Comment Response – Icon Request for Gross Weight Increase

FAA Regulators and Certifiers:

I rise in opposition to the proposed Icon Inc. request for exemption to the Light Sport Aircraft (LSA) gross weight restriction of 1430 for an LSA amphibian. As I understand, Icon inc. has requested an increase of 250 lbs for their Icon A-5 amphibian aircraft.

I am a 3800+ hour former U.S. Air Force transport pilot (C-5A/B and EC-130H) and a general aviation pilot who recently built and is flying SeaRey LSX out of Baltimore MD. While I am no FAA or aviation technical expert, I can speak to my past year and half experience with seeking out an amphibious LSA aircraft to bring me back into the joys of flying. I am also a Federal government employee in the information technology area, well versed in government specifications, waiver processes, and what is and is not vendor hype. For me, this waiver request is all about hype and not about building a better amphibious LSA for the entry level general aviation seaplane pilots. I believe that the FAA should refuse the Icon's request for the following reasons.

1. Icon's less than forthright openness regarding technical information about their aircraft and its multi-year hyped-up marketing and venture finance campaign
2. Icon's application fails to substantiate its claim of equivalent or enhanced safety
3. The potential safety enhancement is offset by unmentioned secondary safety issues
4. Icon has proven technical alternatives to meet the LSA weight
5. Icon's basis justification for weight increase is disproved by their selection of a new light weight, fuel efficient engine
6. A weight increase for safety was specifically incorporated in the existing weight rule
7. The "innovative" anti-spin safety feature is already available in other LSA aircraft
8. Approval of Icon's application will adversely affect a stressed industry
9. The unfair and potentially adverse impact on the other LSA amphibian competitors

Based on these many factors the FAA reviewers should reject this waiver request and instead open a formal rule range process on the LSA weight standards. Icon should be forced to meet the test standards that other Part 23 and LSA aircraft manufacturers have met and/or are pursuing.

1. Icon's less than forthright openness regarding technical information about their aircraft and its multi-year hyped-up marketing and finance campaign.

The FAA has already acknowledged many of the hyped claims of compliance with the LSA rule were market driven and not technologically justified. I can readily attest to this. When I first learned of the Icon A5 in a Fall 2010 CBS Sunday Morning news piece, I made every attempt to see the aircraft with the intent to purchase the aircraft. As a former military aviator I wanted to fully understand the technical capabilities of the aircraft, both good and bad. I was rebuffed in all my efforts. The company pressed me to post a $100,000 per-purchase order with claims that they would get LSA status by 2012. After seeing an Icon aircraft mock-up in Winter of 2010 at their New York City angel investor presentation, I concluded the company was more into marketing the aircraft as the "See Doo" of the air, than building a

safe and fun aircraft to the young Sport Pilot community. At the time, I remember thinking the aircraft would be a real challenge to a 20-hour pilot, what with the retractable gear and operating in both air and water conditions. Their latest marketing tactic is the "Spin Resistant Airframe" and associated video. I have yet to see anything about the aircraft's ground and water performance. All their publically released videos are carefully edited to show the aircraft at its best. Their focus is on selling airplanes, not on safety and what is best for the LSA industry. Other than mere self-promoting statements, the Icon application lacks any substance showing that the claimed safety benefits are inherent in its design. Lacking such evidence, the exemption should be denied.

2. Icon's application fails to substantiate its claim of equivalent or enhanced safety.

Any exemption to a well thought FAA technical specification must demonstrate an equal or enhanced level of flight safety for the conditions by which the aircraft will operate. Icon has the bare minimum of evidence in the form of a video. While the video clearly demonstrate the aircraft's resistance to stall spin accidents, it says little toward the heavier aircraft's performance in the landing and takeoff environment, where 90% of aircraft incidents occur for this aircraft type.

The claimed safety benefits have not been independently verified as called for in the Part 23 standard administrative procedure which requires FAA or FAA certified 3rd party participation for validation. There is no submitted evidence of agency involvement in Icon's testing.

As a minimum, Icon must be required to demonstrate compliance with the FAR 23 spin resistant requirement prior to consideration of any exemption.

