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7 May 2012

U.S. Department of Transportation (DOT)
Docket Operations
West Building – Ground Floor, Room W12-140
1200 New Jersey Avenue, SE.
Washington, DC 20590

(Also Submitted to Federal Docket Management System Website)

Subject: Requests for Exemption for an Amphibious Special Light Sport Aircraft (S-LSA)
Attachment: Petition for Exemption – ICON A5 to Incorporate a Spin-Resistant Airframe (SRA)

Dear DOT Representative:

In January of 2012, the ICON A5 proof of concept vehicle successfully completed spin-resistance flight testing and demonstrated spin resistance in accordance with the full envelope of the 14 CFR § 23.221(a)(2) standard. This will make the A5, once in production, the first conventional, production aircraft in history able to meet this rigorous standard. The long term benefits of this technology, if made available to the public for light sport aircraft, will have a profound impact on increasing aviation and public safety.

In accordance with 14 CFR § 11, ICON Aircraft requests that the FAA consider this petition for exemption. ICON seeks an exemption to allow the ICON model A5 airplanes to be designed, operated, and maintained under the regulations and standards that are applicable to Special Light Sport Aircraft (S-LSA) while incorporating a Spin-Resistant Airframe (SRA). Including an SRA will result in an aircraft that exceeds the maximum takeoff weight as set by the current regulation for an amphibious S-LSA (1430 pounds). While exemptions normally must provide for an "equivalent level of safety," granting this exemption would result in a substantially greater level of safety than the current requirements for S-LSA. Additionally, the FAA has previously issued exemptions to permit additional S-LSA weight to safely accommodate increased product utility. In this case, ICON seeks a similar exemption, but to include features that will substantially increase operational safety over LSA aircraft that do not utilize SRA technology.

By including spin-resistance technology in the model A5, ICON will address the primary cause of fatal accidents in light aircraft: loss of control. Additionally, since S-LSAs are primarily operated at lower altitudes and speeds, where unintentional stall/spin entries are far less forgiving, the safety benefits of spin resistance will be even more pronounced. Furthermore, given that LSAs can be flown by newly certificated, entry-level sport pilots, and considering the significant safety benefits this exemption creates, ICON believes enabling the inclusion of spin-resistance technology in the ICON model A5 by granting this exemption is the responsible regulatory decision.

In the LSA final rule, the FAA asserts in Section II, "Purpose of This Rule" (P.44774), that "*The FAA intends this rule to – increase safety in the light-sport aircraft community by... accommodating new advances in technology*." The addition of spin-resistance technology is directly aligned with this FAA goal. It is also apparent throughout the preamble of the final LSA rule, that simplicity and ease of use were the key criteria in the formation of the LSA category. Adding a Spin-Resistant Airframe is exactly aligned with the spirit of the original rulemaking by providing an aircraft that is even simpler and easier to use than traditional, non spin-resistant aircraft.

The maximum allowable gross-weight limit established in the original LSA rule is considerably minimalistic for S-

LSA products. This restriction has had the unintended consequence of limiting safety innovation. As a result, many innovative safety and user features cannot be made available to the public without compromising the basic features and sound structure needed for a robust, durable S-LSA design. ICON Aircraft would like to include an SRA in the design of its S-LSA model A5. The additional wing and tail surface areas, as well as internal structure needed to implement an SRA, cannot be included in the design within the maximum gross-weight constraints as currently defined for S-LSA without compromising other important safety elements. Since there has never been a conventional, production airplane that has fully met the FAR Part 23 spin-resistance standard before, there was not a complete understanding of the additional weight that spin resistance requires when the original LSA rulemaking was accomplished. ICON believes it is in the best interest of flight safety and the public at large to grant this exemption, thereby enabling an SRA to be incorporated into the design of the ICON A5.

Lastly, ICON supports any future FAA rulemaking activity that would allow for S-LSA products with increased maximum takeoff weight to accommodate substantial safety improvements such as spin resistance. However, given the length of time required for broadly applicable rulemaking versus the benefit of getting spin-resistance technology in the hands of pilots as soon as practicable, ICON strongly believes this exemption should be approved as soon as possible rather than reserving consideration until broadly applicable rulemaking might be effected.

14 CFR § 11.63 requires that applicants allow 120 days for the FAA to process exemptions. As such, ICON respectfully requests the FAA grant this exemption before September 4, 2012.

If you have any questions or need additional information, feel free to contact me directly.

Sincerely,

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Petition for Exemption:
ICON A5 to Incorporate a Spin-Resistant Airframe (SRA) to Increase Safety

