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LSA & SPL – Bringing the "Sport" Back to Flying

Appealing to the emotional rather than the practical may be the key to revitalizing General Aviation

By Kirk Hawkins, CEO & Founder ICON Aircraft

In 2004, the FAA passed what has been called the "biggest change in aviation in 50 years"–they created the Light Sport Aircraft (LSA) category and the Sport Pilot License (SPL). "So what?" you ask. You've already got your Private, Commercial, Instrument, CFI, MEI, and Eagle Scout Badge. Why should you care about Sport Pilot? Well, these two seemingly insignificant changes that fall well below the experience level of us "real pilots," may just have the potential to revitalize our industry by inspiring thousands of new consumers to take up flying at unprecedented levels. With many more people learning to fly, the entire General Aviation (GA) industry stands to benefit – everyone from business jets to ultralights.

Mainstream Consumers are Leaving GA

First, for this discussion, we will focus only on single-engine piston aircraft whose cost, complexity, and pilot requirements make them reasonably accessible to motivated mainstream consumers. Next, let's take a quick look at how "personal aviation" among mainstream consumers has fared over the past three decades. For reference, the US population since 1980 has increased by more than 33% (225M to 300M); as well Real GDP Per Capita has increased by 65%. The bottom-line is that there are a lot more people with a lot more disposable income today than there were 30 years ago (even considering the recent economic climate). This has driven dramatic market growth among cars, boats, motorcycles, and virtually every other transportation and powersport vehicle – except personal aircraft. During the same period, personal aviation has experienced the exact opposite. Participation in GA at the mainstream consumer level has atrophied at an alarming rate. Since 1980, the total number of active pilots decreased from 800K to 600K; further the number of annual student pilot starts dropped 100K+ to less than 60K per year. These statistics are even more startling on a per capital basis where total active pilots are down 44% and annual student pilot starts are down 55%!

While we may be able to massage these numbers to disguise the reality, the facts are that mainstream consumers are telling us something – they're losing interest in what aviation has been offering. They're taking their discretionary time and dollars and going elsewhere. But wait a minute; don't they realize that flying is one of the most exciting activities known to man? So what could possibly be causing consumers to leave GA? Well, the answer may be that consumers aren't leaving GA – but GA has been leaving consumers. Somewhere over the past several decades most of regulators, manufacturers and associations have positioned flying as primarily a convenient mode of transportation. So, in our quest for more speed, range, payload, and fancier glass cockpits – we seem to have forgotten what brought us to aviation in the first place – the freedom, the fun, the adventure of flying! How many of us can remember zooming around the house at age seven holding a plastic airplane over our heads making airplane noises? Well, I bet none of us were imagining, "Boy, I could really save some time getting

to grandma's house; and just think of the TSA lines I'd be avoiding!" No, we were imagining the wind in our hair, the thrill we would feel, and thinking, "how cool it would be if I had the freedom to go where I want, see what I want, and explore this exciting world from above!"

The GA Transportation Myth

As long as we continue to justify personal aviation to our spouse, boss, and IRS based solely on its functional benefits – we're going to continue to lose that argument, along with market share. It only takes a few simple calculations to show why single-engine transportation GA has such low adoptions rates: less than 1% of the population has the financial resources to actually justify it solely for transportation (based on US income and wealth data). The facts are that given a relatively efficient highway infrastructure combined with a relatively abundant airline infrastructure, there are very few cases where single-engine private GA is the most time efficient solution (even assuming a single-engine speed of 200mph). The pilot enthusiast in me hates to admit these facts, but there is only a narrow band of ranges (approximately 200-500 miles) where single-engine GA has any total travel time advantage over cars or airlines, and even then it's arguably minimal. Further, there are far fewer scenarios where private GA wins on a cost basis compared to the car or airline option. Bottom-line: the vast majority of us who engage in personal aviation do so primarily for its emotional value rather than its utility.

Recreation vs Transportation

The industry's positioning of aviation as mere aerospace transportation at the expense of recreation and fun hasn't entirely been our own doing. It's been driven largely by the FAA's philosophy and corresponding regulations. The primary mission of the FAA is to provide "safe, efficient aerospace systems" for all authorized users, whether transportation, recreation, or otherwise. To that end, they have done a commendable job of prioritizing and ensuring safe aerospace infrastructure for the transportation markets. However, the recreational flying markets have been largely neglected, especially with regards to regulations conducive for those users. In the past, the entry level pilot competency (Private Pilot) was: single-engine, all airspace, day or night transportation. As such, being able to operate a C-172 out of Chicago O'Hare at night, cross-country into JFK was in fact, the minimum pilot qualifications as defined by the FAA. This is a high bar, arguably too high as an entry-level license for most consumers—particularly those primarily interested in recreation, not transportation.

Furthermore, the prior requirement that every production aircraft had to be manufactured under the FAR 23 certification program regardless of size and complexity meaningfully increased the cost of light aircraft development and production. Higher costs reduce sales volumes and in turn limit economies of scale. Lastly, the considerable time, energy, and costs of certification under FAR 23 also leads to economic incentives for manufacturers to limit product innovation in order to avoid recertification.

The net effect of these regulatory restrictions on our industry has been to create extraordinarily high barriers to entry. These barriers require consumers to allocate significant time, money, and energy to both become a pilot as well as justifying flying for transportation purposes afterwards.

