints are part of the "other important safety elements" that would be compromised in order to include spin resistance within the maximum weight constraints defined for light-sport aircraft, a statement signed by an individual legally representing ICON Aircraft, Inc. attesting that the ICON Model A5 "includes inflatable restraints previously approved by the FAA as suitable for use in airplanes certificated under the provisions of CAR 3 or 14 CFR Part 23." This statement may be included as part of the previous statement.*

ICON's Response:
Inflatable restraints are not incorporated in the current design. Given the length of time for the FAA to render an exemption decision and the extremely limited weight allowance of the LSA category, inflatable restraints were not incorporated in the current design. However, they may be considered in later versions of the A5 along with future safety-enhancing features, assuming the exemption is allowed and after ICON is able to comprehensively design, test, and incorporate any such features. Conversely, if the requested exemption and weight increase is not allowed, ICON cannot consider offering this or other currently planned-for and included, non-required safety features.

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6. Information to Support Request for LSA Repairmen

FAA's Request: *Maintenance procedures and any other applicable information supporting ICON Aircraft's petition that repairmen (light-sport aircraft) be allowed to maintain the Model A5*

ICON's Response:
ICON will be defining a standard LSA maintenance program as we approach production. The ICON A5 will be a simple aircraft that is easy to operate and just as easy to maintain, as envisioned in the creation of the LSA category and LSA Repairman Certificate. The additional vehicle weight and additional safety features will not introduce any extraordinary maintenance requirements. Therefore, properly certified and trained LSA Repairmen should be permitted to maintain the ICON Model A5.

It is also ICON's opinion that the combination of all three components, Light Sport Aircraft, Sport Pilot Certificate, and LSA Repairmen Certificate, are essential to achieving the FAA's goal of "Delivering Aviation Access through Innovation." Any missing component (aircraft, pilot licensing, or maintenance) will dramatically reduce the innovation rate and accessibility of the overall category and heavily attenuate their synergistic effects to the detriment of the FAA's stated goals.

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7. Explanation of Factors for ICON Training of Repairmen

FAA's Request: *An explanation of the factors leading to ICON Aircraft's request that a grant of its petition include a requirement for persons exercising the privileges of a repairman certificate (light-sport aircraft) to receive and maintain an ICON authorized certificate of training on repair and maintenance of the ICON A5 in order to perform work on the aircraft*

ICON's Response:

While the ICON A5 is easy to operate and simple to maintain, it does have enhanced aerodynamic capability that dramatically improves safety – a Spin Resistant Airframe (SRA). Since there is no conventional, production aircraft flying that has been designed to and passed the FAR 23 Spin Resistant Standard, there is little to no existing knowledge within the maintenance community (either A&P Mechanic or LSA Repairmen). Therefore, to ensure that this critically important safety feature is well maintained, it is important that all maintenance personnel (whether A&P Mechanic or LSA Repairmen) be adequately trained by ICON with regard to the maintenance of a Spin Resistant Airframe given the aerodynamic elements which ensure its safe performance.

Additionally, while data shows that a majority of accidents come from pilot error (something an SRA attempts to address), the secondary, contributing cause is maintenance error. ICON is striving to improve this situation through a rigorous maintenance training program for the A5 with the sole purpose of increasing safety.

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8. Explanation of Factors for ICON Training for Sport Pilots

FAA's Request: *An explanation of the factors leading to ICON Aircraft's request that a grant of its petition include a requirement for persons operating the aircraft while exercising the privileges of a sport pilot certificate to have received ICON authorized training on the aircraft*

ICON's Response:

This answer, in principle, is the same as above in question 7. While the ICON A5 is easy to operate, it does have an enhanced aerodynamic capability that dramatically improves safety – a Spin Resistant Airframe (SRA). Since there is no conventional, production aircraft flying that has been designed to and passed the FAR 23 Spin Resistant Standard, there is little to no existing knowledge within the flight training community on how to most effectively train to and leverage this powerful safety attribute. Therefore, to ensure that sport pilots are properly trained on this safety capability, it is important that flight instruction personnel be adequately trained by ICON with regard to the benefits and applications of a Spin Resistant Airframe.

ICON training would include the use of other safety equipment to prevent loss of control, such as ICON's Angle of Attack (AoA) system. This instrument is currently uncommon in general aviation, and pilots will benefit from specific training to use it in conjunction with an aircraft using SRA technology such as the A5.