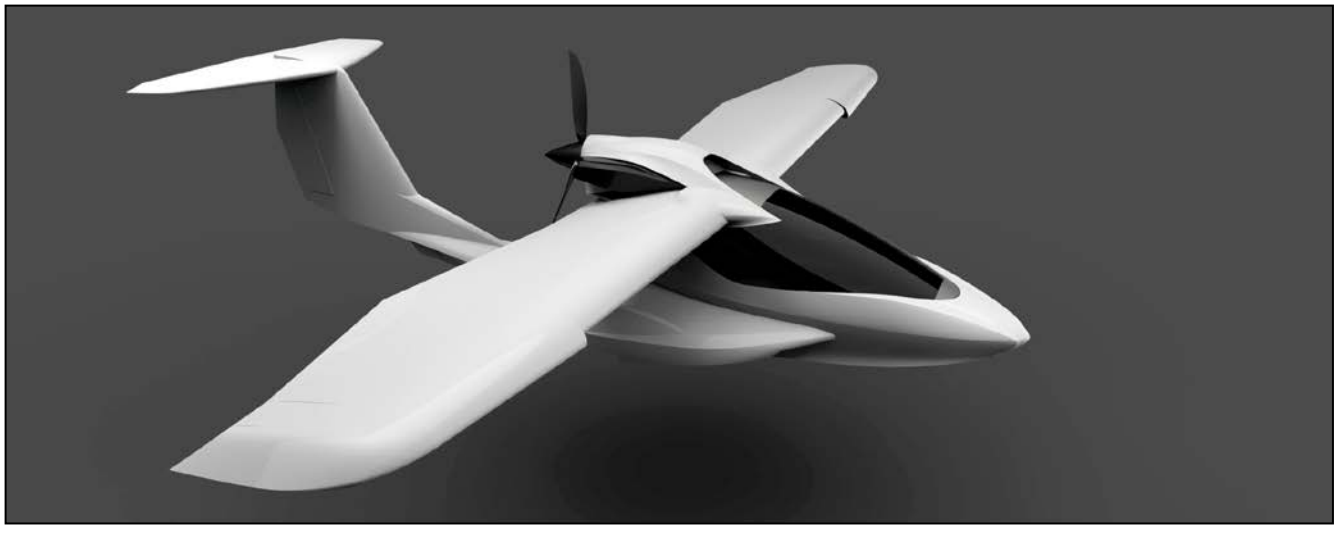
Specific Sections for Exemption

Title 14 of the Code of Regulations Sections 21.181, 21.190, 61.23, 61.31, 61.89, 61.303, 61.305, 61.315, 61.317, 61.321, 61.325, 61.327, 61.403, 61.411, 61.415, 61.417, 61.419, 61.423, 61.429, and 43.7 (certain sections of Parts 21, 61, and 43).

Explanation and Purpose of the Relief Sought

ICON seeks this exemption to permit the incorporation of a Spin-Resistant Airframe (SRA) in the ICON A5 at a weight above the current Light Sport Aircraft (LSA) definition, thereby enabling a level of safety over and above that fully considered when the regulations for Special-Light Sport Aircraft (S-LSA) were created. Unlike the usual requirement to show an "equivalent level of safety" in a request for exemption, this request provides an even greater level of safety by utilizing Federal Aviation Regulation (FAR) Part 23 spin resistance. The Federal Aviation Administration (FAA) has granted other exemptions to permit additional S-LSA gross weight in order to increase utility; however, this request is unique in that the additional weight will provide an enormous safety benefit rather than just increased utility.

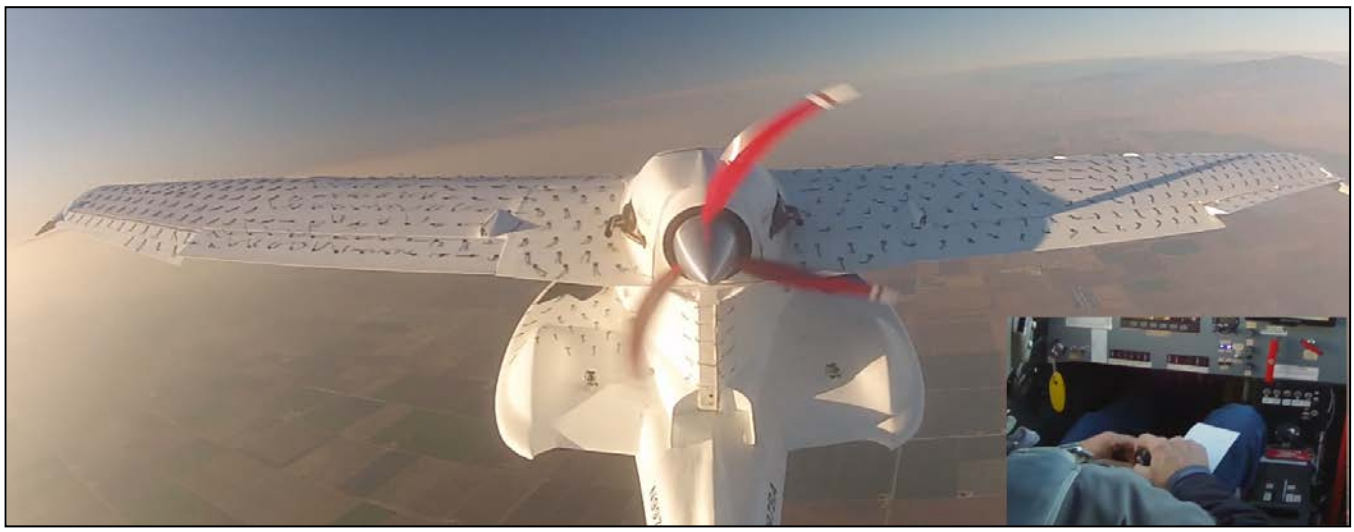
Through the inclusion of spin-resistance technology, the A5 can reduce a primary cause of pilot-related fatal accidents: loss of control. Spin resistance is a major safety-enhancing feature for light aircraft and can significantly reduce the number of loss-of-control accidents resulting from stall/spin scenarios. 70% of all General Aviation accidents are attributed to "Pilot-Related Factors," making them the most significant cause of fatal accidents according to the Aircraft Owners and Pilots Association (AOPA) Air Safety Institute's 2010 Nall Report. The report also found that an alarming 41% of these pilot-related fatal accidents are due to stall/spin loss-of-control scenarios.