LSA & SPL: An Opportunity to Revitalize GA

However, there is hope! The GA world as we know it just changed. The FAA brilliantly revised the regulations that have artificially constrained personal aviation for the previous decades. In 2004, after 12 years of comprehensive analysis, they rewrote the regulations around recreational flying. They created the Light Sport Aircraft (LSA) category and the Sport Pilot License (SPL). Together, these new regulations make flying both safer and much more

accessible to mainstream consumers. Safety was improved by giving recreational flying a viable set of rules while eliminating several problem areas within the ultralight market. Accessibly is greatly improved since the SPL can be achieved in 20 hours of flight time and approximately $3500 – that's less than ½ the time and costs of the Private Pilot license. Additionally, brand new production LSA aircraft do not require FAR 23 certification and can be brought to market in the $100K-$150K price range.

In all, these are groundbreaking changes to aviation that stand to have significant long-term effects. If we embrace LSA/SPL and allow it to reach its full market potential, it has the ability to revitalize GA by releasing enormous amounts of pent-up consumer demand for safe, affordable, fun aircraft. Why is this good for all of GA from business jets to ultralights? If we want increased airport access, fewer airport closures, increased airport funding, the ability to resist user-fees, lower priced aircraft, more aircraft offerings, and generally better awareness and acceptance by the mainstream public – well, we may want to welcome those mainstream consumers into our shrinking industry. Otherwise, in a democratic society, the interests of groups as small as private GA become increasingly marginalized and difficult to protect. Sound familiar?

So how do we recapture the imagination, attention, and ultimately the discretionary time and resources of the mainstream consumer? One answer is we inspire them with products that give them the freedom to express themselves and meet their emotional needs as well as their functional needs. Just imagine how boring and limiting our car markets would be if manufactures delivered vehicles optimized only for the utility of efficient transportation. Indeed, entire classes of vehicles (ie "sport cars") would not exist. The vast majority of the auto makers, at least the surviving successful ones, are finely tuned to delivering products that are as much emotional purchases as they are practical ones—if not more so.

Flying for Fun! It's Okay.

During my flying career I've had the good fortune of flying everything from ultraights, to airliners, to even F-16s in the Air Force. And, of all the flying I've experienced, the most rewarding has been sport flying – at low altitude, with the windows open, a friend sitting next to you, and getting to see and interact with our amazing planet in a visceral way that is only possible in a light aircraft. *That's* the kind of flying the Wright brothers and early aviators knew so well. That's the kind of flying we dreamed about as kids. And, that's the kind of flying that once inspired hundreds of thousands of mainstream consumers to want to fly. Orville Wright himself said it best back in 1903 when he said, "The exhilaration of flying is too keen, the pleasure is too great, for it to be *not* to be a sport."

It is clear that the roots of aviation lie in the pure sport, or fun of flying and what it symbolizes to the human experience. It's ironic that in today's increasingly advanced transportation aviation world, the very fate of personal aviation may lie in how successful we are at bringing the "Sport" *back* to flying.

Author:
Kirk Hawkins is the CEO & Founder of ICON Aircraft. ICON started after he and his team from Stanford University analyzed the long-term market potential of the LSA/SPL rule changes. Kirk is a graduate of Stanford Business School and also holds an MS in Engineering from Stanford. He flew F-16s in the USAF, 767s for the airlines, and is an avid ultralight pilot, sport plane pilot, seaplane instructor, and skydiver with nearly a 1000 skydives.


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Appendix

	1980	2008	% Change	Source
US Population	$225M	$300M	+33%	US Census Bureau
Real GDP	$5B	$12B	+140%	US Bureau Economic Analysis
Real GDP/Capital	23K	38K	+65%	US Bureau Economic Analysis
Student Pilot Starts	100K	60K	**-40%**	AOPA
Active Pilots	800K	600K	**-25%**	AOPA
Total Piston Aircaft	190K	160K	**-16%**	AOPA (2003 DATA)
Student Pilot Starts per Capita	0.0004	0.0002	**-55%**	AOPA
Active Pilots Per Capita	0.0036	0.002	**-44%**	
Total Piston Aircaft Per Capita	0.0008	0.0005	**-37%**	
Note: all numbers are approximates only of US data				

Pure Transportation Utility Comparison of Time and Cost Only

Automovile vs Private GA vs Commercial Air

Note: intangibles and emotional drivers like enjoyment, convenience, fears, social status, etc were ingnored

Time Comparison			
	Auto	GA Single	Airline
speed	60 mph	200 mph	500 mph
Logistics	0 hrs	2 hrs	3.5 hrs
Distance	**Time**	**Time**	**Time**
100	1.7	2.5	3.7
200	3.3	3.0	3.9
300	5.0	3.5	4.1
400	6.7	4.0	4.3
500	8.3	4.5	4.5
600	10.0	5.0	4.7
700	11.7	5.5	4.9
800	13.3	6.0	5.1
900	15.0	6.5	5.3
1000	16.7	7.0	5.5
1500	25.0	9.5	6.5
2000	33.3	12.0	7.5

Cost Comparison					
	Auto	GA Single	Airline		
			<500	500-1500	1500+
$/mile	$0.59	$1.26	$0.40	$0.25	$0.15
Distance	**Cost**	**Cost**	**Cost**		
100	$59	$126			
200	$118	$252	$80		
300	$177	$378	$120		
400	$236	$504	$160		
500	$295	$630		$125	
600	$354	$756		$150	
700	$413	$882		$175	
800	$472	$1,008		$200	
900	$531	$1,134		$225	
1000	$590	$1,260		$250	
1500	$885	$1,890			$225
2000	$1,180	$2,520			$300

US economic data references:

http://www.measuringworth.org/datasets/usgdp/result.php