3. The potential safety enhancement is offset by unmentioned secondary safety issues

Icon's application make no comment or assertion as to what the increased weight will mean on the aircraft's landing and takeoff performance, or climb performance. In my SeaRey LSX with a 115HP Rotax 914 engine, I experience significant increases in takeoff and landing distances when operating at max gross weight, especially on high density altitude days. The Icon's 100 HP Rotax 912si will have push 250 lbs more weight with 15 less horsepower. As former C5A/B Galaxy pilot, I know well the impact of weight to thrust ratios on aircraft performance. Besides there is no assurance that some inexperienced Icon LSA pilot will not over gross the aircraft.

Also, unusual aircraft performance features have not always improved safety. Case and point is the Aircoupe where an "innovation" was claimed as a safety feature. That "innovation" was supported by substantially more test and engineering evidence than a company video. The supposed safety claims were not borne out in the subsequent accident records. It is equally probable that Icon's claimed safety benefit could result in other safety hazards not acknowledged in this application.

To obtain stall-spin resistance, it appears that Icon has limited control authority. Such limitations may present a substantial hazard to inexperienced pilots in crosswind situations. Further, if the aircraft is induced to spin, then control limitations may prevent recovery.

Even if there is a safety benefit from the wing change, it creates a secondary safety issues that Icon trained pilots t will lack basic unusual flight skills. An Icon Light Sport Pilot would lack an appreciation for the dangers of stalls and crossed controls in more conventional aircraft. This lack of appreciation would make typical LSA transition training inadequate for Icon trained pilots.

Icon's application indicates that special training is required to operate the aircraft safely. That alone indicates that this does not meet the Light Sport standard for a simple, safe, easy to operate aircraft. When added to their request that the FAA mandate that any mechanic working on the aircraft be "factory trained," it is clear that the aircraft is anything but simple and easy to operate.

It is clear that there are multiple, unmentioned serious safety issues inherent in Icon's request. Icon has failed to show that it is addressing; thus proving this request does not provide an equivalent level of safety and their request should be denied.

4. Icon has proven technical alternatives to meet the LSA weight.

The current weight limit can be accommodated by eliminating other weight increasing items. Icon's publicized design includes features, such as an engine cowling, automotive style interior, folding wings, and other market driven additions, do not enhance the aircraft's function or safety. "Innovation" is not required to reduce the weight of the current Icon prototype. They can remove many of these features.

Another alternative for Icon to meet the current standard would be to accept lesser performance. In its application, Icon states that "Increased wing and tail surface results in an increase in aerodynamic drag and requires a bigger engine and more fuel." While increased wing area may affect top end performance, adequate performance may be attainable with the previously announced engine. Enhanced upper end performance may give it a competitive advantage, but is not a basis for a request for an exemption.

The other LSA manufacturers, large and small, have or are making such trade-offs. The requested weight increase will give Icon an unfair marketing advantage of providing consumer enhancements that the other LSA manufactures had to sacrifice to meet the weight standard. Since the current standard can be met through conventional means, the request should be denied.

5. Icon's basis justification for weight increase is disproved by their selection of a new light weight, fuel efficient engine.

Icon's application for exemption is based upon their false contention that: "Increased wing and tail surface results in an increase aerodynamic drag and requires a bigger engine and more fuel." In fact, Icon's marketing statements show just the opposite.

Icon recently announced that it will be using the new Rotax 912iS as its power plant. The engine weighs a mere 13 pounds more than Icon's previous selection. The minor increase in weight is more than offset by the reported 38% to 70% increase in fuel efficiency over comparable engines at the same horsepower. (For example, see Icon's announcement on their web site: http://www.iconaircraft.com/news/icon-a5-to-use-fuel-injected-rotax-912-is-engine.html).

Icon's disingenuous application fails to report that it "collaborated" with the engine manufacturer to produce the selected engine while filing an application citing a need for a bigger engine with more fuel capacity. Such blatant misrepresentation is sufficient basis for rejection of the application.

6. A weight increase for safety was specifically incorporated in the existing weight rule

In the preamble for the Light Sport Rule the FAA specifically identified an increase in aircraft weight to accommodate safety equipment. This has been the standard for light sport aircraft designers to meet after incorporating safety features. To allow an exemption for every new self-promoted safety device would essentially eviscerate the standard.

A stated objective for the Light Sport Rule was to provide entry level light aircraft. Arbitrarily increasing the gross weight limit for this exemption nullifies the original intent of simple, light aircraft. Instead of undermining the basis of the existing rule, Icon's request for exemption should be denied.