Above: ICON A5 as shown with ICON's generation 3, full FAR Part 23 Spin-Resistant Airframe (SRA)

Few production aircraft have attempted to achieve spin resistance to the 14 CFR § 23.221(a)(2) standard, and no conventional production aircraft without a canard has ever been completely successful due to the technical difficulty of this requirement. Although there are other aircraft that have incorporated some spin-resistance characteristics (such as the Ercoupe, Jetcruzer, and Cessna Corvalis), the ICON A5, if enabled by this exemption, will be the first production aircraft in history to be designed to and completely meet the full-envelope Part 23 standard for spin resistance.

Full FAR Part 23 spin resistance is now possible as a result of ICON's extensive research, development, and engineering effort to advance previous NASA work on the subject. In order to achieve this result, ICON engineers created a cuffed wing design that employs multiple proprietary airfoils across the span of the wing. ICON thoroughly documented the flight testing of this design and can provide videographic confirmation of this testing to the FAA. Due to the proprietary nature of the design, ICON requests that the FAA make specific request for such proof of compliance by contacting ICON if needed.



Above: Screenshot from videographic documentation during spin-resistant fight testing. Spin-test Profile: "7-second, abused controls (pro-spin)." Controls held for 7 seconds at full aft stick, full left rudder, full right aileron at full aft CG without spin entry. All profiles flown by a professional spin test pilot (Len Fox) and results documented in test pilot report to Part 23 standards.

Due to the unique physical constraints that spin resistance presents, it cannot be included in the design under the maximum gross takeoff weight as currently defined for S-LSA products without compromising other safety features. Meeting the full envelope of the Part 23 spin-resistance standard is a complex, challenging, and multivariable problem. ICON's unique solution involves the use of proprietary technology in addition to some known fundamentals in the art. While it is beyond the scope and intent of this document to fully explain a full FAR Part 23 spin-resistance solution, a simplified, layman's explanation is that a large portion of the outer wing sections must be protected from ever stalling by, among other things, reducing maximum lift well below the wing's capability. Given the maximum stall speed (45 knots) required by the LSA definition, this loss of maximum available lift requires significantly increased wing area. The increased wing area then in turn requires increased tail size for stability along with the corresponding increase in internal structure, as well as proportional accommodation factor weight – at a minimum. Further, the increased wing, tail, and specific spin-resistance

elements also result in an increase in aerodynamic drag which requires increased engine size and additional fuel to compensate. The net result is that a Spin-Resistant Airframe requires increased vehicle weight over a similar S-LSA airplane that does not achieve spin resistance.

Extent of Relief and Reason Sought

Because no production spin-resistance design existed when the S-LSA regulations were created, the FAA did not have adequate information to include provisions or allowances for spin-resistance designs at the time of the LSA rulemaking. Today, because spin-resistance technology and understanding have been significantly advanced through ICON's research and development on the topic, it is now evident that while this feature significantly improves aviation safety, it also requires additional weight in order to achieve it. Given the extraordinary statistics around loss-of-control fatalities, it is clear that a Spin-Resistant Airframe is in the best interest of flight safety and is worth additional weight, especially for the LSA category and sport pilots.

While spin resistance can provide dramatic safety improvements, these benefits cannot be realized if spin-resistant aircraft are not put into the hands of those who can benefit from them the most. For this reason, ICON is also seeking that this exemption allows sport pilots to train in and operate these aircraft. Further, pilots transitioning to S-LSA from certified aircraft also stand to realize the same safety benefit in a spin-resistant aircraft. ICON is also seeking to assure the A5 will integrate into the S-LSA licensing, training and operating regulations seamlessly like any other S-LSA.

Finally, in order to assure the ICON A5 can be kept in airworthy condition in the cost-effective manner envisioned by the regulations governing S-LSA products, ICON is seeking exemption to ensure that the A5 can be maintained in the same manner as other S-LSA. The addition of spin resistance does not add complication to the maintenance aspects of the aircraft.

ICON seeks exemption to allow the ICON model A5 to be issued special airworthiness certificates in the Light Sport Aircraft category and to be operated and maintained under the regulations and standards that are applicable to Special Light Sport Aircraft (S-LSA) despite a maximum gross takeoff weight exceeding that specified by the current S-LSA definition. This exemption will include three specific areas of discussion that will be included in separate sections to facilitate FAA review:

- 1.0 – Aircraft Certification: Permit the ICON A5 to be designed, produced, and issued a special airworthiness certificate in the Light Sport Aircraft category, while including any additional design or production limitations imposed as a result of this exemption.

- 2.0 – Pilot Licensing: Permit licensing, training, and operation of the ICON A5 under the provisions of the regulations and standards governing Special Light Sport Aircraft, while including any additional operating limitations imposed as a result of this exemption.