It should also be noted that the Model A5 behaves normally and predictably throughout the flight envelope all the way up to an aerodynamic stall. Therefore, there is no interference learning or negative transfer among pilots transitioning from traditional "spin recoverable" designs. However, an SRA has a much more stable, predictable behavior inside the stall regime while also being spin resistant. To fully leverage this benefit for maximum safety, it is important that flight instructors are trained on these unique capabilities of the A5 so they can properly train students. ICON is fully committed to and will develop a comprehensive training regimen that can take aviation to the next level of safety by addressing loss-of-control scenarios through both training and safety innovation.

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Appendix IV - Statement Attesting that ICON A5 meets Spin Resistance Standard

09 May 2013

Mr. Earl Lawrence
U.S. Department of Transportation (DOT)
Federal Aviation Administration
Small Airplane Directorate
901 Locust, Room 301
Kansas City, MO 64106

Subject: Statement Attesting That the ICON A5 Meets the Spin Resistance Standard

Dear Mr. Lawrence:

The following is in response to your request for a statement attesting that the ICON A5 meets the requirements stated in italics below related to spin resistance.

I certify that the ICON Aircraft Model A5:

a) *meets the requirements of 14 CFR § 23.221(a)(2).* The A5-Proof Of Concept (POC) has been tested and shown to meet all requirements of 14 CFR § 23.221(a)(2) subject to the roll and yaw limits allowed by ASTM F2245 for coordinated and uncoordinated stalls. These tests were performed for five weight and CG combinations from full forward to full aft limit. With the exemption granted, production can begin and each production A5 aircraft will also be tested to verify it meets the requirements of 14 CFR § 23.221(a)(2) and ASTM F2245.

b) *does not incorporate a stick pusher or other automatic flight control system to achieve satisfactory stall characteristics or spin resistance.* The model A5 does not use a stick pusher or other automatic flight control system to achieve the stall characteristics required by the combination of F2245 and 14 CFR § 23.221(a)(2) described in point a) above.

c) *includes an indicator that provides angle-of-attack (AOA) and sensed AOA rate information to the pilot.* While this is <u>not</u> a requirement of F2245 or 14 CFR § 23.221(a)(2) or 14 CFR § 1.1, ICON has designed the model A5 instrument panel to include an AOA indicator as standard equipment. The indicator is an analog gauge with a needle that sweeps through an arc giving the pilot a sense of AOA rate of change by viewing the needle movement rate.

d) *has a demonstrated descent rate of 20 ft/s (1200 ft/min) or less during a fully developed, wings-level, power-off stall at the most unfavorable weight and center of gravity combination.* While this is also <u>not</u> a requirement of F2245 or 14 CFR § 23.221(a)(2), the A5-POC has been tested to confirm that it has a descent rate of less than 20 ft/s (1200 ft/min) during a fully developed, wings-level, power-off stall at the most unfavorable weight and CG combination. For these tests, the average descent rate was measured

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by stalling the A5-POC at 11,000' density altitude (DA) and holding it in that stall while descending to 6,000' DA.

e) *has a demonstrated altitude loss of 300 feet or less during recovery from a wings-level, power-off stall at the most unfavorable weight and center of gravity combination*. While this is also not a requirement of F2245 or 14 CFR § 23.221(a)(2), the A5-POC has been tested to confirm that it loses less than 300 feet of altitude during recovery from a wings-level, power-off stall at the most unfavorable weight and CG combination. This test was performed in accordance with the stall recovery procedure in FAA AC23-8C.

f) *includes a ballistic recovery complete-aircraft parachute system that complies with ASTM International Standard F2316*. As a test aircraft, the A5-POC does not include a complete aircraft parachute; however, the Production A5 is designed to incorporate an integrated complete aircraft parachute system that will comply with F2316.

g) *complies with the pilot force requirements of ASTM International Standard F2245-12c.* The A5-POC has completed this testing and has verified that it meets all pilot force requirements of F2245-12c.

h) *includes a propulsion system with a maximum power output of 100 kW (135 horsepower) or less, regardless of flight phase or de-rating of the engine.* While this is also not a requirement of F2245 or 14 CFR § 23.221(a)(2) or 14 CFR § 1.1, the initial production version of the A5 does, in fact, use an engine with a maximum power output less than 100 kW (135 horsepower), regardless of flight phase or de-rating of the engine. However, it may be more relevant to the source of this question to certify that the A5 does not exceed the maximum level flight speed of 120 knots CAS required by 14 CFR § 1.1 regardless of de-rating of the engine.