7. The "innovative" anti-spin safety feature is already available in other LSA aircraft.

Icon's marketing department has made extravagant claims about the "innovation" of its spin resistant wing. In fact, other LSAs meet the current standard and they too are "spin-stall resistant."

It is common knowledge that a Tecnam P92 cannot be spun. Further, an existing amphibian, Progressive Aerodyne's SeaRey, has completed certification testing showing that it is extremely difficult to spin. The SeaRey cannot be stalled in a takeoff configuration. In fact, I have to pull back the throttle to 50% power on my SeaRey LSX to get it to do a straight-on power-on stall.

These and other examples undermine Icon's claims of aeronautical innovation. An exemption should not be issued to Icon simply because it cannot produce a compliant LSA with these characteristics when other companies have already done so without all the marketing hype.

8. Approval of Icon's application will adversely affect a stressed industry.

The establishment of the Light Sport Aircraft and Recreational Pilots license has spawned a new and growing industry within aviation. That industry is based upon the principals and standards outlined in the FAA mission to "provide the safest, most efficient aerospace system in the world." Providing one company with an exemption to a basic rule will create an unfair trade advantage in the entry level aircraft market will adversely affect this new part of the industry that the agency is charged with promoting in general. While Icon's employment and sales will go up, the other established U.S. companies will be adversely affected and lead to down-sizing and job layoffs in those small companies. This cannot be reliably offset by the unsubstantiated claims of a single LSA vendor with a track record of hyped up marketing claims and track record of not delivering on its promises.

9. The unfair and potentially adverse impact on the other LSA amphibian competitors

I fully understand EAA's and AOPA's endorsement of this request, since most of the LSA industry is struggling to build fully capable LSA aircraft within this standard. The supporting comments from BRS, Cessna, and Cirrus all point to their desire to benefit from a similar waivers. But that is no excuse to

grant this waiver. A number of LSA manufactures have (i.e. SeaMax and Piper Cub on floats) or soon will (i.e. SeaRey and Lisa) secure LSA amphibian certification. They made performance and capability tradeoffs to meet this standard. Why should Icon be granted a waiver?

I believe the 1430 lb LSA amphibian max weight rule does need to be revised, but for all the LSA amphibian types. Granting Icon this waiver is not how the FAA should handle this, rather the FAA should instead open comprehensive and formal review of the 1430 lb LSA amphibian max weight rule. Seek technical input and subject matter expertise from the broad LSA and general aviation community. That way all the technical, historical, and safety facts can be properly weighed to increase the LSA max gross weight standard based on the current state of technology and LSA manufacturing capabilities. I have personally witnessed over the past year the penned up demand for a capable and affordable LSA amphibian. Few are willing to go through the rigors and efforts I went through to build my amateur built experimental SeaRey LSX. I believe that establishing realistic and achievable LSA specification standards that the industry can meet and deliver safe, reliable and fully supported LSA amphibian aircrafts. Is that not the purpose of the LSAs in the first place?

CONCLUSION

Over the past several years, I have witnessed Icon attempts to bring to market its aircraft with unusual fanfare. They have focused more on consumer features than LSA standards. As I said in the beginning they want to deliver the “Skee Doo” of the sky; but as a Maryland resident, I am well know the safety record of Skee Doo jet skis on eth Chesapeake Bay.

The Icon engineers have struggled, as other LSA engineers, to meet weight restrictions while trying to also deliver consumer friendly features folding cantilevered wings, retractable landing gear and a fully composite airframe. Spin resistance is not unusual LSA feature and a company video of Icon A5 stall is no justification for this weight waiver. In reality it calls into question other safety issues. The spin resistance as a safety feature for a special exemption is simply a bureaucratic way to get around this LSA restriction that others have met.

In summary, the Icon application is replete with irrelevant marketing claims and lacks substance. It is counter to the established LSA standard and insults the serious LSA manufacturers who believe in the long-term LSA vision to bring more pilots into the joys of general aviation. There is no safety equivalency provided for an exemption. For these and other reasons, I stand against Icon’s request for exemption, but for a general FAA rule review of the LSA weight standards based all the facts.

I live in the National Capital Region and would be willing to speak to you more about this matter and what I have observed with regard to amphibious LSAs and other LSA matters, such as the amount of information technology coming into today’s general aviation cockpits. I’ll even take you up for a ride over the Chesapeake Bay for a couple splash & goes in my Maryland colored SeaRey LSX.

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