- 3.0 – Aircraft Maintenance: Permit maintenance of the ICON A5 under the provisions of the regulations and standards governing Special Light Sport Aircraft, while including any additional maintenance limitations imposed as a result of this exemption.

Amended Rule Language: ICON is seeking exemption from requirements in the areas of design/production certification, licensing/training, and maintenance. To allow the appropriate branch of the FAA to review the areas of exemption, ICON has included areas where the requested exemption would be effective in three appendices:

Appendix II - Design, Production and Special Airworthiness Certificate Language
Appendix III - Licensing, Training and Operation Language
Appendix IV - Maintenance Language

If needed, ICON is willing to provide the FAA with a comprehensive, detailed markup of the applicable requirements to better illustrate the nature of the exemption.

Recommended Exemption Limitation Language: Based upon a review of historical limitations that have been assigned to S-LSA products that have been granted similar exemptions, ICON suggests the following limitations be assigned to the model A5 under the provisions of the requested exemption:

1. This exemption applies only to the ICON Aircraft model number A5, serial numbers 000001–999999.
2. ICON must make available to each purchaser of an ICON A5 certificated under the provisions of this exemption a copy of the exemption. A copy of the exemption must be carried onboard each aircraft.
3. ICON must maintain a record of all ICON A5s certificated under the provisions of this exemption. The record must be made available to the FAA upon request.
4. ICON may issue a Manufacturer's Statement of Compliance (FAA Form 8130-15) for each ICON A5 with a maximum takeoff weight (MTOW) of not more than 1680 pounds (762 kilograms) provided the aircraft meets the other provisions of the identified consensus standards.
5. ICON will include the following statement on the Manufacturer's Statement of Compliance (FAA Form 8130-15): "This aircraft performs to the standard of 14 CFR § 23.221(a)(2) at amendment 23-50."
6. When operating the ICON A5, the operator must adhere to the applicable general operating rules and flight rules for an S-LSA in 14 CFR § 91.
7. Each person operating an ICON A5 certificated under the provisions of this exemption must operate the aircraft in accordance with the assigned operating limitations that form a part of the Special Airworthiness Certificate.
8. An ICON A5 certificated under the provisions of this exemption may be operated by a person exercising the privileges of a Sport Pilot License provided they have received ICON authorized training on the ICON A5.
9. A person exercising the privileges of a repairman certificate (Light Sport Aircraft) may perform work on an ICON A5 certificated under the provisions of this exemption provided they have received and maintain an ICON authorized certificate of training on repair and maintenance of the ICON A5.
10. Each ICON A5 must have onboard an ICON Aircraft owned Flight Data Recorder (FDR) that operates in accordance with the provisions of the ICON A5 operating manual for the purpose of continued airworthiness.

Public Benefit and a Greater Level of Safety

Today's consumers have come to expect a high level of safety and crash protection from modern vehicles; ICON

seeks exemption from the FAA regulations to provide an S-LSA with unparalleled light airplane safety for these consumers. Providing exemption to permit the ICON model A5 to employ additional takeoff weight will result in an airplane with unprecedented product safety and quality at a price that has never been available to the public. Unlike traditional, FAA-certified products, S-LSA products and specifically the ICON A5 are being designed with a price point that a much larger percentage of the general public can afford, and as a result, this exemption has direct effect on a substantially larger percentage of the public than traditional airplanes. Even those who do not opt to purchase an ICON A5 will benefit from the knowledge that personal aviation is remarkably safe and financially accessible. It is equally important that the FAA grant the requested exemption so these widely available products are as safe as technology allows, without the constraint of maximum takeoff weight having the unintended consequence of preventing spin resistance, usefulness, and public adoption rates that could otherwise be provided.

Under the current regulatory environment of S-LSA, the consumer could be forced to choose a spin-resistance design at the expense of omitting other important safety equipment; it is in the public's interest to grant the requested exemption thereby enabling a level of safety far beyond that initially set during the original LSA rulemaking. By granting the requested exemption, the FAA will enable what is arguably one of the safest small airplanes to date to enter service. It is contrary to the public interest and safety to force the consumer to compromise safety because of developments in spin resistance that had not occurred at the time the regulations governing S-LSA were promulgated.

Additional Information and Facts to Support Exemption Request

1.0 Design, Production and Special Airworthiness Certificate: The preamble of the final rule establishes that the LSA category is based upon the desire for light airplane innovation and safety. In that discussion, the FAA indicates that there is no intention to limit innovation or safety by creating a maximum takeoff weight for LSA. However, in this specific instance, the weight limit set by the existing LSA definition does unintentionally limit safety innovation in the area of spin resistance.

It is also clear throughout the preamble of the final LSA rule that simplicity and ease of use were the key criteria in the formation of the LSA category. Adding a Spin-Resistant Airframe is exactly aligned with the spirit of the original rulemaking by providing an aircraft that is even simpler and easier to use than traditional, non spin-resistant aircraft. The control techniques required for recovery from an inadvertent stall/spin entry are often counterintuitive and anything but "simple," even assuming there is enough altitude for correct stall/spin recovery inputs to be effective. A Spin-Resistant Airframe like the one proposed on the ICON A5, however, can help simplify these situations by minimizing the risk of inadvertent spins and providing an airplane more capable of responding in a controlled, predictable manner even under a stalled condition. Since the most significant cause of fatal accidents in light airplanes is loss of control, ICON feels including a Spin-Resistant Airframe is critical to significantly improving light aircraft safety.