   Note: A horsepower restriction is not part of the current FAA or ASTM definition of an LSA. ICON believes it should remain that way and would strongly support regulations that define outcomes rather than prescribing solutions. This will avoid the unintended consequences of regulations that limit innovation; a horsepower constraint would be one such limitation.

i) *incorporates interior panels separating and protecting occupants from flight controls, cables, and other systems.* As a test aircraft, the A5-POC does not include interior panels; however, the Production A5 will have interior panels separating and protecting the occupants from flight controls, cables, and other systems in the cockpit.

I hereby affirm that the above is, to the best of my knowledge, a true and correct statement of facts.

Sincerely,

Matthew Gionta
CTO & VP/Engineering
ICON Aircraft, Inc.

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Appendix V - FAA Letter Request for Substantiation Data

U.S. Department
of Transportation
Federal Aviation
Administration

Small Airplane Directorate
901 Locust, Room 301
Kansas City, MO 64106

April 25, 2013

Mr. Kirk Hawkins
Chief Executive Officer
ICON Aircraft, Inc.
12511 Beatrice Street
Los Angeles, CA 90066
Tel: (424) 201-3500

Dear Mr. Hawkins:

The FAA continues to consider your May 7, 2012, petition for exemption from certain sections of Title 14, Code of Federal Regulations (14 CFR), as summarized in the Federal Register (77 FR 31063; May 24, 2012 and 77 FR 42075; July 17, 2012). We are considering the extent of relief sought, whether granting your request would be in the public interest, and whether it would not adversely affect safety or provide a level of safety at least equal to that provided by the rules. Although we strive to process such requests within 120 days, the complexity, extent, and precedent-setting aspects of your petition require additional time for us to make our determination.

The FAA's Aircraft Certification Service, Flight Standards Service, and Office of the Chief Counsel are working together to develop a response to your petition. In support of our analysis, we request that ICON Aircraft, Inc. provide the following:

- A description of the design data that ICON Aircraft claims meets the requirements of 14 CFR § 23.221(a)(2), such as an ICON Model A5 master drawing list or top drawing that includes revision level and date
- A list of the flight test conditions in which ICON Aircraft confirmed the Model A5 meets the requirements of § 23.221(a)(2). For each condition, include at a minimum:
  - a brief description of the type of test conducted
  - weight
  - center of gravity
  - altitude
  - trim speed
  - power
  - airplane configuration
  - stall entry deceleration rate
  - stall entry bank angle (for turning flight and accelerated turning stalls used in showing compliance with § 23.221(a)(2)(iii))
  - control surface positions for each spin resistance demonstration test point (neutral or pro-spin)

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- A description of the manner in which ICON Aircraft confirmed the Model A5 meets the requirements of those § 23.221(a)(2) standards that encompass other Part 23 sections which differ from the consensus standards for light-sport aircraft, i.e.:
  - In confirming the Model A5 meets the requirements of § 23.221(a)(2)(i) and § 23.221(a)(2)(ii) , did ICON Aircraft use the wings level stall maneuvers of ASTM International Standard F2245, or those of 14 CFR § 23.201?
  - At what power settings and in which airplane configurations did ICON Aircraft confirm that the Model A5 meets the requirements of §§ 23.221(a)(2)(i) and 23.221(a)(2)(ii)?
  - In confirming the Model A5 meets the requirements of § 23.221(a)(2)(ii), did ICON Aircraft use the temporary control force limits specified by Table 1 of ASTM International Standard F2245-12c, or those of 14 CFR § 23.143(c)?
  - In confirming the Model A5 meets the requirements of § 23.221(a)(2)(iii), did ICON Aircraft use the wings level, turning flight, and accelerated turning stall maneuvers of ASTM International Standard F2245, or those of §§ 23.201 and 23.203?
- A statement signed by an individual legally representing ICON Aircraft, Inc. attesting, "I certify that the ICON Aircraft Model A5:
  - meets the requirements of 14 CFR § 23.221(a)(2);
  - does not incorporate a stick pusher or other automatic flight control system to achieve satisfactory stall characteristics or spin resistance;
  - includes an indicator that provides angle-of-attack (AOA) and sensed AOA rate information to the pilot;
  - has a demonstrated descent rate of 20 ft/s (1200 ft/min) or less during a fully developed, wings-level, power-off stall at the most unfavorable weight and center of gravity combination;
  - has a demonstrated altitude loss of 300 feet or less during recovery from a wings-level, power-off stall at the most unfavorable weight and center of gravity combination;
  - includes a ballistic recovery complete-aircraft parachute system that complies with ASTM International Standard F2316;
  - complies with the pilot force requirements of ASTM International Standard F2245-12c;
  - includes a propulsion system with a maximum power output of 100 kW (135 horsepower) or less, regardless of flight phase or de-rating of the engine; and
  - incorporates interior panels separating and protecting occupants from flight controls, cables, and other systems."
- If inflatable restraints are part of the "other important safety elements" that would be compromised in order to include spin resistance within the maximum weight constraints defined for light-sport aircraft, a statement signed by an individual legally representing ICON Aircraft, Inc. attesting that the ICON Model A5 "includes inflatable restraints previously approved by the FAA as suitable for use in airplanes certificated under the