When the FAA created the S-LSA category, no production aircraft had demonstrated full-envelope spin resistance, and therefore it was not possible to fully understand the weight implications that such a feature would demand when combined with a maximum stall speed. After a complete review of the promulgation of the S-LSA regulations, it is clear that the FAA is utilizing maximum takeoff weight to assure that S-LSA products do not grow in size in an unbounded fashion. ICON believes FAA acceptance of this limited and specific request

for exemption does not provide an unbounded path for S-LSA growth but rather a thoughtful approach to safety that is in the best interest of the public.

ICON has reviewed the applicable ASTM standards for S-LSA to assure that there is no need to change them in order to accommodate the additional 250 pounds above the current maximum takeoff weight for an amphibious S-LSA that ICON is requesting in this exemption. Further, the Standard F2245 already permits spin-resistance designs, but it does not specify a method to demonstrate spin resistance. ICON proposes to demonstrate spin resistance to the standards contained in 14 CFR § 23.221(a)(2) (see next paragraph). This review of the ASTM standard was important to ensure that an incremental increase in vehicle weight would not invalidate the assumptions that have gone into the consensus standards used by S-LSA products. Under an exemption of this nature, ICON plans to demonstrate compliance to FAA accepted ASTM standards using the increased maximum takeoff weight where the standard calls for maximum takeoff weight. For example, section 4.4.3 of ASTM F2245 specifies that rate of climb and climb gradient be established at maximum takeoff weight:

> 4.4.3 Climb—At maximum takeoff weight, flaps in the position specified for climb within the POH, and full throttle:
> 4.4.3.1 Rate of climb at V_Y shall exceed 95 m/min (312 fpm).
> 4.4.3.2 Climb gradient at V_X shall exceed 1⁄12 .

During ICON's review of the currently accepted consensus standards, no safety concerns have been identified as a result of increased maximum takeoff weight in the amount being requested.

ICON would like to demonstrate the A5 to be spin resistant by using the tests listed in 14 CFR § 23.211(a)(2). As the ICON model A5 is a Light Sport Aircraft, it is not feasible to demonstrate compliance with this requirement per traditional 14 CFR § 21 flight test methods for a number of reasons. Nor is ICON an advocate for this or any unnecessary burden upon FAA resources when there are other equally effective methods available to the S-LSA industry. This is also consistent with the purpose and philosophy behind the entire LSA category which promotes industry consensus standards and self-declaration in lieu of FAA certification of compliance. As a result of the unique nature of S-LSA, there are adequate substitutes that can be used to prove compliance with spin-resistance standards and to ensure that production A5 aircraft will include the same spin resistance. Because S-LSA products are not issued a type certificate, they rely upon a statement of compliance to an applicable standard by the manufacturer. ICON plans to include the following statement on the Manufacturer's Statement of Compliance (FAA Form 8130-15):

> *"This aircraft performs to the standard defined in 14 CFR § 23.221(a)(2) at amendment 23-50."*

To verify this statement, ICON will perform a flight test per S-LSA standard practices with video documentation of the production prototype's flight test to confirm the results. In addition, each production aircraft will fly a series of test points during compliance testing to ensure that each individual serial number performs to the standard defined in 14 CFR § 23.221(a)(2).

There are significant safety reasons to grant this exemption request and there are no outstanding issues that should prevent such an exemption. ICON believes that this exemption request offers far more significant safety contributions than similar exemption requests that have been granted to date. The existing requirements for

the design and production of S-LSA vehicles are well suited for the ICON model A5 with the inclusion of a Spin-Resistant Airframe. ICON also believes the FAA should consider granting similar petitions for expanded weight by other manufacturers who will include full FAR Part 23 spin resistance in a similar manner to ICON since it would be in the best interest of the public and aviation safety to do so.

2.0 Licensing, Training, and Operation: ICON is proposing an exemption that would permit an amphibious S-LSA that is spin resistant but has a heavier maximum takeoff weight than typical S-LSA products. It is clear from the preamble discussion in the rules that created LSA that spin resistance is a favorable approach to safety, but until now, there has been no design presented that meets the full envelope of the FAR Part 23 spin-resistance standard. The added vehicle weight that will result from acceptance of this exemption request will have no detrimental effect on the flight characteristics but instead, the airplane will perform in a safer manner than other products that are not spin resistant. ICON will demonstrate performance requirements using the increased takeoff weight instead of the currently defined LSA maximum takeoff weight.

Light Sport Aircraft such as the ICON A5 have the potential to attract many new and inexperienced pilots into aviation. ICON believes that fatal accidents can be meaningfully reduced with the introduction of a Spin-Resistant Airframe in the S-LSA marketplace. In order for this technology to have the intended safety benefit, it must be put in the hands of the pilots who can benefit most from these capabilities. ICON believes that the model A5 should be subject to the same operating and training conditions as a typical S-LSA product (licensing, training, medical), except ICON believes that the FAA should require factory approved training for all pilots who will fly the A5 to ensure they fully understand and are able to maximize the benefits of the technological safety features provided in the A5.