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provisions of CAR 3 or 14 CFR Part 23." This statement may be included as part of the previous statement.

- Maintenance procedures and any other applicable information supporting ICON Aircraft's petition that repairmen (light-sport aircraft) be allowed to maintain the Model A5
- An explanation of the factors leading to ICON Aircraft's request that a grant of its petition include a requirement for persons exercising the privileges of a repairman certificate (light-sport aircraft) to receive and maintain an ICON authorized certificate of training on repair and maintenance of the ICON A5 in order to perform work on the aircraft
- An explanation of the factors leading to ICON Aircraft's request that a grant of its petition include a requirement for persons operating the aircraft while exercising the privileges of a sport pilot certificate to have received ICON authorized training on the aircraft

If you have any questions concerning this request, please contact me at 816-329-4100.

Sincerely,

Earl Lawrence

Earl Lawrence, Manager
Small Airplane Directorate

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Appendix VI - Len A. Fox Resume

Leonard A. Fox

EDUCATION/ EMPLOYMENT	1971 – 1975	Villanova University, BS Business Admin
	1975 – 1995	United States Naval Aviator, 15 type aircraft including A-4, F-5, A-7, AV-8, F-15, F-16, FA-18, AH-1, S-3, OV-10. USN F-18 representative to Finland
	1995 – 1997	General Manager, AkroTech Aviation, Inc
	1997 – 2002 – 2007	President L.A.FOX Unltd, Flight Test, Design, Demo President, Cascade Aircraft Development Company

TEST PROGRAMS

17 Military Operational Test programs
More than 350 civilian test projects including:

Aerobatic aircraft	– 10 types
Airshow aircraft	– Turbo Raven, Turbo Shark
Spin testing	– 27 types
Ag aircraft	– Air Tractor 502 / Ag Wagon
Bush Aircraft	– Cub, Husky, Arctic Tern, Mt Goat
Experimental Jets	– Viper, Maverick, Javelin, Cozy, Aerostar, Epic Elite, Epic Victory
Turboprop Test	– Epic LT, Lancair IV, Legend, Orlik, Caravan, Escape, Evolution, PC-12
Rocket Test	– Rocket Racing League Prototypes
Certification programs	– Columbia 300,350,400, King Air 90, Aviat 4000, CAP 222, Adam 500, Icon A5, Aerostar, X Cub, TAG winglet on SR 20 & Citation I, II, III
Special projects	– Lindbergh New Spirit of St. Louis, Glasair III high alt turbo, SNC M-28, SNC Pilatus, Perlan high alt glider
UAV Programs	– US Army OWL (optionally piloted)

First flights in type: 22 aircraft

RATINGS & QUALIFICATIONS

Commercial / Instrument / SE & ME Land // SE Seaplane // Glider
Subspecialty for Operational Test and Evaluation (USN)
Graduate, Navy Fighter Weapons School (Top Gun)/ Adversary Pilot
FAA DER Flight Test Pilot (DERT-636010-NM)
EAA Flight Advisor
Oregon / Washington unlimited aerobatic champion 1999
Trans-Pacific (S-3, A-7) / Trans-Atlantic (Christen Eagle, Epic Elite)
Society of Experimental Test Pilots - Spirit of Flight Award 2005
Glider Tow Pilot

FLIGHT TOTALS & TYPES

Total Flight Time	10,669 hours
Single Engine Tailwheel	2,124
Single Engine Fixed Tricycle	1,336
Single Engine Retractable	3,206
Multi Engine	3,881
Turbo Prop	719
Turbo Jet	6,162
Rocket	37 flights
Helicopter (turbine)	30 (25)
Single Engine Seaplane	59
Glider	72
Military / Civilian Types Flown	18 / 180