It is expected that the ICON model A5 with spin resistance will result in an aircraft that flies in the same manner as other S-LSAs except when the aircraft is held in a stalled condition. In this case, the aircraft will respond positively and predictably to flight control inputs unlike airplanes that lack spin resistance. Since airframe buffeting will still be present, it will be clear to the pilot that the aircraft is in a stalled state, and traditional stall recovery techniques will be taught. Thus, stall recognition and recovery techniques of the A5 will be the same as non spin-resistant aircraft. Still, although there is no expected negative transfer learning from a non spin-resistant S-LSA to the A5, ICON believes requiring factory training will further increase safety by ensuring all pilots are properly trained on the safety benefits available in a spin-resistant A5.

It is clearly in the best interest of safety to have an airplane with spin resistant features in the hands of as many pilots as possible. ICON supports granting this or any other similar exemption for spin resistance to ensure the S-LSA industry can be as safe as possible.

3.0 Maintenance: To ensure the model A5 can be utilized as much as possible, ICON believes it is in the interest of the public to allow aircraft with expanded weight and spin resistance under the provisions of this exemption request to be maintained as typical S-LSA products by mechanics holding either an Airframe and Powerplant Certificate or a Light Sport Repairman Certificate. However, as part of this exemption, the FAA would require factory-approved training on repair and maintenance of the A5 to ensure repairmen understand the care of the unique Spin-Resistant Airframe of the A5.

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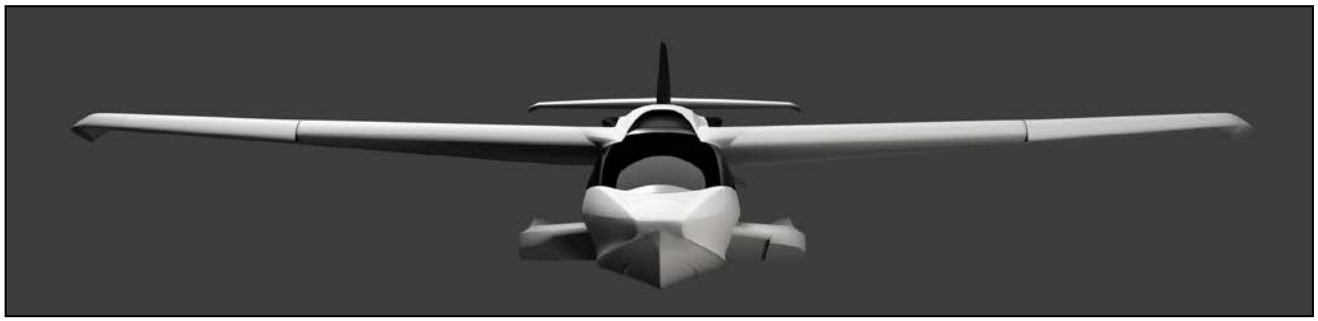


Conclusion / Summary for Publishing in Federal Register

ICON Seeks Relief from 14CFR to Incorporate a Spin-Resistant Airframe (SRA) for Increased Safety

In January of 2012, the ICON A5 proof-of-concept vehicle successfully completed spin-resistance flight testing and demonstrated spin resistance in accordance with the full envelope of the 14 CFR § 23.221(a)(2) standard. Once in production, this will make the ICON A5 the first conventional, production aircraft in history able to meet this rigorous standard. To facilitate the inclusion of spin-resistance technology in the ICON model A5, ICON seeks relief from sections of Parts 21, 61, and 43 of Title 14 of the Code of Federal Regulations.

The potential safety benefits of a Spin-Resistant Airframe (SRA) for the S-LSA category are extraordinary: SRA can dramatically reduce loss-of-control fatalities related to inadvertent stall/spin entries. Stall/spin entries account for an alarming 41% of all pilot-related fatalities (2010 AOPA Nall Report). The SRA developed by ICON directly addresses this serious safety issue. Further, SRA technology is especially useful in the low-altitude envelope where stall/spin entries are the most unforgiving and where most sport pilots and LSA fly. Additionally, since the Sport Pilot License is the entry point for new aviators, an SRA can meaningfully increase the safety of these less experienced pilots.

The inclusion of an SRA is exactly consistent with the intended spirit of the original rulemaking of LSA: to provide aircraft that are simple, safe, and easy to operate. However, the extraordinary benefits of an SRA do not come for free; it requires additional weight. The LSA category is already heavily weight constrained such that the addition of this safety feature is not possible without compromising other important safety considerations.

Therefore, within the spirit of the original rulemaking, which explicitly states the LSA weight limit was NOT intended to reduce safety, ICON seeks an exemption to allow gross weight to be increased from 1430 to 1680 lbs for the ICON A5 S-LSA amphibious aircraft. Additionally, since this technology is especially beneficial to sport pilots, ICON seeks that this exemption allow the increased gross-weight ICON A5 to be flown by sport pilots and maintained by LSA repairman like any other S-LSA. ICON believes this exemption unequivocally serves both safety and public interests and thereby represents the responsible regulatory decision.

Given the length of time required for broadly applicable rulemaking versus the need to get SRA technology in the hands of pilots as soon as practicable, ICON strongly believes this exemption should be approved as soon as possible for the immediate benefit of public safety. 14CFR§11.63 requires that applicants allow 120 days for the FAA to process exemptions. As such, ICON respectfully requests the FAA grant this exemption before September 4, 2012.

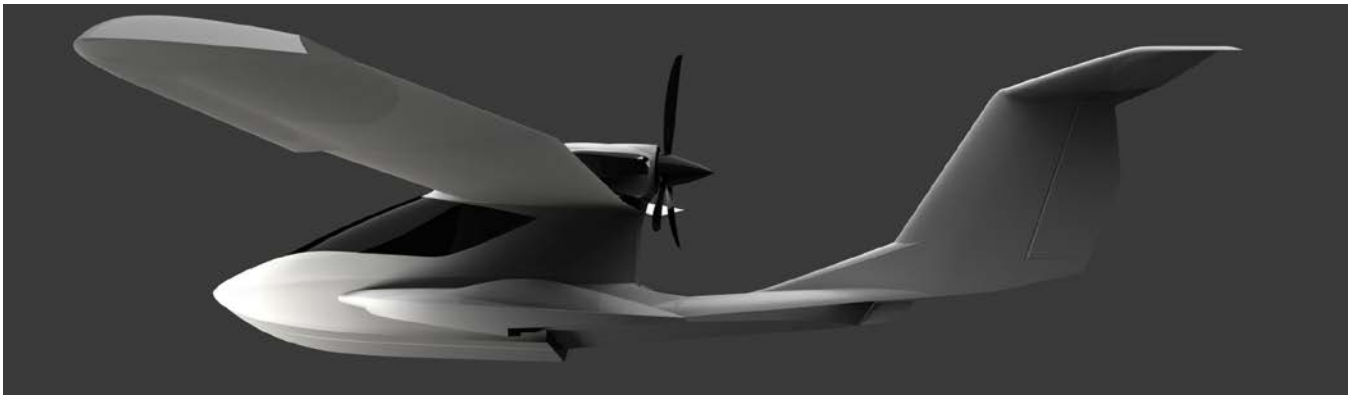
Appendix I – Additional Safety Commitment Beyond Spin Resistance

While this exemption request is specifically for the inclusion of a Spin-Resistant Airframe (SRA) on the model A5, ICON believes it is worth discussing the additional efforts it is making well above and beyond the minimum safety requirements in order to dramatically advance safety within the LSA category through innovative technology. In addition to spin resistance, ICON intends to offer a variety of leading-edge safety enhancements including, but not limited to, a complete airframe parachute (CAP) system, a robust and more crashworthy automotive-like interior, and a state-of-the-art, advanced amphibious hull.

While there may be some debate on the safety benefits of the Complete Airframe Parachute (CAP), what is not debatable is that the success rates and suitability of this technology are heavily dependent on the energy state of the vehicle deploying it. When airframe parachute technology is utilized on relatively low-speed aircraft (like LSAs, micro-lights, and ultralights), the safety benefits and statistics for successful deployments ("saves") is extremely compelling, if not conclusive. Due to the stall speed and top speed limits established for LSAs of 45 knots and 120 knots respectively, this places the entire operating flight envelope of an LSA directly in the heart-of-the-envelope for parachute technology and is therefore an ideal match. Consequently, ICON believes it is in the best interest of public safety to encourage the use of this technology, especially within the LSA category and among sport pilots.

ICON also intends to provide finished, automotive style interiors on the A5 for safety reasons. The A5 will include a finished interior with panels separating and protecting occupants from flight controls, cables, and other systems which are routinely exposed to cockpit occupants in the heavily weight-constrained LSA category. Due to the low stall speeds and flying speeds of an LSA, crashes will often be at proportionally lower speeds than faster aircraft and will potentially be more survivable. The survivability of these accidents becomes heavily tied to the crashworthiness of the cockpit and fuselage and its ability to protect the occupants during a crash. The more exposed and minimalistic the interiors, the less protection they provide. Additionally, LSA interiors that are typically left unfinished due to LSA weight limitations, can leave flight controls and other mechanisms exposed to unsafe interference during flight, in addition to the aforementioned dangers they pose to occupants

during a crash. Within the ultralight community, it is commonly understood that often it is not the crash impact itself that severely or fatally injures occupants, but rather the minimalistic and exposed structures fracturing and injuring an occupant that otherwise may have survived. ICON believes it is in the best interest of safety within the LSA category to provide crashworthy, finished, protective interiors.



ICON has been able to develop a unique amphibious hull design that can provide significantly increased levels of safety during takeoff, landing, water-handling operations, and off-airport forced landings. The ICON A5 hull is arguably the most advanced and potentially safest seaplane hull ever developed. Development began by starting with the best known seaplane knowledge to date including early NACA studies as well as existing knowledge base from designers of the Lake Amphibian and top Dornier hull amphibians from the 1940 to 1980s. At the time the A5 development began, there had been no material advances to this body of knowledge since early 1960s. ICON then incorporated the latest in high-speed planing watercraft design technology and tools. Some of the world's top high-performance racing boat naval architects were involved to design a new generation of light seaplane hull that had the following design safety objectives:

- Outstanding hydrostatic buoyancy and stability.
- Minimal deck angle (pitch) change throughout water acceleration, from displacement to plowing to planing modes. This safety feature was virtually non-existent in all known seaplanes but became achievable using modern computational tools for watercraft design.
- Outstanding rough-water handling through higher dead rise without compromising hydrodynamic lift and drag for takeoff acceleration. This was also enabled through the use of modern watercraft design tools and was not resident in the existing aircraft industry.
- Minimal porpoising tendencies. (porpoising is an undesirable and potentially dangerous mode of pitch instability during higher-speed water operations that is inherent to many, if not most, seaplanes).
- Unprecedented on-water maneuverability for obstacle avoidance (more like a jet-ski than a seaplane).
- Strong, damage-tolerant hull providing for safer off-airport, land-based, forced-landing scenarios.

As a result of ICON's extensive research and development program, the ICON A5 hull is possibly the most advanced seaplane hull in history. It combines safety, maneuverability, and ease of use for all ranges of operator, from the experienced pilot all the way down to the novice. ICON's final design was issued a US Utility Patent (US 2010/0314493 A1)) on 16 December 2010 recognizing the hull's novel design and increased utility and safety.

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Appendix II - Design, Production and Special Airworthiness Certificate Language

Note: The proposed regulatory exemptions could be replaced by revising the definition of an LSA product (14 CFR § 1.1) to include the ICON model A5, but as the FAA has indicated this is not feasible, the following language can serve the same purpose.

> Each of the following sections contain the term "light sport aircraft" which would include a vehicle weighing up to 1680 pounds under this exemption. ICON is requesting these sections also apply to the ICON A5 as they do traditional S-LSA products.
>
> **14 CFR § 21.181 - Duration.**
> 21.181(a)(3)(i)
> 21.181(a)(4)
>
> **14 CFR § 21.190 - Issue of a special airworthiness certificate for a light-sport category aircraft.**
> 21.190(a)

Appendix III - Licensing, Training and Operation Language

Note: The proposed regulatory exemptions could be replaced by revising the definition of an LSA product (14 CFR § 1.1) to include the ICON model A5, but as the FAA has indicated this is not feasible, the following language can serve the same purpose.

Each of the following sections contain the term "light sport aircraft" which would include a vehicle weighing up to 1680 pounds under this exemption. ICON is requesting these sections also apply to the ICON A5 as they do traditional S-LSA products.

14 CFR § 61.23 - Medical certificates: Requirement and duration.
61.23(c)(1)(iii)

14 CFR § 61.31 - Type rating requirements, additional training, and authorization requirements.
61.31(l)(2)(vi)

14 CFR § 61.89 - General limitations.
61.89(b)(1)

14 CFR § 61.303 - If I want to operate a light-sport aircraft, what operating limits and endorsement requirements in this subpart must I comply with?
61.303(b)(4)

14 CFR § 61.305 - What are the age and language requirements for a sport pilot certificate?
61.305(a)(2)

14 CFR § 61.315 - What are the privileges and limits of my sport pilot certificate?
61.315(a)
61.315(c)

14 CFR § 61.317 - Is my sport pilot certificate issued with aircraft category and class ratings?
61.317

14 CFR § 61.321 - How do I obtain privileges to operate an additional category or class of light-sport aircraft?
61.321

14 CFR § 61.325 - How do I obtain privileges to operate a light-sport aircraft at an airport within, or in airspace within, Class B, C, and D airspace, or in other airspace with an airport having an operational control tower?
61.325

14 CFR § 61.327 - Are there specific endorsement requirements to operate a light-sport aircraft based on V_H?
61.327(b)

61.327(b)(2)

14 CFR § 61.403 - What are the age, language, and pilot certificate requirements for a flight instructor certificate with a sport pilot rating?

61.403(b)

14 CFR § 61.411 - What aeronautical experience must I have to apply for a flight instructor certificate with a sport pilot rating?

61.411

14 CFR § 61.415 - What are the limits of a flight instructor certificate with a sport pilot rating?

61.415
61.415(e)
61.415(g)

14 CFR § 61.417 - Will my flight instructor certificate with a sport pilot rating list aircraft category and class ratings?

61.417

14 CFR § 61.419 - How do I obtain privileges to provide training in an additional category or class of light-sport aircraft?

61.419

14 CFR § 61.423 - What are the recordkeeping requirements for a flight instructor with a sport pilot rating?

61.423(a)(2)(iii)(A)
61.423(a)(2)(iii)(D)
61.423(a)(2)(iv)
61.423(a)(2)(iv)(A)
61.423(a)(2)(iv)(B)
61.423(b)

14 CFR § 61.429 - May I exercise the privileges of a flight instructor certificate with a sport pilot rating if I hold a flight instructor certificate with another rating?

61.429(c)

Appendix IV - Maintenance Language

Note: The proposed regulatory exemptions could be replaced by revising the definition of an LSA product (14 CFR § 1.1) to include the ICON model A5, but as the FAA has indicated this is not feasible, the following language can serve the same purpose.

> Each of the following sections contain the term "light sport aircraft" which would include a vehicle weighing up to 1680 pounds under this exemption. ICON is requesting these sections also apply to the ICON A5 as they do traditional S-LSA products.
>
> **14 CFR § 43.7 - Persons authorized to approve aircraft, airframes, aircraft engines, propellers, appliances, or component parts for return to service after maintenance, preventive maintenance, rebuilding, or alteration.**
>
> 43.7(g)
> 43.7(h)

Respectfully submitted,

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